

1 IN THE UNITED STATES DISTRICT COURT  
 2 FOR THE EASTERN DISTRICT OF PENNSYLVANIA  
 3  
 4 ---  
 5 IN RE: AVANDIA MARKETING : CIVIL ACTION  
 6 SALES PRACTICES AND PRODUCTS :  
 7 LIABILITY LITIGATION : 07-MD-01871

10 PHILADELPHIA, PENNSYLVANIA  
 11 MONDAY, SEPTEMBER 20, 2010

13 BEFORE: THE HONORABLE CYNTHIA M. RUFÉ, J.  
 14 THE HONORABLE SANDRA MAZER MOSS, J.

16 DAUBERT HEARING

19 SUZANNE R. WHITE, CM  
 20 FEDERAL CERTIFIED REALTIME REPORTER  
 21 FIRST FLOOR U. S. COURTHOUSE  
 22 601 MARKET STREET  
 23 PHILADELPHIA, PA 19106  
 24 (215)627-1882

25 PROCEEDINGS RECORDED BY STENOTYPE-COMPUTER,  
 TRANSCRIPT PRODUCED BY COMPUTER-AIDED TRANSCRIPTION

1 JEROME SHESTACK, ESQUIRE  
 2 SPECIAL MASTER  
 3 AND  
 4 BRUCE MERENSTEIN, ESQUIRE  
 5 SCHNADER HARRISON SEGAL AND LEWIS, LLP  
 6 1600 MARKET STREET  
 7 PHILADELPHIA, PA 19103  
 8 (215)751-2000

9 ---

1 APPEARANCES:  
 2  
 3 THOMAS MELLON, ESQUIRE  
 4 STEPHEN A. CORR, ESQUIRE  
 5 THOMAS MELLON, ESQUIRE  
 6 MELLON WEBSTER & SHELLY  
 7 87 NORTH BROAD STREET  
 8 DOYLESTOWN, PA 18901  
 9 (215) 348-7700  
 10 REPRESENTING PLAINTIFFS  
 11  
 12 JOSEPH J. ZONIES, ESQUIRE  
 13 REILLY POZNER, LLP  
 14 511 SIXTEENTH STREET  
 15 SUITE 700  
 16 DENVER, CO 80202  
 17 (303) 893-6100  
 18 REPRESENTING PLAINTIFFS  
 19  
 20 THOMAS P. CARTMELL, ESQUIRE  
 21 WAGSTAFF & CARTMELL, ESQUIRE  
 22 4740 GRAND AVENUE  
 23 SUITE 300  
 24 KANSAS CITY, MISSOURI 64112  
 25 REPRESENTING PLAINTIFFS  
 1 NINA M. GUSSACK, ESQUIRE  
 2 GEORGE LEHNER, ESQUIRE  
 3 PEPPER HAMILTON, LLP  
 4 TWO LOGAN SQUIRE  
 5 18TH AND ARCH STREETS  
 6 PHILADELPHIA, PA 19103-2799  
 7 (215) 981-4000  
 8 REPRESENTING DEFENDANT  
 9  
 10 TAMAR P. HALPERN, ESQUIRE  
 11 PHILLIPS LYTLE, LLP  
 12 3400 HSBC CENTER  
 13 BUFFALO, NY 14203-2887  
 14 (716)852-6100  
 15 REPRESENTING DEFENDANT

1 (THE CLERK OPENS COURT.)  
 2 HONORABLE CYNTHIA M. RUFÉ: PLEASE BE  
 3 SEATED. GOOD MORNING.  
 4 MR. MELLON: GOOD MORNING, YOUR HONOR,  
 5 YOUR HONORS.  
 6 HONORABLE SANDRA MAZER MOSS: YOU HAVE TO  
 7 SPEAK WITH AN S FROM NOW ON.  
 8 HONORABLE CYNTHIA M. RUFÉ: MAY I EXPRESS  
 9 MY DELIGHT AND ALSO MY GRATITUDE TO COUNSEL FOR  
 10 COORDINATING THIS STATE AND FEDERAL PROCEEDING. WE ARE  
 11 ADDRESSING SCIENTIFIC ISSUES TODAY IN THE -- NOT ONLY IN  
 12 THE MULTI DISTRICT LITIGATION THAT IS AVANDIA, IN RE:  
 13 AVANDIA MARKETING SALES PRACTICES AND PRODUCTS LIABILITY  
 14 LITIGATION, BUT BECAUSE WE ARE CHARGED WITH DOING MORE  
 15 THAN JUST DECIDING OUR OWN MOTIONS BUT COORDINATING WITH  
 16 CASES ALL OVER THE COUNTRY, INCLUDING THE STATE COURTS,  
 17 WE HAVE INVITED A NUMBER OF STATE JUDGES WHO HAVE MANY  
 18 OF THESE CASES, NONE THE LEAST OF WHICH IS THE COUNTY OF  
 19 PHILADELPHIA COURT OF COMMON PLEAS IN THE COMMONWEALTH  
 20 OF PENNSYLVANIA. AND MY GOOD FRIEND AND COLLEAGUE JUDGE  
 21 SANDRA MAZER MOSS HAS AGREED TO BE HERE PERSONALLY. WE  
 22 HAVE OTHER JUDGES -- AND I'M DELIGHTED ABOUT THAT. IF  
 23 WE CAN JUST GET OUT OF CHAMBERS AND STOP CHATTING, MAYBE  
 24 WE CAN GET BACK TO WORK. BUT WE HAVE OTHER JUDGES THAT  
 25 HAVE ASKED IF THEY COULD PARTICIPATE IN ONE WAY OR

1 ANOTHER AND JUDGE CAROLYN KUHL FROM THE STATE OF  
 2 CALIFORNIA WAS GOING TO BE COORDINATING WITH US AND  
 3 PARTICIPATING BY VIDEO CONFERENCE FOR TODAY, TOMORROW  
 4 AND WEDNESDAY, BUT UNFORTUNATELY HER SCHEDULE CHANGED.  
 5 SO WE ARE MAKING AVAILABLE JUDGE KUHL AND  
 6 ALL THE OTHER JUDGES THAT WERE NOTICED AND I'M LOOKING  
 7 FOR THAT PARTICULAR REPORT, BUT I DON'T SEE. I WOULD  
 8 LIKE TO LIST THEIR NAMES. GIVE ME JUST A MOMENT. JUDGE  
 9 KUHL WILL ALSO BE ABLE TO ACCESS THE AUDIO PORTION BY  
 10 PACER, BECAUSE NOT ONLY ARE WE KEEPING OFFICIAL  
 11 STENOGRAPHIC NOTES THAT WILL BE TURNED INTO A  
 12 TRANSCRIPT, BUT WE ARE ALSO TAPING THIS. I WANTED  
 13 EVERYBODY TO UNDERSTAND THAT. EVEN THOUGH WE ARE NOT  
 14 HAVING OUR ESR ELECTRONIC SOUND RECORDING SYSTEM RECORD  
 15 THIS FOR PURPOSES OF TRANSCRIPTION; ONLY ONE OFFICIAL  
 16 TRANSCRIPT CAN EXIST; WE ARE PRESERVING THE AUDIO SO  
 17 THAT THE UPLOAD TO PACER WILL MAKE THIS PROCEEDING  
 18 AVAILABLE TO ALL OF THE JUDGES THAT ARE CHARGED WITH THE  
 19 RESPONSIBILITY IN THEIR DISTINCT JURISDICTIONS. THE  
 20 HONORABLE SARAH SINGLETON IS ASSIGNED IN SANTA FE COUNTY  
 21 IN NEW MEXICO AND DIFFERENT JUDGES ARE ASSIGNED IN OTHER  
 22 COUNTIES. AND ONE OF THOSE IS HONORABLE RAYMOND ORTIZ  
 23 IN THE FIRST JUDICIAL DISTRICT AND HONORABLE GRANT  
 24 FOUTZ, F-O-U-T-Z, THE 11TH JUDICIAL CIRCUIT, AND ONE  
 25 CASE UNASSIGNED. THE ADDITIONAL JUDGES IN ILLINOIS,

1 WHICH HAS A NUMBER OF ACTIONS, ARE HONORABLE PATRICK  
 2 YOUNG, HONORABLE MICHAEL J. O'MALLEY AND HONORABLE  
 3 LLOYD A. CUETO, C-U-E-T-O. IN ALABAMA THERE ARE SEVERAL  
 4 JUDGES OF COURSE. THEY ARE NOT ALL COUNTY CIRCUIT COURT  
 5 JUDGES, HONORABLE WILLIAM NOBLE AND THE HONORABLE  
 6 HOUSTON BROWN, THE HONORABLE HENRY -- JOHN HENRY  
 7 ENGLAND, JUNIOR, AND HONORABLE EDDIE HARDAWAY,  
 8 H-A-R-D-A-W-A-Y. AND IN MISSOURI, THEIR CASES ARE BEING  
 9 HANDLED BY THE HONORABLE DAVID DOWD, D-O-W-D. AND I  
 10 BELIEVE THAT MAY TAKE ACCOUNT OF MOST OF THE STATE COURT  
 11 JUDGES THAT HAVE BEEN IN COORDINATION WITH THE MDL  
 12 BESIDES THE COUNTY OF PHILADELPHIA AND OF COURSE JUDGE  
 13 MOSS.  
 14 AND JUDGE MOSS, AS YOU ALL WELL KNOW  
 15 BECAUSE SHE HAS BEEN WORKING WITH YOU IN HER OWN  
 16 COORDINATION, IS THE LEADER OF THE COMPLEX LITIGATION  
 17 COURT SECTION IN THE COURTS OF PHILADELPHIA. AND AS  
 18 SUCH, SHE IS VERY FAMILIAR WITH ALL OF THE CASES,  
 19 INCLUDING PHARMACEUTICAL PRODUCT LIABILITY CASES. SO AS  
 20 YOU ARGUE TO HER OVER THE NEXT SEVERAL DAYS THE FRYE  
 21 STANDARD AND HOW IT HAS BEEN MET OR NOT MET, AND ARGUE  
 22 TO ME THE DAUBERT STANDARD, I THINK YOU WILL ALL SEE  
 23 THAT WE ARE READY TO GO. WE ARE READY TO MOVE.  
 24 I HAVE ALSO MADE AVAILABLE IN THE JURY  
 25 ROOM ATTACHED TO THIS COURTROOM REFRESHMENTS FOR

1 COUNSEL, NOT JUST THE ONE THAT ARE TALKING, BUT ALL THE  
 2 ONES THAT CARRIED IN THE LUGGAGE AND ARE PARTICIPATING  
 3 ALL YEAR. AND ALSO THAT WILL BE THE SITE OF YOUR  
 4 CONFERENCE WITH JUDGE MOSS AFTER TODAY'S PROCEEDINGS ARE  
 5 CONCLUDED.  
 6 NOW, I WOULD LIKE TO ASK JUDGE MOSS IF  
 7 THERE IS ANYTHING INITIALLY SHE WOULD LIKE TO TELL US.  
 8 HONORABLE SANDRA MAZER MOSS: BESIDES  
 9 WELCOMING EVERYBODY AND SAYING I'M GETTING A KICK OUT OF  
 10 BEING AT 6TH AND MARKET INSTEAD OF CITY HALL TODAY, BUT  
 11 I WANTED TO MAKE SURE THAT ANYTHING THAT YOU ARGUE TO  
 12 ME, ANY EXPERT REPORTS, ANY EXHIBITS THAT YOU HAVE  
 13 COPIES TO HAND UP TO ME, BECAUSE OBVIOUSLY I COULDN'T  
 14 BRING EVERYTHING THAT YOU SO KINDLY SENT ME. I HAVE A  
 15 BUNCH OF STUFF, BUT ANYTHING THAT YOU NEED FOR ME TO  
 16 SEE, PLEASE HAVE COPIES TO HAND UP TO ME AND PLEASE  
 17 DIRECT YOUR COMMENTS, WHEN YOU TALK ABOUT FRYE, TALK  
 18 ABOUT DAUBERT, MAKE SURE THAT YOU DIRECT THEM SO THAT  
 19 EACH OF US KNOWS WHAT SPECIFIC ARGUMENTS YOU ARE MAKING  
 20 TO US. OKAY.  
 21 HONORABLE CYNTHIA M. RUFÉ: THANK YOU.  
 22 AND COULD I PLEASE TAKE A ROLL CALL. WE HAVE YOUR CHECK  
 23 INS. WE BOTH HAVE A LIST, BUT I THINK IT'S ALWAYS  
 24 APPROPRIATE TO HAVE THAT MADE A PART OF THIS RECORD.  
 25 MR. MELLON: WELL GOOD MORNING, YOUR

1 HONOR, IT'S A PLEASURE TO BE HERE. ON A PERSONAL NOTE,  
 2 I WANTED TO TELL THE COURT THAT WHEN WE OPENED UP THIS  
 3 COURTHOUSE IN 1976, MISS SUZANNE WHITE AND I HAD ONE OF  
 4 THE FIRST TRIALS IN THIS ROOM. SO HERE WE ARE 34 YEARS  
 5 LATER, BACK AT IT. SO IT'S A PLEASURE TO BE HERE WITH  
 6 SUZANNE.  
 7 ON BEHALF OF THE PLAINTIFFS' STEERING  
 8 COMMITTEE, I WOULD LIKE EVERYONE TO INTRODUCE  
 9 THEMSELVES.  
 10 MS. NAST: DIANE NAST, YOUR HONOR.  
 11 HONORABLE CYNTHIA M. RUFÉ: GOOD MORNING.  
 12 MR. CARTMELL: TOM CARTMELL, YOUR HONORS.  
 13 MR. ZONIES: GOOD MORNING, YOUR HONORS,  
 14 JOE ZONIES.  
 15 HONORABLE CYNTHIA M. RUFÉ: HELLO.  
 16 MS. GUSSACK: GOOD MORNING, YOUR HONOR,  
 17 NINA GUSSACK, FOR GLAXOSMITHKLINE. AND I HAVE WITH ME  
 18 MY COLLEAGUES, TAMAR HALPERN FROM PHILLIPS LYTLE, CINDY  
 19 BENNES FROM PHILLIPS LYTLE, AND GEORGE LEHNER FROM  
 20 PEPPER, AND WE ARE DELIGHTED TO JOIN YOU THIS MORNING.  
 21 HONORABLE CYNTHIA M. RUFÉ: GOOD MORNING.  
 22 AND WE HAVE OUR SPECIAL MASTER.  
 23 MR. SHESTACK, GOOD MORNING.  
 24 MR. SHESTACK: GOOD MORNING, YOUR HONOR.  
 25 HONORABLE CYNTHIA M. RUFÉ: MR.

1 MERENSTEIN.  
 2 MR. MERENSTEIN: GOOD MORNING, YOUR  
 3 HONOR.  
 4 HONORABLE CYNTHIA M. RUFÉ: ARE WE READY  
 5 TO PROCEED IN THE PROTOCOL THAT WE AGREED TO?  
 6 MS. GUSSACK: YES, YOUR HONOR. GSK IS  
 7 PREPARED TO PRESENT ITS MOTIONS ON DAUBERT CHALLENGES,  
 8 WITH DISCUSSION OF FRYE ISSUES. WE BELIEVE THAT OUR  
 9 ARGUMENT WILL TAKE AROUND TWO AND A QUARTER, TWO AND A  
 10 HALF HOURS, YOUR HONOR, RECOGNIZING THAT YOU MAY WANT TO  
 11 HAVE A BREAK AT SOME POINT. WE CERTAINLY WILL BE ABLE  
 12 TO ACCOMMODATE THE COURT'S JUDGMENT ABOUT THAT AND THEN  
 13 THAT PLAINTIFFS WILL RESPOND AND IF TIME PERMITS PERHAPS  
 14 WE WILL HAVE A BRIEF REBUTTAL.  
 15 HONORABLE CYNTHIA M. RUFÉ: I THINK THAT  
 16 THAT WORKS FINE. I DON'T KNOW WHAT HAPPENED TO OUR  
 17 CLOCK OVER THE WEEKEND, BUT I HAVE ABOUT 10:20. IS THAT  
 18 RIGHT, 10:25?  
 19 SO LET'S HAVE GSK PROCEED AND WE WILL  
 20 THEN TAKE A BREAK, JUST A COMFORT BREAK FOR EVERYONE,  
 21 GET BACK TO IT. I DO HAVE A JUDGES MEETING OVER THE  
 22 LUNCH HOUR, BUT I DON'T NEED TO LEAVE HERE UNTIL 12:45.  
 23 AND THEN WE'LL COME BACK AFTER THE BREAK, WHICH WILL  
 24 TAKE US TO 2 O'CLOCK. AND WE WILL HEAR PLAINTIFFS' ORAL  
 25 ARGUMENT AND THEN I'M SURE THERE WILL BE TIME FOR SOME

1 REBUTTAL. ALL RIGHT.  
 2 MS. GUSSACK: THANK YOU SO MUCH, YOUR  
 3 HONOR.  
 4 MS. HALPERN: THANK YOU. GOOD MORNING.  
 5 IS THIS OKAY? I HAVE A BIT OF A SOFT VOICE.  
 6 HONORABLE CYNTHIA M. RUFÉ: YOU CAN PUT  
 7 IT CLOSER TO YOU. IT'S VERY FLEXIBLE.  
 8 MS. HALPERN: MUCH BETTER. GOOD MORNING.  
 9 JUDGE RUFÉ, JUDGE MOSS, SPECIAL MASTER, MY NAME IS TAMAR  
 10 HALPERN AND I REPRESENT GLAXOSMITHKLINE, THE DEFENDANT  
 11 IN THESE PROCEEDINGS.  
 12 I'M GOING TO ADDRESS THE SEVEN DEFENSE  
 13 MOTIONS MADE CHALLENGING THE PLAINTIFFS' GENERAL  
 14 CAUSATION WITNESSES. YOU SHOULD SEE UP ON YOUR SCREEN,  
 15 I HOPE, A LIST -- ACTUALLY THERE ARE EIGHT EXPERTS UP  
 16 THERE. THAT IS BECAUSE THE PLAINTIFFS WITHDREW DR.  
 17 LIPPMAN YESTERDAY TO THE BEST OF MY KNOWLEDGE. HE IS  
 18 THE FELLOW --  
 19 HONORABLE CYNTHIA M. RUFÉ: JUST GIVE ME  
 20 A MOMENT. WE NEED TO HAVE THE WITNESS BOX SCREEN.  
 21 HONORABLE SANDRA MAZER MOSS: IS THERE  
 22 SOME WAY THEY CAN RAISE THE CHAIR? I FEEL LIKE CHARLIE  
 23 BROWN -- OR A TELEPHONE BOOK.  
 24 HONORABLE CYNTHIA M. RUFÉ: THEY ARE  
 25 ADJUSTABLE.

1 HONORABLE SANDRA MAZER MOSS: I DID NOT  
 2 MEAN TO INTERRUPT. I WANTED TO BE ABLE TO SEE YOU AS  
 3 WELL AS HEAR YOU. GO AHEAD.  
 4 MS. HALPERN: THANK YOU.  
 5 DR. LIPPMAN, HE IS THE ONLY M.D./PH.D.,  
 6 ON THE LOWER LEFT-HAND CORNER, SO I WILL NOT BE  
 7 ADDRESSING THE CHALLENGE WE MADE TO DR. LIPPMAN TODAY.  
 8 NOW, EACH OF THE REMAINING SEVEN  
 9 WITNESSES PURPORT TO ANSWER THE GENERAL CAUSATION  
 10 QUESTION, DOES AVANDIA CAUSE HEART ATTACK? AND THAT OF  
 11 COURSE AS I'M SURE YOU KNOW IS DIFFERENT FROM THE  
 12 SPECIFIC CAUSATION QUESTION WHICH WOULD ASSUME THAT  
 13 AVANDIA COULD CAUSE HEART ATTACK AND THEN SAY WELL, DID  
 14 IT DO IT IN THIS PARTICULAR PLAINTIFF? MY UNDERSTANDING  
 15 IS THE MOTION ON SPECIFIC CAUSATION CHALLENGES IS  
 16 DEFERRED TO SOME LATER TIME IN OCTOBER.  
 17 HONORABLE SANDRA MAZER MOSS: YES.  
 18 MS. HALPERN: I WOULD LIKE TO TAKE A  
 19 MOMENT, IF I MAY, BEFORE WE LAUNCH INTO THE CHALLENGES,  
 20 TO TALK ABOUT WHAT WE ARE NOT HERE TO DISCUSS TODAY.  
 21 THERE HAS BEEN MUCH NOISE IN THE PRESS ABOUT WHETHER  
 22 AVANDIA SHOULD REMAIN ON THE MARKET, WHETHER CLINICAL  
 23 TRIALS OF THE DRUG SHOULD CONTINUE, AND MUCH ACTIVITY BY  
 24 THE FDA, AS I'M SURE YOU KNOW, AND NEGATIVE ALLEGATIONS  
 25 ABOUT GLAXO'S ACTIONS AND ITS CONDUCT. THIS MOTION,

1 HOWEVER, IS NOT ABOUT ANY OF THAT. AND WHILE WE CONTEST  
 2 THOSE ALLEGATIONS VIGOROUSLY, WE ARE GOING TO SAVE THEM  
 3 FOR ANOTHER DAY.  
 4 YOU ARE LIKELY GOING TO HEAR A LOT FROM  
 5 PLAINTIFFS' COUNSEL AND POSSIBLY FROM THEIR EXPERTS AS  
 6 WELL ABOUT ISSUES THAT ARE NOT GERMANE TO THIS MOTION.  
 7 AND THE REASON I SAY THAT, YOUR HONOR, IS THAT IN THE  
 8 PLAINTIFFS' OVERVIEW BRIEF IN OPPOSITION TO THESE  
 9 MOTIONS, THEY DEVOTED THE FIRST 33 PAGES TO WHAT THEY  
 10 CALL GLAXO'S BAD CONDUCT. SO I WOULD LIKE TO SAY THAT  
 11 WE TAKE THE POSITION VERY CLEARLY, THIS MOTION IS NOT  
 12 ABOUT ANY OF THAT. IT'S NOT ABOUT WHAT GLAXO KNEW OR  
 13 WHEN IT KNEW IT OR WHAT THEY DID ABOUT IT. IT'S NOT  
 14 ABOUT SIGNALS, IT'S NOT ABOUT E-MAILS OR MARKETING. THE  
 15 ONLY THING THAT WE ARE HERE TO TALK TO YOU ABOUT TODAY  
 16 IS THE METHODOLOGY EMPLOYED BY PLAINTIFFS' EXPERTS TO  
 17 DETERMINE WHETHER AVANDIA CAUSES HEART ATTACKS. THE  
 18 COMPANY'S BEHAVIOR, NO MATTER HOW MISCHARACTERIZED,  
 19 CAN'T DETERMINE WHETHER AN EXPERT USED AN APPROPRIATE  
 20 METHODOLOGY TO REACH HIS OPINIONS.  
 21 AS JUDGE DALZELL SAID IN A 2008 CASE FROM  
 22 THE EASTERN DISTRICT: SUGGESTIONS THAT A COMPANY SHOULD  
 23 HAVE CONDUCTED DIFFERENT STUDIES OR DESIGNED THEIR  
 24 STUDIES DIFFERENTLY IS JUST IRRELEVANT IN A DAUBERT  
 25 CHALLENGE. PLAINTIFFS' EXPERTS MAY ONLY BASE THEIR

1 CONCLUSIONS ON EXISTING DATA.  
 2 AND A WESTERN DISTRICT OF PENNSYLVANIA  
 3 JUDGE SAID: YOU WOULD TURN DAUBERT ON ITS HEAD IF  
 4 COURTS ALLOWED EXPERTS TO DRAW CONCLUSIONS TO SUPPORT A  
 5 CAUSATION OPINION IN THE ABSENCE OF RELIABLE TESTING OR  
 6 DATA BECAUSE THEY ASSERT THAT THE COMPANY FAILED TO  
 7 CONDUCT SUFFICIENT TESTS TO PROVE THAT THE PLAINTIFF'S  
 8 ALLEGED CLAIMS WERE WRONG.

9 NOW PLAINTIFFS HAVE DONE A GOOD JOB, I  
 10 BELIEVE, IN CONFUSING THE ISSUES HERE. AND YOUR ROLE  
 11 HERE, YOUR HONORS, IS SO CRITICAL BECAUSE OF THAT VERY  
 12 FACT. WE ARE IN A FEDERAL COURTHOUSE AND IN A STATE  
 13 COURTHOUSE AS WELL AND IN YOUR GOOD HANDS APPLYING THE  
 14 LAW OF THE JURISDICTION AND THE UNITED STATES SUPREME  
 15 COURT WHO'S GRAPPLED MIGHTILY WITH THE DAUBERT ISSUE,  
 16 THIS IS NOT THE FDA. IT'S NOT THE U.S. SENATE FINANCE  
 17 COMMITTEE OR A DOCTOR'S TREATING OFFICE BUT A COURT OF  
 18 LAW WITH A MANDATE TO APPLY DAUBERT AND THE LAW OF THE  
 19 JURISDICTION.

20 THIS IS A CASE POIGNANTLY WELL SUITED FOR  
 21 A DAUBERT JUDGE. A REASONED AND CALM DECISION AND LOOK  
 22 AT THE EVIDENCE AWAY FROM THE FRENZY OF POLITICS AND  
 23 PRESS AND OFTIMES IRRELEVANT AND MISLEADING  
 24 INFORMATION. AND, JUDGE MOSS, FORGIVE ME, BUT I HAVE  
 25 DRAFTED MY ORAL ARGUMENT SPECIFICALLY TOWARDS DAUBERT

1 LAW FOR THE GENERIC VALUE OF IT ACROSS MANY  
 2 JURISDICTIONS. I WILL ADDRESS FRYE AT THE END OF THE  
 3 HEARING, IF THAT IS ACCEPTABLE TO YOU.

4 HONORABLE SANDRA MAZER MOSS: OKAY, THANK  
 5 YOU.

6 MS. HALPERN: THANK YOU.

7 SO THE WISDOM OF DAUBERT IS TO KEEP FROM  
 8 A JURY TESTIMONY THAT IS NOT BASED ON SOUND SCIENTIFIC  
 9 PRINCIPLES, EXACTLY THE CRITICAL TYPE OF MOTION THAT IS  
 10 BEFORE YOU TODAY. DAUBERT LAW REQUIRES THAT EACH  
 11 EXPERT'S METHODOLOGY BE EXAMINED ON SCIENTIFIC  
 12 RELIABILITY GROUNDS. EACH EXPERT HAS TO RISE AND FALL  
 13 ON THE SCIENTIFIC RELIABILITY AND RIGOR OF THE  
 14 METHODOLOGY HE APPLIED. I SAY "HE" BECAUSE THEY HAPPEN  
 15 TO ALL BE HE'S. AND THE LAW IS CLEAR ON WHAT THE PROPER  
 16 METHODOLOGY IS AND IS NOT. IN FACT, ALTHOUGH DAUBERT  
 17 PERMITS A CHALLENGE BASED ON QUALIFICATIONS AND  
 18 CREDENTIALS, WE ARE IN FACT NOT MAKING ANY CHALLENGES TO  
 19 THEIR CREDENTIALS HERE. OUR FOCUS WILL BE EXPLICITLY ON  
 20 THE METHODOLOGY THAT THEY EMPLOYED.

21 THE ABSENCE OF RELIABLE DATA DOES NOT  
 22 PERMIT A WITNESS TO LOWER HIS STANDARDS IN ORDER TO  
 23 REACH HIS CONCLUSION. DAUBERT DOES NOT PERMIT A WITNESS  
 24 IN THE ABSENCE OF SUFFICIENT DATA TO REACH A CAUSATION  
 25 OPINION BY LOWERING HIS STANDARDS. CLINICIANS MUST

1 TREAT PATIENTS AND THEY HAVE TO DO THAT WHETHER THEY  
 2 HAVE SUFFICIENT DATA OR NOT. PATIENTS NEED TO BE TAKEN  
 3 CARE OF. BUT CLINICAL IMPRESSIONS ARE NOT THE SORT OF  
 4 SCIENTIFIC METHODOLOGY THAT DAUBERT DEMANDS. CAUSATION  
 5 OPINIONS DON'T GET MADE WITH DEFAULT METHODS WHEN  
 6 SUFFICIENT DATA SIMPLY IS NOT THERE.

7 AND AGAIN, AS JUDGE DALZELL SAID, HE SAID  
 8 IT VERY WELL: THE NON-EXISTENCE OF GOOD DATA DOES NOT  
 9 ALLOW EXPERT WITNESSES TO SPECULATE OR BASE THEIR  
 10 CONCLUSIONS ON INADEQUATE SUPPORTING SCIENCE. AND AS  
 11 THE 7TH CIRCUIT NOTED, THE COURTROOM IS NOT THE PLACE  
 12 FOR SCIENTIFIC GUESSWORK, EVEN OF THE INSPIRED SORT.  
 13 LAW LAGS SCIENCE. IT DOES NOT LEAD IT.

14 I WOULD LIKE AT THIS TIME IF IT'S  
 15 ACCEPTABLE TO THE COURT TO HAND UP A NOTEBOOK TO EACH OF  
 16 YOU THAT CONTAINS HARD COPIES OF THE SLIDES THAT YOU ARE  
 17 GOING TO BE SEEING. WE CAN MAKE THEM --

18 HONORABLE CYNTHIA M. RUFÉ: I WOULD  
 19 APPRECIATE THAT.

20 HONORABLE SANDRA MAZER MOSS: SURE.

21 MS. HALPERN: IF YOU LOOK INSIDE THE BOOK  
 22 ON THE INSIDE COVER THERE ARE A VERY FEW TERMS JUST  
 23 BECAUSE I THINK THEY ARE USED A LOT. BOTH PLAINTIFFS  
 24 AND DEFENDANTS I'M SURE WILL BE USING THEM. ALSO THE  
 25 FRONT PAGE IS AN OUTLINE OF THE TOPICS I PLAN TO COVER

1 AND THE BOOK IS TABULATED SO IF YOU WOULD LIKE YOU CAN  
 2 FOLLOW THE PROGRESSION THROUGH THE DIFFERENT TOPICS.

3 SINCE WE BELIEVE A DAUBERT CHALLENGE IS  
 4 VERY -- AND A FRYE CHALLENGE IS VERY SPECIFIC TO EACH  
 5 EXPERT'S INDIVIDUAL METHODOLOGY, WE HAVE PREPARED A  
 6 SLIDE AT THE END FOR EACH EXPERT WE HAVE CHALLENGED  
 7 ENUMERATING THE SPECIFIC FLAWS IN THEIR SCIENTIFIC  
 8 METHODOLOGY UNDER DAUBERT. I WILL BE SPEAKING DURING  
 9 THE PRESENTATION HOWEVER IN A MORE GENERAL FASHION ABOUT  
 10 IT, USING INDIVIDUAL EXPERTS AS EXAMPLES AS OPPOSED TO  
 11 TRYING TO TAKE ON SEVEN DIFFERENT METHODOLOGIES. SO I  
 12 HOPE THAT IS ACCEPTABLE. AGAIN, YOUR HONOR, AT THE END  
 13 OF THE HEARING, I WILL MAKE IT, I HOPE, MORE APPLICABLE  
 14 TO FRYE.

15 HONORABLE SANDRA MAZER MOSS: OH GOOD, I  
 16 WILL BE WAITING.

17 MS. HALPERN: SO I WILL BEGIN WITH WHAT  
 18 IS THERE AS SECTION TWO.

19 SO GLAXO'S MOVE TO EXCLUDE PLAINTIFFS'  
 20 GENERAL CAUSATION EXPERTS PROFFERED TO STAND UP AND SAY  
 21 AVANDIA CAUSES HEART ATTACKS. AND THOSE ARE THE TWO  
 22 PIVOTAL WORDS, CAUSES AND HEART ATTACKS. NOW HEART  
 23 ATTACKS, NOT JUST IN THE GENERAL POPULATION BUT HEART  
 24 ATTACKS IN DIABETICS, A POPULATION ALREADY AT EXTREMELY  
 25 HIGH RISK OF HAVING A HEART ATTACK. AND AVANDIA OF

1 COURSE IS A MEDICATION TO TREAT DIABETES. SO STUDYING  
 2 WHETHER AVANDIA CAUSES HEART ATTACKS IN THIS HIGH RISK  
 3 POPULATION REQUIRES STRICT ADHERENCE TO SCIENTIFICALLY  
 4 SOUND PRINCIPLES, SINCE THE DISEASE THAT WE ARE TREATING  
 5 IS ITSELF CAUSALLY RELATED TO THE ENDPOINT WE ARE  
 6 LOOKING TO MEASURE, HEART ATTACKS.

7 AND AS THE COURT PROBABLY IS AWARE, THE  
 8 TERM FOR HEART ATTACK IS MYOCARDIAL INFARCTION. YOU ARE  
 9 SURE GOING TO HEAR IT REFERRED TO AS MI. IT GETS  
 10 CONFUSING BECAUSE THERE IS ANOTHER TERM HERE ALSO WITH  
 11 THE LETTERS MI, BUT IT'S VERY DIFFERENT. IT'S  
 12 MYOCARDIAL ISCHEMIC EVENT. THAT IS A MUCH BROADER AND  
 13 MORE SUBJECTIVE COLLECTION OF SYMPTOMS AND EVENTS.

14 THIS HEARING THOUGH IS NOT ABOUT  
 15 VENTRICULAR FIBRILLATION, WHICH IS WITHIN MYOCARDIAL  
 16 ISCHEMIC EVENT, OR UNSTABLE ANGINA WHICH IS WITHIN  
 17 MYOCARDIAL ISCHEMIC EVENT, OR ANY OF THE OTHER VAGUE AND  
 18 SUBJECTIVE SYMPTOMS LUMPED TOGETHER AND REFERRED TO AS  
 19 THE BROAD CATEGORY OF MYOCARDIAL ISCHEMIC EVENTS. THIS  
 20 IS ABOUT HEART ATTACKS.

21 BUT YOU WILL SEE THAT HEART ATTACKS,  
 22 MYOCARDIAL INFARCTION, IS EMBEDDED WITHIN THE TERM  
 23 MYOCARDIAL ISCHEMIC EVENT AND IT IS IN FACT A SMALL  
 24 SUBSET OF THIS LARGER LUMPED GROUP CALLED MYOCARDIAL  
 25 ISCHEMIC EVENTS. SO IT'S A GOOD THING TO LOOK AT

1 MYOCARDIAL ISCHEMIC EVENTS. IF YOU ARE LOOKING FOR A  
 2 SIGNAL OR TO GENERATE A HYPOTHESIS, YOU CAST YOUR WEB  
 3 REALLY WIDE AND YOU SEE WHAT YOU'VE GOT. AND IF YOU  
 4 FIND SOMETHING, YOU DECIDE WHETHER YOU WANT TO  
 5 INVESTIGATE FURTHER. BUT TO ASSESS CAUSATION ABOUT  
 6 HEART ATTACKS, YOU NEED TO LOOK AT HEART ATTACKS WITH  
 7 SPECIFICITY.

8 PLAINTIFFS ONLY EPIDEMIOLOGIST OF THEIR  
 9 SEVEN EXPERTS IS DR. AUSTIN. HE HAS CLEARLY AGREED THAT  
 10 TO DRAW CONCLUSIONS ABOUT MI, AS HE CALLS THEM, HEART  
 11 ATTACKS, YOU NEED TO LOOK AT DATA ABOUT MI, HEART  
 12 ATTACKS. HE CLEARLY STATES THAT THE LUMPED GROUP OR  
 13 COMPOSITE GROUP CALLED MYOCARDIAL ISCHEMIC EVENTS DOES  
 14 NOT PROVIDE MUCH INFORMATION ABOUT HEART ATTACKS, MI.  
 15 NOW, NOTE THAT WHEN HE SAYS IN THIS CLIP THAT YOU ARE  
 16 ABOUT TO SEE THAT ROSI CAUSES MI, HE IS TALKING ABOUT  
 17 AVANDIA BECAUSE AVANDIA IS KNOWN AS ROSIGLITAZONE AND  
 18 FOR SHORT THEY CALL IT ROSI. SO ROSI AND MI IS THE SAME  
 19 THING AS AVANDIA AND HEART ATTACKS. SO WE CAN PLAY THE  
 20 CLIP. THIS IS DR. AUSTIN.

21 (VIDEO PLAYED.)

22 QUESTION: IN REACHING YOUR OPINION THAT  
 23 ROSI CAUSES MI, MYOCARDIAL INFARCT, DO YOU GIVE EQUAL  
 24 WEIGHT TO STUDIES WHERE THE OUTCOME STUDIED IS  
 25 MYOCARDIAL ISCHEMIC EVENTS AS YOU DO TO STUDIES WHERE

1 THE OUTCOME MEASURED WAS MYOCARDIAL INFARCTION?  
 2 ANSWER: DO I GIVE EQUAL WEIGHT?  
 3 QUESTION: EQUAL WEIGHT.  
 4 ANSWER: WELL, THOSE ARE -- ONE IS A  
 5 COMPOSITE MEASURE THAT INCLUDES MI AND ONE IS -- AND THE  
 6 OTHER IS SPECIFIC MI'S. HOWEVER, IF MY ANALYSIS IS ON  
 7 MI, THE MYOCARDIAL ISCHEMIC EVENTS REALLY DOES NOT  
 8 PROVIDE MUCH INFORMATION FOR THAT.

9 (VIDEO ENDED.)

10 MS. HALPERN: SO WHAT DR. AUSTIN IS  
 11 SAYING IS THAT IF YOU WANT TO REACH AN OPINION ABOUT  
 12 HEART ATTACKS, YOU HAVE TO LOOK AT DATA ABOUT HEART  
 13 ATTACKS, AND THAT LOOKING AT MYOCARDIAL ISCHEMIC EVENTS,  
 14 AS HE SAYS, DOES NOT REALLY PROVIDE MUCH INFORMATION  
 15 ABOUT HEART ATTACKS.

16 SO ACCORDING TO DR. AUSTIN, PLAINTIFFS'  
 17 AND PLAINTIFFS' OWN WITNESSES THE CAUSATION -- EXCUSE  
 18 ME. I'M SORRY.

19 SO ACCORDING TO DR. AUSTIN, PLAINTIFFS'  
 20 OWN WITNESSES, THE CAUSATION TESTIMONY OF DR. SNIDERMAN  
 21 AND SEPTIMUS SHOULD BE EXCLUDED UNDER DAUBERT FOR THIS  
 22 PRECISE REASON. DR. SNIDERMAN HAS NOT EVEN CONSIDERED  
 23 THE QUESTION OF AVANDIA CAUSING HEART ATTACKS, BUT  
 24 RATHER HAS ONLY CONSIDERED THE LARGE LUMPED GROUPING OF  
 25 DATA REFERRED TO AS MYOCARDIAL ISCHEMIC EVENTS, AN

1 ANALYSIS PLAINTIFFS' ONLY EPIDEMIOLOGIST SAID WOULD NOT  
 2 PROVIDE MUCH INFORMATION ABOUT HEART ATTACKS.  
 3 DR. SNIDERMAN AND DR. SEPTIMUS BOTH  
 4 ADMITTED AT THEIR DEPOSITIONS THAT THEY NEVER  
 5 SPECIFICALLY FOCUSED ON THE DATA PERTAINING TO MI. DR.  
 6 SNIDERMAN NEVER EVEN CONSIDERED LOOKING AT HEART ATTACKS  
 7 ALONE. HE SAID THE ISSUE FOR ME IS NOT ISOLATING  
 8 MYOCARDIAL INFARCTION OUT OF THE PANOPLY OF SEVERE  
 9 ADVERSE CARDIOVASCULAR EVENTS. THAT'S WHY I'VE NEVER  
 10 CONSIDERED THE QUESTION THAT WAY.

11 DR. SEPTIMUS JUST LOOKED AT MYOCARDIAL  
 12 ISCHEMIC EVENTS LUMPED TOGETHER.

13 QUESTION: AGAIN, IT'S A LITTLE -- I'M  
 14 SORRY.

15 ANSWER, HE SAYS: IT'S A LITTLE BIT  
 16 VAGUE. ARE YOU TALKING ABOUT SPECIFICALLY MI'S, HEART  
 17 ATTACKS? ARE YOU TALKING ABOUT MYOCARDIAL ISCHEMIC  
 18 EVENTS?

19 QUESTION: MI.

20 ANSWER: YOU KNOW, I DON'T LOOK AT JUST  
 21 MI'S. I LOOK AT ALL MYOCARDIAL ISCHEMIC EVENTS.

22 THESE EXPERTS ADMIT THAT THEY DID NOT  
 23 CONDUCT A CAUSATION ANALYSIS SPECIFICALLY FOR HEART  
 24 ATTACKS. THAT IS WHAT THEY SHOULD HAVE LOOKED AT AND  
 25 THAT IS WHAT THEY DID LOOK AT. DR. SNIDERMAN AND DR.

1 SEPTIMUS'S GENERAL CAUSATION OPINIONS ABOUT HEART  
 2 ATTACKS SHOULD THEREFORE BE EXCLUDED AS UNRELIABLE. AS  
 3 DR. AUSTIN JUST SAID, THEY SHOULD HAVE LOOKED AT HEART  
 4 ATTACKS IF THEY WANTED TO GIVE AN OPINION ABOUT HEART  
 5 ATTACKS AND THEY DID NOT DO THAT. SO JUST SO IT'S  
 6 CLEAR, WHAT THEY ARE LOOKING AT WHEN THEY LOOK AT  
 7 MYOCARDIAL ISCHEMIC EVENTS IS A WHOLE BASKET OF DISEASES  
 8 AND SUBJECTIVE EVENTS, MOST OF WHICH ARE NOT HEART  
 9 ATTACKS AND MANY OF WHICH ARE LIKELY CAUSED BY DIFFERENT  
 10 THINGS. AND FROM LOOKING AT THAT COMPOSITE BASKET OF  
 11 LUMPED EVENTS, THEY WANT TO DRAW CONCLUSIONS  
 12 SPECIFICALLY ABOUT HEART ATTACKS. AGAIN, IT'S NOT JUST  
 13 RELIABLE SCIENCE, THERE IS LAW THAT SAYS SPECIFICITY IS  
 14 REQUIRED.

15 IN THE CASE THAT IS BEFORE YOU IN FRONT  
 16 ON THE SCREEN, THE COURT MADE IT CLEAR THAT AN EXPERT'S  
 17 GENERAL CAUSATION CONCLUSION BASED ON EXTRAPOLATING FROM  
 18 DATA ON ALL, IN THIS CASE, LYMPHOMAS, FOR A CONCLUSION  
 19 ABOUT A SPECIFIC TYPE OF LYMPHOMA WAS INCOMPATIBLE WITH  
 20 THE RELIABLE APPLICATION OF THE SCIENTIFIC METHOD.

21 SO IF I MAY, LET'S TALK A LITTLE MORE  
 22 ABOUT HEART ATTACKS AND SPECIFICALLY ABOUT HEART ATTACKS  
 23 IN DIABETICS. LONG BEFORE THERE WAS AVANDIA, HEART  
 24 ATTACKS WERE ONE OF THE LEADING CAUSES OF DEATH IN THIS  
 25 COUNTRY. THE 2010 AMERICAN HEART ASSOCIATION UPDATE

1 TELLS US THAT EVERY 25 SECONDS AN AMERICAN WILL HAVE A  
 2 CORONARY EVENT. AND EVERY MINUTE SOMEONE WILL DIE OF A  
 3 HEART ATTACK. SO IN ABOUT THE 15 MINUTES I HAVE BEEN  
 4 STANDING HERE TALKING TO YOU, ABOUT 30 PEOPLE IN THIS  
 5 COUNTRY HAD A HEART ATTACK AND HALF OF THEM DIED.

6 BUT FOR PEOPLE WITH DIABETES, THE RISK OF  
 7 A HEART ATTACK HAS ALWAYS BEEN MUCH, MUCH HIGHER. THE  
 8 AMERICAN DIABETES ASSOCIATION TRIES TO MAKE DIABETICS  
 9 AWARE OF THIS. WHEN I ARRIVED AT THE 30TH STREET  
 10 STATION, IT'S INTERESTING THERE WERE POSTERS AND THEY  
 11 WERE EVERYWHERE SHOWING -- IT SAYS ON ONE SIDE OF THE  
 12 POSTER, I DON'T KNOW IF YOU CAN SEE IT, DIABETES AND ON  
 13 THE OTHER SIDE IT SAYS A HEART ATTACK COULD BE RIGHT  
 14 AROUND THE CORNER.

15 PEOPLE WITH DIABETES ARE AT THE GREATEST  
 16 RISK OF HAVING A HEART ATTACK JUST BECAUSE THEY ARE A  
 17 DIABETIC. IN FACT, THREE OUT OF FOUR DIABETICS DIE OF  
 18 CARDIOVASCULAR DISEASE. BEING A DIABETIC ACTUALLY  
 19 DOUBLES THE RISK OF HAVING A HEART ATTACK. THAT IS  
 20 ACCORDING TO PLAINTIFFS' OWN DIABETES EXPERT, DR.  
 21 BRINTON. HE SAYS: BEING A DIABETIC INCREASES THE RISK  
 22 OF A HEART ATTACK BY 100 PERCENT. AND ACCEPTING THE  
 23 TESTIMONY OF PLAINTIFFS' EXPERT DR. BRINTON, DIABETES  
 24 NOT ONLY INCREASES THE RISK OF HEART ATTACK BY  
 25 100 PERCENT, BUT IF THE DIABETIC HAS A PRIOR HISTORY OF

1 A HEART ATTACK, THAT RISK IS INCREASED ANOTHER 100  
 2 PERCENT. AND IF THE DIABETIC SMOKED, THE RISK OF A  
 3 HEART ATTACK IS FURTHER INCREASED 100 PERCENT. LOW HDL  
 4 CHOLESTEROL INCREASES THE RISK YET AGAIN 100 PERCENT.  
 5 HIGH TRYGLYCERIDES CAN INCREASE THE RISK BY ANOTHER 100  
 6 PERCENT. HYPERTENSION BY 50 PERCENT AND SO ON. THESE  
 7 ARE NOT INDIVIDUAL. THEY ARE COMPOUNDED WITH EACH  
 8 ADDITIONAL RISK FACTOR THAT A DIABETIC HAS.

9 AND THIS MEANS EVERY SINGLE PLAINTIFF IN  
 10 THIS LITIGATION IS STARTING OUT BEFORE THEY EVER TAKE  
 11 AVANDIA AT AN EXTREMELY HIGH RISK OF A HEART ATTACK.  
 12 THIS IS CRITICAL BECAUSE DIABETICS WILL HAVE HEART  
 13 ATTACKS WHETHER OR NOT THEY TAKE AVANDIA. NOW, YOU ASK  
 14 WHY IS THIS IMPORTANT? WHY AM I TELLING YOU AND WASTING  
 15 YOUR TIME WITH THIS? WHAT DOES THIS VERY REAL INCREASED  
 16 BACKGROUND RISK OF HEART ATTACK IN PATIENTS WITH  
 17 DIABETES MEAN FOR CAUSATION ANALYSIS OF AVANDIA AND  
 18 HEART ATTACK? IT MEANS THAT METHODOLOGY MATTERS. IT'S  
 19 THAT CONTROLLED STUDIES ARE CRITICAL HERE. AND WHY IS  
 20 THAT? SIMPLY BECAUSE OTHER EXPLANATIONS FOR PURPORTED  
 21 INCREASED RISK CAN BE RULED OUT IF YOU USE GOOD CLEAR  
 22 CAREFUL SCIENTIFIC METHODOLOGY. YOU HAVE TO INTERPRET  
 23 THE STUDIES ABOUT AVANDIA AND HEART ATTACK KNOWING THAT  
 24 THESE THINGS CAN BE INFECTED WITH BIAS IF NOT EVERYBODY  
 25 ON ONE SIDE SMOKED OR NOT EVERYBODY HAD HIGH

1 TRYGLYCERIDES. SO METHODOLOGY AND CONTROLLED STUDIES  
 2 ARE ALL ABOUT DEALING WITH SITUATIONS WITH HIGH  
 3 BACKGROUND RATE.

4 AND CASE LAW MAKES IT CLEAR THAT RELIABLE  
 5 SCIENTIFIC METHODOLOGY REQUIRES THAT THE VERY HIGH  
 6 BACKGROUND RISK, IN PARTICULAR THIS CASE SAYS FOR HEART  
 7 ATTACK, THIS WAS NOT HEART ATTACK IN DIABETICS, JUST  
 8 HEART ATTACKS GENERALLY, MUST BE TAKEN INTO ACCOUNT. SO  
 9 IF AVANDIA DOES CAUSE HEART ATTACKS, LET'S JUST PRESUME  
 10 THAT FOR A MOMENT, AS PLAINTIFFS CONTEND, EVEN THEIR OWN  
 11 EPIDEMIOLOGIST SAYS ONLY THREE OUT OF EVERY TEN PEOPLE  
 12 WHO HAVE HEART ATTACKS WHILE TAKING AVANDIA IN HIS  
 13 OPINION WILL BE ATTRIBUTABLE TO AVANDIA. AND ON TOP OF  
 14 THAT HE SAYS, I DON'T KNOW WHICH THOSE THREE PEOPLE ARE  
 15 GOING TO BE BECAUSE THERE IS NO MARKER, THERE IS NO  
 16 SPECIAL THING THAT SIGNALS THAT THIS IS AN AVANDIA  
 17 INDUCED HEART ATTACK, ACCORDING TO HIM. HE FURTHER  
 18 CONFIRMS THAT CONTROLLED STUDIES BECAUSE OF ALL OF THIS  
 19 ARE NEEDED.

20 SO IF WE CAN SEE THE VIDEO CLIP. THIS IS  
 21 DR. AUSTIN.

22 (VIDEO PLAYED.)

23 QUESTION: NO, BUT MY QUESTION IS, YOU  
 24 HAVE 100 PEOPLE WHO TAKE AVANDIA WHO HAVE HEART ATTACKS.  
 25 WHAT PERCENTAGE OF THEM WOULD YOU ATTRIBUTE THEIR HEART

1 ATTACK TO AVANDIA?  
 2 ANSWER: YOU'RE ASKING FOR A STATISTICAL  
 3 ATTRIBUTION.  
 4 QUESTION: YEAH.  
 5 ANSWER: YES, AS A STATISTICAL  
 6 ATTRIBUTION, IT WOULD BE SOMEWHERE AROUND 30 PERCENT.  
 7 QUESTION: OKAY. SO THREE OUT OF TEN?  
 8 ANSWER: SOMEWHERE LIKE THAT. IF THAT'S  
 9 ALL YOU HAD TO RELY ON WERE THE STATISTICS.  
 10 QUESTION: RIGHT.  
 11 ANSWER: YES.  
 12 QUESTION: SO STATISTICALLY SPEAKING IF  
 13 TEN PEOPLE TAKE AVANDIA AND TEN PEOPLE HAVE HEART  
 14 ATTACKS, YOU WOULD ATTRIBUTE THREE OF THOSE  
 15 STATISTICALLY SPEAKING TO AVANDIA.  
 16 ANSWER: WITHOUT ANY KNOWLEDGE OF OTHER  
 17 RISK FACTORS OF THE PATIENTS AND SO ON, THE ANSWER IS  
 18 YES.  
 19 QUESTION: I GUESS WHAT I'M GETTING AT  
 20 IS, YOU SAID THERE'S A BACKGROUND RATE FOR DIABETICS TO  
 21 HAVE HEART ATTACKS THAT ARE GOING TO HAPPEN WHETHER OR  
 22 NOT THEY TAKE AVANDIA. TRUE?  
 23 ANSWER: THERE IS A BACKGROUND RATE, YES.  
 24 QUESTION: IS THERE SOME KIND OF MARKER  
 25 THAT CAN INDICATE, FROM YOUR PERSPECTIVE, WHICH HEART

1 ATTACKS ARE OR NOT INDUCED BY AVANDIA?  
 2 ANSWER: NOT THAT I'M AWARE OF.  
 3 QUESTION: WOULD YOU AGREE THAT WHEN  
 4 THERE IS A BACKGROUND RATE FOR A DISEASE, YOU NEED  
 5 CONTROLLED STUDIES TO DETERMINE IF THE DISEASE IS  
 6 OCCURRING WITH THE DRUG AT A HIGHER RATE THAN ONE WOULD  
 7 EXPECT FROM THE BACKGROUND RATE ALONE?  
 8 ANSWER: EVEN IF THERE ISN'T A BACKGROUND  
 9 RATE, YOU NEED THAT, YES.  
 10 (VIDEO ENDED.)  
 11 MS. HALPERN: SO METHODOLOGY IS THE  
 12 POINT. IT'S CRITICAL, AND CONTROLLED STUDIES ARE  
 13 NECESSARY. YOU HAVE TO BE SURE THAT THE BACKGROUND RATE  
 14 OF THE HEART DISEASE IS NOT DRIVING THE FINDINGS OF YOUR  
 15 STUDY. AND WHAT THIS MEANS, AND I WILL TALK ABOUT IT IN  
 16 JUST A MOMENT, THAT IS YOU HAVE TO RULE OUT CHANCE, BIAS  
 17 AND CONFOUNDING FROM A STUDY BEFORE YOU CAN SAY IT'S A  
 18 VALID FINDING THAT YOU ARE LOOKING AT. IT'S ESPECIALLY,  
 19 AS HERE, WHEN THERE IS NO CLAIMED SIGNATURE MARKER THAT  
 20 CAN ACCOUNT FOR THE DISEASE.  
 21 I'M TURNING, IF YOU ARE FOLLOWING IT, TO  
 22 SECTION 3 HERE, 3A, ABOUT ASSOCIATION NOT EQUALLING  
 23 CAUSATION. METHODOLOGY MATTERS AND THERE IS NOTHING  
 24 MORE IMPORTANT THAN THE DISTINCTION BETWEEN ASSOCIATION  
 25 AND CAUSATION. THIS HEARING IS ABOUT CAUSATION. IT'S

1 NOT ABOUT SIGNALS OR CONCERNS OR INCREASE IN RISK OR  
 2 ASSOCIATIONS, BUT ABOUT CAUSATION.  
 3 AN ASSOCIATION SIMPLY MEANS THAT TWO  
 4 THINGS OCCUR AT THE SAME TIME. IT DOES NOT MEAN THAT  
 5 ONE CAUSED THE OTHER TO HAPPEN. SO IN THE SUMMERTIME,  
 6 YOU BUY MORE ICE CREAM. IN THE SUMMER THERE ARE MORE  
 7 DEATHS BY DROWNING, BUT CERTAINLY EATING ICE CREAM DOES  
 8 NOT CAUSE MORE DEATHS BY DROWNING. TWO THINGS MAY OCCUR  
 9 TOGETHER, BUT THAT DOES NOT MEAN ONE CAUSED THE OTHER.  
 10 SCIENTISTS KNOW THAT AND BECAUSE OF THAT, IT'S WELL  
 11 ESTABLISHED WITHOUT QUESTION THAT A SIGNAL, A CONCERN OR  
 12 AN ASSOCIATION OR AN INCREASE IN RISK IS NOT EQUAL TO  
 13 CAUSATION.  
 14 NOW THE AUTHORITATIVE TEXT FOR SCIENCE IN  
 15 THE COURTROOM, THE JUDICIAL REFERENCE MANUAL ON  
 16 SCIENTIFIC EVIDENCE, SAYS IT VERY CLEARLY: AN  
 17 ASSOCIATION IS NOT EQUIVALENT TO CAUSATION AND  
 18 ASSOCIATION IDENTIFIED IN AN EPIDEMIOLOGIC STUDY MAY OR  
 19 MAY NOT BE CAUSAL. AND IT'S NOT JUST RELIABLE SCIENCE.  
 20 IT'S THE LAW. THE COURTS CLEARLY STATE THAT EVIDENCE OF  
 21 AN ASSOCIATION MAY GENERATE A HYPOTHESIS TO TEST LATER  
 22 ON, BUT ARE NOT EQUAL TO CAUSATION AND ARE NOT PROOF OF  
 23 CAUSATION IN THE SCIENTIFIC COMMUNITY OR THE COURTROOM.  
 24 NOW MOST OF PLAINTIFFS' EXPERTS AND THEIR  
 25 COUNSEL AGREE, DR. SNIDERMAN SAID THERE'S A DIFFERENCE

1 BETWEEN ASSOCIATION AND A CAUSAL RELATIONSHIP. DR.  
 2 JEWELL SAID, THERE IS SOMETIMES AN ASSOCIATION WHERE  
 3 THERE IS NOT A CAUSAL LINK AND SOMETIMES THERE IS AN  
 4 ASSOCIATION WHEN THERE IS A CAUSAL LINK. DR. SEPTIMUS,  
 5 ASSOCIATION MAY BE BUT NOT NECESSARILY A CAUSE.  
 6 BEFORE PULLING DR. LIPPMAN AS AN EXPERT  
 7 IN THIS CASE, PLAINTIFFS' COUNSEL SUBMITTED A BRIEF IN  
 8 OPPOSITION TO OUR DAUBERT CHALLENGE TO DR. LIPPMAN. AND  
 9 THEY WROTE: DR. LIPPMAN IS NOT OPINING THAT AVANDIA  
 10 CAUSES HEART ATTACK. RATHER, DR. LIPPMAN'S TESTIMONY IS  
 11 PROPERLY CHARACTERIZED IN TERMS OF THE ASSOCIATION  
 12 BETWEEN AVANDIA AND INCREASED RISK.  
 13 PLAINTIFFS' COUNSEL KNOWS THAT WHEN AN  
 14 EXPERT CHARACTERIZED THE TERMS OF THE RELATIONSHIP  
 15 BETWEEN AVANDIA AND HEART ATTACK AS AN ASSOCIATION OR  
 16 INCREASED RISK, THEY ARE NOT TALKING ABOUT CAUSATION.  
 17 NOW, DR. SWIRSKY TESTIFIED AT HIS DEPOSITION THAT HE  
 18 RECOGNIZES THAT SUFFICIENT DATA ARE NOT THERE TO HAVE A  
 19 CAUSATION OPINION UTILIZING ACCEPTED CAUSATION METHODS.  
 20 HE GAVE SWORN TESTIMONY THAT HIS CAUSATION OPINION WAS  
 21 THEREFORE BASED ON EQUATING ASSOCIATION WITH CAUSATION.  
 22 DR. SWIRSKY IN THE VIDEO CLIP YOU ARE  
 23 ABOUT TO SEE REFERS BY THE WAY TO RCT AND THAT MEANS  
 24 RANDOMIZED CONTROLLED TRIALS. HERE IS WHAT HE HAD TO  
 25 SAY:

1 (VIDEO PLAYED.)  
 2 ANSWER: THE DEFINITIONS OF ASSOCIATION  
 3 AND CAUSATION ARE OBVIOUSLY DIFFERENT AND CAUSATION IS  
 4 HELD TO A HIGHER STANDARD OF -- OF CRITERIA. SO  
 5 META-ANALYSIS GENERALLY WILL MAKE ASSOCIATIONS AND THERE  
 6 ARE TIMES WHEN WE WILL HAVE TO MAKE JUDGMENT THAT IT'S  
 7 ALSO CAUSATION. THIS IS A GOOD EXAMPLE. IF WE'VE GOT  
 8 ENOUGH TOTALITY OF INFORMATION, I WOULD THINK IT'S  
 9 UNETHICAL TO NOT LEAD TO CAUSATION AT THIS POINT OR NOT  
 10 FIND CAUSATION AT THIS POINT AND INSIST ON DOING ANOTHER  
 11 RCT AND TRY AND ENROLL PEOPLE WHERE WE RECOGNIZE THAT IF  
 12 YOU'RE ON TREATMENT ARM, THE TOTALITY OF INFORMATION  
 13 SAYS YOU'RE GOING TO HAVE INCREASED CARDIOVASCULAR DEATH  
 14 EVENT AND I FIND THAT UNETHICAL. SO IN A PERFECT WORLD,  
 15 ONLY ASSOCIATION; IN THIS SITUATION, CAUSATION.

16 (VIDEO ENDED.)

17 MS. HALPERN: HOLD IT UP THERE JUST A  
 18 SECOND. IT'S THE LAST SENTENCE: SO IN A PERFECT WORLD,  
 19 ONLY ASSOCIATION; IN THIS SITUATION, CAUSATION. THANKS.  
 20 SO WHAT DR. SWIRSKY IS SAYING IS THAT  
 21 IT'S ONLY AN ASSOCIATION, BUT IN THIS CASE ASSOCIATION  
 22 IS GOOD ENOUGH FOR A CAUSAL INFERENCE BECAUSE YOU CAN'T  
 23 DO THE STUDIES THAT HE EVEN AGREES NEED TO BE DONE.

24 IN THE ABSENCE OF SUFFICIENT EVIDENCE HE  
 25 CAN'T DEFAULT TO A LOWER STANDARD. HE OFFERS A

1 CAUSATION OPINION ON INADEQUATE DATA AND PERMITS THE  
 2 EXISTENCE OF AN ASSOCIATION TO BE SUFFICIENT TO REACH A  
 3 CAUSAL OPINION. WELL, THERE IS NO SUCH PROVISION IN THE  
 4 LAW FOR DEFAULTING TO A LOWER STANDARD WHEN YOU HAVE  
 5 INCOMPLETE DATA. IT'S NOT ACCEPTED IN SCIENCE AND IT'S  
 6 NOT ACCEPTED IN LAW. THERE IS NO PROVISION THAT ALLOWS  
 7 DR. SWIRSKY TO JUMP OVER HOLES IN THE SCIENCE TO REACH A  
 8 CAUSATION OPINION WHEN THE DATA IS JUST NOT THERE.

9 NOW, JUST LIKE ASSOCIATION DOES NOT EQUAL  
 10 CAUSATION, INCREASED RISK DOES NOT EQUAL CAUSATION.  
 11 OPINIONS OF CAUSE BASED ON A FINDING OF INCREASED RISK  
 12 ARE NO DIFFERENT THAN A FINDING ON ASSOCIATION. OPEN UP  
 13 ANY PEER REVIEWED SCIENTIFIC JOURNAL IN ANY DISCIPLINE,  
 14 IT DOES NOT MATTER WHAT YOU ARE READING AND, IF THEY ARE  
 15 REPORTING ON THE RESULTS OF A STUDY, DOES NOT MATTER  
 16 WHAT KIND OF STUDY, RANDOMIZED CONTROLLED TRIAL,  
 17 META-ANALYSIS, OBSERVATIONAL STUDY, IF THE AUTHORS FOUND  
 18 AN ASSOCIATION, THEY WILL FIRST TELL YOU, IS IT  
 19 STATISTICALLY SIGNIFICANT, AND THEN GENERALLY CALL THE  
 20 ASSOCIATION THEY FOUND AN INCREASED RISK IF IT'S  
 21 STATISTICALLY SIGNIFICANT. IT WILL THEN GO ON TO SAY  
 22 THAT TO DETERMINE WHETHER THE INCREASED RISK THEY FOUND  
 23 IS REAL OR RELIABLE, MORE STUDIES ARE NEEDED OR THEY  
 24 WILL DISCUSS THE TYPES OF BIAS AND CONFOUNDING OR CHANCE  
 25 THAT MAY HAVE PLAYED A PART IN THE FINDING OF INCREASED

1 RISK. THEY NEVER EQUATE AN INCREASED RISK WITH  
 2 CAUSATION.  
 3 IT'S ALSO WELL ACCEPTED EVEN BY  
 4 PLAINTIFFS THAT AN INCREASE IN THE RISK IS NOT EQUAL TO  
 5 CAUSATION. DR. SEPTIMUS SAYS: A RISK FACTOR MAY OR MAY  
 6 NOT BE CAUSAL, ACKNOWLEDGING THAT INCREASED RISK IS NOT  
 7 THE SAME AS CAUSATION. AGAIN, THERE IS LAW ON THIS  
 8 POINT. INCREASED RISK IS MERELY AN ASSOCIATION BETWEEN  
 9 EXPOSURE AND OUTCOME.

10 NONETHELESS, DR. SNIDERMAN EQUATES AN  
 11 INCREASED RISK TO CAUSATION. HE SAYS: IF AVANDIA  
 12 SIGNIFICANTLY INCREASES THE RISK OF ADVERSE MYOCARDIAL  
 13 ISCHEMIC EVENTS, HE'S NOT EVEN TALKING ABOUT MI, WHICH  
 14 ARE THE MAJOR CAUSE OF DEATH IN DIABETICS, THEN THAT'S  
 15 THE SENSE IN WHICH I AM USING THE WORD "CAUSE."  
 16 AS YOU WILL SEE IN A MINUTE, EQUATING AN  
 17 ASSOCIATION OR AN INCREASED RISK TO CAUSATION IS  
 18 ACTUALLY A REJECTION OF THE ENTIRE WELL ESTABLISHED  
 19 SCIENTIFIC METHOD, THE METHOD ACCEPTED BY THE REFERENCE  
 20 MANUAL, ADOPTED BY SCIENTISTS WORLDWIDE, ADOPTED BY  
 21 PLAINTIFFS' OWN EXPERT, DR. AUSTIN, THEIR ONLY  
 22 EPIDEMIOLOGIST, AND EMBRACED BY THE 3RD CIRCUIT AND  
 23 COURTS ALL AROUND THE COUNTRY. A CAUSATION ANALYSIS HAS  
 24 A CLEARLY DEFINED METHODOLOGY, IN SCIENCE, IN THE LAW  
 25 AND MOST DEFINITELY UNDER DAUBERT.

1 FINDING AN ASSOCIATION OR INCREASED RISK  
 2 IS JUST THE STARTING POINT SO I'M GOING TO BUILD ON THIS  
 3 TO TRY AND DISPLAY THE SCIENTIFIC METHOD THAT IS IN THE  
 4 SCIENTIFIC MANUAL THAT THE COURTS ACCEPT AND THAT DR.  
 5 AUSTIN IN THIS LITIGATION, THE PLAINTIFFS' EXPERT, HAS  
 6 ENDORSED. IN EACH ONE THE ANALYSIS STARTS AT THE BOTTOM  
 7 WITH THE QUESTION DOES AN ASSOCIATION EXIST? YOU NEED  
 8 AN ASSOCIATION OR AN INCREASED RISK JUST TO START THE  
 9 PROCESS, CERTAINLY NOT TO END THE PROCESS.

10 THE REFERENCE MANUAL CLEARLY STATES IT.  
 11 IT SAYS: THERE ARE THREE EXPLANATIONS WHY AN  
 12 ASSOCIATION FOUND IN A STUDY MAY BE WRONG: CHANCE, BIAS  
 13 AND CONFOUNDING. BEFORE ANY INFERENCES ABOUT CAUSATION  
 14 ARE DRAWN FROM ANY STUDY, THE POSSIBILITY OF THESE  
 15 PHENOMENA MUST BE EXAMINED. WHENEVER AN ASSOCIATION IS  
 16 UNCOVERED, FURTHER ANALYSIS SHOULD BE CONDUCTED TO  
 17 DETERMINE IF THE ASSOCIATION IS REAL OR DUE TO ERROR OR  
 18 BIAS.

19 NOW, WHAT DR. AUSTIN AND THE SCIENTIFIC  
 20 MANUAL SAYS IS THAT AFTER YOU FIND AN ASSOCIATION OR AN  
 21 INCREASED RISK, YOU HAVE TO ANALYZE WHETHER YOU CAN  
 22 EXPLAIN THAT IT WAS NOT DUE TO CHANCE, THAT IT WAS NOT  
 23 DUE TO BIAS, THAT IT WAS NOT DUE TO CONFOUNDING AND THEN  
 24 YOU GET TO A VALID ASSOCIATION, AND THAT STILL IS ONLY  
 25 HALFWAY UP THE LADDER TO FINDING A CAUSAL OPINION.

1 PLAINTIFFS HAVE ONLY ONE EXPERT OUT OF  
2 EIGHT WHO SEEMS TO UNDERSTAND THE PROPER CAUSATION  
3 METHODOLOGY AND THAT IS DR. AUSTIN. THAT IS NOT  
4 SURPRISING, OF COURSE, SINCE HE IS THE ONLY  
5 EPIDEMIOLOGIST.

6 NOW LET'S START WITH THAT FIRST STEP ON  
7 THE LADDER, RULE OUT CHANCE. THE SCIENTIFIC MANUAL  
8 TELLS US THE WAY TO DO THAT. IT SAYS: THE TWO MAIN  
9 TECHNIQUES FOR ASSESSING RANDOM ERROR, OR CHANCE, ARE  
10 STATISTICAL SIGNIFICANCE AND CONFIDENCE INTERVALS.  
11 COURTS IN THE 3RD CIRCUIT ROUTINELY EXCLUDE AS  
12 SCIENTIFICALLY UNRELIABLE EXPERT TESTIMONY BASED ON DATA  
13 THAT ARE NOT STATISTICALLY SIGNIFICANT. SO TO RULE OUT  
14 CHANCE, YOU NEED TO HAVE A STATISTICALLY SIGNIFICANT  
15 ASSOCIATION.

16 SO WHY IS STATISTICAL SIGNIFICANCE SO  
17 IMPORTANT? I MEAN WHY IS IT IN THE LAW AND IN THE  
18 SCIENTIFIC MANUAL? WHY DOES ALMOST EVERY PEER REVIEWED  
19 JOURNAL REQUIRE A SCIENTIST TO SAY IN THE ARTICLE  
20 WHETHER IT WAS A STATISTICALLY SIGNIFICANT FINDING OR  
21 NOT. BECAUSE IT SAYS THE RELATIONSHIP IS SOLID ENOUGH  
22 AND RELIABLE ENOUGH FOR US TO CONSIDER THE RELATIONSHIP  
23 BETTER. IT'S NOT THE END OF THE INQUIRY, BUT IT ALLOWS  
24 YOU TO FEEL COMFORTABLE ABOUT LOOKING INTO THE DATA  
25 FURTHER. IN FACT, AS YOU ARE GOING TO HEAR, IT'S

1 CRITICAL IN THIS LITIGATION.  
2 THERE HAVE BEEN MULTIPLE, MULTIPLE  
3 RANDOMIZED CONTROLLED TRIALS. AND AS YOU WILL HEAR  
4 LATER THAT IS THE GOLD STANDARD FOR STUDIES. THERE HAVE  
5 BEEN MULTIPLE RANDOMIZED CONTROLLED TRIALS LOOKING AT  
6 AVANDIA AND HEART ATTACKS AND THEY ALL, EVERY SINGLE ONE  
7 OF THEM, FAIL TO FIND STATISTICAL SIGNIFICANCE FOR  
8 AVANDIA AND HEART ATTACK, NOT ONE. PLAINTIFFS EXPERTS,  
9 WHILE ACKNOWLEDGING THE IMPORTANCE OF STATISTICAL  
10 SIGNIFICANCE, TRY TO GET AROUND THE FACT THAT THERE HAVE  
11 BEEN MANY RANDOMIZED CONTROLLED TRIALS PERFORMED AND NOT  
12 ONE OF THEM BEING STATISTICALLY SIGNIFICANT BY TALKING  
13 ABOUT TRENDS. NOW A TREND IS NOTHING MORE THAN AN  
14 INCREASED RISK THAT IS NOT STATISTICALLY SIGNIFICANT.  
15 YOU CAN CALL IT WHAT YOU LIKE, BUT IT'S STILL NOT  
16 STATISTICALLY SIGNIFICANT. SO IT'S NOT A VALID  
17 ASSOCIATION BECAUSE YOU HAVE NOT BEEN ABLE TO ACCOUNT  
18 FOR CHANCE.

19 NOW EVEN PLAINTIFFS' EXPERTS AGREE  
20 STATISTICAL SIGNIFICANCE IS CRITICAL. ACCORDING TO DR.  
21 SNIDERMAN, BASED ON HIS OPINION IN ANOTHER CASE, IF THE  
22 RESULT IS NOT STATISTICALLY SIGNIFICANT, YOU CAN'T SAY  
23 THERE WAS AN INCREASED RISK OR AN ASSOCIATION. HE  
24 ACTUALLY SAYS: THE CONVENTIONAL APPROACH IS THAT WHEN  
25 THERE IS NO STATISTICAL SIGNIFICANCE, WE DO NOT ASSIGN

1 IMPORTANCE TO CATEGORIAL DIFFERENCES IN NUMBERS. THAT'S  
2 NORMAL SCIENTIFIC PRACTICE. AND APPLYING DR.  
3 SNIDERMAN'S STANDARD TO THE RANDOMIZED CONTROLLED TRIALS  
4 ON AVANDIA AND HEART ATTACK WOULD MEAN THAT THERE IS NO  
5 ASSOCIATION BETWEEN AVANDIA AND HEART ATTACK.

6 NOW, IT'S FAIR TO SAY THAT NOT EVERYONE  
7 OF THE PLAINTIFFS' GENERAL CAUSATION EXPERTS IN THIS  
8 LITIGATION INCLUDING DR. SNIDERMAN RELY ON DATA THAT ARE  
9 NOT STATISTICALLY SIGNIFICANT. SO DR. SNIDERMAN, HE  
10 KNOWS WHAT IS RIGHT, BUT HE FAILS TO APPLY HIS OWN  
11 METHODOLOGY. YOU ARE GOING TO HEAR THE PLAINTIFFS TELL  
12 YOU THAT THERE ARE STATISTICALLY SIGNIFICANT FINDINGS IN  
13 THIS LITIGATION, BUT AS I'LL ADDRESS LATER, THE  
14 STATISTICALLY SIGNIFICANT RESULTS THEY RELY ON ARE NOT  
15 RANDOMIZED CONTROLLED TRIALS, THE MOST RELIABLE, THE  
16 GOLD STANDARD. THEY ARE NOT IN RANDOMIZED CONTROLLED  
17 TRIALS ABOUT AVANDIA AND HEART ATTACK. THEY ARE NOT IN  
18 RANDOMIZED CONTROLLED TRIALS ABOUT AVANDIA AND  
19 CARDIOVASCULAR DISEASE, THEY ARE NOT IN RANDOMIZED  
20 CONTROLLED TRIALS ABOUT AVANDIA AND ATHEROSCLEROSIS.  
21 THEY ARE IN LOWER TIER STUDIES AND WHOLLY INCONSISTENT  
22 FROM STUDY TO STUDY AT THAT.

23 SO HERE IS THE HIERARCHY OF STUDIES WITH  
24 RANDOMIZED CONTROLLED TRIALS AT TOP, BELOW THAT,  
25 META-ANALYSES AND ON THE BOTTOM OBSERVATIONAL STUDIES.

1 SO IF A STATISTICALLY SIGNIFICANT FINDING IS FOUND AND  
2 THERE WERE NONE FOR THE RANDOMIZED CONTROLLED TRIALS.  
3 BUT WHEN YOU HAVE AN ASSOCIATION, IF A STATISTICALLY  
4 SIGNIFICANT FINDING IS FOUND, YOU THEN MOVE UP THE  
5 LADDER AND YOU START LOOKING AT BIAS AND CONFOUNDING.  
6 NOT ONE OF PLAINTIFFS' EXPERTS DID A  
7 COMPLETE ANALYSIS OF THE OBSERVATIONAL STUDIES FOR BIAS  
8 AND CONFOUNDING, NOR DID THEY DO IT FOR ALL THE  
9 META-ANALYSES. WHEN ASKED IF HE INVESTIGATED WHETHER  
10 STATISTICAL ASSOCIATION WAS EXPLAINABLE BY BIAS OR  
11 CONFOUNDING, DR. SEPTIMUS ANSWERED: I DON'T UNDERSTAND  
12 WHAT YOU MEAN. HE ALSO HAD NO IDEA WHAT ASCERTAINMENT  
13 BIAS WAS.

14 CASE LAW REQUIRES GENERAL CAUSATION  
15 EXPERTS, WHEN EVALUATING THE STUDIES THAT THEY BASE  
16 THEIR OPINIONS ON, TO ACCOUNT FOR CONFOUNDING, BIAS AND  
17 THE LIKELIHOOD THAT IN THE STUDY'S RESULTS THE  
18 ASSOCIATION WAS TO CHANCE. AND RULING OUT BIAS AND  
19 CONFOUNDING IS MUCH EASIER TO DO IF YOU ARE RELYING ON  
20 THE GOLD STANDARD, THE RANDOMIZED CONTROLLED TRIAL.  
21 THAT IS WHY IT IS AT THE TOP. IT'S INFECTED MUCH LESS  
22 BY THINGS LIKE BIAS AND CONFOUNDING.

23 AND THAT IS WHY OBSERVATIONAL STUDIES ARE  
24 ON THE BOTTOM. AND AS YOU WILL HEAR LATER TODAY AND  
25 THROUGHOUT THE COURSE OF THE HEARINGS, BIAS AND

1 CONFOUNDING IS A SERIOUS PROBLEM IN OBSERVATIONAL  
 2 STUDIES AND PARTICULARLY IN THESE OBSERVATIONAL STUDIES.  
 3 NOW, IF YOU CAN RULE OUT BIAS AND  
 4 CONFOUNDING, YOU THEN PROCEED UP THE LADDER TO THE NEXT  
 5 PART OF THE ANALYSIS, THE BRADFORD-HILL CRITERIA. DR.  
 6 AUSTIN SAYS THAT IT'S NOT PRUDENT TO CONCLUDE THAT THE  
 7 FINAL REASON A CAUSAL ASSOCIATION IS THE EXPLANATION  
 8 WITHOUT SOME POSITIVE EVIDENCE. FORTUNATELY SOME  
 9 CRITERIA OF POSITIVE EVIDENCE EXIST, FIRST DESCRIBED BY  
 10 AUSTIN BRADFORD-HILL. AND THE BRADFORD-HILL CRITERIA  
 11 PROVIDE A WELL ACCEPTED METHOD FOR ASSESSING CAUSALITY.  
 12 THESE GUIDELINES CONSIST OF SEVERAL KEY INQUIRIES THAT  
 13 ASSIST RESEARCHERS IN MAKING A JUDGMENT ABOUT CAUSATION.  
 14 GSK'S OVERVIEW MEMO POINTS OUT THAT COURTS APPLYING  
 15 DAUBERT ROUTINELY EXCLUDE EXPERT TESTIMONY THAT PROCEEDS  
 16 FROM A FINDING OF AN ASSOCIATION TO A FINDING OF  
 17 CAUSATION WITHOUT APPLYING THE BRADFORD-HILL. THESE ARE  
 18 IMPORTANT CRITERIA.  
 19 AND JUST TO MENTION A FEW. SPECIFICITY,  
 20 WHICH IS IN THE MIDDLE THERE, THAT MEANS LOOKING AT  
 21 HEART ATTACKS, YOU ARE LOOKING AT THE ENDPOINT WITH  
 22 SPECIFICITY, NOT AT A LUMPED GROUP. CONSISTENCY, THAT  
 23 IS THE HALLMARK HERE. WE WILL TALK A LOT ABOUT THAT.  
 24 DO THE STUDIES ALL SHOW YOU THE SAME THING OR ARE THEY  
 25 ALL OVER THE PLACE? CONSISTENCY I BELIEVE IN THIS

1 LITIGATION IS PROBABLY ONE OF THE MOST IMPORTANT OF THE  
 2 BRADFORD-HILL CRITERIA AND YOU WILL SEE WHY.  
 3 BUT OF COURSE TO ASSESS CONSISTENCY, FOR  
 4 A PLAINTIFFS' EXPERT TO ASSESS IT, YOU NEED TO LOOK AT  
 5 ALL THE DATA BECAUSE IF YOU DON'T LOOK AT ALL THE DATA,  
 6 IF YOU ONLY CHERRY PICK OUT THE DATA YOU WANT, THERE IS  
 7 NO WAY YOU CAN DECIDE WHETHER THAT DATA IS CONSISTENT  
 8 WITH THE TOTALITY OF THE EVIDENCE. AND THERE IS LAW ON  
 9 THIS AS WELL. COURTS INCLUDING THE 3RD CIRCUIT  
 10 ROUTINELY REJECT GENERAL CAUSATION EXPERT TESTIMONY WHEN  
 11 THE EXPERTS DO NOT APPLY OR SATISFY THE BRADFORD-HILL  
 12 CRITERIA. SO IN THIS LITIGATION I THINK SPECIFICITY AND  
 13 CONSISTENCY WILL ROUTINELY COME UP AS THE KEYS IN THE  
 14 BRADFORD-HILL ANALYSIS.  
 15 MOST OF PLAINTIFFS' EXPERTS EITHER NEVER  
 16 HEARD OF THE BRADFORD-HILL CRITERIA OR KOCH'S POSTULATES  
 17 WHICH IS AN EQUIVALENT OR COULD NOT CLEARLY IDENTIFY THE  
 18 PROPER ELEMENTS OF THE BRADFORD-HILL ANALYSIS. LISTEN  
 19 TO THEM YOURSELF. HERE IS DR. SEPTIMUS.  
 20 (VIDEO PLAYED. )  
 21 QUESTION: HAVE YOU EVER HEARD OF KOCH'S  
 22 POSTULATES OR THE BRADFORD-HILL CRITERIA?  
 23 ANSWER: I'VE HEARD OF THEM, BUT I'M NOT  
 24 FAMILIAR WITH THEM.  
 25 QUESTION: IS IT FAIR TO SAY YOU DIDN'T

1 EMPLOY THEM IN REACHING YOUR CONCLUSIONS THAT AVANDIA  
 2 CAUSES HEART ATTACKS?  
 3 ANSWER: I CAN'T SAY WITH ANY CERTAINTY  
 4 BECAUSE I'M NOT FAMILIAR WITH WHAT THEY ARE. SO I  
 5 DIDN'T INTENTIONALLY.  
 6 (VIDEO ENDED.)  
 7 MS. HALPERN: DR. SNIDERMAN FAILED TO  
 8 APPLY BRADFORD-HILL OR KOCH'S POSTULATES.  
 9 (VIDEO PLAYED.)  
 10 QUESTION: WELL, IF THEY ARE SO DEEPLY  
 11 IMMERSSED IN YOUR THINKING, PERHAPS YOU CAN ITEMIZE WHAT  
 12 YOU UNDERSTAND TO BE KOCH'S POSTULATES.  
 13 ANSWER: I WOULDN'T BE ABLE TO AT THIS  
 14 HOUR IN THE DAY GIVE YOU A SPECIFIC LIST OF KOCH'S  
 15 POSTULATES BECAUSE THEY WERE SORT OF -- IT WAS BACK IN  
 16 THE TIME OF TB AND STUFF. IT WAS INFECTIOUS DISEASE AND  
 17 I DON'T -- I DON'T RECALL THEM.  
 18 (VIDEO ENDED.)  
 19 MS. HALPERN: DR. SWIRSKY NEVER MENTIONED  
 20 BRADFORD-HILL OR KOCH'S POSTULATES OR THE EQUIVALENT IN  
 21 ANY OF HIS REPORT. DR. DEPACE ADMITS TO ONLY DOING WHAT  
 22 HE CALLS A CRUDE BRADFORD-HILL LIGHT ANALYSIS SINCE HE  
 23 IS A CLINICIAN AND NOT AN EPIDEMIOLOGIST AND ADMITS TO  
 24 RELYING ON DR. AUSTIN FOR HIS OPINION. HERE IS DR.  
 25 DEPACE.

1 (VIDEO PLAYED.)  
 2 QUESTION: DID YOU APPLY A BRADFORD-HILL  
 3 ANALYSIS?  
 4 ANSWER: AS A CLINICAL DOCTOR, AS A  
 5 CLINICIAN NOW, I'M TESTIFYING AS A CLINICIAN, NOT AN  
 6 EPIDEMIOLOGIST, WHO'S KNOWLEDGEABLE IN EPIDEMIOLOGY, BUT  
 7 NOT AN EPIDEMIOLOGIST OR A BIostatistician, WE APPLY A  
 8 CRUDE BRADFORD-HILL AS WE TREAT PATIENTS IN THE TRENCHES  
 9 AND WE -- TO MAKE ASSESSMENTS ON MEDICINES YOU GIVE  
 10 PEOPLE AND WE HAVE DATA THAT'S GIVEN TO US FROM ALL  
 11 DIFFERENT DIRECTIONS, WE DO A CRUDE BRADFORD-HILL. AND  
 12 SO I DID NOT DO AN OFFICIAL, FORMAL BRADFORD-HILL. I  
 13 LOOKED AT HIS -- I READ HIS OBSERVATIONS, HIS  
 14 CONCLUSIONS AND I EXTRACTED MY -- WHAT WAS CLINICALLY  
 15 RELEVANT FOR ME FROM THE BRADFORD-HILL TO ALSO ARRIVE AT  
 16 MY CONCLUSIONS THAT AVANDIA CAUSES HEART ATTACK OR  
 17 ISCHEMIC EVENTS.  
 18 (VIDEO ENDED.)  
 19 MS. HALPERN: WHEN ASKED ABOUT THE  
 20 BRADFORD-HILL CRITERIA IN HIS DEPOSITION DR. JEWELL  
 21 RESPONDED THAT HE ONLY HAD SOME FAMILIARITY WITH THEM  
 22 AND HE IGNORES THE MECHANISM OF ACTION. AND BEING A  
 23 STATISTICIAN AND NOT A PHYSICIAN, HE ADMITTED TO KNOWING  
 24 LITTLE ABOUT LIPIDS OR ATHEROSCLEROSIS OR DIAGNOSING  
 25 HEART ATTACKS. SINCE HE ALSO ADMITTED HE FAILED TO

1 CONSULT WITH ANY PHYSICIAN BEFORE WRITING HIS REPORT, HE  
 2 WAS UNCAPABLE OF DOING THE TYPE OF BRADFORD-HILL  
 3 ANALYSIS ONE WOULD HAVE TO DO TO RULE OUT BIAS OR  
 4 CONFOUNDING OR ASSESS BIOLOGICAL PLAUSIBILITY. HE DID  
 5 SAY THAT HE FOUND ONE BRADFORD-HILL CRITERIA. HE SAID  
 6 THAT HE FOUND A DOSE RESPONSE. THAT IS ONE OF THE  
 7 CRITERIA, BUT THEN LATER ADMITTED THAT THERE WAS  
 8 INSUFFICIENT DATA TO EVEN DO AN ANALYSIS OF DOSE  
 9 RESPONSE, SAYING: IN MY REVIEW OF THE VARIOUS STUDIES  
 10 AND META ANALYSES I FOUND INSUFFICIENT VARIATION IN THE  
 11 DOSES OF ROSI ASSIGNED TO PATIENTS TO PERFORM A  
 12 MEANINGFUL ASSESSMENT OF THE POSSIBILITY OF A DOSE  
 13 RESPONSE.

14 EVERYONE AGREES BRADFORD-HILL IS AT THE  
 15 HEART OF A CAUSATION ANALYSIS. AND SUCH AN ANALYSIS IS  
 16 NOT RELEVANT TO TREATING CLINICIANS, BUT IT IS CRUCIAL  
 17 HERE WHEN DOING A CAUSATION ANALYSIS. THE LAW AND THE  
 18 SCIENTIFIC MANUAL AND EVEN PLAINTIFFS' EXPERT DR. AUSTIN  
 19 MAKE THAT ABUNDANTLY CLEAR.

20 NOW, I HAVE JUST DISCUSSED THE GENERALLY  
 21 ACCEPTED METHODOLOGY FOR ASSESSING CAUSATION AS ACCEPTED  
 22 BY SCIENTISTS AND THE COURTS AND REQUIRED BY DAUBERT.  
 23 WHAT IS MOST NOTABLE ABOUT THE PLAINTIFFS' GENERAL  
 24 CAUSATION EXPERTS IS THEIR FAILURE, ALMOST UNIFORMLY, TO  
 25 APPLY THAT METHODOLOGY IN THEIR CAUSATION OPINIONS.

1 DRs. SWIRSKY, SEPTIMUS, SNIDERMAN, DEPACE, BRINTON, ALL  
 2 APPROACHED THE TASK AS CLINICIANS, APPLYING A RISK-  
 3 BENEFIT OR CLINICAL STANDARD.

4 NOW, WE ALL UNDERSTAND THAT THE  
 5 METHODOLOGIC STANDARD TO APPLY UNDER DAUBERT TO  
 6 DETERMINE IF AVANDIA CAUSES HEART ATTACK IS DIFFERENT  
 7 FROM THE METHODOLOGIC STANDARD APPLIED BY DOCTORS ON A  
 8 DAILY BASIS IN THEIR CLINICAL PRACTICE. IT HAS TO BE.  
 9 DOCTORS HAVE TO MAKE THEIR DECISIONS ABOUT TREATING  
 10 PATIENTS AND PRESCRIBING MEDICATIONS EVEN IN THE FACE OF  
 11 INCOMPLETE INFORMATION. THEY HAVE TO TREAT THE PATIENT.  
 12 THE PATIENT CAN'T WAIT UNTIL THE STUDIES ARE DONE.

13 THE CRITERIA FOR MAKING A CLINICAL  
 14 DECISION MUST BY DEFINITION BE LOWER THAN THAT FOR  
 15 CONDUCTING A CAUSATION ANALYSIS, GIVEN THE REALITY OF  
 16 HAVING TO TREAT PATIENTS IN THE BEST WAY POSSIBLE WITH  
 17 THE LIMITED INFORMATION YOU MAY HAVE AVAILABLE. OFTEN  
 18 THE CLINICAL DECISION WILL INVOLVE A RISK-BENEFIT  
 19 ANALYSIS THAT ALSO HAS LITTLE TO DO WITH CAUSATION. A  
 20 TREATING DOCTOR CAN PRESCRIBE A DRUG EVEN IF IT'S  
 21 THOUGHT THAT IT'S GOING TO CAUSE A CERTAIN ADVERSE EVENT  
 22 IF ITS BENEFITS OUTWEIGH THE RISKS. AND IF A DRUG IS  
 23 LIFE SAVING, ALMOST ANY RISK MAY BE TOLERABLE BECAUSE  
 24 IT'S NOT THE ARBITER. CAUSE IS NOT THE ARBITER OF HOW  
 25 THAT TYPE OF CLINICAL DETERMINATION IS GOING TO BE MADE.

1 THE DOCTOR MAY CHOOSE NOT TO PRESCRIBE A DRUG EVEN IF IT  
 2 IS JUST POSSIBLE THAT IT CAUSES AN ADVERSE EFFECT. AND  
 3 THAT IS ESPECIALLY SO IF THE BENEFIT OF THE DRUG IS  
 4 SMALL OR IF THERE ARE ALTERNATIVE DRUGS AVAILABLE, THEN  
 5 ANY RISK, EVEN IF A THEORETICAL RISK, WOULD BE TOO  
 6 GREAT. SO AGAIN, YOU DON'T NEED TO KNOW IF IT CAUSES  
 7 THE ADVERSE EVENT IN ORDER TO MAKE A CLINICAL DECISION  
 8 ABOUT YOUR PATIENT.

9 THE PLAINTIFFS' BURDEN HERE IS NOT TO  
 10 CONDUCT A RISK-BENEFIT ANALYSIS OR A DETERMINATION IF  
 11 THERE IS A BETTER ALTERNATIVE OR TO GIVE HIS CLINICAL  
 12 JUDGMENT, BUT TO CONDUCT A CAUSAL ANALYSIS BASED ON  
 13 SUFFICIENT RELIABLE SCIENTIFIC EVIDENCE ABOUT WHETHER  
 14 AVANDIA CAUSES HEART ATTACK. NOW ADHERING TO A RIGOROUS  
 15 CAUSATION METHODOLOGY IS NOT JUST RELIABLE SCIENCE, IT'S  
 16 ALSO THE LAW.

17 THE COURT DOES NOT QUESTION THAT THE  
 18 METHODOLOGY THE EXPERT DISCUSSED AT THE DAUBERT HEARING  
 19 SERVES HIM WELL EVERY DAY IN THE CLINICAL PRACTICE OF  
 20 MEDICINE. UNFORTUNATELY, HIS CLINICAL IMPRESSIONS ARE  
 21 NOT THE SORT OF SCIENTIFIC METHODOLOGY THAT DAUBERT  
 22 DEMANDS.

23 THEIR METHODOLOGY DOES NOT SATISFY THE  
 24 REQUIREMENTS OF DAUBERT. THEY HAVE NOT PROVIDED  
 25 SUFFICIENT RELIABLE SCIENTIFIC EVIDENCE TO SUPPORT A

1 JURY FINDING OF LEGAL CAUSATION. MOST OF PLAINTIFFS'  
 2 GENERAL CAUSATION EXPERTS, HOWEVER, REACH THEIR  
 3 CAUSATION OPINIONS BY APPLYING THE SAME STANDARD THAT  
 4 CLINICIANS MUST USE WHEN TREATING PATIENTS.

5 DR. SWIRSKY PROVIDES A GOOD EXAMPLE.  
 6 THIS SHOULD BE VIDEO CLIP 11.  
 7 (VIDEO PLAYED.)

8 QUESTION: IS THE METHODOLOGY YOU  
 9 EMPLOYED IN COMING TO YOUR CONCLUSIONS AND OPINIONS IN  
 10 THIS CASE WRITTEN DOWN ANYWHERE?

11 ANSWER: NOT THAT I'M AWARE OF.

12 QUESTION: THE AMERICAN LEGAL MEDICINE  
 13 ASSOCIATION, DO THEY HAVE A METHODOLOGY THAT YOU  
 14 FOLLOWED?

15 ANSWER: I THINK THAT THE METHODOLOGY  
 16 THAT I'VE OUTLINED IS WHAT A CLINICIAN WOULD USE IF THE  
 17 INFORMATION WAS AVAILABLE TO HELP MAKE AN EDUCATED  
 18 DECISION AS TO WHETHER OR NOT TO USE A DRUG OR NOT USE A  
 19 DRUG.

20 QUESTION: SO THIS IS YOUR OWN INDIVIDUAL  
 21 METHODOLOGY THAT'S NOT RECOGNIZED ANYWHERE ELSE THAT  
 22 YOU'RE AWARE OF?

23 ANSWER: I WOULDN'T GIVE MYSELF THE ONLY  
 24 CREDIT FOR THAT METHODOLOGY.

25 QUESTION: WHO ELSE HAVE YOU SEEN EMPLOY

1 THAT METHODOLOGY THAT YOU DID?  
 2 ANSWER: I THINK MOST PRACTICING  
 3 CLINICIANS WILL USE ALL THE INFORMATION AVAILABLE AT  
 4 THEIR DISPOSAL TO MAKE A CLINICAL DECISION. WE'RE NOT  
 5 TALKING ABOUT A REGULATORY DECISION ON MY PART. WE ARE  
 6 TALKING ABOUT AN INDIVIDUAL PRACTICE POSITION AS WELL AS  
 7 FOR THE PURPOSES OF THIS CASE, AN EXPERT POSITION.  
 8 (VIDEO ENDED.)  
 9 MS. HALPERN: NOW, THIS IS THE SAME DR.  
 10 SWIRSKY WHO I SHOWED YOU SAID HE WAS USING AN  
 11 ASSOCIATION BECAUSE HE DIDN'T HAVE ENOUGH DATA TO REACH  
 12 A CONCLUSION BASED ON CAUSATION.  
 13 NOW DR. SEPTIMUS ALSO DOES NOT CONTEND  
 14 THAT HIS OPINIONS ARE SUFFICIENT TO SHOW THAT THERE IS A  
 15 STATISTICALLY SIGNIFICANT ASSOCIATION BETWEEN AVANDIA  
 16 AND HEART ATTACK. RATHER, HE CONTENDS THAT THE DATA ARE  
 17 CLINICALLY SIGNIFICANT, THAT THEY SHOW AN ASSOCIATION  
 18 AND THAT CLINICAL SIGNIFICANCE IS THE STANDARD TO APPLY.  
 19 DR. SEPTIMUS WROTE IN HIS REPORT, THIS IS SLIDE 56:  
 20 WHEN ACTING AS A PURE SCIENTIST, ONE HAS THE LUXURY AND  
 21 RESPONSIBILITY TO LOOK AT RESULTS IN A PURELY  
 22 STATISTICAL FASHION PRIOR TO DRAWING CONCLUSIONS. AS A  
 23 CLINICIAN, HOWEVER, WE MUST LOOK AT ALL THE EVIDENCE  
 24 BEFORE US AND DETERMINE WHAT IS CLINICALLY SIGNIFICANT.  
 25 WHEN ASKED TO EXPLAIN WHAT HE MEANT BY

1 CLINICALLY SIGNIFICANT AND HOW THIS STANDARD DIFFERED  
 2 FROM THE STANDARD USED IN A SCIENTIFIC ANALYSIS OF  
 3 CAUSATION, DR. SEPTIMUS CONCEDED THAT HE HAD NO  
 4 PARTICULAR STANDARD, BUT HE KNOWS WHEN IT'S CAUSAL EVEN  
 5 BEFORE YOU CAN SCIENTIFICALLY PROVE IT.  
 6 (VIDEO PLAYED.)  
 7 QUESTION: WHAT'S YOUR STANDARD FOR  
 8 IDENTIFYING CLINICAL SIGNIFICANCE?  
 9 ANSWER: I DON'T HAVE ANY PARTICULAR ONE  
 10 STANDARD. YOU HAVE TO EVALUATE ALL OF THE CLINICAL  
 11 EXPERIENCE THAT YOU HAVE, THE CLINICAL DATA THAT YOU  
 12 HAVE AND THE BASIC SCIENCE THAT YOU HAVE AND COME TO A  
 13 SCIENTIFIC AND CLINICAL CONCLUSION BASED ON ALL THE DATA  
 14 THAT YOU HAVE.  
 15 QUESTION: SO YOU KNOW IT WHEN YOU SEE IT  
 16 BUT YOU CAN'T DEFINE IT?  
 17 ANSWER: YOU KNOW WHEN SOMETHING CAUSES A  
 18 PARTICULAR ADVERSE EVENT OR A POSITIVE EVENT SOMETIMES  
 19 BEFORE YOU CAN SCIENTIFICALLY PROVE IT.  
 20 (VIDEO ENDED.)  
 21 MS. HALPERN: NOW DR. DEPACE SAYS: THE  
 22 AMERICAN HEART ASSOCIATION AND ACADEMICIANS USE HIGHER  
 23 STANDARDS TO ASSESS CAUSATION THAN HE DOES. FOR HIM AS  
 24 A CLINICIAN THE ISSUE OF CAUSATION HAS BEEN SETTLED EVEN  
 25 THOUGH NOTHING HAS BEEN CONVINCINGLY SHOWN. HE ADMITS

1 SCIENTISTS, ACADEMICS HAVE A HIGHER STANDARD OF PROOF,  
 2 STATISTICAL PROOF THAN HE DOES AS A CLINICIAN. HE DOES  
 3 NOT WANT TO REHASH THE DATA ANY FURTHER.  
 4 DR. DEPACE.  
 5 (VIDEO PLAYED.)  
 6 QUESTION: YOU RECOGNIZE THAT YOUR  
 7 OPINIONS CONCERNING AVANDIA AND HEART ATTACK ARE AT ODDS  
 8 WITH THE POSITION STATEMENT PUT OUT BY THE AHA AND ACC.  
 9 ANSWER: I'M NOT SO SURE THEY'RE AT ODDS.  
 10 THEY DON'T -- THEY DON'T -- THEY HAVE A HIGHER -- THEY  
 11 MAY HAVE A HIGHER STANDARD OF WHAT THEY CONSIDER TO BE  
 12 CONCLUSIVE OR PROOF AS MANY OF THE ACADEMICIANS THAN I  
 13 AS A CLINICAL PRACTICING CARDIOLOGIST HAVE WORKING ON  
 14 PATIENTS. MY STANDARD AS A CLINICAL CARDIOLOGIST HAS  
 15 REACHED THE THRESHOLD WITH THIS SUBJECT AND THIS DATA.  
 16 THEY MAY NOT BECAUSE THEY LOOK FOR -- THEY KEEP LOOKING  
 17 AT STATISTICAL ASPECTS OF IT. SO THAT'S WHY I DON'T  
 18 WANT TO GIVE THE IMPRESSION THAT THEY REPRESENT GUYS  
 19 LIKE ME THAT ARE ON THE FRONT LINES BECAUSE THEY DON'T.  
 20 AS FAR AS I'M CONCERNED, THE ISSUE IS SETTLED ON THIS  
 21 HERE. THIS IS A DRUG THAT I'M NOT GOING TO PRESCRIBE  
 22 AND MOST OF MY COLLEAGUES DON'T APPEAR TO BE USING IT.  
 23 WE HAVE -- WE ARE PRETTY CONVINCED THAT THE INITIAL DATA  
 24 HAS NOT BEEN OVERTURNED BY SUBSEQUENT ANALYSIS. NOTHING  
 25 HAS BEEN CONVINCINGLY SHOWN AND WE, YOU KNOW -- WE JUST

1 DON'T WANT TO KEEP LOOKING. PEOPLE JUST DON'T WANT KEEP  
 2 LOOKING AT DATA AND DATA AND REHASH THE SAME DATA.  
 3 (VIDEO ENDED.)  
 4 MS. HALPERN: NOW DR. BRINTON ADMITS TO  
 5 USING A DIFFERENT STANDARD THAN THAT WHICH IS USED BY  
 6 SCIENTISTS IN ASSESSING CAUSATION. HE REACHED HIS  
 7 OPINION THAT AVANDIA CAUSES HEART ATTACK BY, AS HE SAYS,  
 8 TAKING INTO CONSIDERATION THE CLINICAL CONTEXT WHICH HE  
 9 ADMITS IS A DIFFERENT STANDARD THAN THE STANDARD HE  
 10 WOULD USE IN CONSIDERING A SCIENTIFIC CONTEXT. HE  
 11 EMPLOYS A RISK-BENEFIT ANALYSIS AS PART OF HIS CLINICAL  
 12 CONTEXT AND CLEARLY STATES THAT WHAT HE DID IS VERY  
 13 DIFFERENT FROM WHAT EPIDEMIOLOGISTS DO IN ASSESSING  
 14 CAUSATION. HERE IS DR. BRINTON COMMENTING ON THE  
 15 GENERAL CAUSATION QUESTION HE WAS ASKED TO ANSWER IN  
 16 THIS CASE AND THE STANDARD HE APPLIED TO ANSWER THE  
 17 QUESTION.  
 18 (VIDEO PLAYED.)  
 19 ANSWER: SO MY FEELING ABOUT THIS IS THAT  
 20 THE QUESTION THAT I HAD BEEN ASKED TO ANSWER REALLY HAS  
 21 MEANING ONLY IN THE SENSE OF ITS CLINICAL CONTEXT, EVEN  
 22 THOUGH I HAVE NOT BEEN ASKED TO COMMENT, NOR HAVE I  
 23 REVIEWED ANY PARTICULARS OF ANY INDIVIDUAL CASE. AND  
 24 THE ONLY REASON THAT I'M BEING ASKED TO BE INVOLVED HERE  
 25 IS BECAUSE OF THE CLINICAL CONTEXT. SO IT'S MY FEELING

1 THAT THAT'S PERFECTLY APPROPRIATE FOR ME TO TAKE THE  
 2 CLINICAL CONTEXT INTO MY CONSIDERATION OF THAT QUESTION.  
 3 QUESTION: AND IN TAKING INTO  
 4 CONSIDERATION THE CLINICAL CONTEXT, DO YOU USE A  
 5 DIFFERENT STANDARD THAN THE STANDARD YOU WOULD USE IN  
 6 CONSIDERING SCIENTIFIC CONTEXT?  
 7 ANSWER: I THINK THAT THE ANSWER TO THAT  
 8 QUESTION IS YES.  
 9 QUESTION: AND WHAT STANDARD WOULD YOU  
 10 USED TO CONSIDER WHETHER AVANDIA CAUSES HEART ATTACK IN  
 11 A CLINICAL CONTEXT?  
 12 ANSWER: I'M SORRY, REPEAT THE QUESTION  
 13 AGAIN, PLEASE.  
 14 QUESTION: WHAT STANDARD WOULD YOU USE TO  
 15 CONSIDER WHETHER AVANDIA CAUSES HEART ATTACK IN THE  
 16 CLINICAL CONTEXT THAT IS DIFFERENT THAN THE STANDARD YOU  
 17 WOULD USE IN A SCIENTIFIC CONTEXT?  
 18 ANSWER: I THINK THAT'S ACTUALLY A VERY  
 19 IMPORTANT QUESTION BECAUSE THERE ARE SCIENTISTS AND  
 20 ACADEMICIANS WHO WILL CONSIDER QUESTIONS SUCH AS THIS IN  
 21 A PURELY THEORETICAL SENSE AND FROM A PURELY SCHOLARLY  
 22 SENSE AND WHO WILL NOT CONSIDER THE IMPACT OF THEIR  
 23 STATEMENT ON INDIVIDUAL PATIENTS. AND ONE OF THE  
 24 REASONS THAT I DIFFER IN SEVERAL INSTANCES WITH  
 25 STATEMENTS OF OTHER EXPERTS WITH REGARD TO THIS QUESTION

1 IS BECAUSE OF MY CONCERN ABOUT THE CLINICAL CONTEXT IN  
 2 WHICH THIS QUESTION IS ASKED.  
 3 (VIDEO ENDED.)  
 4 MS. HALPERN: DRs. SEPTIMUS, SNIDERMAN,  
 5 SWIRSKY, BRINTON AND DEPACE TESTIMONY THAT AVANDIA  
 6 PRESENTS A RISK OF ISCHEMIC HEART DISEASE IS AN OPINION  
 7 BASED ON CLINICAL STANDARDS. IT'S INSUFFICIENT TO MEET  
 8 THE EXACTING STANDARD THAT DAUBERT SETS FOR EXPERT  
 9 TESTIMONY OFFERED AS SCIENTIFIC PROOF OF CAUSATION.  
 10 PLAINTIFFS HAVE THE BURDEN OF PROOF HERE AND THEY CAN  
 11 ONLY MEET THAT BURDEN BY PROFFERING EXPERT TESTIMONY  
 12 THAT IS METHODOLOGICALLY SOUND AND SCIENTIFICALLY  
 13 RELIABLE. AS WE HAVE SEEN --  
 14 I'M SORRY, I APOLOGIZE.  
 15 HONORABLE CYNTHIA M. RUFÉ: WELL THEN,  
 16 HOW ABOUT THIS BEING OUR BRIEF MORNING RECESS -- WELL,  
 17 IT'S UP. DO YOU WANT TO KEEP GOING?  
 18 MS. HALPERN: I'M WILLING. IF YOU WOULD  
 19 LIKE TO TAKE A BREAK NOW THAT IS FINE TOO. EITHER WAY.  
 20 HONORABLE SANDRA MAZER MOSS: I'M FINE OR  
 21 I CAN BREAK. WHATEVER YOU THINK.  
 22 MS. HALPERN: KEEP GOING FOR A LITTLE BIT  
 23 MORE. IT'S LONG AND YOU ARE GOING TO NEED A BREAK.  
 24 HONORABLE SANDRA MAZER MOSS: IT'S  
 25 FASCINATING.

1 HONORABLE CYNTHIA M. RUFÉ: IT CERTAINLY  
 2 IS.  
 3 MS. HALPERN: THANK YOU. OKAY.  
 4 AS WE HAVE SEEN IN THE BRIEFS SUBMITTED  
 5 BY PLAINTIFFS PERTAINING TO DR. LIPPMAN, BY THEIR OWN  
 6 ADMISSION WHEN THEIR EXPERTS ARE TALKING ABOUT RISK-  
 7 BENEFIT, THEY STATE THAT THEY ARE NOT PROVIDING A  
 8 CAUSATION OPINION. DR. LIPPMAN THEY SAY WAS A RISK-  
 9 BENEFIT EXPERT, NOT A CAUSATION EXPERT. APPLYING THIS  
 10 CRITERIA TO ALL THE PLAINTIFFS' EXPERTS UNIFORMLY SHOULD  
 11 LEAD TO THE EXCLUSION OF DRs. SWIRSKY, SEPTIMUS,  
 12 BRINTON, DEPACE, SNIDERMAN ALL AS GENERAL CAUSATION  
 13 EXPERTS.  
 14 JUST LAST WEEK IN THE SIXTH CIRCUIT  
 15 CITING THE SIHARATH DECISION WHICH I MENTIONED A FEW  
 16 MOMENTS AGO, THE COURT HELD THAT A DISTRICT COURT  
 17 EXCEEDED ITS DISCRETION BY ADMITTING GENERAL CAUSATION  
 18 TESTIMONY BY A PLAINTIFFS' EXPERT WHEN THE EXPERT RELIED  
 19 ON HIS CLINICAL EXPERTISE TO ASSESS THE QUESTION OF  
 20 CAUSATION OR ETIOLOGY. THEY SAID: WHEN PHYSICIANS  
 21 THINK ABOUT ETIOLOGY OR CAUSE IN A CLINICAL SETTING THEY  
 22 MAY THINK ABOUT IT IN A DIFFERENT WAY FROM THE WAY  
 23 JUDGES AND JURIES THINK ABOUT IT IN A COURTROOM. AND  
 24 THE ISSUE IS THE RELIABILITY OF HIS OPINION FROM A LEGAL  
 25 PERSPECTIVE, AND WHAT SCIENCE TREATS AS A USEFUL BUT

1 UNTESTED HYPOTHESIS, THE LAW SHOULD GENERALLY TREAT AS  
 2 INADMISSIBLE SPECULATION.  
 3 NOW, REGULATORS ARE LIKE CLINICIANS.  
 4 THEY HAVE TO MAKE DECISIONS RELATING TO APPROPRIATE  
 5 LABELING OR LICENSING OF MEDICATION FOR THE MARKET. SO  
 6 THEY OFTEN FACE THE SAME DILEMMA AS CLINICIANS. LIKE  
 7 CLINICIANS, THEY HAVE TO MAKE DECISIONS SOMETIMES IN THE  
 8 FACE OF INCOMPLETE OR INADEQUATE INFORMATION. HOW A  
 9 REGULATORY AGENCY DECIDES WHAT TO PUT IN THE LABEL AND  
 10 WHETHER TO PERMIT A MEDICATION TO BE MARKETED FOR A  
 11 PARTICULAR INDICATION DEPENDS ON MANY THINGS INCLUDING  
 12 RISK-BENEFIT ANALYSES AND THE AVAILABILITY OF  
 13 ALTERNATIVE DRUGS. THE REGULATORS MUST REGULATE EVEN IN  
 14 THE FACE OF INCOMPLETE INFORMATION.  
 15 I THINK WE MAY HAVE TO TAKE A BREAK  
 16 BECAUSE IT LOOKS LIKE THIS IS TOTALLY DOWN.  
 17 HONORABLE CYNTHIA M. RUFÉ: I HAVE CALLED  
 18 TO SEE IF THEY COME UP AND CHECK IT. WE DON'T KNOW IF  
 19 IT'S YOUR EQUIPMENT OR OURS. SO SOMETIMES THE  
 20 INTERFACING HAS A LOOSE CONNECTION.  
 21 AND WE WILL TAKE OUR BREAK RIGHT NOW AND  
 22 WE WILL COME BACK AS SOON AS THEY LOOK AT THE EQUIPMENT.  
 23 MS. HALPERN: THANK YOU. I APOLOGIZE.  
 24 HONORABLE CYNTHIA M. RUFÉ: THANK YOU.  
 25 WE ARE IN RECESS.

1 (BREAK TAKEN.)  
 2  
 3 THE CLERK: ALL RISE.  
 4 HONORABLE CYNTHIA M. RUFÉ: THE EQUIPMENT  
 5 IS UP AND RUNNING SO.  
 6 MS. HALPERN: IS IT ALL RIGHT TO BEGIN?  
 7 HONORABLE CYNTHIA M. RUFÉ: PLEASE.  
 8 MS. HALPERN: WHEN WE BROKE, JUST TO  
 9 RECAP, WE WERE TALKING ABOUT CLINICAL IMPRESSIONS AND  
 10 HOW A PHYSICIAN'S CLINICAL IMPRESSION IS NOT EQUAL TO A  
 11 RELIABLE SCIENTIFIC ANALYSIS UNDER DAUBERT. AND WE WERE  
 12 POINTING TO THE RECENT CASE FROM THE SIXTH CIRCUIT AND  
 13 THIS IS FLICKERING OFF THE SCREEN, SO IF YOU WILL  
 14 INDULGE ME, I JUST WILL REPEAT THAT WHEN PHYSICIANS  
 15 THINK ABOUT CAUSE IN A CLINICAL SETTING, THEY MAY THINK  
 16 ABOUT IT IN A DIFFERENT WAY FROM THE WAY JUDGES AND  
 17 JURIES THINK ABOUT IT IN A COURTROOM. AND THE ISSUE IS  
 18 THE RELIABILITY OF THEIR OPINION FROM A LEGAL  
 19 PERSPECTIVE. AND WHAT SCIENCE TREATS AS A USEFUL BUT  
 20 UNTESTED HYPOTHESIS, THE LAW SHOULD GENERALLY TREAT AS  
 21 INADMISSIBLE SPECULATION. AND JUDGE MOSS, IF I MIGHT IT  
 22 MIGHT BE WORTH IT TO JUST SAY SOMETHING ABOUT FRYE HERE.  
 23 HONORABLE SANDRA MAZER MOSS: THANK YOU,  
 24 ALTHOUGH I AM FINDING THIS FASCINATING, SO IT'S NOT A  
 25 WASTE FOR SURE.

1 MS. HALPERN: I DON'T THINK IT'S THAT  
 2 DIFFERENT, ACTUALLY AND FOR THE SAME REASONS THAT  
 3 PLAINTIFF'S EXPERTS' OPINIONS ARE UNRELIABLE AND  
 4 INADMISSIBLE UNDER DAUBERT, THEY ARE ALSO INADMISSIBLE  
 5 UNDER THE FRYE STANDARD. THE PENNSYLVANIA SUPREME COURT  
 6 HAS MADE IT PRETTY CLEAR THAT FRYE, AND I KNOW YOU HAVE  
 7 SAID THIS YOURSELF, APPLIES TO NOVEL SCIENTIFIC  
 8 EVIDENCE. I HAVE BEEN IN YOUR COURTROOM AND HEARD YOU  
 9 SAY IT.  
 10 HONORABLE SANDRA MAZER MOSS: IT'S A  
 11 NOVEL APPROACH I ALWAYS SAY.  
 12 MS. HALPERN: YES, AND I KNOW YOU BELIEVE  
 13 THAT AND THAT IS THE LAW, THAT STEP ONE, IS THE EVIDENCE  
 14 NOVEL AND IF INDEED IT IS, THEN FRYE APPLIES.  
 15 AND JUST THE LAST I THINK TWO MONTHS, IT  
 16 MIGHT HAVE BEEN JUST LAST MONTH IN A RECENT PENNSYLVANIA  
 17 SUPERIOR COURT DECISION, I THINK IN BETZ, THE COURT  
 18 DEFINED NOVELTY AS THE EXISTENCE OF A "LEGITIMATE  
 19 DISPUTE REGARDING THE RELIABILITY OF THE EXPERT'S  
 20 CONCLUSIONS." AND PLAINTIFF'S EXPERTS' CONCLUSIONS THAT  
 21 AVANDIA CAUSES HEART ATTACKS ARE CLEARLY NOVEL WITHIN  
 22 THE MEANING OF THAT BETZ DECISION THAT JUST CAME DOWN.  
 23 AND AS WE HAVE SEEN TODAY, PLAINTIFF'S EXPERTS'  
 24 METHODOLOGIES FOR REACHING CAUSATION CONCLUSIONS ARE  
 25 UNRELIABLE AND CERTAINLY NOT GENERALLY ACCEPTED IN THE

1 SCIENTIFIC COMMUNITY.  
 2 HONORABLE SANDRA MAZER MOSS: DO YOU HAVE  
 3 THAT CITE IN YOUR MATERIAL?  
 4 MS. HALPERN: ABSOLUTELY.  
 5 HONORABLE SANDRA MAZER MOSS: OKAY. AS  
 6 LONG AS IT'S IN ONE OF THESE SLIDES WE WILL FIND IT.  
 7 MS. HALPERN: I'M SORRY, IN THE  
 8 MATERIALS, NO. BUT I WOULD BE HAPPY TO --  
 9 HONORABLE SANDRA MAZER MOSS: AFTER LUNCH  
 10 YOU CAN GET IT FOR ME.  
 11 MS. HALPERN: THUS UNDER PENNSYLVANIA LAW  
 12 AS ENUNCIATED BY THE PENNSYLVANIA SUPREME COURT IN GRADY  
 13 VERSUS FRITO-LAY, WE BELIEVE THAT PLAINTIFF'S EXPERTS'  
 14 OPINION SHOULD BE EXCLUDED.  
 15 HONORABLE SANDRA MAZER MOSS: THE CORN  
 16 CHIP CASE, I KNOW IT WELL.  
 17 MS. HALPERN: SO THANK YOU. AND I WILL  
 18 GET THAT TO YOU.  
 19 SO MOVING ON, I GUESS I WOULD LIKE TO  
 20 TAKE A MOMENT NOW TO BRIEFLY MENTION TWO FDA ADCOMS, THE  
 21 ONE IN 2007 AND THE ONE IN 2010 ON AVANDIA, AND WHAT  
 22 THEY DID DO AND WHAT THEY DID NOT DO. AND THE REASON  
 23 THIS IS RELEVANT IS IT SPEAKS DIRECTLY TO AN OPINION  
 24 GIVEN IN THIS LITIGATION BY DR. SNIDERMAN.  
 25 DR. SNIDERMAN TESTIFIED THAT, I WILL

1 RETURN TO MY UNDERSTANDING OF THE WORD CAUSE. WHEN THE  
 2 FDA PANEL VOTES 20 TO 3 THAT THERE IS A SIGNIFICANTLY  
 3 INCREASED RISK WITH AVANDIA AND THE FREQUENCY OF HEART  
 4 ATTACKS, I USE THE WORD CAUSE TO ENCOMPASS WHAT THEY  
 5 DECLARE TO BE A CLINICALLY INSIGNIFICANT INCREASE IN  
 6 RISK.  
 7 NOW, THERE ARE A COUPLE OF THINGS WRONG  
 8 WITH THIS AND THE FIRST IS, OF COURSE, THAT HE EQUATES  
 9 AN INCREASED RISK WITH CAUSATION, BUT MOST NOTABLY, HE  
 10 MISREPRESENTS OR EVEN MISUNDERSTOOD, WHICH I THINK OTHER  
 11 PEOPLE DID AS WELL, WHAT THE FDA ACTUALLY VOTED ON.  
 12 THEY DID NOT VOTE IN 2007, WHICH IS WHEN THAT 20 TO 3  
 13 VOTE WAS, THAT THERE WAS INCREASED RISK WITH AVANDIA.  
 14 THEY EXPLICITLY DECIDED TO VOTE ON THE QUESTION, IS  
 15 THERE A SUGGESTION OF AN INCREASED RISK. AND I WOULD  
 16 LIKE TO PLAY A SEGMENT FROM THE 2010 ADCOM. IT'S DR.  
 17 JENKINS SPEAKING HERE ABOUT THIS PRECISE  
 18 MISUNDERSTANDING ABOUT WHAT THE VOTE WAS IN 2007.  
 19 (VIDEO PLAYED.)  
 20 ANSWER: ONE CAVEAT I THINK YOU SHOULD BE  
 21 AWARE OF THOUGH IS THAT THAT NUANCE GETS LOST IN HOW THE  
 22 VOTE IS REPORTED. SO EVEN IN THE MEETING FOR THE LAST  
 23 TWO DAYS, WE'VE HEARD SEVERAL SPEAKERS MISREPRESENT THAT  
 24 VOTE FROM THREE YEARS AGO. SO THEY LEAVE OUT THE WORD  
 25 SUGGEST. WE'VE SEEN IT REPEATEDLY IN THE SLIDES. IF

1 YOU GO BACK AND LOOK, YOU WILL SEE REFERENCES TO THE  
2 COMMITTEE VOTED OVERWHELMINGLY THAT THE DRUG INCREASES  
3 THE RISK OF CARDIOVASCULAR ISCHEMIC EVENTS. THEY LEAVE  
4 OUT THE SUGGESTS. SO THAT'S THE PROBLEM WE ALL FACE IN  
5 WRITING THESE QUESTIONS AND CAPTURING WHAT ARE THE  
6 ACTUAL CONCLUSIONS AND FINDINGS ARE IS A CHALLENGE.

7 (VIDEO ENDED.)

8 MS. HALPERN: NOW, THE VOTE -- AND I  
9 WOULD JUST LIKE TO CLEAR THIS UP, TOO -- IN 2010 WAS  
10 ALSO CHANGED. THE QUESTION THAT THEY VOTED ON WAS ALSO  
11 CHANGED. AND THE QUESTION THEY ACTUALLY VOTED ON WAS  
12 WHETHER OR NOT THE DATA WAS SUFFICIENT TO RAISE  
13 SIGNIFICANT SAFETY CONCERNS. THAT WAS THE ACTUAL  
14 WORDING OF WHAT THEY VOTED ON. AND IN A RECENT 5TH  
15 CIRCUIT DECISION, THE COURT AFFIRMED EXCLUSION OF ALL  
16 THREE PLAINTIFFS' GENERAL CAUSATION EXPERTS PURSUANT TO  
17 DAUBERT SAYING THAT A CONCERN WAS INSUFFICIENT GROUNDS  
18 FOR ASSESSING CAUSATION, AND WHAT THE COURT HELD WAS  
19 THAT THE PLAINTIFF URGES THE LAW, THEY SAY, TO LEAD  
20 SCIENCE, A SEQUENCE NOT COUNTENANCED BY DAUBERT. AND  
21 WHILE THE POSSIBILITIES OF THEIR RELATIONSHIP PROPERLY  
22 SPARK CONCERNS SUFFICIENT TO WARRANT CAUTION, THE COURTS  
23 MUST AWAIT ITS RESULTS.

24 SO REGULATORS, LIKE PHYSICIANS, RELY ON  
25 RISK BENEFIT ANALYSES AND CONSIDERATIONS OF WHETHER OR

1 NOT THERE ARE ALTERNATIVE TREATMENTS AVAILABLE AND  
2 THEY'RE CONCERNED WITH WHETHER THINGS ARE EVEN A  
3 SUGGESTION OF AN INCREASED RISK OR WHETHER IT JUST  
4 RAISES A CONCERN AS OPPOSED TO ASSESSING CAUSATION. AND  
5 THE FDA MAY APPROVE A DRUG, EVEN IF IT'S A KNOWN CAUSE  
6 OF A PROBLEM, AND THEY CAN PULL A DRUG, EVEN IF IT'S  
7 UNCLEAR IF THE DRUG CAUSES IT.

8 NOW, ESTABLISHING CAUSATION IS NOT THE  
9 GUIDING STANDARD FOR THIS TYPE OF REGULATORY DECISION  
10 MAKING AND A CASE IN POINT IS PARLODEL. THE FDA  
11 DETERMINED TO WITHDRAW IT FROM THE MARKET BECAUSE OF  
12 LINKS TO STROKE, BUT NONETHELESS, THE 11TH CIRCUIT IN A  
13 DAUBERT HEARING EXCLUDED UNDER DAUBERT ALL OF  
14 PLAINTIFFS' WELL QUALIFIED EXPERTS ACKNOWLEDGING THAT  
15 THE FDA'S RISK BENEFIT ANALYSIS INVOLVED A MUCH LOWER  
16 STANDARD THAN THAT WHICH IS REQUIRED BY A COURT OF LAW  
17 TO HOLD A MANUFACTURER LIABLE FOR DAMAGES.

18 YOU KNOW, THIS RISK, THE CASE LAW SAYS  
19 CLEARLY THAT RISK BENEFIT ANALYSIS IS ALSO NOT A  
20 CAUSATION ANALYSIS AND THEY WRITE, THE RISK UTILITY  
21 ANALYSIS INVOLVES A MUCH LOWER STANDARD THAN THAT WHICH  
22 IS DEMANDED BY A COURT OF LAW.

23 SO WE HAVE GONE THROUGH I THINK WHAT THE  
24 SCIENTIFICALLY RELIABLE METHOD IS FOR ASSESSING  
25 CAUSATION AND WHAT IS NOT. I WOULD LIKE NOW TO APPLY

1 THESE STANDARDS TO THE DATA RELEVANT TO WHETHER AVANDIA  
2 CAUSES HEART ATTACK. SO LET'S TALK FOR A MOMENT ABOUT  
3 BIOLOGICAL PLAUSIBILITY IN A CAUSATION ANALYSIS. AND  
4 THIS IS IMPORTANT AND IT'S PARTICULARLY SUITED FOR A  
5 JUDGE'S DECISION BECAUSE THIS HAS A LOT OF APPEAL TO  
6 PEOPLE. THEY THINK OKAY, I HAVE HIGH CHOLESTEROL, OH,  
7 MY GOD, I'M AT RISK FOR HEART ATTACK. AND IT'S VERY  
8 HARD FOR JURORS TO UNDERSTAND THIS NEXT POINT AND SO  
9 IT'S EXACTLY WHAT DAUBERT AND FRYE WAS INTENDED TO DO  
10 WAS TO KEEP THINGS AWAY FROM THE JURY THAT CAN BE  
11 PREJUDICIAL AND BAD SCIENCE, IN EFFECT.

12 SO THE PLAINTIFFS PURPORT TO IDENTIFY A  
13 PLAUSIBLE BIOLOGICAL MECHANISM FOR THEIR HYPOTHESIS THAT  
14 AVANDIA CAUSES HEART ATTACK. AND WHAT THEY HAVE DONE IS  
15 EQUATE BIOLOGICAL PLAUSIBILITY TO CAUSATION. THEY  
16 PRESUME THAT BECAUSE AVANDIA INCREASES LDL, WHICH IS A  
17 LIPID, OR APO-B, WHICH IS ALSO A LIPID, OR LP-PLA2,  
18 WHICH IS AN INFLAMMATORY MARKER, THAT AVANDIA CAUSES  
19 HEART ATTACK. HERE ARE JUST A FEW EXAMPLES. DR.  
20 SWIRSKY, IT'S HARD TO READ SO I WILL READ IT. THE MAIN  
21 ISSUE OF CONCERN WITH ROSIGLITAZONE THAT STARTS THE  
22 PLAUSIBILITY OF HARM IS ITS ADVERSE EFFECT ON LIPID  
23 PROFILE. THE LIPID PROFILE, SPECIFICALLY RAISING LDL  
24 CHOLESTEROL AND APO-B NUMBERS. HE SAYS THE RAISING OF  
25 THOSE NUMBERS IS A DIRECT CAUSATIVE AGENT, CONTRIBUTING

1 AGENT, CAUSATIVE AGENT TO HEART ATTACK AND THE BROAD  
2 CATEGORY OF MYOCARDIAL ISCHEMIC EVENTS.

3 DR. SNIDERMAN SAYS, ANY INTERVENTION THAT  
4 INCREASES LDL IN PATIENTS WITH TYPE TWO DIABETES MUST BE  
5 PRESUMED TO INCREASE THE RISK OF HEART ATTACK.

6 DR. SEPTIMUS EMPHASIZED IN BOLD IN HIS  
7 EXPERT REPORT, ANY DRUG THAT INCREASES LDL, REGARDLESS  
8 OF WHAT IT DOES TO THE SIZE OF THE PARTICLES, INCREASES  
9 ISCHEMIC HEART DISEASE UNTIL PROVEN OTHERWISE.

10 HERE IS THE CAUSATION ANALYSIS WE TALKED  
11 ABOUT BEFORE. HERE IS THE LADDER. LOOK WHERE  
12 BIOLOGICAL PLAUSIBILITY IS. IT'S ONE OF THE  
13 BRADFORD-HILL CRITERIA THAT YOU CONSIDER AT THE END OF  
14 THE ANALYSIS, NOT AT THE BEGINNING. IT'S NOT A  
15 SUBSTITUTE FOR THIS ENTIRE ANALYSIS THAT WE HAVE LAID  
16 OUT SO CLEARLY. GENERAL CAUSATION, ACCEPTED CAUSATION  
17 METHODOLOGY IS A SEQUENCED PROCESS. BIOLOGICAL  
18 PLAUSIBILITY HAS ITS PLACE IN THE SEQUENCE. IT'S ONE  
19 ELEMENT OF BRADFORD-HILL TO BE CONSIDERED AS A LAST  
20 STEP. IT'S CERTAINLY NOT WHERE YOU BEGIN. AND THIS  
21 CASE SAYS IT VERY CLEARLY, SIR BRADFORD-HILL IDENTIFIED  
22 THE STARTING POINT OF HIS CRITERIA. THE STARTING POINT  
23 AS AN ASSOCIATION, NOT BIOLOGICAL PLAUSIBILITY.

24 NOW DR. AUSTIN, PLAINTIFF'S  
25 EPIDEMIOLOGIST, OBSERVED THAT EVEN -- SORRY, BIOLOGICAL

1 PLAUSIBILITY IS THE MOST UNRELIABLE OF THE BRADFORD-HILL  
 2 CRITERIA, SO IT ISN'T ONLY JUST ONE AT THE TOP AT THE  
 3 END, BUT IT'S ONE OF THE LESS RELEVANT. HE ACTUALLY  
 4 SAYS IT'S THE MOST UNRELIABLE OF THE POSITIVE CRITERIA.  
 5 NOW PLAINTIFF'S EXPERTS, HOW DO THEY USE  
 6 THIS? THEY USE BIOLOGICAL PLAUSIBILITY TO LEAPFROG OVER  
 7 THE HOLES THAT THEY HAVE IN THEIR CAUSATION ANALYSIS,  
 8 AND LET ME SHOW YOU HOW. THEY SAY START WITH AVANDIA,  
 9 AVANDIA CAUSES AN INCREASE IN THE LIPIDS, APO-B OR LDL,  
 10 WHICH IS THEIR PROPOSED MECHANISM OF ACTION. THAT LEADS  
 11 TO ATHEROSCLEROSIS BECAUSE THAT IS HOW IT WORKS, AND  
 12 THEN ATHEROSCLEROSIS CAUSES THE HEART ATTACK. CAUSATION  
 13 METHODOLOGY, HOWEVER, REQUIRES OUTCOME STUDIES AND WHAT  
 14 I PUT UP HERE IS WHAT I MEAN BY OUTCOME STUDIES. THE  
 15 DRUG, AND YOU LOOK AT THE END POINT, THE HEART ATTACK,  
 16 YOU GET RID OF THOSE MIDDLE MEN BECAUSE YOU REALLY DON'T  
 17 KNOW WHAT LDL DOES WITH REGARD TO ATHEROSCLEROSIS AND  
 18 WHAT ATHEROSCLEROSIS DOES ULTIMATELY WITH REGARD TO  
 19 HEART ATTACK IN THIS PARTICULAR CASE. SO, THERE ARE A  
 20 COUPLE OF PROBLEMS WITH THEIR THEORY. FIRST, IT'S JUST  
 21 NOT EVIDENCE BASED. IT'S NOT GOOD SCIENCE. IT'S A  
 22 GUESS. CLEARLY NOT A GENERALLY ACCEPTED CAUSATION  
 23 METHODOLOGY IN ANY TEXT OR PUBLISHED ARTICLE OR ANY  
 24 SCIENTIFIC ORGANIZATION.  
 25 IN FACT, THE FOLLY OF RELYING ON THE

1 MECHANISM OF ACTION TO PREDICT OUTCOMES HAS BEEN SHOWN  
 2 REPEATEDLY, AND HERE IS A COUPLE OF EXAMPLES.  
 3 TORCETRAPIB WAS A DRUG THAT WAS THOUGHT WOULD REDUCE  
 4 CARDIOVASCULAR EVENTS BECAUSE, WHY? IT INCREASED THE  
 5 GOOD CHOLESTEROL, IT DECREASED THE BAD CHOLESTEROL  
 6 ALMOST BY AS MUCH AS 50 PERCENT. SO EVERYBODY WAS REAL  
 7 EXCITED. THIS WAS GOING TO BE A GREAT DRUG THAT WAS  
 8 GOING TO PREVENT CARDIOVASCULAR EVENTS, AND IT WAS  
 9 EXPECTED THAT THESE POSITIVE MECHANISTIC EVENTS WOULD  
 10 LEAD TO A DECREASE IN CARDIOVASCULAR DISEASE, BUT  
 11 INSTEAD, IT WAS FOUND TO CAUSE HARM, CARDIOVASCULAR  
 12 HARM.  
 13 ANOTHER DRUG, ZETIA WAS A DRUG THAT  
 14 LOWERS THE BAD CHOLESTEROL, LDL, AND IT LOWERS APO-B  
 15 WHICH IS ALSO SOMETHING THAT IS GOOD, CARDIOVASCULARLY,  
 16 AND WAS EXPECTED TO BE CARDIO-PROTECTIVE, BUT IT WAS  
 17 NOT. IT WAS NOT FOUND TO DECREASE CARDIOVASCULAR EVENTS  
 18 OR TO REDUCE ATHEROSCLEROSIS. NOW, EVEN DR. SNIDERMAN  
 19 ADMITS ON PAGE 14 OF HIS REPORT, AND I WILL QUOTE, THE  
 20 INESCAPABLE CONCLUSION IS THAT CHANGES IN HDL  
 21 CHOLESTEROL INDUCED BY MEDICATION DO NOT AUTOMATICALLY  
 22 TRANSLATE INTO CLINICAL BENEFIT.  
 23 BUT IT'S PRETTY SHOCKING THAT DR.  
 24 SNIDERMAN IS SAYING THAT BECAUSE AS YOU SAW JUST A  
 25 MINUTE AGO, HE IS WILLING TO PRESUME, IF WE WENT BACK,

1 BUT I HAVE IT RIGHT HERE. HE IS WILLING TO PRESUME THAT  
 2 MEDICATION INDUCED INCREASES IN LDL AUTOMATICALLY  
 3 TRANSLATE INTO INCREASED HEART ATTACK. SO ONCE AGAIN,  
 4 DR. SNIDERMAN, BECAUSE WE SAW HIM DO IT WITH STATISTICAL  
 5 SIGNIFICANCE EARLIER, HE FAILS TO ADHERE TO HIS OWN  
 6 METHODOLOGIC PRINCIPLES IN ANY CONSISTENT FASHION.  
 7 DR. BRINTON ACTUALLY AGREES THAT THE MERE  
 8 FACT THAT AVANDIA RAISES LDL OR APO-B OR LP-PLA2 CAN'T  
 9 PREDICT IF IT WILL ALSO INCREASE THE RISK OF A HEART  
 10 ATTACK. HE HAS CLEARLY SAID JUST THAT. HE SAID JUST  
 11 BECAUSE SOMETHING INCREASES -- HE AGREED, JUST BECAUSE  
 12 SOMETHING INCREASES LDL DOES NOT MEAN THAT IT INCREASES  
 13 CARDIOVASCULAR RISK. DR. BRINTON THEN POINTS OUT THAT  
 14 THE FDA WON'T ACCEPT AN IMPACT ON LIPIDS IN RAISING OF  
 15 LDL OR LOWERING OF LDL AS A SURROGATE FOR LOOKING AT THE  
 16 OUTCOME, SUCH AS HEART ATTACKS, WHICH AGAIN THEY WANT  
 17 THE OUTCOME STUDIES.  
 18 NOW DR. SNIDERMAN HAS SAID, I'VE NOT SEEN  
 19 ANY DATA LINKING IN ANY PATIENT LIPID CHANGES TO  
 20 CLINICAL ADVERSE EVENTS. AND HE IS TALKING ABOUT  
 21 AVANDIA. YOU KNOW WHAT, I HAVE TO SAY I'M NOT SURE IF  
 22 HE WAS TALKING ABOUT AVANDIA THERE, SO I APOLOGIZE, I  
 23 CAN'T QUALIFY THAT. IT'S NOT JUST GOOD SCIENCE TO AVOID  
 24 EXTRAPOLATING FROM THESE SURROGATE MARKERS OR POSSIBLE  
 25 MECHANISMS TO THE OUTCOME OF HEART ATTACK, THERE IS LAW

1 ON IT. AND THE FIRST SLIDE I HAVE UP IS HOLLANDER  
 2 VERSUS SANDOZ WHERE THEY SAY EXCLUDING EXPERTS WHO COULD  
 3 ONLY LIST POSSIBLE MECHANISMS OF CAUSATION AND COULD NOT  
 4 CITE ANY STUDIES OR TESTS WOULD BE EXCLUDED. AND THEN  
 5 THE ACCUTANE LITIGATION, WHILE THE EXPERT'S BIOLOGICAL  
 6 THEORY MAY BE EXACTLY RIGHT, AT THIS POINT IT IS MERELY  
 7 PLAUSIBLE, NOT PROVEN, AND BIOLOGICAL PLAUSIBILITY IS  
 8 NOT EQUAL TO PROOF OF CAUSATION.  
 9 NOW DR. SEPTIMUS ACTUALLY TURNS THE  
 10 METHODOLOGY UPSIDE DOWN AND ON ITS HEAD. HE STATES THAT  
 11 THE LIPID DATA DEMONSTRATES THAT AVANDIA CAUSES HEART  
 12 ATTACKS BECAUSE, AND THIS IS A QUOTE, DEFENSE HAS NOT  
 13 PROVEN THAT IT DOES NOT CAUSE HEART ATTACKS. HERE IS  
 14 WHAT HE SAID. WE WILL PLAY THE VIDEO CLIP.  
 15 (VIDEO PLAYED.)  
 16 QUESTION: AND TO REACH A RELIABLE  
 17 SCIENTIFIC CONCLUSION ON WHETHER THAT MEDICATION THAT  
 18 INCREASES LDL PARTICLE NUMBER ACTUALLY CAUSES MYOCARDIAL  
 19 INFARCTION OR MYOCARDIAL ISCHEMIC EVENTS, WOULDN'T YOU  
 20 WANT TO SEE OUTCOME DATA LOOKING AT THOSE END POINTS?  
 21 ANSWER: YOU SEE, AGAIN I TURN IT AROUND  
 22 THE OTHER WAY. THIS IS NOT A CASE -- WHEN A DRUG HAS AN  
 23 EFFECT LIKE INCREASING LDL PARTICLE NUMBER, INCREASING  
 24 LDL CHOLESTEROL, THE BURDEN OF EVIDENCE IS TO PROVE IT'S  
 25 SAFE, NOT TO PROVE THAT IT DOESN'T CAUSE ISCHEMIC HEART

1 DISEASE. SO THE PRESUMPTION OF INNOCENCE IS NOT ON THE  
 2 DRUG. THE PRESUMPTION OF INNOCENCE IS ON THE LDL AND I  
 3 KNOW I'M NOT A LAWYER, I DON'T PRETEND TO USE THOSE IN  
 4 THE SAME TERMS THAT YOU GUYS DO, BUT YOU, AS A  
 5 CLINICIAN, HAVE TO ASSUME THAT IT'S HARMFUL UNTIL IT'S  
 6 PROVEN SAFE, SO I'M NOT -- I'M TURNING YOUR QUESTION  
 7 AROUND THE OTHER WAY BECAUSE I CAN'T ANSWER IT THE WAY  
 8 THAT YOU ASKED IT.

9 QUESTION: WHAT WOULD IT TAKE TO PROVE  
 10 THAT IT'S SAFE FROM YOUR PERSPECTIVE IF IT INCREASES THE  
 11 LDL PARTICLE NUMBER?

12 ANSWER: WELL DESIGNED, RANDOMIZED  
 13 CONTROLLED TRIALS SHOWING DEFINITELY THAT IT'S SAFE.

14 MS. HALPERN: TO BEGIN WITH, IT'S WORTH  
 15 NOTING THAT HE CALLS FOR RANDOMIZED CONTROLLED TRIALS,  
 16 THE GOLD STANDARD. HE IS NOT SAYING WE NEED A  
 17 META-ANALYSIS OR WE NEED AN OBSERVATIONAL STUDY. HE IS  
 18 ENDORSING THIS HIGH LEVEL STUDY. BUT IN ANY CASE, HE  
 19 CLEARLY BASES HIS OPINION ON THE ASSUMPTION THAT ANY  
 20 DRUG THAT INCREASES LDL INCREASES HEART ATTACKS AND AS  
 21 HE SAYS UNTIL PROVEN OTHERWISE, HE FLIPS IT UPSIDE DOWN.  
 22 NOW, WHILE THERE IS PENNSYLVANIA LAW ON  
 23 THIS PRECISE POINT, A DEFENDANT HAS NO BURDEN TO PROVE  
 24 THOSE CONCLUSIONS ARE WRONG. PLAINTIFFS HAVE THE BURDEN  
 25 OF PROVING CAUSATION VIA A RELIABLE SCIENTIFIC

1 METHODOLOGY.  
 2 NOW, MEDICATION INDUCED EFFECTS ON LIPIDS  
 3 APPARENTLY DON'T NECESSARILY, AS WE HAVE SEEN, TRANSLATE  
 4 INTO OUTCOME PROBLEMS. FISH OIL INCREASES THE BAD  
 5 CHOLESTEROL LDL, NO INCREASED CARDIOVASCULAR RISK.  
 6 ANTIRETROVIRUS INCREASES ADVERSE LIPID PROFILE, AND  
 7 THERE IS NO INCREASED RISK OF CARDIOVASCULAR DISEASE.  
 8 BETA BLOCKERS HAVE ADVERSE LIPID PROFILES AND THERE IS  
 9 NO INCREASED CARDIOVASCULAR RISK. AND DIURETICS HAVE  
 10 ADVERSE LIPID PROFILES AND THERE IS NO INCREASED  
 11 CARDIOVASCULAR RISK. THAT IS WHY YOU NEED OUTCOME  
 12 STUDIES, STUDIES THAT LOOK NOT JUST AT A SURROGATE FOR  
 13 HEART ATTACKS, BUT THAT LOOK AT THE HEART ATTACKS  
 14 THEMSELVES, THE OUTCOME STUDIES. IN ANY CASE, IF YOU  
 15 WANTED TO LOOK AT A SURROGATE, THE ONE TO LOOK AT WOULD  
 16 BE ATHEROSCLEROSIS, NOT LIPIDS.

17 THE PLAINTIFF'S EXPERTS CAN'T EVEN AGREE  
 18 ABOUT WHAT THE PLAUSIBLE BIOLOGICAL MECHANISM IS. DR.  
 19 SNIDERMAN SAYS AVANDIA RAISES APO-B WHICH CAUSES HEART  
 20 ATTACKS, BUT THAT EVIDENCE FOR LP-PLA2 AS A MECHANISM IS  
 21 WEAK. DR. DEPACE SAYS IT'S LP-PLA2, BUT IT' NOT LDL OR  
 22 APO-B. DR. SWIRSKY SAYS IT'S LDL AND DR. SEPTIMUS SAYS  
 23 IT'S ALL THREE, BUT HE DOES NOT KNOW OF ANY STUDY THAT  
 24 LOOKS AT INCREASING LP-PLA2 CAUSING HARM.

25 ANOTHER REASON WHY THIS BIOLOGICAL

1 PLAUSIBILITY ARGUMENT SHOULD BE CONSIDERED BY YOUR  
 2 HONORS VERY SKEPTICALLY IS THAT PLAINTIFFS WANT TO SAY  
 3 ATHEROSCLEROSIS AND THEN HEART ATTACK IS ALL ABOUT LDL  
 4 OR ALL ABOUT APO-B. WELL, IT'S JUST SIMPLY NOT THAT  
 5 EASY. IT'S VERY COMPLICATED. THERE ARE MANY BIOLOGICAL  
 6 FACTORS AND MARKERS AND CLOTTING FACTORS AND  
 7 INFLAMMATORY FACTORS THAT PLAY A PART IN THE DEVELOPMENT  
 8 OF ATHEROSCLEROSIS AND THE RUPTURING OF A PLAQUE AND  
 9 WHAT LEADS TO ULTIMATELY A HEART ATTACK.

10 AND IT'S IMPORTANT TO NOTE THAT AVANDIA  
 11 HAS EFFECTS NOT JUST ON LDL AND APO-B AND LP-PLA2, BUT A  
 12 WHOLE HOST OF -- OH NO, A WHOLE HOST -- THERE WE GO --  
 13 OF BENEFICIAL EFFECTS ON VARIOUS BIOMARKERS. SO THESE  
 14 ARE ALL BIOMARKERS RELATED TO CORONARY HEART DISEASE AND  
 15 AVANDIA HAS POSITIVE EFFECTS ON ALL OF THEM. AND THE  
 16 TOP ONE, IF YOU KNOW ANYTHING ABOUT CRP, IS ONE THAT  
 17 IT'S KIND OF COMMONLY THOUGHT ABOUT WHICH NOWADAYS WITH  
 18 REGARD TO HEART ATTACKS AND IN THE BOTTOM, HDL  
 19 CHOLESTEROL IS RAISED, BLOOD PRESSURE IS LOWERED. THAT  
 20 MEANS THAT OUTCOME STUDIES ARE EVEN MORE IMPORTANT  
 21 BECAUSE A HUMAN BEING IS A DYNAMIC PERSON WITH ALL  
 22 THINGS COMING AT ONE TIME. YOU CAN'T MAKE A  
 23 DETERMINATION BASED ON JUST ONE MARKER OR TWO MARKERS OR  
 24 THREE MARKERS. YOU HAVE TO LOOK AT THE TOTALITY OF THE  
 25 EFFECT. AND ONLY THE SUM TOTAL OF ALL OF AVANDIA'S

1 EFFECTS WILL DETERMINE WHETHER AVANDIA AFFECTS HEART  
 2 ATTACK RISKS.

3 NOW, THE PLAINTIFFS WANT TO CLAIM THAT  
 4 LDL OR APO-B CAUSES HEART ATTACK. THE ONLY WAY TO GET  
 5 THERE AS YOU SAW IS THROUGH ATHEROSCLEROSIS. THERE IS  
 6 NOT A SHRED, NOT A SHRED OF EVIDENCE THAT AVANDIA IS  
 7 ASSOCIATED WITH AN INCREASE OF ATHEROSCLEROSIS. THERE  
 8 HAVE BEEN MULTIPLE RANDOMIZED CONTROLLED TRIALS LOOKING  
 9 TO SEE WHETHER PATIENTS TAKING AVANDIA DEVELOPED MORE  
 10 ATHEROSCLEROSIS OVER TIME COMPARED TO PATIENTS WHO DON'T  
 11 TAKE AVANDIA. AND PLAINTIFF'S EXPERTS DON'T TALK ABOUT  
 12 THESE STUDIES MUCH. IF YOUR HYPOTHESIS IS THAT AVANDIA  
 13 IS CAUSING ATHEROSCLEROSIS AND HEART ATTACKS BECAUSE OF  
 14 AN INCREASE IN LDL, YOU HAVE TO LOOK AT ATHEROSCLEROSIS  
 15 TO SEE WHAT IS HAPPENING. OUTCOME DATA IS WHAT IT'S ALL  
 16 ABOUT. AND THERE HAVE BEEN MULTIPLE STUDIES AND THERE  
 17 ARE A WHOLE BATCH OF THEM LISTED HERE THAT LOOK TO  
 18 WHETHER AVANDIA CAUSES OR PROGRESSES ATHEROSCLEROSIS AND  
 19 THEY UNIFORMLY, WHOLLY CONSISTENT SAY NO, NOT ONE OF THE  
 20 STUDIES FOUND ANY INCREASE IN ATHEROSCLEROSIS ON  
 21 EXPOSURE TO AVANDIA.

22 IF LDL OR APO-B WERE CAUSING HEART  
 23 ATTACKS, IT WOULD BE DOING IT VIA ATHEROSCLEROSIS AND NO  
 24 RANDOMIZED CONTROLLED TRIAL EVEN SUGGESTS THAT AVANDIA  
 25 INCREASES ATHEROSCLEROSIS. AND THERE IS JUST ONE -- YOU

1 KNOW, THIS IS JUST ONE REASON WHY THERE IS NO PUBLISHED  
2 ARTICLE OR PROFESSIONAL ORGANIZATION OR REGULATORY BODY  
3 THAT HAS COME OUT AND SAID AVANDIA CAUSES HEART ATTACKS  
4 AND THE ATHEROSCLEROSIS DATA IS SIGNIFICANT IN WHAT THEY  
5 CONSIDER.

6 PLAINTIFF'S EXPERTS ACKNOWLEDGE THAT THEY  
7 CAN'T CITE A SINGLE STUDY FINDING A STATISTICALLY  
8 SIGNIFICANT INCREASED RISK OF ATHEROSCLEROSIS WITH  
9 AVANDIA. LET'S LISTEN TO THEM. THEY SAY IT THEMSELVES.

10 (VIDEO PLAYED.)

11 QUESTION: AND IS THERE ANY STUDY,  
12 RANDOMIZED CONTROLLED TRIAL, LOOKING AT ATHEROSCLEROSIS  
13 PROGRESSION IN WHICH THERE IS A STATISTICALLY  
14 SIGNIFICANT INCREASE IN ATHEROSCLEROSIS PROGRESSION WITH  
15 AVANDIA?

16 ANSWER: NO.

17 QUESTION: ARE YOU AWARE OF ANY STUDIES  
18 LOOKING AT THE IMPACT OF ROSIGLITAZONE OR ROSI ON  
19 ATHEROSCLEROSIS?

20 ANSWER: YES, THERE ARE SEVERAL.

21 QUESTION: WOULD YOU AGREE THAT  
22 RANDOMIZED CONTROLLED TRIALS DO NOT SHOW A PROGRESSION  
23 OF ATHEROSCLEROSIS WITH ROSI?

24 ANSWER: THE TRIALS THAT I LOOKED AT DO  
25 NOT DEMONSTRATE AN INCREASE IN ATHEROSCLEROSIS WITH ROSI

1 COMPARED TO THEIR COMPARATOR DRUGS, COMPARISON DRUGS.  
2 QUESTION: AND THEN OF ANY OF THOSE  
3 STUDIES THAT YOU ARE REFERENCING, VICTORY OR THE ONE  
4 THAT YOU CAN'T REMEMBER THE NAME OF, DID ANY OF THOSE  
5 STUDIES SHOW THAT AVANDIA CONTRIBUTED TO THE PROGRESSION  
6 OF ATHEROSCLEROSIS?

7 ANSWER: NOT THAT I CAN DIRECTLY QUOTE  
8 RIGHT NOW.

9 QUESTION: AND ASIDE FROM THOSE, ARE YOU  
10 AWARE OF ANY OTHER DATA OR TRIALS OR LITERATURE  
11 SUGGESTING THAT AVANDIA CONTRIBUTED TO THE PROGRESSION  
12 OF ATHEROSCLEROSIS?

13 ANSWER: NO, I'M NOT.

14 (VIDEO ENDED.)

15 MS. HALPERN: DRs. SNIDERMAN, SWIRSKY,  
16 SEPTIMUS ALL PROPOSE AVANDIA CAUSES HEART ATTACK THROUGH  
17 APO-B AND LDL INDUCED ATHEROSCLEROSIS, BUT THEY IGNORE  
18 THE INCONVENIENT FACT THAT THE EVIDENCE CONTRADICTS THE  
19 OPINION BECAUSE IT'S AN UNTESTED HYPOTHESIS BASED ON  
20 PURE SPECULATION AND THE ATHEROSCLEROSIS STUDIES FLY  
21 TOTALLY IN THE FACE OF THAT THEORY. A PLAUSIBLE  
22 MECHANISM IS NO SUBSTITUTE FOR RANDOMIZED CONTROLLED  
23 OUTCOME STUDIES. THERE IS NO DATA WHATSOEVER THAT  
24 AVANDIA HAS ANY DELETERIOUS EFFECT ON ATHEROSCLEROSIS.  
25 AND THESE STUDIES ARE FUNDAMENTALLY INCONSISTENT WITH

1 PLAINTIFF'S THEORY THAT AVANDIA CAUSES HEART ATTACK VIA  
2 THE MECHANISM OF LIPIDS. IN FACT, AS I SAID, THERE IS  
3 AFFIRMATIVE DATA TO THE CONTRARY.

4 WHAT I WOULD LIKE TO TALK ABOUT ARE THE  
5 RANDOMIZED CONTROLLED TRIALS. WE HAVE JUST SEEN  
6 BIOLOGICAL PLAUSIBILITY IS NOT THE STANDARD FOR  
7 CAUSATION. AND ALTHOUGH IT MIGHT BE JURY FRIENDLY TO  
8 SAY THAT BECAUSE A HIGHER LDL HAS A HIGHER HEART ATTACK  
9 RISK, AN INCREASE IN LDL WITH AVANDIA MEANS AVANDIA CAN  
10 CAUSE HEART ATTACKS, IT FLIES IN THE FACE OF THE  
11 EXISTING KNOWLEDGE AND IS NOT SANCTIONED BY ACCEPTED  
12 SCIENTIFIC CAUSATION METHODOLOGY. SO THIS IS THE EXACT  
13 TYPE OF INQUIRY DAUBERT ENCOURAGES TO PREVENT  
14 PREJUDICIAL AND UNRELIABLE SCIENTIFIC STATEMENTS FROM  
15 GOING TO THE JURY.

16 NOW WHAT IS THE ACCEPTED METHODOLOGY?  
17 CONTROLLED STUDIES. AND THE GOLD STANDARD OF CONTROLLED  
18 STUDIES, RANDOMIZED CONTROLLED STUDIES. SO LET'S TURN  
19 TO THE GENERALLY ACCEPTED METHODOLOGY FOR MAKING A  
20 CAUSAL INFERENCE. THERE ARE MANY DIFFERENT TYPES OF  
21 STUDIES THAT CAN GENERATE THAT ASSOCIATION THAT STARTS  
22 OFF THE WHOLE ANALYSIS. AND THE MANUAL ON SCIENTIFIC  
23 EVIDENCE SAYS VERY CLEARLY THAT THE GOLD STANDARD FOR  
24 INFERRING CAUSATION ARE RANDOMIZED CONTROLLED TRIALS.  
25 AND PLAINTIFF'S EXPERTS AGREE THAT RANDOMIZED CONTROLLED

1 TRIALS ARE THE MOST RELIABLE METHOD TO ASSESS WHETHER  
2 AVANDIA IS ASSOCIATED WITH HEART ATTACK.

3 DR. JEWELL SAYS, EVIDENCE FROM RANDOMIZED  
4 PLACEBO CONTROLLED TRIALS PROVIDES THE MOST CONVINCING  
5 EVIDENCE TO ASSESS THE INCREASED CARDIOVASCULAR RISKS  
6 ASSOCIATED WITH EXPOSURE TO AVANDIA.

7 DR. SNIDERMAN, I AGREE THAT AS A GENERAL  
8 PROPOSITION, RANDOMIZED CONTROLLED TRIALS ARE MORE  
9 POWERFUL TOOLS OR PUT DIFFERENTLY, LESS SUSCEPTIBLE TO  
10 ERROR THAN META-ANALYSES WHICH IN TURN ARE SUPERIOR TO  
11 OBSERVATIONAL STUDIES.

12 DR. DEPACE, THERE IS A HIERARCHY OF  
13 SCIENTIFIC PROOF AND AT THE TOP, THE HIERARCHY WOULD BE  
14 DOUBLE BLINDED RANDOMIZED CONTROL STUDIES.

15 THEY AGREE, ALL OF THEM, THAT RANDOMIZED  
16 CONTROLLED TRIALS ARE AT THE TOP AND FOR GOOD REASON,  
17 BECAUSE OTHER KINDS OF DATA, LIKE META-ANALYSES AND  
18 OBSERVATIONAL STUDIES, ARE MORE SUBJECT TO THE THINGS WE  
19 SAW EARLIER, CHANCE, BIAS AND CONFOUNDING. LISTEN TO  
20 WHAT DR. BRINTON, ANOTHER ONE OF PLAINTIFF'S EXPERTS,  
21 SAID TO HIS MEDICAL COLLEAGUES AFTER THE RELEASE OF THE  
22 INTERIM RECORD STUDIES, WHICH IS THE BIG RANDOMIZED  
23 CONTROLLED TRIAL IN AVANDIA.

24 (VIDEO PLAYED.)

25 ANSWER: THERE ARE MANY, MANY STUDIES AND

1 MANY TYPES OF STUDIES AND LET ME JUST PUT IT BRIEFLY  
 2 THAT I THINK THERE'S A HIERARCHY OF THE VALIDITY OR THE  
 3 VALUE OF THE DATA AND I WOULD PUT AT THE VERY TOP THE  
 4 RANDOMIZED CLINICAL TRIALS. AND, GRANTED THERE CAN BE  
 5 ISSUES WITH INDIVIDUAL TRIALS, THERE ARE SOME ISSUES AS  
 6 YOU MENTIONED WITH THE PROACTIVE TRIAL, THERE ARE SOME  
 7 ISSUES WITH THE RECORD TRIAL, I'M SURE YOU DISCUSSED  
 8 THAT ALREADY. THOSE I THINK ARE THE TWO BEST PIECES OF  
 9 EVIDENCE THAT WE HAVE WITH REGARD TO CORONARY  
 10 ATHEROSCLEROTIC EVENTS WITH PIOGLITAZONE AND  
 11 ROSIGLITAZONE AND THEY ARE VERY DIFFERENT STUDIES, VERY  
 12 DIFFERENT POPULATIONS, VERY DIFFERENT IN MANY WAYS, BUT  
 13 I THINK THOSE TWO ARE THE BEST PIECES OF DATA THAT WE  
 14 HAVE.

15 (VIDEO ENDED.)

16 MS. HALPERN: NOW, JUST REMEMBER THIS IS  
 17 PLAINTIFF'S EXPERT DR. BRINTON AFTER THE RELEASE OF THE  
 18 INTERIM RECORD STUDY. THAT MEANS THE NISSEN STUDY WAS  
 19 ALREADY OUT THERE AND PUBLISHED AS WERE MANY OTHER  
 20 STUDIES YOU WILL HEAR ABOUT TODAY. IT'S NOT JUST  
 21 RELIABLE SCIENCE, THERE IS LAW. DOUBLE BLIND RANDOMIZED  
 22 CONTROLLED TRIALS ARE THE GOLD STANDARD OF SCIENTIFIC  
 23 EVIDENCE.

24 NOW, THERE ARE HUNDREDS OF RANDOMIZED  
 25 CONTROLLED TRIALS CONDUCTED WITH AVANDIA, HUNDREDS OF

1 THEM. MANY OF THE SMALLER ONES DID NOT DEFINE HEART  
 2 ATTACK AS AN END POINT. THEY DID NOT PREDEFINE IT  
 3 BECAUSE THEY WERE DONE FOR OTHER PURPOSES. THESE SMALL  
 4 RANDOMIZED CONTROLLED TRIALS THAT WERE NOT PREDEFINED TO  
 5 LOOK AT HEART ATTACK ARE LARGELY WHAT COMPRISES THE  
 6 META-ANALYSES YOU ARE GOING TO HEAR ABOUT LATER BY  
 7 NISSEN AND THE ICT AND THE FDA. THERE ARE, HOWEVER, A  
 8 FEW RANDOMIZED CONTROLLED TRIALS THAT DID PREDEFINE  
 9 HEART ATTACK AS AN ENDPOINT AND ADJUDICATE HEART  
 10 ATTACKS. AND THESE ARE WHAT WE CALL THE LARGE  
 11 RANDOMIZED CONTROLLED TRIAL THAT FIND NO STATISTICALLY  
 12 SIGNIFICANT RELATIONSHIP FOR AVANDIA AND HEART ATTACK.  
 13 BUT LET ME SAY, NOT ONE RANDOMIZED CONTROLLED TRIAL, NOT  
 14 LARGE, NOT SMALL, NOT WITH A PREDEFINED OUTCOME OR  
 15 WITHOUT A PREDEFINED OUTCOME, NOT ONE FOUND A  
 16 STATISTICALLY SIGNIFICANT INCREASED RISK FOR HEART  
 17 ATTACK WHEN THEY LOOKED BACK.

18 SO IF YOU ARE WONDERING WHY NO  
 19 PROFESSIONAL OR REGULATORY ORGANIZATION OR EVEN PEER  
 20 REVIEWED PUBLICATION HAS DECLARED THAT AVANDIA CAUSES  
 21 HEART ATTACK, THIS IS THE REASON WHY. THERE HAVE BEEN  
 22 MULTIPLE LARGE RANDOMIZED CONTROLLED TRIALS ON AVANDIA  
 23 AND NONE OF THEM FOUND A STATISTICALLY SIGNIFICANT  
 24 INCREASED RISK FOR HEART ATTACK. THERE HAVE BEEN  
 25 MULTIPLE RANDOMIZED CONTROLLED TRIALS ON AVANDIA AND

1 ATHEROSCLEROSIS AND NONE OF THEM FOUND AN INCREASED RISK  
 2 FOR ATHEROSCLEROSIS.

3 SO WHEN YOU LOOK AT THAT HIERARCHY AGAIN  
 4 WITH THE RANDOMIZED CONTROLLED TRIALS AT TOP, THERE IS  
 5 NO STATISTICALLY SIGNIFICANT FINDING THAT PLAINTIFFS CAN  
 6 POINT TO IN SUPPORT OF THEIR OPINIONS.

7 NOW, PLAINTIFFS' EXPERTS CONCEDE THAT NO  
 8 RANDOMIZED CONTROLLED TRIAL HAS SHOWN A STATISTICALLY  
 9 SIGNIFICANT INCREASED RISK OF HEART ATTACK IN AVANDIA  
 10 PATIENTS. THEY HAVE TO BECAUSE THERE AREN'T ANY. LET'S  
 11 PLAY THE CLIP.

12 OH, I'M SORRY, IT'S A SLIDE. SO THIS IS  
 13 WHAT DR. SNIDERMAN SAID.

14 QUESTION: OKAY, DOCTOR -- QUESTION,  
 15 OKAY, DOCTOR, AS I READ YOUR REPORT IN THIS CASE, YOU  
 16 HAVEN'T IDENTIFIED A SINGLE PROSPECTIVE STUDY OF AVANDIA  
 17 FINDING A STATISTICALLY SIGNIFICANT INCREASED RISK OF  
 18 HEART ATTACK WITH AVANDIA THERAPY, HAVE YOU?

19 THE WITNESS. NO.

20 QUESTION: OR EVEN A STATISTICALLY  
 21 SIGNIFICANT INCREASED RISK OF ISCHEMIC HEART DISEASE,  
 22 CORRECT?

23 THE WITNESS: AS A SINGLE STUDY, NO.

24 DR. BRINTON.

25 QUESTION: IS THERE ANY RANDOMIZED

1 CONTROLLED TRIAL IN WHICH PATIENTS ARE RANDOMIZED TO  
 2 RECEIVE AVANDIA WHERE THERE'S A STATISTICALLY  
 3 SIGNIFICANT INCREASE IN HEART ATTACK IN PATIENTS TAKING  
 4 AVANDIA?

5 ANSWER: NO.

6 DR. AUSTIN.

7 QUESTION: DO YOU KNOW OF ANY RANDOMIZED  
 8 CONTROLLED TRIAL THAT FOUND A STATISTICALLY SIGNIFICANT  
 9 INCREASED RISK FOR AVANDIA AND HEART ATTACK?

10 THE WITNESS: BY ITSELF?

11 QUESTION: YEAH.

12 ANSWER: NO, NOT THAT I CAN THINK OF.

13 THESE TRIALS INCLUDE THOUSANDS OF  
 14 PATIENTS AND TENS OF THOUSANDS OF PATIENTS'  
 15 EXPOSURE-YEARS TO AVANDIA. THEY INCLUDE LONG TERM  
 16 TRIALS AND SHORT TERM TRIALS. THEY INCLUDE TRIALS  
 17 SPECIFICALLY DESIGNED TO ASSESS CARDIOVASCULAR SAFETY,  
 18 TRIALS WITH BLINDED ADJUDICATION OF CARDIOVASCULAR  
 19 OUTCOMES AND TRIALS DESIGNED TO ASSESS THE EFFECT OF  
 20 AVANDIA ON ATHEROSCLEROSIS. THEY INCLUDE TRIALS IN  
 21 PREDIABETICS, EARLY DIABETICS AND ADVANCED DIABETICS.  
 22 PATIENTS WITH METABOLIC SYNDROME, PATIENTS WITHOUT  
 23 CORONARY ARTERY DISEASE AND PATIENTS WITH CORONARY  
 24 ARTERY DISEASE. THEY INCLUDE HIGH RISK PATIENTS AND LOW  
 25 RISK PATIENTS, ELDERLY PATIENTS AND YOUNG PATIENTS.

1 AVANDIA IS ONE OF THE MOST, IF NOT THE MOST, EXTENSIVELY  
 2 AND RIGOROUSLY STUDIED ANTIDIABETIC DRUGS EVER  
 3 DEVELOPED.  
 4 SO LET'S LOOK AT THE LARGE RANDOMIZED  
 5 CONTROLLED TRIALS. THE RECORD TRIAL IS THE ONLY LARGE  
 6 RANDOMIZED CONTROLLED TRIAL SPECIFICALLY DESIGNED TO  
 7 EVALUATE CARDIOVASCULAR SAFETY OF AVANDIA. IT WAS  
 8 RANDOMIZED. IT WAS LARGE. IT WAS LONG TERM. IT  
 9 TRACKED PATIENTS FOR 5 TO 7 YEARS OF FOLLOW UP AND IT  
 10 HAD PREDEFINED END POINTS. WHAT THAT MEANS IS THE  
 11 RESEARCHERS SAID BEFORE THEY DID THE STUDY, WE WANT TO  
 12 LOOK AT HEART ATTACKS. SO THEY HAD PEOPLE IN PLACE WHO  
 13 COULD REALLY ADJUDICATE AND EVALUATE WHETHER A HEART  
 14 ATTACK OCCURRED OR NOT. NOT A SINGLE OBSERVATIONAL  
 15 STUDY DOES THAT. NONE OF THEM PREDEFINE THE END POINT.  
 16 THEY ARE ALL RETROSPECTIVE LOOK BACK IN DATABASES. SO  
 17 RECORD WAS SUPERVISED BY INDEPENDENT RESEARCHERS AND WAS  
 18 REQUIRED BY EUROPEAN REGULATORS. IT IS TO THIS DAY THE  
 19 ONLY LARGE SCALE RANDOMIZED TRIAL DESIGNED A PRIORITY,  
 20 AND THAT MEANS BEFORE THE DATA WAS COLLECTED, TO EXAMINE  
 21 AVANDIA AND HEART ATTACKS. IN THE WORDS OF PLAINTIFF'S  
 22 OWN EXPERT, DR. BRINTON, IF WE CAN PLAY THAT CLIP.  
 23 (VIDEO PLAYED.)  
 24 ANSWER: I THINK THAT IT COULD BE SAID  
 25 THAT THE RECORD TRIAL STANDS HEAD AND SHOULDERS ABOVE

1 OTHER STUDIES, OTHER SINGLE RANDOMIZED CLINICAL TRIALS  
 2 OF AVANDIA IN THE FACT THAT IT WAS A RANDOMIZED TRIAL IN  
 3 WHICH THE USE OF ROSIGLITAZONE WAS RANDOMIZED AND IT WAS  
 4 A STUDY IN WHICH THE PRIMARY END POINT WAS  
 5 CARDIOVASCULAR IN NATURE AND IT WAS PRESPECIFIED AND  
 6 EVENTS WERE ADJUDICATED.  
 7 (VIDEO ENDED.)  
 8 MS. HALPERN: NOW EVEN TODAY, AS I SAID,  
 9 RECORD IS THE ONLY TRIAL THAT MEETS THE RIGOROUS  
 10 CRITERIA AS LAID OUT BY DR. BRINTON. THE RECORD TRIAL  
 11 SHOWED NO INCREASED RISK OF CARDIOVASCULAR DEATH OR  
 12 HOSPITALIZATION AND NO STATISTICALLY SIGNIFICANT  
 13 INCREASE IN THE RISK OF HEART ATTACK. IT WAS LARGE,  
 14 LONG TERM, RANDOMIZED, CONTROLLED, PREDEFINED, HEART  
 15 ATTACK AS AN OUTCOME THAT WAS ADJUDICATED AND IT WAS  
 16 BLINDED AND THERE WASN'T A SINGLE STATISTICALLY  
 17 SIGNIFICANT FINDING FOR HEART ATTACK OR CARDIOVASCULAR  
 18 DEATH.  
 19 NOW PLAINTIFFS' EXPERTS, AND I'M SURE YOU  
 20 HAVE READ IT IN THE BRIEFS, ATTACK RECORD ON SEVERAL  
 21 DIFFERENT GROUNDS. FIRST, THEY ALLEGE THAT THE STUDY  
 22 HAD SUCH A SERIOUS DESIGN PROBLEM THAT THE DATA SHOULD  
 23 BE DISCOUNTED. THAT IS A PRETTY INCREDIBLE ALLEGATION.  
 24 IT'S UNDISPUTED THAT THE DESIGN OF RECORD WAS CLEARLY  
 25 STATED, WELL PUBLISHED, KNOWN TO THE FDA, THE EUROPEAN

1 REGULATORS, DR. BRINTON, DR. NISSEN, THE FDA, LONG  
 2 BEFORE ANYBODY STARTED CRITICIZING THE DESIGN IN THE  
 3 GUISE OF THE PLAINTIFF'S COUNSEL AND EXPERTS.  
 4 IN FACT, WHEN DR. BRINTON SAID IT WAS THE  
 5 BEST PIECE OF DATA THAT WAS AVAILABLE, HE KNEW THE  
 6 DESIGN OF THE STUDY AND THAT THE STUDY HAD BEEN  
 7 UNBLINDED AND KNEW THE INTERIM DATA RESULTS THAT  
 8 RESULTED FROM THE UNBLINDING. EVERYONE KNEW WHAT THE  
 9 DESIGN WAS AT THE TIME OF THE 2007 FDA HEARING AND  
 10 EVERYONE SAID THE SAME THING, WE HAVE TO WAIT FOR THE  
 11 RECORD RESULTS. THAT IS THE BEST STUDY THAT IS GOING TO  
 12 COME OUT THAT WILL GIVE SOME LIGHT ON WHAT IS HAPPENING  
 13 HERE BECAUSE WE REALLY DON'T KNOW. NISSEN'S ANALYSIS,  
 14 YOU KNOW, RAISED A QUESTION AND HOPEFULLY RECORD WILL  
 15 ANSWER IT.  
 16 IT APPEARED THAT WAY IN THE PUBLISHED  
 17 LITERATURE AS WELL. HERE IS AN ARTICLE WRITTEN WHERE  
 18 THEY SAY -- BY DR. SHUSTER. FORTUNATELY WE DO NOT HAVE  
 19 TO RELY ON META-ANALYSIS ON THIS ISSUE FOR LONG. TWO  
 20 LONG TERM OUTCOME STUDIES CURRENTLY UNDERWAY SHOULD HELP  
 21 IN CLARIFYING THIS IMPORTANT ISSUE. WHILE META-ANALYSIS  
 22 CAN BE AN EXCELLENT WAY TO PUT STUDIES TOGETHER CAUTION  
 23 ABOUT ITS INTERPRETATION IS CRITICAL. ALTHOUGH IT MAY  
 24 PROVIDE SUPPORTING EVIDENCE, IT SHOULD NOT BE USED IN  
 25 ISOLATION. THIS IS WHAT DR. NISSEN WROTE HIMSELF, A

1 META-ANALYSIS IS ALWAYS CONSIDERED LESS CONVINCING THAN  
 2 A LARGE PROSPECTIVE TRIAL DESIGNED TO ASSESS THE OUTCOME  
 3 OF INTEREST. AND THEN HE MENTIONS THE RECORD TRIAL.  
 4 HOW DO WE KNOW THEY KNEW THE DESIGN? IT  
 5 WAS PUBLISHED IN THE PEER REVIEW LITERATURE LONG AGO AND  
 6 CLEARLY FDA HAD ACCESS TO IT, THE REGULATORS DID, AND  
 7 ANYBODY WHO BOTHERED TO GET ON THE INTERNET AND LOOK  
 8 THROUGH PUBMED TO FIND THE ARTICLE.  
 9 SO PLAINTIFFS ALSO CRITICIZE RECORD  
 10 CLAIMING THE CONDUCT OR EXECUTION OF THE STUDY WAS  
 11 SUBPAR AND HERE IT'S IMPORTANT TO SET THE RECORD  
 12 STRAIGHT AS WELL. PLAINTIFFS SAY THAT THE WORST AND  
 13 MOST DRAMATIC ERROR WAS COMMITTED THROUGH THE UNBLINDING  
 14 OF THE RECORD DATA, BUT AS YOU KNOW, DR. BRINTON HIMSELF  
 15 SAID IT WAS THE BEST EVIDENCE WE HAD LONG AFTER THE  
 16 UNBLINDING OCCURRED. PLAINTIFFS WOULD HAVE YOU THINK  
 17 THAT THE RECORD STUDY HAS NO VALUE AND SHOULD BE  
 18 DISCOUNTED AS EACH OF PLAINTIFF'S EXPERTS HAVE DONE.  
 19 THEY DO THAT IN ORDER TO SURVIVE THIS DAUBERT CHALLENGE.  
 20 THEY HAVE TO DO THAT. THEY KNOW FULL WELL RANDOMIZED  
 21 CONTROLLED TRIALS TRUMP ALL OTHER TRIALS IN THEIR  
 22 CONTRIBUTION TO A CAUSATION ANALYSIS.  
 23 NOW THERE ARE MULTIPLE INSTANCES WHERE  
 24 POSITIVE FINDING IN AN OBSERVATIONAL STUDY OR  
 25 META-ANALYSIS HAS BEEN DISPROVEN BY RANDOMIZED

1 CONTROLLED TRIALS. HERE IS JUST ONE EXAMPLE, BUT THERE  
 2 ARE MANY MORE. THIS ONE INVOLVED CALCIUM CHANNEL  
 3 BLOCKERS, PROBABLY A THIRD OF THE PEOPLE IN THE ROOM ARE  
 4 ON CALCIUM CHANNEL BLOCKERS, VERY POPULAR DRUG, DOES  
 5 VERY GOOD THINGS. WELL, ABOUT A NUMBER OF YEARS AGO,  
 6 BASIC RESEARCH SAID THAT THE MECHANISM COULD POTENTIALLY  
 7 BE HARMFUL TO PEOPLE AND CAUSE HEART ATTACKS.  
 8 OBSERVATIONAL STUDIES CAME OUT AND SAID, THE MECHANISM  
 9 OF -- THE OBSERVATIONAL STUDIES SAID THERE WAS AN  
 10 ASSOCIATION BETWEEN CALCIUM CHANNEL BLOCKERS AND HEART  
 11 ATTACKS. META-ANALYSES SHOWED THAT THERE WAS POTENTIAL  
 12 HARM FOR CALCIUM CHANNEL BLOCKERS AND HEART ATTACK. AND  
 13 THEN FINALLY, A LARGE SCALE RANDOMIZED TRIAL CAME OUT  
 14 AND SAID, NO, THERE ARE NO HARMFUL EFFECTS ON  
 15 CARDIOVASCULAR DISEASE, INCLUDING HEART ATTACK. AND AS  
 16 YOU KNOW, CALCIUM CHANNEL BLOCKERS ARE WELL PRESCRIBED  
 17 EVEN TODAY.

18 DR. NISSEN ACTUALLY COMMENTED ON THE  
 19 CALCIUM CHANNEL BLOCKER ANALYSIS AND WHAT HE SAID IS,  
 20 THIS META-ANALYSIS WAS INAPPROPRIATE BECAUSE IT MIXED  
 21 AND MATCHED STUDIES THAT SHOULD NOT HAVE BEEN COMBINED.  
 22 IN FACT, DR. UNGER AT THE FDA, THE SENIOR FDA PHYSICIAN  
 23 TO ADDRESS THIS STUDY, SAID IT BEST. HE SAID, THE  
 24 RESULTS OF RECORD DO NOT SUBSTANTIATE THE FINDINGS FROM  
 25 THE NISSEN WOLSKI META-ANALYSIS OF HEART ATTACK AND

1 CARDIOVASCULAR DEATH.  
 2 NOW, THE RECORD TRIAL, I'M SURE YOU HAVE  
 3 HEARD, WAS DISCUSSED IN DETAIL AT THE FDA ADVISORY  
 4 COMMITTEE MEETINGS. ONE REVIEWER IN AN FDA'S DIVISION  
 5 OF CARDIOVASCULAR AND RENAL PRODUCTS, A FELLOW NAMED DR.  
 6 MARCINIAK, CRITICIZED THE ASCERTAINMENT AND ADJUDICATION  
 7 OF CARDIOVASCULAR END POINTS IN THE RECORD TRIAL AND HE  
 8 CONCLUDED THAT THE RESULTS WERE BIASED IN FAVOR OF ROSI,  
 9 AND HE PRESENTED THIS AT THE 2010 ADCOM. DR.  
 10 MARCINIAK'S CONCLUSIONS WERE BASED, HOWEVER, ON HIS OWN  
 11 UNBLINDED POST HOC ASSESSMENT OF A SMALL SUBSET OF THE  
 12 RECORD DATA. THIS WAS UNBLINDED, AND A PARTIAL REVIEW  
 13 OF THE DATA DONE BY ONE PERSON, DR. MARCINIAK HIMSELF.  
 14 THE DEPUTY DIRECTOR OF THE FDA'S OFFICE OF DRUG  
 15 EVALUATION SAID, AND ALSO DR. MARCINIAK'S BOSS, DR.  
 16 UNGER, HE SAID WE DON'T AGREE WITH THIS APPROACH IN THE  
 17 OFFICE OF NEW DRUGS. DR. UNGER NOTED CORRECTLY THAT ANY  
 18 READJUDICATION OF EVENTS IN RECORD SHOULD HAVE BEEN  
 19 CONDUCTED, IF IT WAS GOING TO BE CONDUCTED, ON ALL THE  
 20 DATA IN A BLINDED FASHION BY A COMMITTEE OF QUALIFIED  
 21 PEOPLE TO DO THAT.

22 NONETHELESS, DESPITE HIS ATTEMPTS TO  
 23 REINTERPRET THE FINDINGS FROM RECORD, DR. MARCINIAK DID  
 24 NOT FIND A STATISTICALLY SIGNIFICANT INCREASED RISK FOR  
 25 AVANDIA AND HEART ATTACKS. DR. UNGER NOTED THAT RECORD

1 IS ROBUST AND THERE IS NO EVIDENCE OF HARM HERE AND THIS  
 2 FACT SEEMS INCONTROVERTIBLE. AS NOTED AT THE ADVISORY  
 3 COMMITTEE HEARINGS, RECORD HAS UNDERGONE EXTRAORDINARY  
 4 SCRUTINY. AS WITH ANY TRIAL RECEIVING THAT KIND OF  
 5 SCRUTINY, SOME VIOLATIONS IN ADHERENCE TO STUDY PROTOCOL  
 6 WOULD BE EXPECTED TO OCCUR, BUT ACCORDING TO THE  
 7 DIVISION OF SCIENTIFIC INVESTIGATION AT THE FDA WHO  
 8 LOOKED AT THIS, THEY FOUND NO EVIDENCE OF SYSTEMIC  
 9 PROBLEMS WITH THE RECORD TRIAL.

10 NOW, ONE OF THE COMMON ATTACKS LEVIED BY  
 11 PLAINTIFFS AGAINST THE AVANDIA RANDOMIZED CONTROLLED  
 12 TRIALS IS THAT THEY WERE NOT PLACEBO CONTROLLED. SO  
 13 WHAT DOES THAT MEAN? THAT MEANS YOU DO A STUDY WHERE  
 14 HALF THE PEOPLE GET THE DRUG AND THE OTHER HALF GET THE  
 15 SUGAR PILL AND YOU WANT TO SEE WHAT THE DIFFERENCE IS.  
 16 A PERFECT WAY TO DO A STUDY BECAUSE A SUGAR PILL IS  
 17 INERT. IT HAS NO EFFECT AND YOU CAN REALLY LOOK AT IT.

18 HONORABLE CYNTHIA M. RUFÉ: EXCEPT IN A  
 19 DIABETIC.

20 MS. HALPERN: ABSOLUTELY. THAT'S EXACTLY  
 21 RIGHT. SUGAR PILL? YOU COULD NOT DO IT. ABSOLUTELY  
 22 RIGHT.

23 HONORABLE SANDRA MAZER MOSS: A  
 24 SACCHARINE PILL.

25 MS. HALPERN: A SACCHARINE PILL. I

1 MISSED THE JOKE. SORRY.

2 BUT WHAT I WAS GOING TO SAY IS THAT YOU  
 3 CAN'T DO IT IN A DIABETIC POPULATION BECAUSE THEY HAVE  
 4 TO BE TREATED. YOU CAN'T. IT WOULD BE MALPRACTICE TO  
 5 PUT A DIABETIC ON NOTHING WHEN THEY NEEDED TREATMENT.  
 6 SO THAT MAKES THESE STUDIES PARTICULARLY HARD NOT ONLY  
 7 TO DO, BUT TO INTERPRET BECAUSE THE OTHER DRUG ALSO HAS  
 8 AN EFFECT. THE DRUG YOU ARE COMPARING IT TO, WHATEVER  
 9 IT IS, METFORMIN, SULFONYLUREA, ACTOS. SO IF THAT DRUG  
 10 INCREASES THE RISK, MAYBE AVANDIA INCREASES -- DECREASES  
 11 THE RISK OR MAYBE IT INCREASES IT MORE, BUT ALL YOU KNOW  
 12 IS WHAT IT DOES IN COMPARATOR TO THE COMPARATIVE DRUG.  
 13 SO LET'S SAY THE OTHER DRUG REDUCES THE RISK AND AVANDIA  
 14 REDUCES IT, BUT NOT AS MUCH. IT COMES UP WITH THE  
 15 STATISTICALLY SIGNIFICANT INCREASED RISK. IT'S NOT  
 16 CAUSING ANYTHING. IT'S JUST NOT AS PROTECTIVE. SO WHAT  
 17 YOU COMPARE IT TO IS REALLY IMPORTANT. AND CLEARLY A  
 18 PLACEBO CONTROL WOULD BE THE BEST THING IF YOU COULD DO  
 19 IT, RIGHT?

20 AND DR. JEWELL, I WILL JUST JUMP BY, HE  
 21 ENDORSES THIS PROVISION OF PLACEBO CONTROL AND HE SAID  
 22 THAT THE RANDOMIZED CONTROLLED TRIALS SHOULD BE DONE IF  
 23 THEY COULD WITH THE SUITABLE PLACEBO, AND HERE IS HIS  
 24 STATEMENT.

25 DR. BRINTON ENDORSES THE STUDY OF THE

1 DESIGN OF THE DREAM TRIAL. LET ME TELL YOU ABOUT DREAM.  
 2 DREAM ALLOWED A CLOSER COMPARISON TO PLACEBO BECAUSE  
 3 THEY PERFORMED THE STUDY IN PREDIABETICS, PEOPLE WHO  
 4 WERE BEGINNING TO HAVE DIABETIC SYMPTOMS, BUT THEIR  
 5 GLUCOSE WAS NOT HIGH ENOUGH TO DEFINE THEM. SO YOU  
 6 COULD STILL CONTROL THEM WITH EXERCISE AND DIET AND  
 7 OTHER THINGS. SO EVERYBODY GETS THE SAME EXERCISE AND  
 8 DIET, BUT ONE SIDE GOT THE AVANDIA.  
 9 AND SO THERE WAS A SMALL ARM IN DREAM  
 10 THAT REALLY WAS A TRUE PLACEBO CONTROL. SO IT'S A RARE  
 11 THING. AND EVERYBODY WOULD AGREE THAT THAT IS THE BEST  
 12 WAY TO LOOK AT IT BECAUSE YOU ARE NOT BEING AFFECTED  
 13 WITH THE OTHER SIDE. SO FIRST LET'S SEE WHAT DR.  
 14 BRINTON SAYS.  
 15 (VIDEO PLAYED.)  
 16 QUESTION: SO ARE YOU SAYING THAT IDEALLY  
 17 TO ANSWER THE QUESTION ABOUT WHETHER AVANDIA CAUSES  
 18 HEART ATTACK, THE BEST STUDY TO ANSWER THAT QUESTION IS  
 19 AN AVANDIA VERSUS PLACEBO STUDY, CORRECT?  
 20 ANSWER: YES.  
 21 QUESTION: AND A RANDOMIZED CONTROLLED  
 22 TRIAL IS PREFERRED?  
 23 ANSWER: YES.  
 24 QUESTION: AND A STUDY IN WHICH  
 25 CARDIOVASCULAR OUTCOMES INCLUDING MI ARE PRESPECIFIED IS

1 BETTER?  
 2 ANSWER: YES.  
 3 QUESTION: AND A STUDY IN WHICH  
 4 PRESPECIFIED CARDIOVASCULAR OUTCOME INCLUDING MI ARE  
 5 ADJUDICATED IS BETTER, CORRECT?  
 6 ANSWER: YES.  
 7 QUESTION: ARE YOU AWARE THAT THERE IS AN  
 8 ANALYSIS OF THE DREAM DATA, THE PLACEBO CONTROLLED THE  
 9 DATA IN DREAM, LOOKING AT AVANDIA AND MI?  
 10 ANSWER: YES.  
 11 QUESTION: AND DO YOU KNOW WHAT THE  
 12 FINDINGS ARE?  
 13 ANSWER: THERE WAS A NONSIGNIFICANT  
 14 INCREASE.  
 15 (VIDEO ENDED.)  
 16 MS. HALPERN: OKAY, SO I'M GOING TO SHOW  
 17 YOU THAT DR. BRINTON WAS WRONG THERE, THERE WASN'T A  
 18 NONSIGNIFICANT INCREASE, THERE WAS A NONSIGNIFICANT  
 19 DECREASE, BUT LET'S LOOK AT THE DREAM STUDY FOR A  
 20 MOMENT.  
 21 DREAM WAS ANOTHER DOUBLE BLIND PLACEBO  
 22 CONTROLLED TRIAL DESIGNED TO EVALUATE WHETHER AVANDIA  
 23 REDUCED THE DEVELOPMENT OF TYPE TWO DIABETES IN PATIENTS  
 24 AT RISK FOR DIABETES. SO IT WAS LARGE, IT WAS LONG  
 25 TERM, IT WAS RANDOMIZED, IT WAS CONTROLLED. IT HAD A

1 PREDEFINED END POINT OF HEART ATTACK, AN OUTCOME STUDY,  
 2 IT WAS ADJUDICATED AND IT WAS BLINDED. AND BOTH THE  
 3 RESULTS FOR HEART ATTACK AND CARDIOVASCULAR DEATH SHOWED  
 4 NO STATISTICALLY SIGNIFICANT INCREASE. NOW, THIS IS THE  
 5 INTERESTING PART. NOT ALL OF THE CONTROLS WERE ON  
 6 ANOTHER DRUG. SOME OF THE DRUGS, SOME OF THE PEOPLE  
 7 WERE REALLY WHAT I WILL CALL TRUE PLACEBO. BECAUSE THE  
 8 FDA USES THIS TERM OF PLACEBO CONTROLLED AND OTHER  
 9 PEOPLE USE PLACEBO CONTROLLED IN THIS SITUATION. IF  
 10 BOTH SIDES WERE TAKING METFORMIN AND ONE ALSO TOOK  
 11 AVANDIA, THAT'S -- THEY CALL THAT PLACEBO CONTROLLED,  
 12 BUT IT'S NOT PLACEBO CONTROLLED BECAUSE THE OTHER SIDE  
 13 IS NOT TAKING THE INERT DRUG. IN THIS STUDY, THEY  
 14 REALLY TOOK AN INERT DRUG, THEY DID NOT TAKE A SUGAR  
 15 PILL FOR SURE, I'M SURE YOU ARE RIGHT. THEY TOOK A  
 16 SACCHARINE PILL OR THEY TOOK NOTHING, BUT IT WAS TRULY  
 17 AVANDIA VERSUS NOTHING. AND THIS IS WHAT THEY FOUND.  
 18 AVANDIA VERSUS PURE PLACEBO, HEART ATTACK WENT, AS THE  
 19 PLAINTIFFS LIKE TO SAY, IN A PROTECTIVE DIRECTION. SO  
 20 THE PEOPLE ON AVANDIA HAD FEWER HEART ATTACKS THAN THOSE  
 21 ON THE PURE PLACEBO. AND THIS IS DATA THAT WAS REPORTED  
 22 BY THE FDA IN ONE OF THE FDA BRIEFING DOCUMENTS.  
 23 NOW LET'S TALK ABOUT THE ADOPT STUDY.  
 24 THERE WAS A DOUBLE BLIND RANDOMIZED CONTROLLED STUDY IN  
 25 PATIENTS NEWLY DIAGNOSED WITH DIABETES. AND THERE WAS

1 NO STATISTICALLY SIGNIFICANT INCREASE IN HEART ATTACK SO  
 2 HERE WE GO. IT WAS LARGE, LONG TERM, RANDOMIZED,  
 3 CONTROLLED, IT WAS NOT PREDEFINED. THEY WENT BACK AND  
 4 LOOKED THROUGH THE MEDICAL RECORDS FOR HEART ATTACK AND  
 5 THEN POST ADJUDICATED THEM. SO ARGUABLY, IT MAY NOT BE  
 6 AS ROBUST AS THE TWO ABOVE IT THAT DID PREDEFINE. IT  
 7 WAS BLINDED, BUT IT TOO FOUND NO STATISTICALLY  
 8 SIGNIFICANT INCREASED RISK FOR HEART ATTACK OR FOR  
 9 CARDIOVASCULAR DEATH.  
 10 SO THERE IS A REMARKABLE CONSISTENCY HERE  
 11 THAT NONE OF THE LARGE LONG TERM TRIALS INVESTIGATING  
 12 THE RELATIONSHIP BETWEEN AVANDIA AND HEART ATTACK HAVE  
 13 IDENTIFIED A STATISTICALLY SIGNIFICANT INCREASED RISK  
 14 FOR AVANDIA AND HEART ATTACK. AND DESPITE ALL THE  
 15 STUDY, DESPITE ALL THE RANDOMIZED CONTROLLED TRIALS,  
 16 PLAINTIFFS STILL DON'T HAVE A SINGLE RANDOMIZED  
 17 CONTROLLED TRIAL THAT HAS A STATISTICALLY SIGNIFICANT  
 18 END POINT SHOWING AN INCREASED RISK FOR HEART ATTACKS  
 19 AND AVANDIA.  
 20 SO YOU ASK WHAT ARE THE PLAINTIFFS  
 21 RELYING ON? THE ANSWER IS SIMPLE. AN INCONSISTENT BODY  
 22 OF EVIDENCE COMPRISED OF META-ANALYSES AND OBSERVATIONAL  
 23 STUDIES. A BODY OF EVIDENCE THEY ADMIT IS A LOWER, LESS  
 24 RELIABLE SOURCE OF DATA THAN RANDOMIZED CONTROLLED  
 25 TRIALS. THEY SHOOT DOWN THE RANDOMIZED CONTROLLED

1 TRIALS, CAREFULLY NITPICKING AT EVERY POSSIBLE COMPLAINT  
 2 THEY COULD FIND. THE TRIALS WERE NOT BIG ENOUGH. THEY  
 3 ARE NOT IN THE RIGHT POPULATION, NOT THE RIGHT  
 4 COMPARATOR DRUG, NOT THE RIGHT END POINT TO EXAMINE, NOT  
 5 THE RIGHT ANYTHING, EVEN THOUGH THE STUDY WAS TOUTED BY  
 6 ALL AND AWAITED BY ALL RIGHT UP UNTIL AFTER THE RESULTS  
 7 CAME OUT SHOWING NO EFFECT. SO INSTEAD, THEY COME UP  
 8 WITH A REASON TO DISCOUNT EACH AND EVERY RANDOMIZED  
 9 CONTROLLED TRIAL THAT HAS BEEN CONDUCTED. AND THEY  
 10 PROVIDE AN UNENDING LITANY OF REASONS HOLDING THE  
 11 RANDOMIZED CONTROLLED TRIALS TO STANDARDS THAT TOTALLY  
 12 FAIL TO APPLY TO THE LESSER -- THEY APPLY TO THE LESSER  
 13 STANDARDS THEY DO RELY ON.

14 AND YOUR HONORS, I THINK THAT THIS IS  
 15 PROBABLY THE MOST IMPORTANT THING WE HOPE YOU TAKE AWAY  
 16 FROM THIS ORAL ARGUMENT. WHEN YOU LISTEN TO THE  
 17 CRITICISMS THAT MAKE THEM DISCOUNT THESE RANDOMIZED  
 18 CONTROLLED TRIALS, THEY DON'T APPLY THE SAME  
 19 METHODOLOGIC REQUIREMENT ON THE LESSER STUDIES, THE ONES  
 20 THAT ARE MORE VULNERABLE TO THESE EXACT KIND OF  
 21 FAILINGS. THEY DON'T DO THAT TYPE OF SCRUTINY AND LET  
 22 ME JUST GIVE YOU A FEW EXAMPLES.

23 PLAINTIFFS SAY, FOR EXAMPLE, RECORD IS  
 24 UNRELIABLE, POORLY DESIGNED AND POORLY CONDUCTED. YET,  
 25 RECORD IS IN THE DATA SET OF THE NISSEN META-ANALYSIS

1 AND THE SINGH ANALYSIS. THEY DON'T HAVE ANY PROBLEM  
 2 USING THAT DATA WHEN IT'S IN A META-ANALYSIS THAT FINDS  
 3 A STATISTICALLY SIGNIFICANT INCREASED RISK.

4 LET'S SEE WHAT DR. SWIRSKY SAID.

5 (VIDEO PLAYED.)

6 QUESTION: SO YOU DON'T KNOW WHETHER OR  
 7 NOT DR. SINGH'S INCLUSION OF RECORD IN HIS META-ANALYSIS  
 8 FLAWED HIS META-ANALYSIS?

9 ANSWER: THAT'S RIGHT.

10 QUESTION: BUT YOU RELIED ON IT IN YOUR  
 11 REPORT?

12 ANSWER: BUT I DON'T KNOW HOW MUCH IT MAY  
 13 OR MAY NOT HAVE BEEN FLAWED, YOU KNOW, BY A PIECE FROM  
 14 RECORD.

15 QUESTION: THAT'S MY POINT, YOU DON'T  
 16 KNOW.

17 ANSWER: I DON'T KNOW.

18 QUESTION: YOU DID NOT REFERENCE THAT AT  
 19 ALL IN YOUR REPORT AT ALL, DID YOU, THE POSSIBILITY THAT  
 20 THE SINGH META-ANALYSIS IS FLAWED?

21 ANSWER: NO, I DID NOT.

22 QUESTION: DID YOU CONSIDER THAT BEFORE  
 23 YOU FORMED YOUR OPINION?

24 ANSWER: NO. NOT UNTIL THIS MOMENT RIGHT  
 25 NOW.

1 (VIDEO ENDED.)

2 MS. HALPERN: NOW RECORD IS THE  
 3 CRITICIZED BECAUSE IT HAD UNACCOUNTED-FOR STATIN USE,  
 4 YET ALL THE META-ANALYSES HAVE UNACCOUNTED-FOR STATIN  
 5 USE, ALL OF THE OBSERVATIONAL STUDIES. MAYBE THERE ARE  
 6 1 OR 2 EXCEPTIONS IN THE OBSERVATIONAL STUDIES. RECORD  
 7 IS CRITICIZED FOR HAVING SUCH SICK PEOPLE THAT THEY HAD  
 8 TO HAVE A RESCUE PROGRAM AND BE PARTIALLY UNBLINDED  
 9 BECAUSE OF THAT, BUT THEN THEY CRITICIZED DREAM BECAUSE  
 10 THE POPULATION WAS TOO HEALTHY AND THE PEOPLE WERE NOT  
 11 SICK ENOUGH TO REALLY SEE AVANDIA'S EFFECT. PLAINTIFFS  
 12 DISCOUNT THE DREAM RANDOMIZED CONTROLLED TRIAL BECAUSE  
 13 IT'S NOT A STUDY CONDUCTED ON DIABETICS, BUT IN  
 14 PREDIABETICS, AND YET THEY RELY ON META-ANALYSES LIKE  
 15 SINGH AND NISSEN THAT INCLUDE THE DREAM DATA IN IT AND  
 16 ALSO THE NISSEN META-ANALYSIS INCLUDES STUDIES IN  
 17 NONDIABETICS, PEOPLE WHO HAVE ALZHEIMERS, PEOPLE WITH  
 18 PSORIASIS. AND THEY RELY ON DATA FROM OTHER STUDIES NOT  
 19 INVOLVING DIABETICS.

20 THEY SAY THE ADOPT STUDY SHOULD BE  
 21 DISCOUNTED. AT HIS DEPOSITION, DR. JEWELL TESTIFIED  
 22 THAT HE HAD NOT SEEN THE ADJUDICATED DATA FROM ADOPT AND  
 23 THAT HE WOULD BE RELUCTANT TO LOOK AT IT BECAUSE HE  
 24 THINKS IT'S SUSPICIOUS WHEN IT'S BEING POST HOC  
 25 ADJUDICATED, WHICH AS YOU REMEMBER IT MEANS THEY DID NOT

1 PREDEFINE IT SO THEY WENT BACKWARDS LATER, FOUND THE  
 2 CASES AND ADJUDICATED THEM.

3 WELL, EVERY SINGLE ONE OF THE OTHER  
 4 RANDOMIZED CONTROLLED TRIALS IN THE META-ANALYSES ARE  
 5 POST HOC ADJUDICATED, AS ARE ALL THE OBSERVATIONAL  
 6 STUDIES. THE ADOPT DATA WAS READJUDICATED IN A BLINDED  
 7 FASHION BY MULTIPLE INDEPENDENT REVIEWERS AND THEY  
 8 CRITICIZED AND ARE WILLING TO RELY ON A READJUDICATION  
 9 BY DR. MARCINIAK WHICH WAS NOT EVEN BLINDED AND WAS DONE  
 10 BY A PANEL OF ONE.

11 DR. AUSTIN CRITICIZES THE ADOPT STUDY  
 12 WHICH HE ADMITS DID NOT REPORT A STATISTICALLY  
 13 SIGNIFICANT INCREASED RISK OF HEART ATTACK IN PATIENTS  
 14 TAKING AVANDIA ON THE BASIS THAT IT MERELY COLLECTED  
 15 UNADJUDICATED CARDIOVASCULAR EVENTS.

16 THAT IS TRUE IN EVERY SINGLE  
 17 OBSERVATIONAL STUDY AND DR. AUSTIN RELIED ON THE NISSEN  
 18 META-ANALYSIS AND THE ICT META-ANALYSIS AND THE FDA  
 19 META-ANALYSIS, DISPUTE THE FACT THEY ALL INVOLVED  
 20 NONADJUDICATED END POINTS. DR. AUSTIN RELIED ON THE  
 21 NISSEN AND SINGH META-ANALYSES EVEN THOUGH THOSE STUDIES  
 22 INCLUDED THE FLAWED, AS HE SAYS, ADOPT STUDY.

23 SO ALL OF THE PLAINTIFFS' EXPERTS WOULD  
 24 AGREE THAT STUDIES THAT PREDEFINED HEART ATTACK AS AN  
 25 END POINT AND THEN ADJUDICATE FOR HEART ATTACKS AS PART

1 OF THE STUDY ARE THE BEST STUDIES TO ACCURATELY ASSESS  
 2 WHETHER AVANDIA IS CAUSING HEART ATTACKS.  
 3                   HERE IS DR. JEWELL.  
 4                   QUESTION: SO WOULD YOU AGREE FOR THE  
 5 PURPOSE OF ASSESSING CARDIOVASCULAR SAFETY, WOULD YOU  
 6 AGREE A RANDOMIZED CONTROLLED TRIAL WITH A PREDEFINED  
 7 AND ADJUDICATED CARDIOVASCULAR END POINT IS PREFERABLE  
 8 TO A RANDOMIZED CONTROLLED TRIAL WITH AN EFFICACY END  
 9 POINT WITH NO IN STREAM ADJUDICATION?  
 10                  THE WITNESS: I THINK I ANSWERED THAT  
 11 QUESTION. YES, ALL OTHER THINGS BEING EQUAL, I WOULD  
 12 AGREE.  
 13                  YET NONE, NOT ONE OF THE OBSERVATIONAL  
 14 STUDIES DO THAT. NOR DO MOST OF THE STUDIES INCLUDED IN  
 15 THE META-ANALYSES. ONLY THE LARGE RANDOMIZED CONTROLLED  
 16 TRIALS WE JUST DISCUSSED.  
 17                  NOW, DR. AUSTIN ALSO CRITICIZED THE ADOPT  
 18 STUDY ON THE BASIS THAT THE STUDY WAS NOT DESIGNED TO  
 19 ASSESS CARDIOVASCULAR SAFETY, BUT HE RELIED ON THE  
 20 RESULTS OF ALL OF THE META-ANALYSES, EVEN THOUGH NONE OF  
 21 THE RANDOMIZED CONTROLLED TRIALS IN THOSE META-ANALYSES  
 22 WITH THE EXCEPTION OF DREAM WERE DESIGNED TO ASSESS  
 23 CARDIOVASCULAR END POINTS. IT'S INCONSISTENT  
 24 METHODOLOGY FOR THE PLAINTIFFS TO REJECT THE GOLD  
 25 STANDARD STUDIES FOR REASONS THAT ARE EQUALLY APPLICABLE

1 TO THE STUDIES THAT THE PLAINTIFFS' EXPERTS DO RELY ON.  
 2 AND THEY ACCEPT THESE OTHER STUDIES, LOWER ON THE  
 3 HIERARCHY WITH NO ASSESSMENT OR AT MINIMUM A CURSORY  
 4 ASSESSMENT OF BIAS AND CONFOUNDING THAT IS KNOWN TO BE  
 5 INHERENT IN THOSE STUDY DESIGNS. DAUBERT DOES NOT  
 6 COUNTENANCE THAT INCONSISTENT APPLICATION OF THE  
 7 SCIENTIFIC METHOD.  
 8                  HERE IS A CASE WHERE IT'S CLEARLY SAID  
 9 THAT CONSISTENCY IS A HALLMARK OF THE SCIENTIFIC METHOD  
 10 AND BECAUSE IT IS THE SCIENTIFIC HALLMARK, PLAINTIFFS'  
 11 EXPERTS MUST BE REQUIRED TO SATISFY THEIR OWN STANDARDS  
 12 OF RELIABILITY, APPLY THE SAME CRITERIA TO CRITICIZING  
 13 THE STUDIES THEY DON'T RELY ON TO THOSE THAT THEY DO  
 14 RELY ON. AND AN EXPERT'S PROPOSED TESTIMONY THUS IS  
 15 PROPERLY EXCLUDED WHERE THE EXPERT FAILS TO APPLY HIS  
 16 OWN METHODOLOGY RELIABLY.  
 17                  THE INCONSISTENT APPLICATION OF THESE  
 18 EXPERT'S OWN METHODOLOGY IS COMPOUNDED BY THE INFERIOR  
 19 DESIGN OF THE STUDIES THAT THEY DO RELY ON,  
 20 META-ANALYSES AND OBSERVATIONAL STUDIES, WHICH SUBJECTS  
 21 THESE STUDIES TO MORE BIAS, MORE CONFOUNDING, MORE  
 22 LIKELIHOOD OF CHANCE THAN THE RANDOMIZED CONTROLLED  
 23 TRIALS.  
 24                  HONORABLE CYNTHIA M. RUFÉ: I THINK THAT  
 25 IS WHAT WE CAN GET BACK TO AFTER THE LUNCH BREAK.

1                  MS. HALPERN: YES.  
 2                  HONORABLE CYNTHIA M. RUFÉ: THIS IS A  
 3 GOOD PLACE TO STOP?  
 4                  HONORABLE SANDRA MAZER MOSS: HOLD THE  
 5 THOUGHT.  
 6                  HONORABLE CYNTHIA M. RUFÉ: WE WILL  
 7 RECESS AND JUDGE MOSS AND I WILL BE BACK HERE ON THE  
 8 BENCH HOPEFULLY BY 2 O'CLOCK OR SOON THEREAFTER.  
 9                  HONORABLE SANDRA MAZER MOSS: I JUST  
 10 WANTED, BEFORE WE GET OFF, I KNOW THAT WE SET A MEETING  
 11 FOR THIS AFTERNOON, AND I WANT MY STATE LAWYERS TO  
 12 POW-WOW BECAUSE IT'S IMPORTANT TO GET THROUGH THESE  
 13 ARGUMENTS. I CAN DO IT WHEN WE ARE DONE. IT MAY BE  
 14 LATER OR IF YOU FEEL THAT WE SHOULD DO IT EARLY TOMORROW  
 15 MORNING OR LATE TOMORROW AFTERNOON, SEE WHAT IS BEST FOR  
 16 ALL OF YOU. I WILL TRY TO BE AS FLEXIBLE AS I CAN,  
 17 OKAY?  
 18                  HONORABLE CYNTHIA M. RUFÉ: THANK YOU.  
 19 (BREAK IS TAKEN 12:40.)  
 20                  THE CLERK: ALL RISE.  
 21                  HONORABLE CYNTHIA M. RUFÉ: GOOD  
 22 AFTERNOON.  
 23                  ALL COUNSEL: GOOD AFTERNOON, YOUR  
 24 HONORS.  
 25                  HONORABLE CYNTHIA M. RUFÉ: PLEASE BE

1 SEATED.  
 2                  HONORABLE SANDRA MAZER MOSS: I WONDERED  
 3 IF THE STATE COURT LAWYERS SPOKE ABOUT WHETHER YOU WILL  
 4 JUST HANG AROUND TO THE END OF THIS OR WHAT YOUR  
 5 PLEASURE IS.  
 6                  MS. NAST: JUDGE MOSS, WE DID GET A  
 7 CHANCE TO SPEAK, AND WE WOULD LIKE TO SEE YOU TODAY  
 8 BECAUSE A NUMBER OF PEOPLE ARE HERE THAT CAME IN JUST  
 9 FOR THAT PURPOSE.  
 10                  JUDGE SANDRA MAZER MOSS: THAT IS FINE.  
 11 WHENEVER WE ARE DONE IS OKAY WITH ME. I  
 12 HAVE NO LIFE.  
 13                  HONORABLE CYNTHIA M. RUFÉ: MISS HALPERN,  
 14 PLEASE CONTINUE.  
 15                  MS. HALPERN: YOUR HONORS, ON THE SCREEN  
 16 IS THE OUTLINE OF WHERE I'M GOING TODAY AND I JUST WANT  
 17 YOU TO SEE WHERE WE ARE AND THE LAST SECTIONS MOVE  
 18 RATHER QUICKLY, SO I DON'T THINK IT WILL TAKE THAT MUCH  
 19 LONGER. IF I COULD JUST DO ONE HOUSEKEEPING THING, I DO  
 20 HAVE THE BETZ DECISION FOR YOU.  
 21                  HONORABLE SANDRA MAZER MOSS: THANK YOU  
 22 FOR THAT. I REALIZED LATER ON THAT'S THE ASBESTOS  
 23 OPINION ON JUDGE KOBEL'S RULING SO UNFORTUNATELY I KNOW  
 24 IT A HECK OF A LOT BETTER THAN I WOULD LIKE TO.  
 25                  HONORABLE CYNTHIA M. RUFÉ: I WOULD LOVE

1 TO SEE IT.  
 2 HONORABLE SANDRA MAZER MOSS: IT HAS SOME  
 3 GOOD LANGUAGE IN IT. THANK YOU.  
 4 MS. HALPERN: I HAVE TO SAY, IF YOU  
 5 RECALL, THERE WAS A SLIDE WHERE I COULD NOT PRONOUNCE  
 6 THE WORD AND NOW I'VE FORGOTTEN, THE RETROVIRAL DRUGS.  
 7 THAT IS BECAUSE IT SHOULD NOT HAVE BEEN ON THE SLIDE AND  
 8 I HAD NOT SEEN IT BEFORE. SO I WOULD LIKE TO SUBSTITUTE  
 9 THIS. THAT WAS AN ERROR ON OUR PART.  
 10 HONORABLE CYNTHIA M. RUFÉ: WHAT SECTION  
 11 IS THAT IN?  
 12 MS. HALPERN: PAGE 81 AND --  
 13 HONORABLE SANDRA MAZER MOSS: WHAT  
 14 SECTION?  
 15 MS. HALPERN: I'M SORRY. SLIDE 81. IT  
 16 BELONGS IN THE SECTION ON BIOLOGICAL PLAUSIBILITY.  
 17 HONORABLE SANDRA MAZER MOSS: IS THAT  
 18 FOUR?  
 19 MS. HALPERN: YES. IF YOU LOOK THEY ARE  
 20 NUMBERED ON THE BOTTOM. I HOPE.  
 21 HONORABLE SANDRA MAZER MOSS: I SEE THAT,  
 22 THANK YOU. VERY EASY TO FOLLOW. THANK YOU.  
 23 MS. HALPERN: THIS IS A SUBSTITUTE.  
 24 HONORABLE SANDRA MAZER MOSS: YOU WANT TO  
 25 US TAKE THE OTHER ONE OUT COMPLETELY?

1 MS. HALPERN: YES, PLEASE. I CAN'T  
 2 PRONOUNCE IT ANYWAY. IT DOESN'T DESERVE TO BE IN THERE.  
 3 IF I CAN BEGIN THEN?  
 4 HONORABLE CYNTHIA M. RUFÉ: YES, YOU MAY.  
 5 HONORABLE SANDRA MAZER MOSS: YOU MAY.  
 6 MS. HALPERN: WE WERE TALKING ABOUT THE  
 7 STUDIES THAT PLAINTIFFS DO RELY ON. AND META-ANALYSES  
 8 FIGURE VERY PROMINENTLY IN THERE. PLAINTIFFS POINT TO A  
 9 NUMBER OF META-ANALYSES TO CAUSE SUPPORT THEIR CAUSATION  
 10 OPINION IN THIS CASE.  
 11 SO, JUST BRIEFLY, WHAT IS A  
 12 META-ANALYSIS? I CAN TELL YOU WHAT IT'S NOT. IT'S NOT  
 13 A RANDOMIZED CONTROLLED TRIAL. IN FACT, IT'S NOT EVEN  
 14 AN INDEPENDENT STUDY LOOKING AT NEW SUBJECTS OR NEW  
 15 EXPOSURES. IT'S AN AVERAGE OF SORTS OF ALREADY EXISTING  
 16 STUDIES AND DATA. A RESEARCHER COLLECTS A BATCH OF  
 17 STUDIES, MAYBE A BATCH OF RANDOMIZED CONTROLLED TRIALS,  
 18 MAYBE A BATCH OF OBSERVATIONAL TRIALS AND THEY POOL THEM  
 19 TOGETHER AS IF IT IS ONE STUDY AND CAN PERFORM DIFFERENT  
 20 KINDS OF METHODOLOGIC STATISTICAL ANALYSES ON THE DATA.  
 21 SO DIFFERENT PEOPLE CAN LOOK AT THE SAME DATA SET AND  
 22 GET DIFFERENT RESULTS, AND YOU ARE GOING TO SEE THAT  
 23 THAT HAS HAPPENED HERE.  
 24 NOW SINCE THE STUDIES IN EVERY  
 25 META-ANALYTIC COLLECTION ARE ALMOST ALWAYS FROM

1 DIFFERENT RESEARCHERS, IN DIFFERENT POPULATIONS, LOOKING  
 2 AT DIFFERENT ENDPOINTS, HAVING DIFFERENT INCLUSIONARY  
 3 AND EXCLUSIONARY CRITERIA FOR THE STUDY. SO ONE WILL  
 4 EXCLUDE DIABETICS OF 20 YEARS DURATION, ANOTHER WILL  
 5 EXCLUDE PEOPLE WHO SMOKED. YOU HAVE TO DO THE BEST YOU  
 6 CAN WITH THIS KIND OF GEMISCH OF DIFFERENCES BETWEEN THE  
 7 STUDIES. AND SOMETIMES THE DIFFERENCES ARE SO EXTREME  
 8 THEY CALL IT HETEROGENEITY, YOU CAN'T EVEN DO THE STUDY.  
 9 BUT THERE IS ALWAYS SOME DEGREE OF HETEROGENEITY BECAUSE  
 10 YOU ARE MIXING APPLES AND ORANGES, IT'S AN INHERENT  
 11 LIMITATION IN ALL META-ANALYSIS. THAT IS OKAY BECAUSE  
 12 THE PURPOSE FOR CONDUCTING META-ANALYSES IS USUALLY A  
 13 CRUDE ONE. IT'S TO SAY LET'S LOOK BACK. IT'S QUICK AND  
 14 IT'S DIRTY BECAUSE THE STUDIES ARE ALREADY DONE. SO YOU  
 15 LOOK BACK AND YOU SAY LET ME COLLECT THESE STUDIES, LET  
 16 ME DO THIS ANALYSIS AND IT WILL GENERATE A QUICK ANSWER.  
 17 IT'S NOT THE BEST ANSWER BUT IT'S A GOOD WAY TO SEE IF  
 18 THERE IS A SIGNAL, IF SOMETHING IS HAPPENING, IF THERE  
 19 IS A QUESTION THAT IS WORTH EXPLORING FURTHER. SO IT'S  
 20 QUICK AND DIRTY JUST LIKE OBSERVATIONAL STUDIES CAN BE  
 21 QUICK AND DIRTY, AND IT CAN GENERATE A HYPOTHESIS THAT  
 22 YOU WILL TEST LATER IN A RANDOMIZED CONTROLLED TRIAL.  
 23 IT'S KIND OF LIKE A PILOT STUDY.  
 24 THE REFERENCE MANUAL HAS BEEN VERY CLEAR.  
 25 AND IT STATES THAT META-ANALYSES ARE INHERENTLY

1 HYPOTHESIS-GENERATING. THAT IS BECAUSE THEY CAN RAISE  
 2 THE QUESTION, AS OPPOSED TO ANSWERING THE QUESTION. AND  
 3 THEY SAY THAT THE PROBLEMS OF META-ANALYSES HAVE BEEN SO  
 4 FREQUENT AND SO DEEP AND OVERSTATEMENTS OF CONCLUSIONS  
 5 SO EXTREME THAT ONE MIGHT WELL CONCLUDE THAT THERE IS  
 6 SOMETHING SERIOUSLY AND FUNDAMENTALLY WRONG WITH THE  
 7 METHOD. I THINK IF YOU REMEMBER THE EXAMPLE WITH  
 8 CALCIUM CHANNEL BLOCKERS, AND IT HAS HAPPENED WITH  
 9 HORMONE REPLACEMENT THERAPY. LOTS OF EXAMPLES WHERE  
 10 META-ANALYSES GENERATED A SIGNAL, AND THEN THE  
 11 RANDOMIZED TRIAL CAME ALONG, AND NOTHING WAS GOING ON.  
 12 NOW, EVERY SINGLE ONE OF PLAINTIFFS'  
 13 EXPERTS RELY ON THE NISSEN META-ANALYSES. THE SMALL  
 14 RANDOMIZED CONTROLLED TRIALS THAT WENT INTO THE NISSEN  
 15 META-ANALYSES HAD ALL THE SAME PROBLEMS PLAINTIFFS CLAIM  
 16 ABOUT THE LARGE RANDOMIZED CONTROLLED TRIALS BECAUSE  
 17 THEY INCLUDE THE RECORD STUDY, THE ADOPT STUDY, THE  
 18 DREAM STUDY IN THE NISSEN 2010 ANALYSIS, BUT THEY HAVE  
 19 EVEN MORE PROBLEMS THAN THAT BECAUSE THE REST OF THE  
 20 STUDIES ARE EVEN WORSE. THEY ARE SMALL, UNADJUDICATED  
 21 NO PREDEFINED ENDPOINT, NO HEART ATTACK EVER BEING  
 22 CONSIDERED. SOME OF THEM ARE NOT IN DIABETICS. BUT  
 23 ASIDE FROM METHODOLOGIC PROBLEMS, PUTTING IT ASIDE FOR  
 24 JUST A MOMENT, DR. NISSEN HIMSELF ADMITS THAT THE DATA  
 25 GENERATED FROM HIS STUDY ARE FRAGILE AND NOT THE TYPE OF

1 MATERIAL TO INFER CAUSATION FROM. YOU ALSO SAW IN HIS  
 2 ARTICLE, HE SAID, WE SHOULD AWAIT THE LARGE -- ACTUALLY  
 3 HE SPECIFIED THE RECORD TRIAL. SO DR. NISSEN PRESENTED  
 4 HIS META-ANALYSIS AT THE 2010 APRIL ADCOM.  
 5 DR. SANJAY KAUL AND HE IS THE FIRST NAMED  
 6 AUTHOR OF THE AMERICAN HEART ASSOCIATION PAPER LOOKING  
 7 AT THE EFFECTIVENESS OF PPD'S. HE WAS ALSO A MEMBER ON  
 8 THE ADCOM COMMITTEE IN 2010. DR. SANJAY KAUL, A  
 9 CARDIOLOGIST, SAID TO DR. NISSEN, I COULD HAVE SHOWN YOU  
 10 THE VIDEO, BUT I'M TRYING TO MAKE IT GO A LITTLE FASTER,  
 11 TOLD DR. NISSEN THAT HE FOUND THE DATA IN NISSEN'S STUDY  
 12 FRAGILE AND "DESERVING OF A CONSERVATIVE OR WHAT I WOULD  
 13 CALL FRUGAL INTERPRETATION AND THAT IT WAS NOT  
 14 APPROPRIATE TO MAKE CAUSAL INFERENCE FROM SUCH FRAGILE  
 15 DATA." AND DR. NISSEN RESPONDED TO DR. KAUL, YOU ARE  
 16 ABSOLUTELY RIGHT. DR. NISSEN TOTALLY AGREES THAT THE  
 17 DATA FROM HIS META-ANALYSIS ARE NOT THE TYPE OF MATERIAL  
 18 TO MAKE CAUSAL INFERENCE FROM AND THAT THE DATA WAS  
 19 FRAGILE. WHAT I MEAN BY FRAGILE IS, YOU TWEAK A LITTLE  
 20 BIT HERE, YOU ADD ONE CASE HERE, YOU TAKE ONE CASE  
 21 THERE, IT GOES FROM STATISTICALLY SIGNIFICANT TO NOT  
 22 STATISTICALLY SIGNIFICANT. THAT IS WHAT FRAGILITY  
 23 MEANS. YOUR FINDINGS ARE SO WEAK THAT THE LITTLDEST  
 24 THING HERE OR THERE IS GOING TO FLIP YOUR FINDING ONE  
 25 WAY OR THE OTHER.

1 SO DR. NISSEN WENT ON TO STATE THAT, "THE  
 2 ABSENCE OF EVIDENCE" -- HE WAS TALKING ABOUT AVANDIA --  
 3 "IS CERTAINLY NOT EVIDENCE OF ABSENCE." HE MAY WELL BE  
 4 RIGHT. THE ABSENCE -- IF YOU DON'T KNOW, IF YOU DON'T  
 5 HAVE THE DATA, YOU REALLY CAN'T SAY EITHER WAY FOR SURE.  
 6 I MEAN WE ARE NOT STANDING UP HERE AND SAYING IT'S BEEN  
 7 PROVEN TO BE SAFE, BECAUSE IF THAT WERE THE CASE, I CAN  
 8 TELL YOU FOR SURE I WOULD BE SAYING THAT TO YOU. BUT  
 9 WHAT HE IS SAYING IS, THE ABSENCE OF EVIDENCE IS  
 10 CERTAINLY NOT EVIDENCE OF ABSENCE. SO WHAT HE IS SAYING  
 11 IS, I DON'T HAVE ENOUGH DATA, BUT YOU CAN'T ALSO TELL ME  
 12 THAT THE LACK OF THE DATA MEANS THAT IT'S TOTALLY SAFE.  
 13 EVEN ASSUMING THAT DR. NISSEN IS CORRECT  
 14 AND THAT THERE IS INSUFFICIENT EVIDENCE THAT AVANDIA  
 15 DOES NOT CAUSE HEART ATTACKS, THIS DOES NOT HELP THE  
 16 PLAINTIFFS MEET THEIR BURDEN. LET ME JUST SAY --  
 17 BECAUSE I WOULD LIKE TO QUALIFY WHAT I SAID IN THIS  
 18 SENSE. WE SEE NO REASON TO BE CONCERNED ABOUT THIS DRUG  
 19 AT ALL. CAN WE PROVE THAT IT DOES NOT DO ANYTHING?  
 20 IT'S VERY HARD TO PROVE A NEGATIVE. IN SCIENCE IT'S  
 21 ALMOST IMPOSSIBLE TO PROVE A NEGATIVE. WE SHOW NO  
 22 INDICATION, AND THAT IS HOW WE AND OUR EXPERTS ANALYZE  
 23 THIS DATA, THAT IT DOES ANY HARM AT ALL. AND SOME  
 24 INDICATION FROM OTHER STUDIES LIKE THE ATHEROSCLEROSIS  
 25 STUDIES THAT IN FACT -- THERE MAY BE BENEFICIAL VALUES,

1 BUT I'M NOT STANDING UP HERE AND TELLING YOU THAT THAT  
 2 IS THE CASE.  
 3 SO DR. NISSEN AND DR. KAUL AGREE THAT THE  
 4 NISSEN META-ANALYSIS WAS FRAGILE. WHATEVER STANDARD DR.  
 5 JEWELL IS USING IN HIS ASSESSMENT OF THIS META-ANALYSIS,  
 6 IT'S NOT THE SAME STANDARD USED BY THE AUTHOR HIMSELF.  
 7 ALTHOUGH DR. JEWELL ADMITS HE NEVER TOOK A COURSE IN  
 8 META-ANALYTIC TECHNIQUE, BEING SELF TAUGHT IN THE AREA  
 9 AND HAVING NEVER WRITTEN ABOUT META-ANALYTIC METHODOLOGY  
 10 OR PUBLISHED A META-ANALYSIS, HE IS QUICK TO DISAGREE  
 11 WITH DR. NISSEN ABOUT THE FRAGILITY AND RELIABILITY OF  
 12 THE NISSEN META-ANALYSIS. DR. NISSEN SAYS IT'S FRAGILE  
 13 AND SHOULD BE INTERPRETED WITH CAUTION, AND IT'S NOT  
 14 DATA YOU SHOULD MAKE A CAUSAL INFERENCE FROM.  
 15 DR. JEWELL ON THE OTHER HAND DISAGREES,  
 16 AND, HE SAYS -- THERE IT IS, THANK YOU.  
 17 QUESTION -- NO, THAT IS NOT IT. 119.  
 18 THERE WE GO. SO MAYBE WE HAVE THE WRONG SLIDE HERE.  
 19 I'M SORRY. IS THAT SLIDE 119.  
 20 HONORABLE SANDRA MAZER MOSS: I THINK  
 21 YOUR NUMBERS ARE A LITTLE MIXED UP.  
 22 MS. HALPERN: I'M NOT SURPRISED.  
 23 HONORABLE CYNTHIA M. RUFÉ: THAT IS 616.  
 24 THAT WAS 116.  
 25 HONORABLE SANDRA MAZER MOSS: YOU SKIPPED

1 SOMETHING.  
 2 MS. HALPERN: MAYBE WE CAN JUST SKIP IT.  
 3 AND GO TO, IS THERE A PROBLEM WITH THE  
 4 PROJECTOR?  
 5 HONORABLE SANDRA MAZER MOSS: I WAS  
 6 MISSING A SLIDE, THAT IS THE NUMBER --  
 7 MS. HALPERN: OKAY.  
 8 HONORABLE CYNTHIA M. RUFÉ: NO, WE HAVE  
 9 THAT AS 116.  
 10 HONORABLE SANDRA MAZER MOSS: WE HAVE  
 11 THAT AS 119.  
 12 MS. HALPERN: YOU KNOW WHAT?  
 13 HONORABLE CYNTHIA M. RUFÉ: THAT IS 117.  
 14 MS. HALPERN: LET'S JUST SKIP IT.  
 15 HONORABLE SANDRA MAZER MOSS: YOU WANTED  
 16 TO SEE WHETHER OR NOT WE WERE FOLLOWING YOU AND  
 17 LISTENING.  
 18 MS. HALPERN: THANK YOU. YOU ARE MORE ON  
 19 TOP OF IT THAN I AM.  
 20 THIS IS THE NISSEN META-ANALYSIS. HE  
 21 SAYS IN HIS STUDY THAT OUR STUDY HAS IMPORTANT  
 22 LIMITATIONS. AT THE BOTTOM HE SAYS: A META-ANALYSIS IS  
 23 ALWAYS CONSIDERED LESS CONVINCING THAN A LARGE  
 24 PROSPECTIVE TRIAL DESIGNED TO ASSESS THE OUTCOME OF  
 25 INTEREST.

1 THE MEDICAL CONTEXT AND THE DIFFICULTY IN  
 2 UNCOVERING A SMALL INCREASED RISK IS ILLUSTRATED BY DR.  
 3 NISSEN'S 2010 META-ANALYSIS. NOW IF YOU RECALL AND YOU  
 4 MAY NOT RECALL BECAUSE I MAY NOT HAVE MENTIONED IT YET,  
 5 THE NISSEN 2010 META-ANALYSIS SHOWED A STATISTICALLY  
 6 SIGNIFICANT INCREASED RISK FOR HEART ATTACK IN AVANDIA.  
 7 YET WHEN YOU LOOK AT THE DATA, THIS IS THE DATA FROM THE  
 8 STUDY AND THE POPULATION STUDIED 17,000 PATIENTS ABOUT  
 9 AVANDIA, HAD 159 HEART ATTACKS, .92 PERCENT. IN  
 10 CONTRAST, 14,000 PATIENTS WHO DID NOT TAKE AVANDIA HAD  
 11 136 HEART ATTACKS, .94 PERCENT. ONE OF THE THINGS -- I  
 12 MEAN, STATED DIFFERENTLY ALL IT MEANS THERE IS NO  
 13 DIFFERENCE BETWEEN THESE GROUPS. IF ANYTHING, IT'S  
 14 SLIGHTLY -- SLIGHTLY MORE HEART ATTACKS IN THE  
 15 NONAVANDIA GROUP, BUT THE DIFFERENCE IS SO TINY, IT'S  
 16 NOT A STATISTICALLY SIGNIFICANT DIFFERENCE. BUT PEOPLE  
 17 LOOKED AT THAT AND THEY SAID, HOW COULD WE HAVE A  
 18 STATISTICALLY SIGNIFICANT FINDING FROM THIS STUDY WHEN  
 19 YOU LOOK AT THE NUMBER OF HEART ATTACKS? IT'S A  
 20 FUNCTION OF THE METHODOLOGY THAT WAS APPLIED TO DO THE  
 21 META-ANALYSIS.

22 SO I THINK YOU WILL FIND THIS VERY  
 23 INTERESTING. AFTER PUBLICATION OF THE NISSEN ARTICLE,  
 24 MANY SCIENTISTS TOOK THE NISSEN DATA SET, THE EXACT SAME  
 25 DATA SET, AND REDID THE META-ANALYSIS, SAME EXACT DATA,

1 AND THEY CAME UP THE WITH -- LOOK AT THIS. THAT IS HIS  
 2 RESULT, STATISTICALLY SIGNIFICANT, BUT ALL THESE OTHER  
 3 PEOPLE DID THE EXACT SAME DATA SET, PUBLISHED -- THESE  
 4 ARE PUBLISHED FINDINGS, AND CAME UP WITH NOT  
 5 STATISTICALLY SIGNIFICANT DIFFERENCE. MY POINT IS THAT  
 6 THIS DEMONSTRATES WHAT DR. NISSEN SAID AND WHAT DR. KAUL  
 7 SAID, THE FRAGILITY OF THE DATA. SEE WHAT HAPPENS WHEN  
 8 ONE STATISTICAL METHOD CHANGES AND ALL THESE RESEARCHERS  
 9 USED THE SAME DATA SETS. WHEN RESULTS CHANGE LIKE THAT,  
 10 BASED ON YOUR CHOICE OF A PARTICULAR METHODOLOGIC  
 11 APPROACH, ACHIEVING STATISTICAL SIGNIFICANCE WITH ONE  
 12 BUT NOT THE OTHER, IT EXPOSES THE FRAGILITY OF THE  
 13 UNDERLYING DATA. AND PLAINTIFFS' ONLY EPIDEMIOLOGIST,  
 14 DR. AUSTIN, AGREES AS WELL.

15 LET ME JUST SHOW YOU THE SAME THING WITH  
 16 THE SAME META-ANALYSIS. THIS IS ANOTHER ONE THAT  
 17 PLAINTIFFS RELY ON. DR. SINGH AND IF YOU RECALL, SINGH  
 18 IS THE SAME FELLOW WE WERE TALKING ABOUT BEFORE. HE DID  
 19 A META-ANALYSIS, FOUND A STATISTICALLY SIGNIFICANT  
 20 FINDING WITH RECORD, DREAM, UNADJUDICATED ADOPT AND  
 21 DARGIE, WHICH IS A VERY SMALL STUDY. DAHABREH REDID IT,  
 22 CHANGED IT A LITTLE BIT, HE DROPPED OUT STUDY 211, IT'S  
 23 NOT STATISTICALLY SIGNIFICANT. THE AVANDIA LABEL REDID  
 24 IT WITH A LITTLE BIT OF A CHANGE, NOT STATISTICALLY  
 25 SIGNIFICANT. AND THE FINAL RECORD WHICH IS ON THE GSK

1 WEBSITE, NOT STATISTICALLY SIGNIFICANT. NOW HERE I WILL  
 2 HAVE TO SAY THE DATA CHANGED A LITTLE. IT WAS NOT THE  
 3 EXACT SAME DATA. IT WAS IN THE NISSEN ONES I SHOWED  
 4 YOU. HERE THE DATA HAS CHANGED A LITTLE BECAUSE SHE HAD  
 5 FINAL RECORD AND SINGH HAD INTERIM RECORD. WE HAD  
 6 ADJUDICATED ADOPT AND SINGH HAD UNADJUDICATED ADOPT. SO  
 7 THERE WERE SOME DIFFERENCES IN DATA.

8 SO PLAINTIFFS RELY ON A WHOLE BATCH OF  
 9 META-ANALYSES. THE FDA, THEY DID TWO, THE 42 AND THE  
 10 56. GSK THEY DID TWO, WITH 42 STUDIES AND AGAIN WITH 56  
 11 STUDIES. THE NISSEN META-ANALYSES AND THE SINGH  
 12 META-ANALYSES. SO WHAT DO THESE META-ANALYSES ALL HAVE  
 13 IN COMMON? ALMOST THE SAME DATA. NOT EXACTLY, BUT LET  
 14 ME JUST SHOW YOU.

15 I HOPE TO SHOW YOU BECAUSE THIS IS AN  
 16 ANIMATION. WELL, LET'S GO BACK. SO ON THE LEFT IS THE  
 17 GSK META-ANALYSIS OF 42 STUDIES. ON THE RIGHT IS THE  
 18 FDA META-ANALYSIS OF 42 STUDIES. THEY ARE THE EXACT  
 19 SAME DATA SETS. THEN GSK META-ANALYSIS AND THE FDA  
 20 META-ANALYSIS EACH ADDED APPROXIMATELY 10 STUDIES. THEY  
 21 ADDED THE SAME TEN STUDIES SO THEY ARE EXACTLY THE SAME  
 22 DATA SETS. SO THESE FOUR META-ANALYSES ARE BASICALLY  
 23 THE EXACT SAME DATA SETS.

24 HERE WE HAVE GOT THE SINGH META-ANALYSIS  
 25 AND THE NISSEN 2010 META-ANALYSIS. EVERYTHING THAT IS

1 IN THE SINGH META-ANALYSIS IS ALSO IN THE NISSEN  
 2 META-ANALYSIS IN 2010 PLUS A COUPLE MORE.  
 3 MY POINT IS, IS THAT THE STUDIES HAVE  
 4 LARGELY, HUGELY OVERLAPPING DATA. AND SO THEY ARE NOT  
 5 MULTIPLE INDEPENDENT FINDINGS OF A STATISTICALLY  
 6 SIGNIFICANT INCREASED RISK FOR AVANDIA AND HEART ATTACK.  
 7 THEY ARE MULTIPLE PERMUTATIONS OF LARGELY THE SAME DATA.  
 8 AND IN FACT THEY RESULTED IN STATISTICALLY SIGNIFICANT  
 9 FINDINGS IN THE PERMUTATIONS OF THEM. THAT IS OFTEN, AT  
 10 LEAST WITH THE NISSEN META-ANALYSIS, MORE OFTEN THAT  
 11 CAME UP WITH NONSTATISTICALLY SIGNIFICANT PERMUTATIONS.

12 NOW, PUTTING ASIDE THE INHERENT PROBLEMS  
 13 WITH META-ANALYSES, PLAINTIFFS STILL HAVE A PROBLEM.  
 14 THE META-ANALYSES THEMSELVES ARE INCONSISTENT. SOME  
 15 SHOW AN INCREASED RISK FOR MI AND AVANDIA. SOME SHOW AN  
 16 ASSOCIATION WITH -- NO ASSOCIATION WITH CARDIOVASCULAR  
 17 MORTALITY AND NONE SHOW AN ASSOCIATION WITH ALL CAUSE  
 18 MORTALITY. FROM THE STATISTICS WE SAW EARLIER TODAY,  
 19 HALF THE PEOPLE WHO HAVE A HEART ATTACK DIE, RIGHT, BUT  
 20 THERE IS NO INDICATION FROM THE DATA THAT PEOPLE ON  
 21 AVANDIA HAVE EITHER INCREASED ATHEROSCLEROSIS OR DIE AT  
 22 A GREATER RATE THAN THOSE NOT ON AVANDIA. NOW THAT JUST  
 23 DOES NOT MAKE SENSE IF AVANDIA IS REALLY CAUSING PEOPLE  
 24 TO HAVE HEART ATTACKS. THE SIMPLEST EXPLANATION  
 25 OBVIOUSLY IS THAT AVANDIA IS NOT CAUSING HEART ATTACKS.

1 WELL, WHAT ABOUT OTHER ANALYSES? IT'S  
 2 INTERESTING, THE PLAINTIFFS RELY ON STUDIES THAT ARE  
 3 STATISTICALLY SIGNIFICANT AND LARGELY IGNORE THOSE THAT  
 4 ARE NOT. THE LARGEST META-ANALYSIS PERFORMED IS BY  
 5 MANNUCCI. IT HAS GOT 164 TRIALS AND IT DID NOT FIND A  
 6 STATISTICALLY SIGNIFICANT INCREASED RISK FOR HEART  
 7 ATTACK, NOR THE MONAMI TRIAL, WHICH INCLUDED 86 TRIALS.  
 8 PLAINTIFFS AGAIN APPLY INCONSISTENT  
 9 METHODOLOGY IN EVALUATING THE META-ANALYSES THAT DO NOT  
 10 SUPPORT THEIR CONCLUSIONS. SO FOR EXAMPLE, DR. SWIRSKY  
 11 REJECTED THE MANNUCCI META-ANALYSIS BASED ON THE FACT  
 12 THAT IT INCLUDED TRIALS IN NONDIABETICS, BUT HE DID NOT  
 13 KNOW, WHEN HE WAS ASKED, WHETHER THE NISSEN  
 14 META-ANALYSIS ON WHICH HE DOES RELY, WHETHER IT  
 15 CONTAINED STUDIES IN NONDIABETICS. IN FACT, AS YOU KNOW  
 16 BECAUSE WE HAVE TALKED ABOUT IT, IT DID INCLUDE  
 17 PEOPLE -- PEOPLE WITH ALZHEIMER'S AND WITH PSORIASIS AND  
 18 NO DIABETES AT ALL. DR. AUSTIN CRITICIZED THE MANNUCCI  
 19 META-ANALYSIS WHICH DID NOT FIND A STATISTICALLY  
 20 SIGNIFICANT RISK BECAUSE IT DID NOT EXCLUDE TRIALS BASED  
 21 ON THE SHORTNESS OF THE TRIAL. HE DID NOT LIKE THAT  
 22 THEY WERE TRIALS THAT WERE ONLY 30 DAYS LONG. BUT DR.  
 23 AUSTIN STATED IN HIS REPORT THAT THE EXCESS RISK OF  
 24 AVANDIA AND HEART ATTACK IS REACHED WITHIN 30 DAYS OF  
 25 CONTINUED EXPOSURE, AND HE TESTIFIED THAT THE SHORTEST

1 TRIAL INCLUDED IN MANNUCCI WAS 30 DAYS. NOW, SOME  
 2 PLAINTIFFS EXPERTS DID NOT EVEN BOTHER TO REVIEW THE  
 3 META-ANALYSIS THAT DID NOT FIND AN INCREASED RISK OF MI.  
 4 DR. JEWELL FAILED TO EVEN CONSIDER TWO META-ANALYSES  
 5 THAT DON'T SUPPORT THE CONCLUSION. DR. AUSTIN  
 6 ACKNOWLEDGED AT HIS DEPOSITION THAT HE DID NOT REVIEW  
 7 THREE META-ANALYSES THAT DID NOT FIND A STATISTICALLY  
 8 SIGNIFICANT ASSOCIATION. DR. SNIDERMAN IS ABSOLUTELY  
 9 CERTAIN THAT THE TOTALITY OF THE EVIDENCE SUPPORTS HIS  
 10 OPINION EVEN WHEN HE COULD NOT TESTIFY AS TO WHICH  
 11 STUDIES WERE NOT STATISTICALLY SIGNIFICANT. THIS IS DR.  
 12 SNIDERMAN.  
 13 (VIDEO PLAYED.)  
 14 QUESTION: DOCTOR, DO YOU KNOW OF ANY  
 15 STUDIES BEYOND THE NISSEN STUDY AND THE SINGH STUDY THAT  
 16 HAVE FOUND A STATISTICALLY SIGNIFICANT INCREASED RISK OF  
 17 MYOCARDIAL INFARCTION WITH AVANDIA THERAPY?  
 18 ANSWER: NO, BUT THE NISSEN AND SINGH  
 19 STUDY DID.  
 20 QUESTION: RIGHT. BUT YOU KNOW THAT THE  
 21 FDA STUDY, THE GSK, THE VARIOUS META-ANALYSIS, THE  
 22 MANNUCCI STUDY AND A HOST OF OTHER ONES LOOKED AT THAT  
 23 SAME ENDPOINT AND DID NOT FIND A STATISTICALLY  
 24 SIGNIFICANT INCREASED RISK OF HEART ATTACK, DON'T YOU?  
 25 ANSWER: I'LL SAY THAT I WOULD LIKE TO

1 REVIEW THE MATERIAL BECAUSE IT'S A TON OF DIFFERENT  
 2 REPORTS AND I COULD BE WRONG AT A PARTICULAR  
 3 -- REMEMBER, THERE'S 20 REPORTS IN THERE. SO I WOULD  
 4 NORMALLY LOOK AT A TABLE AND REVIEW THE TABLE AND  
 5 DETERMINE WHETHER -- BECAUSE I NEED TO -- I'M UNDER  
 6 OATH. I WANT TO BE SURE I'M NOT PROVIDING INADVERTENTLY  
 7 AN ERRONEOUS ANSWER. BUT THERE'S NO QUESTION IN MY MIND  
 8 THAT THE TOTALITY OF THE EVIDENCE ESTABLISHES A  
 9 CLINICALLY SIGNIFICANT INCREASE IN ADVERSE  
 10 CARDIOVASCULAR EVENTS.  
 11 (VIDEO ENDED.)  
 12 MS. HALPERN: NOW, IT MAY BE THAT HE IS  
 13 ABLE TO SAY THE TOTALITY OF THE EVIDENCE INCREASES A  
 14 CLINICAL DECISION, BUT IT CERTAINLY DOES NOT INVOLVE A  
 15 SCIENTIFIC ONE. BECAUSE JUST INVOKING THE WORD "THE  
 16 TOTALITY OF EVIDENCE" IS MEANINGLESS UNLESS THE TOTALITY  
 17 OF THE EVIDENCE IN A SCIENTIFIC SENSE IS CONSIDERED AND  
 18 REVIEWED WITH CONSISTENT METHODOLOGIC RIGOR. YOU CAN'T  
 19 CHERRY PICK. YOU CAN'T APPLY A RIGOROUS SET OF CRITERIA  
 20 TO THE STUDIES YOU DON'T LIKE, AND YOU CERTAINLY HAVE TO  
 21 LOOK AT THE TOTALITY OF THE EVIDENCE. YOU HAVE TO KNOW  
 22 WHAT'S STATISTICALLY SIGNIFICANT AND WHAT IS NOT.  
 23 DR. SNIDERMAN DID NOT KNOW, BUT LET ME  
 24 SHOW YOU ALL OF THE META-ANALYSES THAT FAILED TO FIND  
 25 STATISTICALLY SIGNIFICANT INCREASED RISK FOR MI. NO

1 INTERPRETATION OF DAUBERT WOULD ALLOW PLAINTIFFS TO  
 2 REJECT THE SIGNIFICANCE OF MULTIPLE RANDOMIZED  
 3 CONTROLLED TRIALS, THE ACKNOWLEDGED GOLD STANDARD, THAT  
 4 FIND NO ASSOCIATION WHILE RELYING ON THOSE VERY SAME  
 5 RANDOMIZED CONTROLLED TRIALS IN META-ANALYSIS. NO  
 6 INTERPRETATION OF DAUBERT PERMITS WHOLLY INCONSISTENT  
 7 AND INCONCLUSIVE AND FRAGILE DATA TO BE THE FOUNDATION  
 8 OF A RELIABLE CAUSATION OPINION.  
 9 SO AT THE TOP OF THE LADDER WE HAVE  
 10 STATISTICALLY SIGNIFICANT RANDOMIZED CONTROLLED TRIALS  
 11 AND THE INCONSISTENT META-ANALYSES.  
 12 I'M GOING TO TRY TO MOVE QUICKLY OUT OF  
 13 OBSERVATIONAL STUDIES. AS WE KNOW, OBSERVATIONAL  
 14 STUDIES ARE NOT RANDOMIZED. IT'S A BACKWARD LOOK INTO A  
 15 DATABASE. AND BECAUSE OF THE BIASES INHERENT IN THEM,  
 16 THEY ARE AT THE VERY BOTTOM OF THE PILE BECAUSE IT'S  
 17 HARDEST TO RULE OUT CHANCE, BIAS OR CONFOUNDING.  
 18 DR. JEWELL TESTIFIED -- NO. THAT IS NOT  
 19 IT EITHER. DR. JEWELL TESTIFIED THAT RANDOMIZED  
 20 CONTROLLED TRIALS PROVIDE MUCH FIRMER BASIS FOR CAUSAL  
 21 INFERENCE THAN OBSERVATIONAL STUDIES AND HE CONFIRMED  
 22 THAT THE REASON OBSERVATIONAL STUDIES ARE LESS RELIABLE  
 23 IS BECAUSE THEY ARE SUBJECT TO BIAS AND CONFOUNDING.  
 24 IN FACT, HERE IS A SLIDE OF THE AUTHORS  
 25 OF THREE OF THE OBSERVATIONAL STUDIES. ALL THREE OF

1 THEM FOUND A STATISTICALLY SIGNIFICANT INCREASED RISK  
 2 FOR MI AND AVANDIA, BUT LOOK AT WHAT THEY WROTE. THE  
 3 FIRST ONE, RAMIREZ SAID HE FOUND A STATISTICALLY  
 4 SIGNIFICANT ASSOCIATION BETWEEN AVANDIA AND  
 5 CARDIOVASCULAR DEATH, BUT CONCLUDED THAT ADDITIONAL  
 6 STUDY OF RISKS ASSOCIATED WITH ROSI USE IN A VULNERABLE  
 7 POPULATION, INCLUDING A RANDOMIZED CLINICAL TRIAL, ARE  
 8 WARRANTED. BROWNSTEIN, HE REPORTED A STATISTICALLY  
 9 SIGNIFICANT ASSOCIATION BETWEEN AVANDIA AND HEART ATTACK  
 10 BUT WROTE THAT THEIR METHODS DO NOT PROVIDE THE SAME  
 11 DEGREE OF INFORMATION AS A PROSPECTIVE RANDOMIZED  
 12 CONTROLLED TRIAL. STOCKL FOUND A STATISTICALLY  
 13 SIGNIFICANT INCREASED RISK IN PATIENTS WITH RECENT  
 14 AVANDIA EXPOSURE, BUT COMMENTED THAT "CONCLUSIVE  
 15 EVIDENCE CAN ONLY BE ASCERTAINED FROM ADEQUATELY POWERED  
 16 WELL CONTROLLED CLINICAL STUDIES."

17 THESE ARE FROM THE AUTHORS THEMSELVES OF  
 18 THE STATISTICALLY SIGNIFICANT OBSERVATIONAL STUDIES.

19 I WOULD LIKE TO SHOW YOU A LITTLE CLOSER  
 20 WHAT STOCKL WROTE. HE WROTE THAT INVESTIGATORS HAVE  
 21 ALSO NOTED THAT THERE IS NO CONSISTENCY AMONG THE  
 22 FINDINGS OF THE OBSERVATIONAL STUDIES EVALUATING AVANDIA  
 23 AND HEART ATTACK. HE NOTED INCONSISTENCY OF FINDINGS  
 24 ACROSS MULTIPLE OBSERVATIONAL STUDIES.

25 NOW THERE HAVE BEEN OVER TWO DOZEN

1 OBSERVATIONAL STUDIES LOOKING AT THE POTENTIAL EFFECT OF  
 2 AVANDIA AND HEART ATTACK. AND AS THIS SLIDE  
 3 DEMONSTRATES, THERE IS NO CONSISTENCY AMONG THE FINDINGS  
 4 FROM THE VARIOUS OBSERVATIONAL STUDIES.

5 CAN WE SEE SLIDE 114 AGAIN JUST QUICKLY.  
 6 IT'S THE SOLDI CASE. IF YOU RECALL THERE THEY SAY THAT  
 7 CONSISTENCY IS THE HALLMARK OF THE SCIENTIFIC METHOD.  
 8 AND AN EXPERTS' PROPOSED TESTIMONY THUS IS PROPERLY  
 9 EXCLUDED WHERE THE EXPERT FAILS TO APPLY HIS OWN  
 10 METHODOLOGY.

11 IF WE CAN GO BACK AGAIN. INCONSISTENCY  
 12 IS THE HALLMARK OF THE SCIENTIFIC METHOD AND THE FACT  
 13 THAT THERE ARE STUDIES ON BOTH SIDES HERE DOES NOT MEAN  
 14 THIS RAISES A JURY QUESTION. IT'S NOT ABOUT THAT. IT'S  
 15 A DAUBERT STANDARD FOR SCIENTIFIC RELIABILITY AND IT'S  
 16 ANOTHER REASON WHY THIS DECISION MUST REST IN THE HANDS  
 17 OF THE JUDGES BECAUSE THIS IS A HARD CONCEPT TO GET, BUT  
 18 THE CONSISTENCY FACTOR IS AT THE HEART OF THE  
 19 BRADFORD-HILL ANALYSIS.

20 BY WAY OF JUST EXAMPLE UNDER THE YES  
 21 COLUMN AT THE BOTTOM IS THE STUDY PLAINTIFFS LIKE TO  
 22 TALK ABOUT A LOT, AN OBSERVATIONAL STUDY, BROWNSTEIN,  
 23 THAT FOUND A STATISTICALLY SIGNIFICANT INCREASED RISK  
 24 FOR HEART ATTACK AND AVANDIA. LISTEN TO WHAT THE  
 25 BROWNSTEIN AUTHORS -- I'LL SHOW YOU WHAT THEY WROTE

1 ABOUT THEIR OWN STUDY. THE AUTHORS TRIED TO FIND OUT IF  
 2 THEY WERE REALLY CAPTURING HEART ATTACKS, BECAUSE IF YOU  
 3 REMEMBER, JUST A BACKWARD LOOK INTO AN INSURANCE  
 4 DATABASE, THAT IS ALL IT IS. THEY WERE WORRIED ABOUT  
 5 WHETHER THEY WERE REALLY CAPTURING HEART ATTACKS  
 6 CORRECTLY. SO THEY LOOKED BACK AND THEY DETERMINED THAT  
 7 26 PERCENT OF THE EVENTS THEY IDENTIFIED IN THEIR STUDY  
 8 WERE NOT EVEN HEART ATTACKS. NOW THIS WOULD NEVER  
 9 HAPPEN IN A STUDY THAT HAD A PREDEFINED ENDPOINT AND  
 10 THAT WAS ADJUDICATED FOR HEART ATTACKS. THIS COULD ONLY  
 11 HAPPEN IN AN OBSERVATIONAL STUDY. ABOUT THE ONLY  
 12 CONSISTENCY FROM ALL OF THESE STUDIES IS THAT THERE IS  
 13 NO CONSISTENT FINDING AT ALL IN THE OBSERVATIONAL  
 14 STUDIES. LET'S HEAR WHAT DR. AUSTIN SAID, THEIR  
 15 EPIDEMIOLOGIST.

16 (VIDEO PLAYED.)

17 QUESTION: WOULD YOU AGREE THAT THE  
 18 MCAFEE STUDY WAS A LARGE COHORT STUDY?

19 (VIDEO ENDED.)

20 MS. HALPERN: I'M SORRY. THAT IS WRONG  
 21 AGAIN. LET ME READ IT. WE ARE GOING TO USE THAT IN A  
 22 MINUTE.

23 QUESTION: WERE YOU AWARE THAT SOME  
 24 OBSERVATIONAL STUDIES FOUND A PROTECTIVE TREND FOR ROSI  
 25 AND MI? ARE YOU AWARE OF THAT?

1 ANSWER: YES.

2 QUESTION: AND ARE YOU AWARE THAT SOME  
 3 OBSERVATIONAL STUDIES FOUND NO DIFFERENCE FOR ROSI?

4 ANSWER: THAT'S CORRECT.

5 QUESTION: AND SOME FOUND A STATISTICALLY  
 6 SIGNIFICANT INCREASED RISK, TRUE?

7 ANSWER: YES.

8 QUESTION: SO THE STUDIES VARY IN THEIR  
 9 FINDINGS FOR AVANDIA AND HEART ATTACK?

10 ANSWER: THAT'S TRUE.

11 AND DR. AUSTIN ADMITTED HE DID NOT EVEN  
 12 CONSIDER OR READ ALL OF THE OBSERVATIONAL STUDIES.  
 13 INTERESTINGLY, ALL OF THE ONES HE FAILED TO READ FAILED  
 14 TO SUPPORT HIS OPINION THAT AVANDIA CAUSES HEART ATTACK.  
 15 PLAY THIS TAPE NOW.

16 (TAPE PLAYED.)

17 QUESTION: WOULD YOU AGREE THAT THE  
 18 MCAFEE STUDY WAS A LARGE COHORT STUDY? YOU'RE FAMILIAR  
 19 WITH THE MCAFEE STUDY, I BELIEVE. EXHIBIT 28, PLEASE,  
 20 YOU REFERENCE IT, I BELIEVE, IN YOUR REPORT.

21 ANSWER: I'M NOT SURE I DID. I DON'T  
 22 THINK I DID.

23 QUESTION: SO YOU DIDN'T RELY ON THE DATA  
 24 FROM THE MCAFEE STUDY?

25 ANSWER: APPARENTLY NOT.

1 QUESTION: AND THE RESULTS FROM MCAFEE  
 2 FOR ROSI AND MI WERE NOT STATISTICALLY SIGNIFICANTLY  
 3 ELEVATED. ARE YOU AWARE OF THAT?  
 4 ANSWER: NOT WITHOUT SEEING THE PAPER.  
 5 QUESTION: I DIDN'T SEE ANY REFERENCE IN  
 6 YOUR REPORT TO THE TZOULAKI STUDY, T-Z-O-U-L-A-K-I. THE  
 7 TZOULAKI STUDY FOUND NO ASSOCIATION BETWEEN ROSI AND MI.  
 8 IT'S AN OBSERVATIONAL STUDY PUBLISHED IN THE BRITISH  
 9 MEDICAL JOURNAL. ARE YOU AWARE OF THAT STUDY OR DID YOU  
 10 DISREGARD IT FOR SOME REASON?  
 11 ANSWER: I'M AWARE OF IT, BUT I'M NOT  
 12 SURE THAT I WAS AWARE OF IT AT THE TIME THIS WAS  
 13 WRITTEN.  
 14 QUESTION: SO YOU DID NOT CONSIDER IT IN  
 15 FORMING YOUR OPINION?  
 16 ANSWER: THAT'S RIGHT.  
 17 QUESTION: HOW ABOUT THE WALKER STUDY?  
 18 YOU DON'T REFERENCE THAT EITHER. IT WAS PUBLISHED IN  
 19 THE PHARMACOEPIDEMIOLOGY AND DRUG SAFETY JOURNAL. YOU  
 20 DON'T CITE TO IT IN YOUR REPORT AND IT WENT IN THE  
 21 PROTECTIVE DIRECTION FOR ROSI AND MI. DO YOU KNOW IF  
 22 YOU DIDN'T CONSIDER IT OR WHETHER YOU CONSIDERED IT AND  
 23 REJECTED IT?  
 24 ANSWER: I DON'T RECALL. DO YOU HAVE A  
 25 COPY OF IT THAT I COULD -- DID YOU GIVE IT TO ME?

1 QUESTION: I DO, BUT I'M OUT OF TIME HERE  
 2 SO I JUST -- I DIDN'T SEE ANY REFERENCE TO IT.  
 3 ANSWER: I DON'T RECALL SEEING IT AT THE  
 4 TIME THAT I WROTE THE REPORT.  
 5 QUESTION: OKAY. IF WE HAVE TIME, PULL  
 6 IT. IT'S EXHIBIT 46. HOW ABOUT THE CASSCELLS STUDY,  
 7 C-A-S-S-C-E-L-L-S. IT'S A STUDY CONDUCTED IN THE  
 8 MILITARY HEALTH SYSTEM. AND YOU DIDN'T CITE THAT IN  
 9 YOUR REPORT.  
 10 ANSWER: NO, I DIDN'T. I WASN'T AWARE OF  
 11 THAT STUDY. I HAVEN'T SEEN IT.  
 12 QUESTION: HOW ABOUT THE DORE STUDY,  
 13 D-O-R-E? DID YOU CONSIDER THAT AND REJECT IT OR DIDN'T  
 14 YOU CONSIDER IT? IT'S AN OBSERVATIONAL STUDY.  
 15 ANSWER: I'M NOT SURE THAT I KNOW THAT  
 16 STUDY.  
 17 QUESTION: OKAY. HOW ABOUT THE  
 18 WINKELMEYER STUDY? IT'S ALSO NOT CITED IN YOUR REPORT  
 19 AND IT'S PUBLISHED IN THE ARCHIVES OF INTERNAL MEDICINE.  
 20 YOU KNOW THAT JOURNAL, RIGHT?  
 21 ANSWER: I KNOW THAT JOURNAL, YES.  
 22 QUESTION: IT'S A PEER REVIEWED, WELL  
 23 RESPECTED JOURNAL?  
 24 ANSWER: YES.  
 25 QUESTION: DO YOU KNOW IF YOU CONSIDERED

1 IT AND REJECTED IT OR JUST DIDN'T CONSIDER IT?  
 2 ANSWER: I DON'T RECALL THE PAPER, SO I  
 3 CAN'T TELL YOU THE ANSWER TO THAT.  
 4 (TAPE ENDED.)  
 5 MS. HALPERN: THAT'S PLAINTIFFS' ONLY  
 6 EPIDEMIOLOGIST ACKNOWLEDGES THAT THERE IS NO CONSISTENT  
 7 FINDING IN THE OBSERVATIONAL DATA DEMONSTRATING THAT  
 8 AVANDIA INCREASES THE RISK OF HEART ATTACK. AND THAT IS  
 9 BEFORE READING MANY OF THE STUDIES THAT FOUND NO  
 10 STATISTICALLY SIGNIFICANT INCREASED RISK FOR AVANDIA AND  
 11 HEARD ATTACK. SO OFTEN THE PLAINTIFFS' EXPERTS FALL  
 12 BACK, AS DR. SNIDERMAN DID TALKING GENERALLY ABOUT THE  
 13 TOTALITY OF THE EVIDENCE, USING THAT AS A PANACEA FOR  
 14 THEIR METHODOLOGIC FAILURES. YET TIME AND TIME AGAIN,  
 15 IT BECAME CLEAR THAT IN FACT THEY DID NOT REVIEW THE  
 16 TOTALITY OF THE EVIDENCE, INSTEAD CHERRY-PICKING FROM  
 17 RANDOMIZED CONTROLLED META-ANALYSES AND LIKE DR. AUSTIN  
 18 OBSERVATIONAL STUDIES.  
 19 SO HERE IS THE HIERARCHY AGAIN. NO  
 20 STATISTICALLY SIGNIFICANT FINDING FOR RANDOMIZED  
 21 CONTROLLED TRIALS WITH INCONSISTENT DATA IN  
 22 META-ANALYSES AND INCONSISTENT DATA IN OBSERVATIONAL  
 23 STUDIES.  
 24 THERE IS CASE LAW THAT ADDRESSES THIS  
 25 PRECISE SITUATION WHEN EPIDEMIOLOGIC FINDINGS ARE

1 INCONSISTENT AND CONTRADICTORY. THE COURT CONCLUDES  
 2 THAT PLAINTIFFS' EXPERTS' GENERAL CAUSATION TESTIMONY  
 3 MUST BE EXCLUDED BECAUSE THE STUDIES THEY RELY UPON  
 4 SINGLY OR IN COMBINATION DO NOT SUPPORT THE CAUSATION  
 5 CONCLUSIONS THEY MAKE IN THE FACE OF THE OVERWHELMING  
 6 BODY OF CONTRADICTORY AND INCONSISTENT EPIDEMIOLOGICAL  
 7 EVIDENCE. PLAINTIFFS' EXPERTS HAVE HIGHLIGHTED STUDIES  
 8 -- AND IT GOES ON TO SAY WITH DATA THAT IS TRENDING IN  
 9 A DIRECTION. SOME STATISTICALLY SIGNIFICANT, SOME  
 10 TRENDING, WHICH MEANS THEY ARE NOT STATISTICALLY  
 11 SIGNIFICANT. THE BODY OF DATA HAD STATISTICALLY  
 12 SIGNIFICANT AND NOT STATISTICALLY SIGNIFICANT TRENDING  
 13 DATA, BUT WHOLLY WAS INCONSISTENT AND THE COURT EXCLUDED  
 14 IT.  
 15 NOW TO CONCLUDE, ALTHOUGH GENERAL  
 16 ACCEPTANCE IS NO LONGER THE LINCHPIN OF ADMISSIBILITY,  
 17 IT'S AN IMPORTANT FACTOR IN ASSESSING THE RELIABILITY OF  
 18 AN EXPERT'S METHODOLOGY UNDER DAUBERT. IT'S NOT  
 19 GENERALLY ACCEPTED IN THE SCIENTIFIC COMMUNITY THAT  
 20 AVANDIA CAUSES HEART ATTACK, NOR IS IT ACCEPTED IN FRYE.  
 21 IN APPLYING THE FRYE RULE, WE HAVE  
 22 REQUIRED AND CONTINUED TO REQUIRE THAT THE PROPONENT OF  
 23 THE EVIDENCE PROVE THAT THE METHODOLOGY AN EXPERT USED  
 24 IS GENERALLY ACCEPTED BY SCIENTISTS IN THE RELEVANT  
 25 FIELD AS A METHOD FOR ARRIVING AT THE CONCLUSION THE

1 EXPERT WILL TESTIFY TO AT TRIAL.  
 2 EACH OF PLAINTIFFS' EXPERTS HAS REACHED  
 3 HIS CAUSATION CONCLUSION BY APPLYING A METHODOLOGY THAT  
 4 IS NOT GENERALLY ACCEPTED IN THE SCIENTIFIC COMMUNITY.  
 5 NO JOURNAL, NO TEXTBOOK OR SCIENTIFIC  
 6 TREATISE OR PEER REVIEWED ARTICLE HAS EVER PUBLISHED  
 7 THAT AVANDIA CAUSES HEART ATTACKS.  
 8 DR. AUSTIN WAS ASKED, DO YOU KNOW OF ANY  
 9 TREATISE OR PEER REVIEWED PUBLICATION THAT SAYS ROSI --  
 10 CONCLUDES ROSI CAN CAUSE MI?  
 11 ANSWER: I DON'T THINK I HAVE SEEN A PEER  
 12 REVIEWED ARTICLE THAT SPECIFICALLY SAYS THAT.  
 13 DR. SNIDERMAN WAS ASKED: DO YOU KNOW OF  
 14 ANY TEXTBOOK THAT SAYS THAT AVANDIA CAUSES HEART ATTACKS  
 15 INCLUDING -- MYOCARDIAL ISCHEMIC EVENTS INCLUDING HEART  
 16 ATTACKS?  
 17 ANSWER: NO.  
 18 NOT ONE PROFESSIONAL ORGANIZATION HAS  
 19 ENDORSED THE CONCLUSION THAT ROSI CAUSES HEART ATTACKS.  
 20 DR. SEPTIMUS SAID -- WAS ASKED: ARE YOU AWARE OF ANY  
 21 PROFESSIONAL ORGANIZATIONS ANYWHERE IN THE WORLD THAT  
 22 HAS ENDORSED THE CONCLUSION THAT AVANDIA CAUSES HEART  
 23 ATTACKS?  
 24 AND HE SAYS: I DON'T KNOW OF ANY  
 25 PROFESSIONAL ORGANIZATION, BUT I ALSO AM NOT AWARE OF

1 EVERY PROFESSIONAL ORGANIZATION IN THE WORLD.  
 2 DR. SEPTIMUS WAS ASKED -- I'M SORRY.  
 3 SNIDERMAN WAS ASKED: MY QUESTION IS ABOUT REGULATORY  
 4 BODIES. ARE YOU AWARE OF ANY REGULATORY BODY ANYWHERE  
 5 IN THE WORLD THAT HAS STATED THAT AVANDIA CAUSES HEART  
 6 ATTACK OR MYOCARDIAL ISCHEMIC EVENTS?  
 7 ANSWER: NO. IN THAT PRECISE LANGUAGE,  
 8 NO.  
 9 AND THE REASON NOT ONE PROFESSIONAL OR  
 10 REGULATORY ORGANIZATION HAS CONCLUDED THAT AVANDIA  
 11 CAUSES HEART ATTACKS IS BECAUSE THE DATA IS SIMPLY NOT  
 12 THERE. THESE ORGANIZATIONS AND THE FDA ITSELF HAVE  
 13 ACKNOWLEDGED THAT THE DATA ON AVANDIA AND HEART ATTACKS  
 14 IS INCONSISTENT, INCONCLUSIVE AND FRAGILE. AND YOU CAN  
 15 JUST SEE THE WORDS THAT I HAVE BOLDED FROM EACH OF THESE  
 16 PROFESSIONAL ORGANIZATIONS. THIS REMAINS THE CASE  
 17 DESPITE THE FACT THAT IT'S ONE OF THE MOST STUDIED DRUGS  
 18 EVER.  
 19 NOW IT'S NOT SURPRISING THAT THESE  
 20 PROFESSIONAL ORGANIZATIONS HAVE CONCLUDED THAT THE DATA  
 21 IS INCONSISTENT AND INCONCLUSIVE BECAUSE THIS IS EXACTLY  
 22 WHAT THE SCIENTIFIC LITERATURE SHOWS. I WOULD LIKE TO  
 23 SHOW YOU. THESE ARE ALL THE ORGANIZATIONS THAT I -- THE  
 24 ONES THAT ARE IN CHARGE OF OUR SAFETY AND OUR HEALTH FOR  
 25 DIABETES AND FOR HEART DISEASE.

1 SO HERE ARE THE SCIENTIFIC PUBLICATIONS  
 2 THAT APPEAR IN THE PEER REVIEW JOURNALS. AS YOU CAN  
 3 SEE, THE ONLY THING THAT IS CONSISTENT IN THE LITERATURE  
 4 ARE THE REFERENCES TO HOW INCONSISTENT, FRAGILE AND  
 5 SUBJECT TO CHANCE AND BIAS THE DATA IS FOR AVANDIA AND  
 6 HEART ATTACKS. THE NEW ENGLAND JOURNAL OF MEDICINE,  
 7 INCONCLUSIVE, NO EVIDENCE, DATA WERE INSUFFICIENT,  
 8 INCONCLUSIVE. 2008 PHARMACOEPIDEMIOLOGY, DEGREE OF  
 9 CONFIDENCE THAT THE SIGNAL IS NOT FALSE IS MODEST.  
 10 OBESITY, INCONCLUSIVE. CURRENT ATHEROSCLEROTIC REPORT,  
 11 INCONCLUSIVE. INCONCLUSIVE, INCONCLUSIVE RESULTS. IT  
 12 GOES ON AND ON.  
 13 APPLYING THE GENERALLY ACCEPTED  
 14 METHODOLOGY TO ASSESS CAUSATION, NO REASONABLE SCIENTIST  
 15 COULD CONCLUDE THAT AVANDIA CAUSES HEART ATTACKS. IN  
 16 FACT, NO ONE HAS OTHER THAN PLAINTIFFS' EXPERTS IN THIS  
 17 LITIGATION. PLAINTIFFS' EXPERTS HAVE POINTED TO NO  
 18 CONSISTENT ASSOCIATION BETWEEN AVANDIA EXPOSURE AND  
 19 HEART ATTACK BECAUSE THERE IS NO SUCH EVIDENCE. NOT A  
 20 SINGLE RANDOMIZED CONTROLLED TRIAL FINDS ANY  
 21 STATISTICALLY SIGNIFICANT INCREASED RISK BETWEEN AVANDIA  
 22 AND HEART ATTACK OR FOR AVANDIA AND PROGRESSION OF  
 23 ATHEROSCLEROSIS. FOR EVERY OBSERVATIONAL STUDY THAT  
 24 FINDS AN ASSOCIATION, THERE ARE ALMOST TWO THAT DO NOT.  
 25 THE META-ANALYSES ARE ALL OVER THE PLACE. THE SAME DATA

1 SETS GET REDONE AND THE RESULTS CHANGE AS TO WHETHER  
 2 THEY ARE STATISTICALLY SIGNIFICANT OR NOT. FOR EVERY  
 3 META-ANALYSIS THAT FINDS A STATISTICALLY SIGNIFICANT  
 4 RISK, THERE IS ABOUT ONE THAT DOES NOT.  
 5 WITH THAT KIND OF INCONSISTENCY, IT'S  
 6 ESPECIALLY IMPORTANT TO SEE IF THERE IS BIAS OR  
 7 CONFOUNDING THAT CAN EXPLAIN THE RESULTS AND YET NOT ONE  
 8 OF PLAINTIFFS' EXPERTS MADE AN EFFORT TO SIGNIFICANTLY  
 9 AND CAREFULLY ASSESS WHETHER IN THOSE META-ANALYSES THAT  
 10 DO PURPORT TO FIND AN ASSOCIATION, ANY SUCH ASSOCIATION  
 11 MIGHT BE DUE TO BIAS OR CONFOUNDING. WHEN THEY PURPORT  
 12 TO IDENTIFY A PLAUSIBLE BIOLOGICAL MECHANISM FOR THE  
 13 HYPOTHESIS THAT AVANDIA CAUSES HEART ATTACK, THEY ADMIT  
 14 THAT NEITHER THEY NOR ANYONE ELSE HAS SHOWN THAT  
 15 PATIENTS WHO EXPERIENCE THE GREATEST INCREASES IN APO-B  
 16 AND LDL EXPERIENCE HEART ATTACKS.  
 17 AVANDIA -- PEOPLE ON AVANDIA ARE THE ONES  
 18 AT HIGHEST RISK FOR HEART ATTACK. AND THEY CAN CITE TO  
 19 NO EVIDENCE WHATSOEVER CONFIRMING THEIR HYPOTHESIS THAT  
 20 AVANDIA INCREASES PROGRESSION OF ATHEROSCLEROSIS.  
 21 PLAINTIFFS HAVE THE BURDEN, YOUR HONORS,  
 22 OF DEMONSTRATING THE ADMISSIBILITY OF THE PROPOSED  
 23 TESTIMONY UNDER DAUBERT. I KNOW THIS HAS BEEN  
 24 DIFFICULT. I KNOW THIS IS DENSE MATERIAL, BUT JUST  
 25 IMAGINE WHAT IT WOULD BE LIKE FOR A JURY. THE BURDEN IS

1 ON YOU AS GATEKEEPERS TO LOOK TO SEE IF THIS MEETS THE  
2 RELIABILITY CRITERIA SUFFICIENT TO GO TO THE JURY. THE  
3 BURDEN IS NOT LESSENEED WHEN THERE IS LIMITED, FRAGILE OR  
4 INCONSISTENT DATA AVAILABLE.

5 AND I'D JUST LIKE TO END WITH THIS QUOTE  
6 FROM A 3RD CIRCUIT CASE. I'M SORRY -- FROM THE EASTERN  
7 DISTRICT OF PENNSYLVANIA: THE NONEXISTENCE OF GOOD DATA  
8 DOES NOT ALLOW EXPERT WITNESSES TO SPECULATE OR BASE  
9 THEIR CONCLUSIONS ON INADEQUATE SUPPORTING SCIENCE. IN  
10 CASES WHERE NO ADEQUATE STUDY SHOWS THE LINK BETWEEN A  
11 SUBSTANCE AND A DISEASE, EXPERT TESTIMONY WILL GENERALLY  
12 BE INADMISSIBLE EVEN IF THERE ARE HINTS IN THE DATA THAT  
13 SOME LINK MIGHT EXIST. AS THE SEVENTH CIRCUIT HAS NOTED  
14 THE COURTROOM IS NOT THE PLACE FOR SCIENTIFIC GUESSWORK,  
15 EVEN OF THE INSPIRED SORT. LAW LAGS SCIENCE. IT DOES  
16 NOT LEAD IT.

17 I'LL REALLY DONE. THANK YOU VERY MUCH.  
18 I KNOW IT WAS LONG AND IT HAS BEEN A PRIVILEGE TO APPEAR  
19 BEFORE BOTH OF YOU. THANK YOU VERY MUCH.

20 HONORABLE CYNTHIA M. RUFÉ: I WOULD LIKE  
21 TO THANK YOU AND INSTEAD OF ASKING QUESTIONS NOW, I  
22 THINK WE AGREE THAT WE NEED TO GET TO PLAINTIFFS'  
23 ARGUMENT SO WE WILL DEFER ANY QUESTIONS.

24 MS. HALPERN: I ALSO CUT OFF AT THE END.  
25 I SAID AT THE BEGINNING EACH EXPERT'S METHODOLOGY SHOULD

1 BE LOOKED AT INDIVIDUALLY. THERE ARE SLIDES IN THE  
2 BACK. I'M NOT GOING TO WASTE YOUR TIME WITH THAT NOW  
3 THAT ADDRESS THEM. THANK YOU.

4 HONORABLE SANDRA MAZER MOSS: THANK YOU  
5 VERY MUCH. YOU WERE VERY WELL PREPARED.

6 HONORABLE CYNTHIA M. RUFÉ: NOW WE HAVE  
7 BEEN AT THIS FOR ALMOST AN HOUR. WOULD YOU LIKE A BRIEF  
8 RECESS AND GET SETTLED?

9 MR. ZONIES: IF I COULD DO THAT, THAT  
10 WOULD BE GREAT, YOUR HONOR. I APPRECIATE THAT.

11 HONORABLE CYNTHIA M. RUFÉ: VERY BRIEF,  
12 LIKE FIVE MINUTES.

13 (RECESS.)

14 THE CLERK: ALL RISE.

15 HONORABLE CYNTHIA RUFÉ: GOOD AFTERNOON  
16 AGAIN.

17 ALL COUNSEL: GOOD AFTERNOON, YOUR HONOR.

18 HONORABLE CYNTHIA RUFÉ: PLEASE BE SEATED  
19 AND THE PLAINTIFFS MAY PROCEED.

20 HONORABLE SANDRA MAZER MOSS: DO WE NEED  
21 ANYTHING ELSE OTHER THAN THE EXPERT REPORTS?

22 MR. ZONIES: BECAUSE I HAVE BEEN MOVING  
23 THE SLIDES AROUND WHILE MS. HALPERN SPOKE SO IT MADE  
24 MORE SENSE IN MY PRESENTATION, I HAVE NEW NOTEBOOKS  
25 COMING WITH MY SLIDES AND THEY SHOULD BE HERE SHORTLY.

1 HONORABLE SANDRA MAZER MOSS: SO WE ARE  
2 GOING TO GET LITTLE THINGS, TOO.

3 MR. ZONIES: WE ARE GOING TO BRING THEM  
4 UP AND YOU CAN WRITE RIGHT ON THOSE.

5 HONORABLE SANDRA MAZER MOSS: GREAT.

6 MR. ZONIES: I APPRECIATE THE TIME, YOUR  
7 HONORS, AND MS. HALPERN'S PRESENTATION.

8 BUT I THINK THAT, YOU KNOW, YOU'VE GOT TO  
9 DO SOMETHING I THINK IS VERY IMPORTANT HERE WHICH IS NOW  
10 THAT YOU HAVE HEARD GSK'S THOUGHTS ABOUT OUR EXPERTS'  
11 OPINIONS, GO BACK AND READ THEIR OPINIONS AND START  
12 THERE BECAUSE I SORT OF FEEL LIKE WE ARE IN A POSITION  
13 WHERE A MOTION HAS BEEN WRITTEN WITHOUT US ESSENTIALLY  
14 GETTING TO TELL YOU WHAT OUR THOUGHTS ARE BEFORE IT'S  
15 WRITTEN. AND I DO THINK IT'S IMPORTANT THAT YOU GO,  
16 READ THOSE OPINIONS AGAIN BECAUSE YOU WILL FIND THAT  
17 WHEN THESE EXPERTS ARE ESSENTIALLY PAINTED AS HAVING  
18 SAID THEY RELIED ON ESSENTIALLY ONE POORLY DESIGNED  
19 META-ANALYSIS, THAT I THINK THE IMPLICATION THAT YOU  
20 HAVE BEEN LEFT WITH IS THAT THESE RANDOMIZED CONTROLLED  
21 TRIALS DON'T SUPPORT A RISK AND I THINK THAT YOU HAVE  
22 BEEN LEFT WITH THE IMPRESSION THAT THEY DID NOT REALLY  
23 APPLY THE SCIENTIFIC METHODOLOGY, THAT INSTEAD IT WAS AS  
24 IF I WENT TO VISIT MY DOCTOR AND MY DOCTOR SAID YEAH,  
25 YOU KNOW, THIS IS WHAT I THINK BASED ON MY CLINICAL

1 JUDGMENT. AND I WILL TAKE YOU THROUGH AND SHOW YOU THAT  
2 THAT IS NOT AT ALL HOW OUR EXPERTS APPROACHED THIS  
3 SITUATION. BUT BEFORE I GET INTO THAT, I JUST WANT TO  
4 GIVE YOU A FEW EXAMPLES OF THAT. THE CASE THAT MS.  
5 HALPERN CITED AS SHE STEPPED OFF THE STAGE, IN THAT  
6 CASE --

7 HONORABLE CYNTHIA RUFÉ: THE STAGE?

8 HONORABLE SANDRA MAZER MOSS: WHICH ONE?

9 MR. ZONIES: THE PERRY V NOVARTIS CASE.

10 HONORABLE SANDRA MAZER MOSS: YOU MEAN  
11 THE WORLD STAGE?

12 MR. ZONIES: YES, CORRECT. COMING FROM  
13 THE THEATER I ALWAYS THINK OF IT AS A STAGE. AND I  
14 WOULD, BY THE WAY, YOUR HONORS, I'M VERY HAPPY TO HAVE  
15 YOU ASK QUESTIONS AS I'M GOING ALONG, I DON'T FEEL LIKE  
16 THAT WOULD BE A PROBLEM IF YOU WANT TO INTERJECT AND ASK  
17 QUESTIONS AT ANY TIME, PLEASE DO. IT'S NOT A PROBLEM.

18 BUT BEFORE SHE STEPPED OFF, SHE CITED TO  
19 THE PERRY V NOVARTIS CASE FOR ESSENTIALLY THE  
20 PROPOSITION THAT THE PROBLEMS ASSOCIATED WITH THIS  
21 EXPERT'S METHODOLOGY WERE SUCH THAT THE EXPERT WAS  
22 STRICKEN. IN FACT, THAT EXPERT WAS ALLOWED. SO YOU  
23 HAVE TO TAKE A CLOSE LOOK AT THE EVIDENCE. MS. HALPERN  
24 SPENT A LOT OF TIME TALKING ABOUT WITH GRAPHS ABOUT HOW  
25 STUDIES OVERLAP AND THEN WHEN SHE GAVE YOU THIS SLIDE,

1 META-ANALYSES THAT DO NOT FIND A STATISTICALLY  
 2 SIGNIFICANT INCREASE FOR HEART ATTACK, SHE FAILED TO  
 3 TELL YOU, FOR EXAMPLE, THAT THE TIAN STUDY IS THE NISSEN  
 4 DATA. THE DIAMOND STUDY IS THE NISSEN DATA. THE ICT-42  
 5 AND FDA 42 ARE THE SAME DATA AND THE SAME AS IN THE  
 6 AVANDIA LABEL. SO THERE IS OVERLAPPING STUDIES IN HER  
 7 PRESENTATION AS WELL. AND I'M CONCERNED THAT YOU ARE  
 8 NOT BEING INFORMED OF THAT. WHEN SHE CITED TO THE  
 9 HENDERSON'S CASE, THE MAIN POINT ABOUT HENDERSON IS THE  
 10 OVERWHELMING BODY OF CONTRADICTORY EPIDEMIOLOGICAL  
 11 EVIDENCE, AND I WILL SHOW YOU IN A MINUTE HERE THAT THAT  
 12 JUST DOES NOT EXIST HERE. IT DOES NOT EXIST HERE.

13 SHE ALSO SAID THAT PROFESSIONAL SOCIETIES  
 14 DON'T FIND CAUSATION, BUT THE AMERICAN DIABETES  
 15 ASSOCIATION IN 2009 ISSUED A CONSENSUS STATEMENT AND  
 16 SAID THE CONSENSUS GROUP MEMBERS UNANIMOUSLY ADVISED  
 17 AGAINST USING THIS DRUG. JUST THIS MONTH, THE UK'S  
 18 VERSION OF THE FDA SAID, WITHDRAW THIS DRUG. IT WAS A  
 19 UNANIMOUS VOTE OF THAT ORGANIZATION. AND THE REASON  
 20 THEY SAID TO WITHDRAW THE DRUG WAS, THE RISKS OF  
 21 ROSIGLITAZONE OUTWEIGH ITS BENEFITS AND IT NO LONGER HAS  
 22 A PLACE ON THE UK MARKET.

23 NOW, I DON'T NEED TO REMIND YOU THAT GSK  
 24 IS A UK COMPANY. AND THIS BODY HAS DECIDED THAT THIS  
 25 DRUG NEEDS TO BE WITHDRAWN FROM THE MARKET. SO THERE

1 ARE ORGANIZATIONS OUT THERE AND I JUST WANTED TO POINT  
 2 OUT SOME OF THE INCONSISTENCIES IN MS. HALPERN'S  
 3 PRESENTATION WHERE IT DEMONSTRATES THAT YOU JUST  
 4 CAREFULLY HAVE TO GO OVER THE MATERIALS WHICH I HAVE NO  
 5 QUESTION THAT YOU BOTH WILL.

6 TODAY WE ARE HERE ABOUT METHODOLOGIES,  
 7 NOT CONCLUSIONS. UNDER BOTH DAUBERT AND FRYE, THAT IS  
 8 THE QUESTION, WHETHER OR NOT THE METHODOLOGIES THESE  
 9 EXPERTS APPLY WERE RELIABLE METHODOLOGIES AND WHETHER OR  
 10 NOT THEY APPLIED THEM RELIABLY TO THE SUFFICIENT FACTS  
 11 OR DATA. WE ALL KNOW RULE 702 QUITE WELL.

12 I FOUND IT INTERESTING THAT THEY DO NOT  
 13 SAY THAT OUR EXPERTS ARE NOT QUALIFIED. IN FACT, THEY  
 14 APPEAR TO SAY THAT OUR EXPERTS ARE VERY QUALIFIED. THAT  
 15 IS ACTUALLY TRUE. WHAT I'M HOLDING HERE IS DR. JEWELL,  
 16 WHO IS IN THE COURTROOM. DR. JEWELL, HE TELLS ME IT'S A  
 17 BEST SELLER, BEST SELLING BOOK CALLED STATISTICS FOR  
 18 EPIDEMIOLOGY. AND THIS IS LITERALLY THE METHODOLOGY  
 19 APPLIED AND YOU CAN SEE, FOR EXAMPLE, CHAPTER EIGHT,  
 20 MAKING CAUSAL INFERENCES FROM ASSOCIATIONS. THAT IS THE  
 21 METHODOLOGY DR. JEWELL APPLIED. DR. JEWELL TEACHES  
 22 EPIDEMIOLOGISTS ABOUT STATISTICS FROM THIS BOOK.

23 NOW, I UNDERSTAND -- AND HE IS AT  
 24 BERKELEY, LUCKY GUY, THAT HE IS AT BERKELEY AND I  
 25 UNDERSTAND THAT THE DEFENSE WOULD LIKE TO PAINT HIM AS

1 NOT USING THIS METHODOLOGY, BUT HE HAS A LOT AT RISK.  
 2 HE HAS WRITTEN A BOOK ON THIS METHODOLOGY. HE WOULD NOT  
 3 PUT THAT AT RISK TO NOT USE IT HERE. HE KNOWS EXACTLY  
 4 HOW TO APPLY THE CORRECT METHODOLOGY. IT'S THE SAME  
 5 WITH DR. BRINTON, WHO IS ALSO HERE IN THE COURTROOM. HE  
 6 IS WORLD RENOWNED ENDOCRINOLOGIST, SPECIALTY IN  
 7 DIABETES, HE'S A BOARD CERTIFIED LIPIDOLOGIST. HE HAS  
 8 DONE MANY CLINICAL TRIALS, DESIGNED THEM. AND HE, IN  
 9 FACT, HAS A CURRENT GRANT APPLICATION INTO GSK TO DO A  
 10 CLINICAL TRIAL. DR. BRINTON WAS ON THE SPEAKERS BUREAU  
 11 FOR AVANDIA. GSK HAD DR. BRINTON SPEAK TO DOCTORS  
 12 ACROSS THE COUNTRY ABOUT THIS DRUG YEARS AGO. THAT IS  
 13 WHAT HE DID. AND GSK STILL USES HIM TO TALK TO THEIR  
 14 SALES FORCE ABOUT THEIR CURRENT BLOCKBUSTER DRUG, WHICH  
 15 IS LOVAZA. YOU MAY HAVE SEEN SOME OF THOSE FISH TANK  
 16 COMMERCIALS THAT ARE GOING ON.

17 AND THE SAME WITH DR. ALAN SNIDERMAN. HE  
 18 QUITE LITERALLY IS INTERNATIONALLY RECOGNIZED AS  
 19 ESTABLISHING APOLIPOPROTEIN B AS A MARKER OF  
 20 CARDIOVASCULAR RISK. AND HAS PEER REVIEWED HUNDREDS OF  
 21 PAPERS. THEY CAN'T ASSAIL THE QUALIFICATIONS OF THESE  
 22 EXPERTS BECAUSE THEY ARE QUITE WELL QUALIFIED.

23 NOW, THE QUESTION BECOMES WHETHER OR NOT  
 24 THESE EXPERTS RELIABLY APPLIED THE METHODOLOGY TO THE  
 25 DATA USING THE THREE STEPS THAT I THINK WE ACTUALLY BOTH

1 AGREE ON, WHICH IS ASSOCIATION, BIAS AND CONFOUNDING,  
 2 AND CAUSATION.  
 3 UNDER THE KELLER CASE, A CASE OUT OF THIS  
 4 CIRCUIT AND OUT OF THIS COURT, ACTUALLY, SUCH EXPERTISE  
 5 WHICH THEY HAVE STIPULATED TO JUSTIFIES THE RELIABILITY  
 6 OF AN EXPERT'S METHODOLOGY. THAT IS WHERE THIS ANALYSIS  
 7 ACTUALLY BEGINS.

8 THEY START WITH A JUSTIFICATION FOR  
 9 RELIABILITY OF THEIR METHODOLOGY IN THIS CASE. I'M  
 10 ACTUALLY GOING TO TAKE YOU THROUGH THE METHODOLOGY THAT  
 11 THEY ALL APPLIED IN A BROAD SENSE. IF YOU HAVE ANY  
 12 PARTICULAR QUESTIONS ABOUT ANY OF THE EXPERTS, I'M HAPPY  
 13 TO ANSWER.

14 AN ASSOCIATION IS DESCRIBED IN THE  
 15 REFERENCE MANUAL ON SCIENTIFIC LITERATURE IN  
 16 EPIDEMIOLOGY AS THE RELATIONSHIP BETWEEN TWO EVENTS THAT  
 17 WOULD OCCUR MORE FREQUENTLY TOGETHER THAN ONE WOULD  
 18 EXPECT BY CHANCE.

19 NOBODY IN THIS ROOM AND NOT A SINGLE ONE  
 20 OF OUR EXPERTS BELIEVES THAT ASSOCIATION EQUALS  
 21 CAUSATION, NONE OF OUR EXPERTS BELIEVE THAT. THEY ALL  
 22 UNDERSTAND THAT THE FIRST STEP IS TO FIND AN  
 23 ASSOCIATION, AND DR. JEWELL USES AN EXAMPLE IN HIS BOOK  
 24 THAT IS FABULOUS, WHICH IS IT WAS FOUND TO BE THAT THOSE  
 25 WHO DRINK COFFEE HAD MORE LUNG CANCER. IT WAS

1 ASSOCIATED, THERE WAS AN INCREASE IN BOTH OF THOSE  
2 ACROSS THE STUDY.

3 WELL, IT DOES NOT MAKE ANY SENSE THAT  
4 COFFEE WOULD CAUSE LUNG CANCER. WELL, IT TURNS OUT THAT  
5 WHILE YOU WERE DRINKING YOUR COFFEE, YOU WERE SMOKING  
6 MORE AND THEREFORE, YOU WERE GETTING LUNG CANCER FROM  
7 DRINKING COFFEE. IT'S THE ASSOCIATION VERSUS THE CAUSAL  
8 EFFECT. IN THE ASSOCIATION YOU LOOK AT EPIDEMIOLOGICAL  
9 EVIDENCE. AND WE DO AGREE AND OUR EXPERTS HAVE AGREED  
10 THAT A WELL-CONDUCTED, WELL-DESIGNED RANDOMIZED  
11 CONTROLLED TRIAL IS THE HIGHEST EVIDENCE, THAT A  
12 META-ANALYSIS, PARTICULARLY WHEN IT'S OF RANDOMIZED  
13 CONTROLLED TRIALS IS ALSO VALID EVIDENCE. OBSERVATIONAL  
14 STUDIES WHEN WELL DONE ARE EXCELLENT EVIDENCE AND DON'T  
15 FORGET THAT THERE ARE A LOT OF OTHER TYPES OF EVIDENCE  
16 THAT WE ARE NOT EVEN GOING TO TALK ABOUT TODAY BECAUSE  
17 WE DON'T NEED TO. ADVERSE EVENT REPORTING, CASE  
18 STUDIES, THINGS OF THAT SORT.

19 SO THE REASON I BRING IT UP IS BECAUSE,  
20 FOR EXAMPLE, THE RECORD STUDY, WHICH THEY SPENT A LOT OF  
21 TIME ON AS A RANDOMIZED CONTROLLED TRIAL, IF YOU READ,  
22 THIS IS FROM THE PUBLICATION OF THE RECORD STUDY. THE  
23 STUDY HAD LIMITED STATISTICAL POWER FOR INDIVIDUAL  
24 COMPONENTS OF THE PRIMARY END POINT. WHAT THEY MEAN BY  
25 INDIVIDUAL PRIMARY COMPONENTS IS THIS STUDY WAS NOT

1 POWERED TO STUDY MYOCARDIAL INFARCTION. THEY DID NOT.  
2 IT WAS NOT DESIGNED TO STUDY HEART ATTACKS. THE RECORD  
3 TRIAL WAS NOT DESIGNED TO STUDY HEART ATTACKS BECAUSE IT  
4 WAS NEVER INTENDED TO ANSWER THESE QUESTIONS. THIS IS  
5 FROM THE PUBLICATION OF THE STUDY.

6 THE RECORD TRIAL WAS NOT DESIGNED TO  
7 ANSWER THE QUESTION OF WHETHER OR NOT THIS DRUG CAUSES  
8 MYOCARDIAL INFARCTION. SO YOU CAN'T RELY UPON THAT  
9 STUDY FOR MYOCARDIAL INFARCTION. BENEFIT, CERTAINLY. I  
10 CAN SHOW YOU WHY YOU CAN REFER UPON IT FOR RISK. IN  
11 FACT, YOU HEARD SOME TALK ABOUT THE RECORD TRIAL. IT  
12 DID ACTUALLY GET HAMMERED AT THE FDA ADCOM A COUPLE OF  
13 MONTHS BACK, I WAS THERE FOR IT. I WILL SHOW YOU SOME  
14 OF THE CONCERNS THAT DR. MARCINIAK HAD WITH IT LATER,  
15 BUT THIS IS WHAT ONE OF THE EPIDEMIOLOGISTS FROM THE  
16 UNIVERSITY OF WASHINGTON, SHE IS AN EXPERT WHO SAT ON  
17 THE ADVISORY COMMITTEE. WHAT SHE SAID ABOUT RECORD: IN  
18 THIS INSTANCE, GIVEN THE DESIGN PROBLEMS -- AND SHE IS  
19 NOT TALKING ABOUT DR. MARCINIAK'S "READJUDICATION,"  
20 WHICH WAS IN REALITY AN AUDIT OF THE STUDY. SHE IS  
21 TALKING ABOUT THE DESIGN PROBLEMS AND THE CONDUCT  
22 PROBLEMS. THIS IS NOT NECESSARILY ANY HIGHER LEVEL OF  
23 EVIDENCE THAN AN OBSERVATIONAL STUDY. SO RECORD GOES  
24 FROM RCT AT THE TOP OF THEIR PYRAMID RIGHT THROUGH  
25 META-ANALYSES DOWN TO OBSERVATIONAL STUDIES BECAUSE OF

1 ITS DESIGN AND CONDUCT PROBLEMS. THIS IS AN INDEPENDENT  
2 EXPERT AFTER HEARING THE CONCERNS ABOUT RECORD. AND I  
3 WILL SHOW YOU SOME OF THOSE, AND YOU WILL UNDERSTAND WHY  
4 SHE SAID THAT.

5 META-ANALYSES, HOWEVER, THE REFERENCE  
6 MANUAL IS VERY CLEAR, ARE APPROPRIATE WHEN USED IN  
7 POOLING RANDOMIZED EXPERIMENTAL TRIALS, WHICH IS EXACTLY  
8 WHAT THE META-ANALYSES I WILL SHOW YOU DID. BECAUSE THE  
9 STUDIES INCLUDED IN THAT META-ANALYSIS SHARED THE MOST  
10 SIGNIFICANT METHODOLOGICAL CHARACTERISTICS. THEY ARE  
11 RANDOMIZED. YOU WILL HEAR ME COME BACK AROUND TO  
12 RANDOMIZED AGAIN AND AGAIN BECAUSE THERE ARE A BUNCH OF  
13 STUDIES THAT GSK SHOWS YOU THAT ARE NOT RANDOMIZED  
14 STUDIES. AND THAT IS SOME OF THE STUDIES THAT THEY RELY  
15 UPON.

16 SO META-ANALYSES THAT ARE BASED UPON  
17 RANDOMIZED CLINICAL TRIALS ARE GOOD META-ANALYSES. SO  
18 WHAT YOU SEE HERE IN WHAT'S CALLED THE ICT 42 DONE BY  
19 GSK, THIS STUDY. IT'S ALL GSK'S INTERNAL TRIALS, THERE  
20 ARE 42 STUDIES. IT'S NOT ONE STUDY. THEY LIKE TO  
21 IDENTIFY THIS AS ONE META-ANALYSIS. IN FACT, IT IS 42  
22 SEPARATE STUDIES WITH 14,000 PATIENTS. THESE PEOPLE  
23 WERE ALL RANDOMIZED, IT WAS ALL CONTROLLED AND, IN FACT,  
24 THERE ARE PLACEBO STUDIES IN THE ICT 42 BECAUSE EARLY  
25 ON, THEY TOOK DIABETICS AND PULLED THEM OFF OF THEIR

1 MEDICATION AND PUT THEM ON A PLACEBO IN THESE STUDIES.  
2 AND MOST IMPORTANTLY, IN BOTH OF THE ARMS OF THESE  
3 STUDIES THERE ARE DIABETICS. SO YOU ARE MEASURING A  
4 DIABETIC PATIENT VERSUS A DIABETIC PATIENT. YOU ARE  
5 TAKING CARE AND CONTROLLING FOR BACKGROUND RISK OF  
6 DIABETES. SO WHILE WE AGREE THAT DIABETES ITSELF  
7 INCREASES RISK, WHEN YOU DO A RANDOMIZED CONTROLLED  
8 TRIAL LIKE THIS OR AN OBSERVATIONAL TRIAL LIKE THIS, YOU  
9 HAVE BALANCED THAT BACKGROUND RISK.

10 HONORABLE SANDRA MAZER MOSS: HOT OFF THE  
11 PRESS?

12 MR. ZONIES: HOT OFF THE PRESS.

13 HONORABLE SANDRA MAZER MOSS: YOU COULD  
14 BURN THE BACK OF YOUR HAND.

15 MR. ZONIES: WITHOUT A CHANCE FOR ME TO  
16 EDIT SO I HOPE THEY ARE ALL RIGHT.

17 SO THE IMPORTANT POINTS ABOUT THESE, THEY  
18 ARE RANDOMIZED TRIALS, YOU ARE CONTROLLING FOR  
19 BACKGROUND RISK OF DIABETES, AND IN FACT, YOU ARE  
20 CONTROLLING FOR A LOT OF OTHER FACTORS ACROSS AGE AND  
21 GENDER.

22 THAT TRIAL PERFORMED BY GSK RETURNED A  
23 RELATIVE RISK RATIO OF 1.3 THAT WAS STATISTICALLY  
24 SIGNIFICANT FOR THE END POINT OF MYOCARDIAL ISCHEMIA.  
25 GSK DEFINED THE END POINT MYOCARDIAL ISCHEMIA ONE OF THE

1 ELEMENTS OF MYOCARDIAL ISCHEMIA WAS IN FACT MYOCARDIAL  
 2 INFARCTION. AS THE REFERENCE MANUAL SAYS, IF A RELATIVE  
 3 RISK IS GREATER THAN 1, WHICH THIS IS, 1.3, THE RISK IN  
 4 THE EXPOSED INDIVIDUALS TO AVANDIA IS GREATER THAN THE  
 5 RISK IN THE UNEXPOSED INDIVIDUALS.  
 6 AND THERE IS A POSITIVE ASSOCIATION  
 7 BETWEEN EXPOSURE TO THE AGENT AND THE DISEASE. THAT  
 8 ASSOCIATION COULD BE CAUSAL, WE AGREE, AND NOW WE ARE  
 9 TALKING ABOUT ASSOCIATION, WHETHER OR NOT THERE IS A  
 10 VALID ASSOCIATION. AND, IN FACT, GSK RECOGNIZES THAT  
 11 THIS STUDY SHOWS AN ASSOCIATION BETWEEN THE USE OF  
 12 AVANDIA AND MYOCARDIAL ISCHEMIC EVENTS. HOW DO WE KNOW  
 13 THAT? THEY PUT IT IN THE LABEL IN EUROPE IN 2006. IT  
 14 MAKES IT EVENTUALLY INTO THE LABEL IN THE U.S. SOME  
 15 18 MONTHS LATER. HERE IS WHAT THE CURRENT LABEL SAYS.  
 16 A META-ANALYSIS OF 42 CLINICAL TRIALS, 14,237 PATIENTS,  
 17 THAT IS THEIR ICT. MOST OF WHICH COMPARED AVANDIA TO  
 18 PLACEBO, SO YOU ARE SEEING DRUG EFFECT, SHOWED AVANDIA  
 19 TO BE ASSOCIATED WITH AN INCREASED RISK OF MYOCARDIAL  
 20 ISCHEMIC EVENTS SUCH AS ANGINA OR MYOCARDIAL INFARCTION.  
 21 THAT IS GSK'S OWN LABEL. THAT STUDY THEY ADMIT REFLECTS  
 22 AN ASSOCIATION.

23 NOW, MS. HALPERN SAID I'M GOING TO  
 24 MENTION SOME THINGS ABOUT COULD THEY HAVE KNOWN EARLIER,  
 25 OR NOT KNOWN EARLIER, AND I WILL. AND I'M NOT DOING

1 THIS IN THE CONTEXT OF SAYING JEEZ, GSK DID NOT PAY  
 2 ATTENTION. WHAT I'M SAYING IS, THEY SHOULD HAVE KNOWN  
 3 ABOUT THIS RISK EARLY ENOUGH THAT THEY COULD HAVE  
 4 DESIGNED STUDIES THAT WOULD HAVE EFFECTIVELY LOOKED AT  
 5 THIS RISK OR MORE EFFECTIVELY LOOKED AT THIS RISK. FOR  
 6 EXAMPLE, PRIOR TO DESIGNING THE RECORD TRIAL, WHICH HAD  
 7 A HORRIBLE DESIGN, THEY SHOULD HAVE KNOWN THAT THESE  
 8 STUDIES REFLECTED AN INCREASE, A STATISTICALLY  
 9 SIGNIFICANT INCREASE IN MYOCARDIAL ISCHEMIC EVENTS. WE  
 10 HAVE ACTUALLY GONE BACK TO 1998 EVEN BEFORE THIS DRUG  
 11 WAS MARKETED, IN THIS SLIDE WHAT YOU ARE SEEING ARE  
 12 THEIR TRIALS ALONG THE BOTTOM, 090, 093, 098, 094, 011.  
 13 THESE ARE PIVOTAL CLINICAL TRIALS. AS YOU CAN SEE IN  
 14 EVERY ARM THE AVANDIA RISK IS MORE THAN DOUBLE ACROSS  
 15 THESE TRIALS. THIS IS IN 1998 BEFORE THE DRUG IS  
 16 MARKETED, BEFORE RECORD IS DESIGNED, BEFORE ADOPT IS  
 17 DESIGNED, BEFORE DREAM IS DESIGNED. DESIGN YOUR  
 18 STUDIES, IF YOU KNOW THIS. AND THIS ACTUALLY REFLECTS  
 19 THAT TYPE OF RISK IN 1998. THIS IS NOT FRAGILE. IF YOU  
 20 LOOK AT THOSE BARS, THAT IS NOT A FRAGILE RISK.

21 SO WHAT YOU SEE ON THE NEXT SLIDE IS,  
 22 MYOCARDIAL ISCHEMIA IS REPRESENTED AS A GREEN DIAMOND.  
 23 AND OUR EXPERTS DID IN FACT LOOK AT GSK'S ICT 42 AND THE  
 24 FDA'S ICT 42 AND FOUND AN ASSOCIATION FOR MYOCARDIAL  
 25 ISCHEMIA. WHY DID THEY LOOK AT MYOCARDIAL ISCHEMIA?

1 FRANKLY, WE ASKED THEM TO BECAUSE ALL OF THEIR OPINIONS  
 2 SAY WE BELIEVE, IN OUR EXPERT OPINION, THAT AVANDIA  
 3 INCREASES AND CAUSES MYOCARDIAL ISCHEMIC EVENTS  
 4 INCLUDING MYOCARDIAL INFARCTION. INCLUDING MYOCARDIAL  
 5 INFARCTION. AND THEY DID NOT STOP AT ISCHEMIA AND THEN  
 6 LEAP TO MYOCARDIAL INFARCTION. THAT IS NOT WHAT THEY  
 7 DID. MYOCARDIAL ISCHEMIA VERSUS MYOCARDIAL INFARCTION.  
 8 GSK DEFINED THE END POINT IN THAT STUDY AS MYOCARDIAL  
 9 ISCHEMIA. THE FDA UTILIZED IT. IT'S A GOOD, STRONG  
 10 ENDPOINT. MYOCARDIAL INFARCTION IS AN END POINT WITHIN  
 11 THAT DEFINITION OF MYOCARDIAL ISCHEMIA. WHY? BECAUSE  
 12 IT'S THE SAME PHYSIOLOGICAL PROCESS. TURN TO AVANDIA --  
 13 TO GSK'S WEBSITE TODAY AND ON THEIR WEBSITE TODAY --  
 14 YESTERDAY, SORRY. ON THEIR WEBSITE YESTERDAY IT SAID,  
 15 AVANDIA MAY INCREASE YOUR RISK OF OTHER HEART PROBLEMS  
 16 THAT OCCUR WHEN THERE IS REDUCED BLOOD FLOW TO THE  
 17 HEART. REDUCED BLOOD FLOW TO THE HEART IS ISCHEMIA,  
 18 SUCH AS CHEST PAIN, ANGINA, OR HEART ATTACK, MYOCARDIAL  
 19 INFARCTION. THEY ARE THE SAME PHYSIOLOGICAL PROCESS.  
 20 THAT IS WHY YOU CAN USE MYOCARDIAL ISCHEMIA TO SUPPORT  
 21 AN OPINION ABOUT NOT ONLY MYOCARDIAL ISCHEMIA, BUT ALSO  
 22 MYOCARDIAL INFARCTION.

23 AND THEY DIDN'T STOP THERE. DR.  
 24 SEPTIMUS' QUOTE WAS, I DON'T LOOK AT JUST MI'S. YOU  
 25 WOULD HAVE THOUGHT WHEN YOU HEARD DR. SEPTIMUS' -- THE

1 SPIN THAT WAS PUT ON DR. SEPTIMUS THAT HE ONLY LOOKED AT  
 2 MYOCARDIAL ISCHEMIC EVENTS. HE DOES NOT LOOK JUST AT  
 3 MI'S, HE LOOKS BEYOND IT TO SEE WHAT OTHER EVIDENCE  
 4 THERE IS. AND AS YOU CAN SEE, EVEN IN THOSE TWO  
 5 STUDIES, YOU HAVE A STATISTICALLY SIGNIFICANT INCREASED  
 6 RISK FOR MYOCARDIAL ISCHEMIA SUPPORTED BY ONE OF ITS  
 7 SUB-END POINTS, WHICH IS MYOCARDIAL INFARCTION BEING A  
 8 NONSTATISTICALLY SIGNIFICANT INCREASED RISK. YOU WILL  
 9 SEE THE POINT ESTIMATE WHICH IS THE BEST PREDICTOR OF  
 10 THE AVERAGE IN THAT POPULATION IS TO THE RIGHT. AND IN  
 11 FACT, BOTH OF THE MYOCARDIAL INFARCTION POINT ESTIMATES  
 12 ARE TO THE RIGHT OF THE ISCHEMIA, WHICH TELLS YOU THAT  
 13 THE INFARCTION IS DRIVING THE ISCHEMIA BECAUSE IT'S A  
 14 SUB GROUP OF IT.

15 AND THAT IS NOT WHERE THEY STOPPED  
 16 EITHER. THEY DIDN'T STOP JUST ON ONE STUDY OR TWO  
 17 STUDIES. THEY DID LOOK AT THE TOTALITY OF THE EVIDENCE  
 18 AND THIS SLIDE REFLECTS FOR YOU THE END POINTS THAT ARE  
 19 ALL STATISTICALLY SIGNIFICANT END POINTS FOR -- THE RED  
 20 ONES ARE MYOCARDIAL INFARCTION 1, 2, 3, 4, 5, 6, 7, 8,  
 21 12 -- 20 OR SO STATISTICALLY SIGNIFICANT MYOCARDIAL  
 22 INFARCTION END POINTS. AND THE GREENS ARE THE  
 23 MYOCARDIAL ISCHEMIC END POINTS SUPPORTING THE INFARCTION  
 24 FINDING AND THE BLUES ARE OTHER CV EVENTS,  
 25 CARDIOVASCULAR EVENTS. THESE ARE ALL STATISTICALLY

1 SIGNIFICANT FINDINGS.  
 2 NOW, OUR EXPERTS WERE TAKEN TO TASK FOR  
 3 USING NONSTATISTICALLY SIGNIFICANT INFORMATION, BUT IT  
 4 IS CLEAR THAT YOU CAN TURN TO NONSTATISTICALLY  
 5 SIGNIFICANT RESULTS BECAUSE THEY SHOW A TREND,  
 6 PARTICULARLY WHEN THEY SUPPORT A STATISTICALLY  
 7 SIGNIFICANT RESULT. AND THE REFERENCE MANUAL RECOGNIZES  
 8 THAT. THE REFERENCE MANUAL SAYS, EPIDEMIOLOGIC STUDIES  
 9 HAVE BECOME INCREASINGLY SOPHISTICATED IN ADDRESSING  
 10 ISSUES OF RANDOM ERROR AND IT CONCLUDES, YOU DON'T HAVE  
 11 TO REJECT STUDIES THAT ARE NOT STATISTICALLY  
 12 SIGNIFICANT.

13 WE DID NOT RELY, OUR EXPERT DID NOT  
 14 SOLELY RELY ON NONSTATISTICALLY SIGNIFICANT RESULTS.  
 15 YOU SAW THE SLIDE BEFORE. THE SLIDE BEFORE IS ALL  
 16 STATISTICALLY SIGNIFICANT RESULTS. THEY THEN TURN TO  
 17 THE NONSTATISTICALLY SIGNIFICANT RESULTS TO SEE IF THEY  
 18 SHOWED A TREND, A SUPPORTING TREND. AND THEIR EXPERTS  
 19 ACTUALLY AGREE WITH THIS. THIS IS THEIR EXPERT  
 20 CARDIOLOGIST, DR. KEANEY AND HERE IS WHAT HE SAYS ABOUT  
 21 IT.

22 (VIDEO PLAYED.)

23 QUESTION: IN REACHING YOUR OPINION IN  
 24 THIS CASE, YOU FELT IT WAS COMPLETELY APPROPRIATE TO  
 25 EXAMINE STUDIES THAT WERE STATISTICALLY SIGNIFICANT AS

1 WELL AS STUDIES THAT WERE NOT STATISTICALLY SIGNIFICANT  
 2 WHEN REACHING YOUR OPINION?

3 ANSWER: I WOULD CHARACTERIZE -- MY  
 4 ANSWER TO THE QUESTION WOULD BE THAT I INCLUDED ALL OF  
 5 THE DATA IN REACHING MY OPINION. I DID NOT WEIGHT ALL  
 6 THE DATA EQUALLY. AND I WOULD NOT NECESSARILY AGREE  
 7 WITH THE CONCLUSION FROM A NONSIGNIFICANT STUDY BUT I  
 8 WOULD INCLUDE IT IN THE DATA AS A WHOLE.

9 QUESTION: AND OFTENTIMES IN YOUR REPORT  
 10 YOU CALL NONSTATISTICALLY SIGNIFICANT OUTCOMES TRENDS.  
 11 IS THAT A PHRASE THAT YOU ARE COMFORTABLE WITH?

12 ANSWER: THAT IS A TERM THAT IS OFTEN  
 13 USED FOR NONSTATISTICALLY SIGNIFICANT OUTCOMES. I DON'T  
 14 KNOW THAT IT HAS A PARTICULARLY SPECIAL MEANING.

15 (VIDEO ENDED.)

16 MR. ZONIES: SO DR. KEANEY DID WHAT OUR  
 17 EXPERTS DID, SAME METHODOLOGY. YOU WILL NOTICE WE DID  
 18 NOT FILE DAUBERT OR FRYE MOTIONS ON THEIR EXPERTS'  
 19 METHODOLOGIES BECAUSE WE THINK THEIR METHODOLOGIES WERE  
 20 CORRECT. WE DISAGREE WITH MOST OF THEIR CONCLUSIONS,  
 21 BUT THEY APPLIED THE SAME METHODOLOGIES THAT OUR EXPERTS  
 22 APPLIED.

23 IN USING NONSTATISTICALLY SIGNIFICANT  
 24 STUDIES AND RESULTS TO SUPPORT A STATISTICALLY  
 25 SIGNIFICANT FINDING IS COMPLETELY APPROPRIATE, ACCORDING

1 TO THE REFERENCE MANUAL AND ACCORDING TO THEIR OWN  
 2 EXPERTS.

3 SO WHAT DO THE NONSTATISTICALLY  
 4 SIGNIFICANT RESULTS SHOW? ON THIS SLIDE YOU WILL SEE  
 5 THAT THEY'RE NONSTATISTICALLY SIGNIFICANT BECAUSE THE  
 6 CONFIDENCE INTERVALS CROSS THE 1, BUT ON EVERY ONE OF  
 7 THESE, AND AGAIN, THE RED ONES ARE MYOCARDIAL  
 8 INFARCTION. ON EVERY SINGLE ONE OF THESE  
 9 NONSTATISTICALLY SIGNIFICANT RESULTS, THE POINT ESTIMATE  
 10 IS TO THE RIGHT OF 1, WHICH MEANS IT SHOWS RISK. AND IF  
 11 YOU COMBINE THE RISK STATISTICALLY SIGNIFICANT AND  
 12 NONSTATISTICALLY SIGNIFICANT, THAT IS WHAT THE SLIDE  
 13 LOOKS LIKE. I CAN'T READ THE INDIVIDUAL STUDIES FROM  
 14 HERE. ALL OF THOSE RESULTS ARE TO THE RIGHT OF 1,  
 15 STATISTICALLY SIGNIFICANT AND NONSTATISTICALLY  
 16 SIGNIFICANT. THIS IS NOT FRAGILE DATA.

17 NOW, IF YOU LOOK AT THE STATISTICALLY  
 18 SIGNIFICANT BENEFIT, THAT IS THE NEXT SLIDE. AND IN THE  
 19 BOTTOM CORNER THERE IS THE ONE STUDY THAT SHOWS A  
 20 STATISTICALLY SIGNIFICANT BENEFIT, MARGOLIS. AND YOU  
 21 COMPARE THOSE. ON THE RIGHT, ALL OF THE STATISTICALLY  
 22 SIGNIFICANT RISK; ON THE LEFT, MARGOLIS AS THE SOLE  
 23 STUDY WITH A STATISTICALLY SIGNIFICANT BENEFIT.

24 NOW, OUR EXPERTS DID NOT STOP THERE.  
 25 THEY WENT AND THEY LOOKED FOR NONSTATISTICALLY

1 SIGNIFICANT BENEFIT AND THEY FOUND SOME OF THOSE AS WELL  
 2 AND ON THE LAST SLIDE, IT'S SO CROWDED I DID NOT EVEN  
 3 PUT THE NAMES, EVERYTHING ABOVE THE YELLOW LINE IS  
 4 EITHER A -- YOU KNOW, THERE IS ONE STATISTICALLY  
 5 SIGNIFICANT RESULT THERE FOR BENEFIT, BUT EVERYTHING  
 6 ABOVE THE YELLOW LINE IS NONSTATISTICALLY SIGNIFICANT  
 7 BENEFIT. EVERYTHING BELOW IT IS STATISTICALLY  
 8 SIGNIFICANT AND NONSTATISTICALLY SIGNIFICANT RISK. THE  
 9 BALANCE OF THESE CLEARLY FAVORS A FINDING OF  
 10 ASSOCIATION.

11 NOW, MS. HALPERN SAID THAT THE  
 12 PLAINTIFF'S EXPERTS DISCOUNTED THE RANDOMIZED CONTROLLED  
 13 TRIALS. IN FACT, OUR EXPERTS DID NOT DISCOUNT THE  
 14 RANDOMIZED CONTROLLED TRIALS. FIRST OF ALL, THERE ARE  
 15 42 OF THEM IN THE ICT. THOSE ARE RANDOMIZED CONTROLLED  
 16 TRIALS AND THEY DON'T DISCOUNT THE "LARGE RANDOMIZED  
 17 CONTROLLED TRIALS" EITHER BECAUSE THEY ARE SUPPORTIVE.  
 18 THEY LOOKED AT THEM. IF YOU LOOK AT THE  
 19 NONSTATISTICALLY SIGNIFICANT RESULTS, IN THAT STUDY IN  
 20 YELLOW ON THIS SLIDE IS RECORD, INTERIM RECORD, ADOPT,  
 21 AND DREAM. THEY ALL SHOW NONSTATISTICALLY SIGNIFICANT  
 22 RESULTS BUT ALL TO THE RIGHT OF 1, SUPPORTING A FINDING  
 23 OF RISK. HOW DO WE KNOW THAT? WE ARE NOT -- OUR  
 24 EXPERTS ARE NOT THE ONLY ONES WHO SAY IT. DOCTORS PSATY  
 25 AND FURBERG, WHO ARE TWO WELL-KNOWN RENOWNED PHYSICIANS

1 IN EPIDEMIOLOGISTS, BOTH SAY, RECORD, THE RESULTS OF  
 2 RECORD IN THIS INSTANCE THEY ARE TALKING ABOUT INTERIM  
 3 RECORD, WHICH IS ONE OF THE RESULTS THAT WAS IN THE  
 4 CHART, ARE COMPATIBLE WITH THOSE OF THE META-ANALYSIS  
 5 FOR MYOCARDIAL INFARCTION RISK. THAT IS TRUE BECAUSE  
 6 THE RESULT IS TO THE RIGHT OF 1.  
 7 ADOPT. PSATY PUBLISHED IN THE NEW  
 8 ENGLAND JOURNAL OF MEDICINE, ROSIGLITAZONE IN ADOPT WAS  
 9 ASSOCIATED WITH A HIGHER RISK OF CARDIOVASCULAR EVENTS.  
 10 THAT IS ONE OF THE LONG-TERM RANDOMIZED CLINICAL TRIALS.  
 11 DREAM, THIS IS A SLIDE FROM THE DREAM  
 12 PRESENTATION. YOU CAN SEE THE MI IN THE COMPOSITE END  
 13 POINT. MI IS THE SECOND ONE DOWN, IT IS WELL TO THE  
 14 RIGHT OF 1, ALTHOUGH NONSTATISTICALLY SIGNIFICANT. THEY  
 15 SHOW SUPPORTIVE TRENDS, THE RANDOMIZED CLINICAL TRIALS.  
 16 GSK UNDERSTOOD IT. THE NEXT SLIDE IS AN  
 17 INTERNAL DOCUMENT FROM THEIR GLOBAL SAFETY BOARD WHEN  
 18 THEY GOT THESE RESULTS AND THE GLOBAL SAFETY BOARD  
 19 GOVERNS ALL OF THE SAFETY IN THIS COMPANY. AND THE  
 20 GLOBAL SAFETY BOARD MEMBERS CONSIDERED CONSIDERABLY MORE  
 21 DATA AVAILABLE, INCLUDING THE DATA FROM ADOPT AND DREAM,  
 22 AND THEY CONCLUDED THAT THIS ADDITIONAL INFORMATION  
 23 STRENGTHENED THE SIGNAL, WHICH THEY LATER AGREE IS AN  
 24 ASSOCIATION, THE SIGNAL OBSERVED IN THE ICT ANALYSIS.  
 25 SO OUR EXPERTS DID NOT IGNORE THE RANDOMIZED CONTROLLED

1 TRIALS, THE LARGE ONES, THEY UTILIZED THEM IN REACHING  
 2 THEIR OPINION, WHICH IS AN APPROPRIATE METHODOLOGY EVEN  
 3 ACCORDING TO THEIR OWN EXPERTS.  
 4 OUR EXPERTS ALSO EXAMINED SUBGROUP  
 5 ANALYSES DONE BY THE FDA AND I WON'T GO THROUGH EACH ONE  
 6 OF THESE, BUT YOU CAN SEE FROM THE ONES ON THE LEFT THAT  
 7 IF YOU ARE OVER 65, YOU HAVE A STATISTICALLY SIGNIFICANT  
 8 INCREASED RISK. EACH OF THE YELLOWS IS A STATISTICALLY  
 9 SIGNIFICANT INCREASED RISK. IF YOU ARE OVER 65, IF YOUR  
 10 BMI IS UP, IF YOU ARE SICK BECAUSE YOU ARE ON A NITRATE,  
 11 IF YOU NEED TO TAKE LOOP DIURETICS. EACH OF THESE  
 12 SUBGROUP ANALYSES, THOSE POINTS WERE NOT UP THERE. EACH  
 13 OF THESE SUB GROUP ANALYSES DEMONSTRATED EVEN MORE RISK  
 14 WHILE ON THIS DRUG. AND THE CONCLUSION CAN BE REACHED  
 15 THAT THE SICKER YOU ARE, THE WORSE THIS DRUG IS FOR YOU.  
 16 NOW DON'T FORGET, WHEN THE FDA DOES THESE SUBGROUP  
 17 ANALYSES, BECAUSE THE FDA DID THIS, IT CONTROLS FOR THE  
 18 DIFFERENCES BETWEEN THE TWO COMPARATOR GROUPS. SO IT IS  
 19 DIABETIC POPULATION ON NITRATES VERSUS DIABETIC  
 20 POPULATION ON NITRATES, ONE HAS AVANDIA, ONE DOESN'T.  
 21 SO THEY ARE CONTROLLING FOR EACH OF THOSE ISSUES. AND  
 22 WHEN YOU CONTROL FOR THOSE ISSUES, YOU ARE SEEING  
 23 EXTREME RISK IN SOME OF THESE POPULATIONS IN MANY OF  
 24 THESE POINTS OVER 2. AND IN SOME INSTANCES, FOR  
 25 EXAMPLE, WHEN AVANDIA IS USED IN COMBINATION WITH

1 METFORMIN, IT POPPED A 3.2 RELATIVE RISK. MANY OF THE  
 2 PEOPLE IN THIS LITIGATION AND MANY OF THE CLAIMANTS HAVE  
 3 THAT COMBINATION THERAPY.  
 4 YOU HEARD A LOT ABOUT HOW OUR EXPERTS  
 5 ONLY APPLIED THAT CLINICAL JUDGMENT. UNDER 702, I MEAN  
 6 I DON'T THINK THEY WOULD BE QUALIFIED IF THEY DIDN'T  
 7 HAVE TRAINING EXPERIENCE AND CLINICAL EXPERIENCE TO MAKE  
 8 THESE CALLS, BUT THE CASES THAT THEY RELY ON FOR THIS  
 9 POSITION ARE NORRIS AND SANDOZ AND IN BOTH OF THOSE  
 10 CASES, IT WAS ESSENTIALLY AN EXPERT WALKING IN AND  
 11 SAYING, I KNOW THE EPIDEMIOLOGICAL EVIDENCE DOES NOT  
 12 SUPPORT THIS, BUT I THINK CLINICALLY THAT IS JUST THE  
 13 WAY IT'S GOING TO BE. IN FACT, THE 6TH CIRCUIT CASE  
 14 THAT WAS JUST CITED TODAY, AND I THINK, I DON'T KNOW IF  
 15 MS. HALPERN DELIVERED YOU A COPY OR NOT, THAT IS IN THE  
 16 WELDING ROD CONTEXT. IN THAT CASE, IT'S EXACTLY RIGHT  
 17 ON POINT. BECAUSE IN THAT CASE, THE EXPERT THAT WAS  
 18 DISALLOWED DID NOT READ ANY OF THE STUDIES, DID NOT DO  
 19 ANY OF THE EPIDEMIOLOGICAL RESEARCH AND SIMPLY VISITED  
 20 WITH THE PATIENT AND MADE THE CALL. THAT IS NOT WHAT  
 21 OUR EXPERTS DID.  
 22 AND DR. DEPACE, WHO IS THE ONE THEY  
 23 PRIMARILY POINTED YOU TO ON THIS, IS NOT A GENERAL  
 24 CAUSATION EXPERT IN THE MDL. HE IS A SPECIFIC CAUSATION  
 25 EXPERT. YOU WILL HEAR FROM HIM AT THE END OF OCTOBER

1 ACTUALLY IN BOTH CASES, BUFORD AND BERFER.  
 2 HONORABLE SANDRA MAZER MOSS: HOW  
 3 EXCITING.  
 4 MR. ZONIES: DR. DEPACE, WHEN HE IS  
 5 MAKING A SPECIFIC CAUSATION DECISION, HAS TO RELY ON  
 6 CLINICAL JUDGMENT. THE REFERENCE MANUAL REQUIRES IT  
 7 WHEN HE IS DOING A SPECIFIC CAUSATION JUDGMENT. AND THE  
 8 REFERENCE MANUAL SAYS, PHYSICIANS MUST ALMOST ALWAYS USE  
 9 AN ELEMENT OF JUDGMENT IN DETERMINING THE RELATIONSHIP  
 10 BETWEEN THE EXPOSURE AND DISEASE IN A GIVEN PATIENT,  
 11 WHICH IS SPECIFIC CAUSATION, THUS CLINICAL JUDGMENT IS  
 12 CRITICAL TO THE OPINIONS ON DIAGNOSIS AND CAUSATION.  
 13 IT'S NOT INAPPROPRIATE TO USE CLINICAL JUDGMENT. I  
 14 THINK IT'S PROBABLY A REQUIREMENT.  
 15 SO THROUGH THIS INFORMATION, OUR EXPERTS  
 16 CONCLUDED, AND YOU WILL HEAR IN MORE DETAIL IF YOU WISH  
 17 TO TOMORROW FROM THE EXPERTS' MOUTHS, THAT BASED UPON  
 18 STATISTICALLY SIGNIFICANT INCREASED RISK,  
 19 NONSTATISTICALLY SIGNIFICANT SUPPORTING RISK INCLUDING  
 20 THE RANDOMIZED CONTROLLED TRIALS, THE LARGE ONES, A  
 21 HIGHER RISK IN A HIGHER RISK POPULATION THAT THIS DRUG  
 22 IS ASSOCIATED WITH MYOCARDIAL ISCHEMIC EVENTS, INCLUDING  
 23 MYOCARDIAL INFARCTION. THEY DID NOT REACH THE CAUSATION  
 24 OPINION AT THIS POINT BECAUSE OF THE COFFEE AND SMOKING.  
 25 AND THEY ARE NOT ALONE.

1 THIS IS THE DEFENSE'S EXPERT, DR.  
 2 BURKHART. HE IS PUT UP IN THIS CASE AS AN FDA EXPERT SO  
 3 YOU MAY HEAR FROM HIM IN OCTOBER, BUT HE IS ACTUALLY AN  
 4 EPIDEMIOLOGIST WHO WORKED AT THE FDA AND HIS JOB WAS TO  
 5 MAKE CAUSAL ASSOCIATION AND CAUSAL OPINIONS ABOUT DRUGS  
 6 BASED UPON CLINICAL TRIAL EVIDENCE AT THE FDA. THIS IS  
 7 WHAT DR. BURKHART SAID ABOUT SOME OF THIS EVIDENCE.

8 (VIDEO PLAYED.)

9 QUESTION: IN OTHER WORDS, FOR EXAMPLE IN  
 10 THIS CASE, THE NISSEN META-ANALYSIS FROM 2007 SHOWS AN  
 11 ASSOCIATION BETWEEN AVANDIA AND MYOCARDIAL INFARCTION,  
 12 CORRECT?

13 ANSWER: YES.

14 QUESTION: THE SINGH META-ANALYSIS SHOWS  
 15 THAT AS WELL, CORRECT?

16 ANSWER: THE SINGH, YES.

17 QUESTION: OKAY. THE FDA META-ANALYSIS  
 18 FROM 2007 AND THE GSK'S OWN META-ANALYSIS FROM 2007  
 19 SHOWS AN ASSOCIATION BETWEEN AVANDIA AND MYOCARDIAL  
 20 ISCHEMIC EVENTS, CORRECT?

21 ANSWER: YES.

22 QUESTION: THE 2010 META-ANALYSIS FROM  
 23 THE FDA AND THE 2010 META-ANALYSIS FROM NISSEN SHOW AN  
 24 ASSOCIATION BETWEEN AVANDIA AND CARDIOVASCULAR EVENTS,  
 25 CORRECT?

1 ANSWER: YES.

2 (VIDEO ENDED.)

3 MR. ZONIES: SO DR. BURKHART, WHOSE JOB  
 4 AT THE FDA WAS TO MAKE EXACTLY THOSE TYPES OF  
 5 ASSESSMENTS ABOUT DRUGS, AGREES THAT THERE IS AT LEAST  
 6 SOME EVIDENCE IN THIS CASE OF AN ASSOCIATION BETWEEN THE  
 7 USE OF THIS DRUG AND MYOCARDIAL ISCHEMIC EVENTS. HE IS  
 8 NOT ALONE ON THE DEFENSE SIDE. THIS IS DR. MEAGHER, THE  
 9 DEFENDANT'S EXPERT CARDIOLOGIST, SHE WAS ASKED ABOUT THE  
 10 EVIDENCE.

11 (VIDEO PLAYED.)

12 QUESTION: DO YOU BELIEVE THERE IS ANY  
 13 EVIDENCE IN ANY OF THE INFORMATION YOU HAVE REVIEWED  
 14 THAT SUPPORTS THAT AVANDIA IS ASSOCIATED WITH INCREASED  
 15 RISK OF MYOCARDIAL INFARCTION?

16 ANSWER: THERE IS EVIDENCE THAT I HAVE  
 17 REVIEWED THAT ASSOCIATES AVANDIA WITH MYOCARDIAL  
 18 INFARCTION.

19 (VIDEO ENDED.)

20 MR. ZONIES: SO TWO OF THE DEFENSE  
 21 EXPERTS ACTUALLY CONCUR WITH OUR EXPERTS, THAT THERE IS,  
 22 I BELIEVE THEY WOULD LIMIT IT TO SOME EVIDENCE OF AN  
 23 ASSOCIATION.

24 THEY ARE NOT ALONE EITHER. THIS IS DR.  
 25 GRAHAM FROM THE FDA. HE WORKS IN THE OFFICE OF

1 SURVEILLANCE AND EPIDEMIOLOGY AND THESE ARE THE  
 2 CONCLUSIONS FROM HIS PRESENTATION AT THE 2007 ADVISORY  
 3 COMMITTEE. AND THE FIRST LINE, AVANDIA INCREASES  
 4 CARDIOVASCULAR RISK COMPARED TO ITS NONUSE. AND HE  
 5 ACTUALLY RECOMMENDED WITHDRAWING IT FROM THE MARKET IN  
 6 2007.

7 THE NEXT SLIDE, THE FDA JUST IN JUNE OF  
 8 THIS YEAR, THE OFFICE OF SURVEILLANCE AND EPIDEMIOLOGY,  
 9 THE RISKS OF ROSIGLITAZONE USE ARE SERIOUS AND EXCEED  
 10 THOSE FOR PIOGLITAZONE, ROSIGLITAZONE CONFERS NO UNIQUE  
 11 AND MEDICALLY IMPORTANT BENEFIT THAT DISTINGUISHES IT  
 12 FROM PIOGLITAZONE. AND THE RESULT -- THE RISKS OF  
 13 ROSIGLITAZONE USE EXCEED ITS BENEFITS COMPARED TO  
 14 PIOGLITAZONE AND IT SHOULD BE REMOVED FROM THE MARKET.

15 THAT IS THE FDA OFFICE, THE SAFETY SIDE  
 16 OF THE FDA.

17 DR. PSATY WHO I MENTIONED BEFORE  
 18 PUBLISHED IN THE NEW ENGLAND JOURNAL OF MEDICINE A PAPER  
 19 CALLED, THE RECORD ON ROSIGLITAZONE AND THE RISK OF  
 20 MYOCARDIAL INFARCTION. HE DISCUSSES THE HISTORY OF HOW  
 21 IT IS APPROVED BASED ON A SURROGATE END POINT AND  
 22 CONCLUDES THAT IT APPEARS TO BE ASSOCIATED WITH AN  
 23 INCREASE RATHER THAN A DECREASE IN THE RISK OF  
 24 MYOCARDIAL INFARCTION.

25 NOW, YOU HEARD SOMETHING ABOUT THE FDA

1 ADCOM AND THE VOTE AND HOW THE VOTE WAS SOMEHOW MODIFIED  
 2 TO BE SUPPORT. THIS IS A QUOTE FROM CLIFFORD ROSEN, WHO  
 3 WAS THE HEAD OF THAT COMMITTEE IN 2007. HE CHAIRED THE  
 4 2007 ADVISORY COMMITTEE AND HE PUBLISHED THIS IN THE NEW  
 5 ENGLAND JOURNAL OF MEDICINE IN A PAPER CALLED THE  
 6 ROSIGLITAZONE STORY, LESSONS FROM AN FDA ADVISORY  
 7 COMMITTEE, WHICH HE CHAIRED AND HE DESCRIBED THE  
 8 CONCLUSION AS FOLLOWS: WE CONCLUDED THAT THE USE OF  
 9 ROSIGLITAZONE FOR THE TREATMENT OF TYPE TWO DIABETES WAS  
 10 ASSOCIATED WITH A GREATER RISK OF MYOCARDIAL ISCHEMIC  
 11 EVENTS THAN ALL COMPARATORS.

12 SO THE CONCLUSION OF AN ASSOCIATION IS  
 13 NOT UNIQUE TO OUR EXPERTS. THE CONCLUSION OF  
 14 ASSOCIATION GOES ACROSS MANY GOVERNMENTAL ORGANIZATIONS  
 15 AND WATCHDOGS, IT GOES ACROSS INDEPENDENT SCIENTISTS, IT  
 16 GOES ACROSS THOSE WHO HEADED UP FDA ADVISORY COMMITTEES  
 17 AND IT GOES ACROSS INTO THE DEFENSE'S OWN EXPERTS.

18 SO THE NEXT SLIDE IS A CHECK MARK NEXT TO  
 19 ASSOCIATION AND I WILL NOW MOVE ON TO BIAS AND  
 20 CONFOUNDING. IF AT ANY POINT -- I DON'T KNOW HOW LONG  
 21 WE HAVE BEEN GOING SINCE -- KEEP ON GOING?

22 HONORABLE CYNTHIA RUFÉ: WE WILL LET YOU  
 23 GO A LITTLE BIT LONGER.

24 MR. ZONIES: BIAS AND CONFOUNDING IN THE  
 25 REFERENCE MANUAL, ESSENTIALLY IF THE ASSOCIATION IS SEEN

1 IN STUDIES OF DIFFERENT TYPES AMONG DIFFERENT GROUPS,  
 2 THIS REDUCES THE CHANCE THAT IT'S DUE TO A DEFECT, DUE  
 3 TO CHANCE, BIAS OR CONFOUNDING. THAT IS WHAT THAT  
 4 ESSENTIALLY IT MEANS. AND AS YOU KNOW, THIS ASSOCIATION  
 5 WAS SHOWN ACROSS MANY DIFFERENT STUDIES, YOU SAW THAT  
 6 HUGE SLIDE, AND I WILL DESCRIBE SOME OF THOSE STUDIES  
 7 FOR YOU HERE SHORTLY.

8 NOW, OUR EXPERTS DID, IN FACT, LOOK AT  
 9 BIAS AND CONFOUNDING AND THEY LOOKED AT IT AT THE  
 10 INDIVIDUAL STUDY LEVEL. I WILL SHOW YOU SOME OF THEIR  
 11 CONCLUSIONS. THEY LOOKED AT IT ACROSS MULTIPLE TRIALS  
 12 AND THEY DISCOVERED THAT MOST OF THE BIASES AND  
 13 CONFOUNDING FAVORED AVANDIA, LEADING TO THE CONCLUSION  
 14 THAT WHILE THESE STUDIES DEMONSTRATED CLEAR RISK, THE  
 15 RISK THEY DEMONSTRATE UNDERREPORTS THE ACTUAL RISK OF  
 16 THIS DRUG. SO ONE OF THE -- I CALL IT A CONFOUNDER OR  
 17 BIAS HERE IS DIABETES, THE BACKGROUND RISK OF DIABETES.  
 18 AS I SAID, WE DO NOT DISPUTE THAT DIABETES CARRIES WITH  
 19 IT AN INCREASED RISK. AND AS DR. DAVID GRAHAM SAID,  
 20 THAT IS THE EXACT REASON YOU WOULD NOT WANT TO GIVE  
 21 THESE PATIENTS SOMETHING THAT WOULD INCREASE THAT RISK.  
 22 SO DR. GRAHAM CONCLUDED IN 2007 ANY DRUG USED FOR THE  
 23 TREATMENT OF DIABETES THAT INCREASES THE INCIDENCE OR  
 24 SEVERITY OF CORONARY HEART DISEASE IN PATIENTS WITH  
 25 DIABETES IS UNACCEPTABLE, IN 2007.

1 NOW, ONE OF THE WAYS THAT YOU DEAL WITH  
 2 DIABETES AS A BACKGROUND RISK IS TO CONTROL FOR IT. AND  
 3 AS I DISCUSSED BEFORE, THE ICT 42, IN FACT, CONTROLS FOR  
 4 DIABETES BECAUSE ONE OF THE REQUIREMENTS TO BE INCLUDED  
 5 IN THESE RANDOMIZED CONTROLLED TRIALS WAS THAT YOU HAD  
 6 DIABETES. SO YOU HAD DIABETES IN BOTH THE CONTROL ARM,  
 7 DIABETICS IN BOTH THE CONTROL ARM AND THE AVANDIA ARM IN  
 8 ALL OF THESE STUDIES. SO IT'S CONTROLLED FOR. SO WHEN  
 9 YOU SEE THE INCREASE IN RISK IN THE ICT 42, YOU ARE  
 10 CONTROLLING FOR THE BACKGROUND RISK OF DIABETES.

11 IMPORTANTLY, THESE WERE COMPANY SPONSORED  
 12 STUDIES THAT CONTROLLED FOR DIABETES, THAT CONTROLLED  
 13 FOR OTHER THINGS, SUCH AS PREEXISTING CORONARY HEART  
 14 DISEASE. THEY CONTROLLED FOR AGE AND BASELINE RISK  
 15 FACTORS IN THESE STUDIES. SO DIABETES BEING A  
 16 BACKGROUND RISK FACTOR WE AGREE WITH, YOU STILL SEE THE  
 17 RISK OVER AND ABOVE THE RISK THAT YOU HAVE WITH DIABETES  
 18 AS A BACKGROUND. EVEN IF YOU TAKE THIS DRUG INTO A  
 19 POPULATION THAT IS NOT DIABETIC, WHICH IS WHAT THE DREAM  
 20 TRIAL WAS, DREAM WAS IN NONDIABETIC PATIENTS. YOU WILL  
 21 SEE THE MYOCARDIAL INFARCTION RISK, THE SECOND ONE DOWN  
 22 IS TO THE RIGHT OF 1. THE HAZARD RATIO FOR THE  
 23 COMPOSITE END POINT IS NEARLY STATISTICALLY SIGNIFICANT  
 24 AT 1.37. SO YOU ARE SEEING THE RISK EVEN IN  
 25 NONDIABETICS WHEN YOU TAKE AWAY THE BACKGROUND DISEASE

1 RISK. AND DR. NISSEN -- DREAM IS ACTUALLY WHAT LAUNCHED  
 2 DR. NISSEN ON HIS OWN META-ANALYSIS AND HE DISCUSSED  
 3 DREAM WHEN IT WAS PUBLISHED AND SAID THE HAZARD RATIO OF  
 4 1.37 IN THE COMPOSITE END POINT, NEARLY STATISTICALLY  
 5 SIGNIFICANT. IT'S AN IMPORTANT FINDING THAT RAISES  
 6 SERIOUS QUESTIONS ABOUT THE SAFETY OF THIS AGENT, WHICH  
 7 IS WHEN HE EMBARKED UPON HIS META-ANALYSIS TO TRY TO  
 8 DISCOVER WHAT THE REAL RISKS WERE WITH THIS DRUG.

9 NOW, ONE OF THE THINGS THAT MS. HALPERN  
 10 DID NOT DISCUSS TODAY THAT I WILL JUST TOUCH ON QUICKLY,  
 11 THERE IS ANOTHER BIAS, BUT THIS BIAS SHOWS UP IN THE  
 12 PAPERS A BUNCH SO I WANT TO MAKE SURE THAT WE LET YOU  
 13 KNOW ABOUT IT. OVER-ASCERTAINMENT BIAS GOES ROUGHLY  
 14 LIKE THIS: WE KNOW THAT THIS DRUG INCREASES AND CAUSES  
 15 AN INCREASE IN CHF. SO IN THESE CLINICAL TRIALS, YOU  
 16 HAVE MORE PATIENTS GOING TO THEIR DOCTORS FOR CHF  
 17 PROBLEMS, WHERE YOU WILL PICK UP MORE MYOCARDIAL  
 18 INFARCTIONS, YOU WILL NOTICE MORE MYOCARDIAL INFARCTIONS  
 19 BECAUSE MORE PEOPLE WILL BE GOING IN FOR HEART PROBLEMS  
 20 FROM CHF. SO THE ARGUMENT IS, BECAUSE WE KNOW THE  
 21 INCREASE IN CHF, MORE PATIENTS ARE SHOWING UP AT THEIR  
 22 DOCTORS' OFFICE TALKING ABOUT HAVING A HEART PROBLEM,  
 23 THEY ARE GETTING MORE TESTING, MORE EKGs, AND THEY ARE  
 24 FINDING MORE HEART ATTACKS. IT'S CALLED  
 25 OVER-ASCERTAINMENT BIAS. AND IT IS IN THE PAPERS. AND

1 OUR EXPERTS WHEN ASKED ABOUT IT IN DEPOSITIONS AND IN  
 2 THE PAPERS SAID, YOU KNOW, I HAVE NOT SEEN ANY DATA ON  
 3 THAT. IF I SAW IT, I WOULD LIKE TO SEE IT, BUT I HAVE  
 4 NOT SEEN ANY DATA ON THAT, SO NO, I DID NOT CONSIDER  
 5 THAT BIAS WITH HARD DATA.  
 6 WELL, WE HAVE ACTUALLY FOUND THE DATA.  
 7 GSK HAS LOOKED AT EXACTLY THAT AND THE NEXT PAGE IS A  
 8 BLURRY VERSION OF WHAT THEY FOUND, WHICH IS IN THE  
 9 INTEGRATED CLINICAL TRIALS ANALYSIS. ONE OF THE  
 10 MYOCARDIAL INFARCTIONS IN THE ROSIGLITAZONE ARM HAD CHF  
 11 BEFORE THEY HAD THE MI SO THERE REALLY IS NO  
 12 OVER-ASCERTAINMENT BIAS AND THAT ARGUMENT IN THE BRIEFS  
 13 IS REALLY DISINGENUOUS BECAUSE ONLY ONE PERSON HAD CHF  
 14 SHOWED UP AND GOT DIAGNOSED WITH MYOCARDIAL INFARCTION  
 15 IN THOSE TRIALS, ACCORDING TO THEIR OWN ANALYSIS THAT  
 16 THEY ACTUALLY DID KNOW ABOUT WHEN THEY ASKED OUR EXPERTS  
 17 ABOUT IT.

18 NOW, WE DISCUSSED RECORD. I WILL JUST  
 19 TOUCH ON SOME OF THE BROAD ISSUES FROM DR. MARCINIAK.  
 20 THIS WAS PRESENTED AT ADCOM IN 2010. THE REASON THIS IS  
 21 IMPORTANT IS BECAUSE THEY REPEATEDLY SAY IN THE PAPERS  
 22 THAT OUR EXPERTS DID NOT LOOK AT BIAS AND CONFOUNDING  
 23 WHEN, IN FACT, THEY DID LOOK AT BIAS AND CONFOUNDING.  
 24 THEY JUST FOUND THAT IT ALWAYS FAVORED AVANDIA WHEN THEY  
 25 LOOKED AT IT. AND I WILL SHOW YOU A FEW REASONS WHY.

1 OUR EXPERTS BEFORE DR. MARCINIAK EVEN  
 2 WENT, DR. JEWELL IN PARTICULAR, OUR BIostatISTICIAN,  
 3 LINED OUT MANY OF HIS CONCERNS WITH THE RECORD TRIAL,  
 4 THE DESIGN ISSUES, CONDUCT ISSUES, BUT HE HAD NO REAL  
 5 INFORMATION ON THAT BECAUSE HE DIDN'T HAVE ACCESS TO THE  
 6 DATA. WELL, WHEN DR. MARCINIAK DID HIS PRESENTATION AT  
 7 THE FDA, IT CONFIRMED MOST OF DR. JEWELL'S CONCERNS  
 8 ABOUT THIS TRIAL. NOW, YOU HEARD DOCTOR -- SOME QUOTES  
 9 FROM DR. UNGER, BUT DR. UNGER ACTUALLY THINKS THAT DR.  
 10 MARCINIAK IS A TENACIOUS REVIEWER WHO SPENT I THINK SIX  
 11 MONTHS ON THIS TRIAL LOOKING THROUGH THE PAPERS. HE IS  
 12 EXTREMELY, EXTREMELY COMPETENT, DOES NOT EVEN BOTHER TO  
 13 USE A BIostatISTICIAN BECAUSE HE IS FULLY CAPABLE OF  
 14 DOING HIS OWN STATISTICAL ANALYSES. SO DR. MARCINIAK  
 15 DID A VERY WELL DONE AUDIT OF THIS TRIAL AND WHAT HE  
 16 FOUND WERE DESIGN BIASES AND IN THE RIGHT-HAND COLUMN  
 17 YOU SEE THERE ARE 18 BIASES UP THERE, IN THE RIGHT-HAND  
 18 COLUMN IF IT SAYS ROSIGLITAZONE, THEN IT WAS A BIAS IN  
 19 FAVOR OF THE DRUG. IF IT SAYS NULL, THAT IS ALSO A BIAS  
 20 IN FAVOR OF THE DRUG BECAUSE IT DRIVES THE VALUES  
 21 TOWARDS ZERO OR TOWARDS 1. SO THE ONLY NEUTRAL DESIGN  
 22 ISSUE, THERE ARE TWO NEUTRAL DESIGN ISSUES, ALL 16 OF 18  
 23 FAVOR THE DRUG. THE CONDUCT OF THE TRIAL, AGAIN, A LONG  
 24 LIST OF BIASES IN THE CONDUCT OF THE TRIAL AND ON THE  
 25 RIGHT-HAND SIDE, YOU CAN SEE THAT THE BIAS IN ALL OF

1 THOSE OR MOST OF THOSE INSTANCES FAVORED EITHER THE NULL  
 2 OR ROSIGLITAZONE. THAT IS THE PART OF DR. MARCINIAK'S  
 3 REPORT THAT OUR EXPERTS PRIMARILY RELY UPON, NOT HIS  
 4 READJUDICATION OF EVENTS, HIS AUDIT OF THE TRIAL.  
 5 NOW, IN HIS AUDIT, AND THE REASON IT'S  
 6 IMPORTANT AND THE REASON IT DEMONSTRATES BIAS AND  
 7 CONFOUNDING IS BECAUSE FOR EXAMPLE, HE WENT TO THE  
 8 CLINICAL TRIAL FORMS, THE PAPERS THEMSELVES THAT THE  
 9 DOCTORS AND INVESTIGATORS HAD FILLED OUT, AND WHEN HE  
 10 REVIEWED SOME RANDOM PERCENTAGE OF THOSE, THIS IS THE  
 11 TYPE OF STUFF THAT HE FOUND, THAT AN MI VANISHED AND IT  
 12 WAS NEVER REFERRED FOR ADJUDICATION AND THEREFORE NEVER  
 13 MADE IT INTO THE END POINT. CLEARLY AFFECTING THE  
 14 RESULTS FOR MYOCARDIAL INFARCTION WHICH THIS STUDY WAS  
 15 NOT EVEN DESIGNED OR POWERED TO FIND IN THE FIRST  
 16 INSTANCE.  
 17 HE CONCLUDED AFTER MAKING THIS THOROUGH  
 18 REVIEW THAT IT WAS INADEQUATELY DESIGNED AND CONDUCTED  
 19 TO PROVIDE ANY REASSURANCE ABOUT THE SAFETY OF THE DRUG  
 20 AND THAT IT CONFIRMS THE HEART FAILURE RISK AND NOT ONLY  
 21 THAT, BUT THAT IT SUGGESTS THAT ROSIGLITAZONE, IN FACT,  
 22 INCREASES THE RISK FOR MYOCARDIAL INFARCTION. SO OUR  
 23 EXPERTS DID LOOK AT BIAS AND CONFOUNDING. THEY SAW WHAT  
 24 DR. MARCINIAK SAW, WHICH IS DESIGN BIASES AND CONDUCT  
 25 BIASES IN THAT TRIAL.

1 DR. UNGER'S CONCLUSION WHEN HE HEARD  
 2 THAT, HE ACTUALLY SUPPORTED THIS AUDIT. WHAT HE DID NOT  
 3 LIKE WAS THE READJUDICATION. THE ISSUE HERE IS REALLY  
 4 TRUTH. CAN WE TRUST THE SPONSOR WITH THE RESULTS OF  
 5 RECORD? AND CAN YOU IS A GOOD QUESTION.  
 6 IN 2005, YEARS BEFORE IT WAS FINAL, AN  
 7 INTERNAL DOCUMENT SAYS RECORD DOES NOT UTILIZE AVANDIA  
 8 AS MONOTHERAPY OR IN COMBINATION WITH INSULIN AND  
 9 THEREFORE THE STUDY WILL NOT PROVIDE ANY INFORMATION  
 10 REGARDING THE CARDIOVASCULAR PROFILE OF THIS DRUG WHEN  
 11 USED IN MONOTHERAPY. THAT IS WHEN YOU ARE USING IT  
 12 ALONE WITHOUT METFORMIN OR SULFONYLUREA. IT'S NOT GOING  
 13 TO PROVIDE ANY INFORMATION ON THAT. AND ANOTHER  
 14 IMPORTANT LIMITATION, AS IT IS CALLED IN GSK'S OWN  
 15 DOCUMENT, ANOTHER IMPORTANT LIMITATION THAT THEY  
 16 DESCRIBED ABOUT RECORD WAS IT'S A SMALL PROPORTION OF  
 17 THE PATIENTS WHO WERE AT HIGH RISK. THIS IS A DESIGN  
 18 BIAS THAT WE SEE ACROSS ALL OF THE RANDOMIZED CONTROLLED  
 19 TRIALS.  
 20 RURY HOLMAN, TALKING ABOUT ADOPT, SAYS  
 21 THESE PEOPLE ARE EARLY DIAGNOSIS. SO IF YOU THINK OF  
 22 THE THREE LONG TERM CLINICAL TRIALS, YOU HAVE RECORD,  
 23 WHERE GSK RECOGNIZES IT'S A RELATIVELY HEALTHY  
 24 POPULATION, YOU HAVE ADOPT, WHERE RURY HOLMAN, WHO WAS  
 25 ONE OF THE INVESTIGATORS IN ADOPT, SAYS THEY ARE EARLY

1 DIAGNOSIS, THEY HAVE NOT GOT COMPLICATIONS AND THE FACT  
 2 THAT WE ARE SEEING CARDIOVASCULAR EFFECTS IN THESE TYPES  
 3 OF PATIENTS, WE CAN'T DENY THAT. THE CONCERN WHEN THESE  
 4 DATA CAME OUT IS YOU HAVE GOT RELATIVELY HEALTHY  
 5 PATIENTS AND STILL YOU ARE SEEING AN INCREASE IN RISK.  
 6 AND YOU SEE THAT ACROSS ALL THREE LONG TERM CLINICAL  
 7 CONTROLLED TRIALS, OUR EXPERTS RECOGNIZE THAT RISK AND  
 8 THAT IS THE TYPE OF BIAS THAT THEY TALK ABOUT IN THEIR  
 9 REPORTS.  
 10 WHY DO YOU HAVE SUCH DESIGN BIAS?  
 11 BECAUSE IT WAS AN INTERNAL, VERY EARLY, THIS IS 2001,  
 12 GSK POLICY. ALL OF THE STUDIES WE ARE DOING WERE CHOSEN  
 13 TO SHOW RESULTS IN FAVOR OF AVANDIA. IT WAS DESIGNED  
 14 THAT WAY.  
 15 NOW, THIS IS FROM THE MANNUCCI TRIAL  
 16 WHICH YOU HEARD ABOUT. MANNUCCI 164 META-ANALYSIS THAT  
 17 MS. HALPERN TALKED ABOUT A NUMBER OF TIMES. WELL,  
 18 ANOTHER TYPE OF BIAS THAT OUR EXPERTS LOOK FOR WHEN THEY  
 19 LOOKED AT THE INDIVIDUAL CLINICAL TRIALS THEMSELVES OR  
 20 META-ANALYSIS THEMSELVES WAS THE TYPE OF BIAS I'M ABOUT  
 21 TO SHOW YOU. IN MANNUCCI AND ALSO IN MONAMI, WHICH USES  
 22 THE SAME INFORMATION, THEY RELIED, FOR EXAMPLE, ON THE  
 23 LEBOVITZ PAPER. AND THE LEBOVITZ PAPER REFLECTED IN THE  
 24 COLUMN THERE WITH THE POINT OUT THAT THERE WERE NO  
 25 EVENTS IN THE ROSIGLITAZONE ARM AND NO EVENTS IN THE

1 PLACEBO ARM. THIS IS A META-ANALYSIS THAT THEY RELY  
 2 UPON TO SHOW NO INCREASED RISK. IT STILL HAS A POINT  
 3 ESTIMATE TO THE RIGHT OF 1, DESPITE WHAT I'M ABOUT TO  
 4 SHOW YOU. SO IN THIS PAPER, THEY USE THIS PUBLICATION  
 5 BY LEBOVITZ TO SAY THERE WERE NO EVENTS. WHY? BECAUSE  
 6 THIS IS WHAT THE PUBLICATION ACTUALLY SAYS, THERE WERE  
 7 NO SIGNIFICANT CHANGES FROM BASELINE IN VITAL SIGNS OR  
 8 ELECTROCARDIOGRAM PARAMETERS FOR AVANDIA TREATED  
 9 PATIENTS. SO TO SAY THERE WERE NO CHANGES IN  
 10 ELECTROCARDIOGRAMS FOR ROSIGLITAZONE TREATED PATIENTS.  
 11 THE SECOND AND THIRD AUTHORS AND FOURTH  
 12 AUTHORS ARE ALL GSK EMPLOYEES. AND THIS IS WHERE MONAMI  
 13 PICKED UP THE INFORMATION TO FIND THAT THERE WERE NO  
 14 EVENTS IN THE ROSIGLITAZONE ARM. WELL, THIS STUDY IS  
 15 PUBLISHED ON GSK'S CLINICAL TRIAL REGISTRY, WHICH --  
 16 IT'S POSTED THERE WHERE IF YOU CAN DIG IN AND FIND IT,  
 17 YOU WILL FIND THE RESULTS OF THIS STUDY AND AS YOU CAN  
 18 SEE, IT'S CALLED STUDY 011 BECAUSE THAT IS THE  
 19 PUBLICATION OF IT FOR LEBOVITZ. ON THE CLINICAL TRIAL  
 20 REGISTRY, IT ACTUALLY REFLECTS TWO HEART ATTACKS IN THE  
 21 ROSIGLITAZONE ARM AND NONE IN THE PLACEBO ARM. SO  
 22 MANNUCCI MISSED TWO HEART ATTACKS WHEN HE SAID THERE  
 23 WERE NONE. SO OUR EXPERTS LOOKED AT THE DATA. THAT IS  
 24 HOW DEEP THEY GOT. THEY LOOKED AT THE DATA IN THESE  
 25 STUDIES AND FOUND OUT THAT THIS META-ANALYSIS WAS NOT

1 ACCURATELY REFLECTING THE TRUE INFORMATION ABOUT THE  
 2 RISK OF THIS DRUG. MANNUCCI USES THE EXACT SAME  
 3 NUMBERS.  
 4 NOW DR. NISSEN GOT HIS INFORMATION FROM  
 5 THE CLINICAL TRIAL REGISTRY AS WELL. AND YOU CAN SEE  
 6 THAT HE APPROPRIATELY REFLECTED THE RESULTS FROM THE  
 7 CLINICAL TRIAL REGISTRY WHICH IS TWO MYOCARDIAL  
 8 INFARCTIONS, THERE IS ACTUALLY ONE DEATH FROM  
 9 CARDIOVASCULAR CAUSE, THAT IS A MYOCARDIAL INFARCTION.  
 10 THAT IS LISTED ON THE CLINICAL TRIAL REGISTRY, AND NONE  
 11 IN THE CONTROL GROUP. THE PROBLEM IS, IS DR. NISSEN DID  
 12 NOT KNOW THAT WHAT IS ON THE CLINICAL TRIAL REGISTRY IS  
 13 NOT THE FULL STORY, BECAUSE WHEN GSK SUBMITTED THE FINAL  
 14 CLINICAL STUDY REPORT TO THE FDA, THE FINAL CLINICAL  
 15 STUDY REPORT THAT WENT TO THE FDA HAS FIVE MYOCARDIAL  
 16 INFARCTIONS IN THE ROSIGLITAZONE ARM IN AVANDIA AND NONE  
 17 IN PLACEBO. SO EVEN DR. NISSEN DIDN'T KNOW. THIS IS  
 18 NOT PUBLICLY AVAILABLE. YOU CAN'T GET THIS UNLESS YOU  
 19 ARE AT THE FDA OR IN LITIGATION.  
 20 THAT WAS AN IMPORTANT BIAS ABOUT THESE  
 21 STUDIES FOR OUR EXPERTS SO WHEN OUR EXPERTS LOOKED AT  
 22 THIS META-ANALYSIS, THEY DID NOT LOOK AT IT AND GO OH, I  
 23 DON'T LIKE THE RESULT. THEY LOOKED AT IT, EXAMINED THE  
 24 DATA AND DETERMINED THAT IT WAS NOT RELIABLE DATA. THAT  
 25 IS HOW DEEP THEY WENT IN TO SEE THAT THE DATA THEY WERE

1 RELYING ON WAS RELIABLE IN AND OF ITSELF. SO YOU CAN  
 2 IMAGINE THE UNDERREPORTING THERE FOR FIVE HEART ATTACKS  
 3 IN AVANDIA ARM VERSUS NONE IN PLACEBO. IT'S JUST NOT IN  
 4 THE MANNUCCI OR THE MONAMI PAPERS.  
 5 ANOTHER BIAS AND CONFOUNDER THAT OUR  
 6 EXPERTS DISCUSSED WAS THE USE OF STATIN IN THE STUDIES.  
 7 FOR A LOT OF STUDIES, STATIN IS CONTROLLED FOR,  
 8 PARTICULARLY AT BASE LINE, BUT IN THE RECORD STUDY IN  
 9 PARTICULAR, THE STATIN USE, AS THE TRIAL GOES ALONG,  
 10 GOES UP IN THE ROSIGLITAZONE ARM. SO AVANDIA PATIENTS  
 11 ARE GETTING MORE STATIN SO YOU WOULD EXPECT LESS EVENTS  
 12 BECAUSE THEY ARE GETTING MORE STATIN. AND THAT WAS  
 13 ANOTHER BIAS, OR IT'S AN INCORRECT USE OF THE TERM  
 14 CONFOUNDER, BUT ANOTHER PATHWAY THAT THESE PATIENTS WENT  
 15 ON IN THIS STUDY. OUR EXPERTS EXAMINED THAT. SO WHEN  
 16 THEY SAY THAT OUR EXPERTS DID NOT LOOK AT BIAS AND  
 17 CONFOUNDING IN FACT THEY DID. AS DR. JEWELL  
 18 TESTIFIED --  
 19 (VIDEO PLAYED.)  
 20 QUESTION: YOUR OPINION IS THAT IN THE  
 21 TRIALS, I'M TALKING ABOUT THE RANDOMIZED CONTROLLED  
 22 TRIALS, WITH HIGH USE OF STATINS OR DISPARATE USE OF  
 23 STATINS, THOSE STUDIES WOULD HAVE UNDERESTIMATED, IN  
 24 FACT, THE RISK OF CARDIOVASCULAR EVENTS ASSOCIATED WITH  
 25 ROSI, IS THAT CORRECT?

1 ANSWER: THAT IS CORRECT.  
 2 (VIDEO ENDED.)  
 3 MR. ZONIES: AND THAT IS WHAT IS  
 4 IMPORTANT ABOUT THESE TYPES OF BIASES AND CONFOUNDING,  
 5 IS YOU ARE TRYING TO EXAMINE DID THE STUDIES THEMSELVES,  
 6 THEY REVIEWED THIS AT THE STUDY LEVEL, APPROPRIATELY AND  
 7 IN AN UNBIASED FASHION REPORT THE RESULTS.  
 8 SO BIAS AND CONFOUNDING OUR EXPERTS DID  
 9 DO. ALL OF THE WAY DOWN TO THE INDIVIDUAL STUDIES USED  
 10 TO SUPPORT INDIVIDUAL META-ANALYSES.  
 11 SO THE LAST QUESTION, IS IT CAUSAL? AND  
 12 THIS IS DR. BURKHART, THE DEFENSE'S EXPERT'S DEFINITION  
 13 OF CAUSAL. I DON'T THINK IT'S PARTICULARLY AT ISSUE.  
 14 WHETHER OR NOT THERE'S A CAUSE AND EFFECT AFTER YOU HAVE  
 15 DETERMINED THAT THERE IS AN ASSOCIATION, AFTER YOU HAVE  
 16 DETERMINED THE OUTCOMES WITH BIAS AND CONFOUNDING. IN  
 17 THE END, AS THE REFERENCE MANUAL SAYS, DECIDING WHETHER  
 18 ASSOCIATIONS ARE CAUSAL IS NOT A MATTER OF STATISTICS,  
 19 BUT A MATTER OF GOOD SCIENTIFIC JUDGMENT.  
 20 NOW OUR EXPERTS USED A LOT OF JUDGMENT,  
 21 ACCORDING TO GSK AND WE BELIEVE THAT TO BE TRUE. THE  
 22 BRADFORD-HILL CRITERIA I HAVE LISTED ON HERE. BY THE  
 23 WAY, KOCH'S POSTULATES, WHICH WAS BROUGHT UP IN ONE OF  
 24 THE SLIDES BY MS. HALPERN. IT'S NOT MENTIONED IN THE  
 25 REFERENCE MANUAL. IT'S BECAUSE IT'S ABOUT 150 YEARS OLD

1 BACK WHEN THEY WERE LOOKING AT TUBERCULOSIS, BUT THE  
 2 BRADFORD-HILL CRITERIA, IT'S NOT A SCIENTIFIC  
 3 METHODOLOGY. THE CRITICAL PART IN THE REFERENCE MANUAL  
 4 IS THERE IS NO FORMULA OR ALGORITHM. WHILE YOU ARE  
 5 DRAWING THE CAUSAL INFERENCES, IT'S INFORMED BY  
 6 SCIENTIFIC EXPERTISE, SOMETHING THAT THEY ADMIT OUR  
 7 EXPERTS HAVE, EXPERTISE. IT'S NOT A DETERMINATION THAT  
 8 IS MADE BY USING A SCIENTIFIC METHODOLOGY.  
 9 REPLICATION IS ONE OF THE BRADFORD-HILL  
 10 CRITERIA AND WHAT IT PRIMARILY MEANS IS, IT'S IMPORTANT  
 11 THAT A STUDY BE REPLICATED IN DIFFERENT POPULATIONS AND  
 12 BY DIFFERENT INVESTIGATORS BEFORE A CAUSAL RELATIONSHIP  
 13 IS ACCEPTED BY EPIDEMIOLOGISTS.  
 14 HERE, EVEN JUST LOOKING AT THE ICT 42  
 15 ALONE, BECAUSE IT IS 42 STUDIES DONE OVER A PERIOD OF  
 16 TIME, YOU HAVE HUNDREDS OF DIFFERENT INVESTIGATORS AND  
 17 HUNDREDS OF DIFFERENT PATIENT POPULATIONS AND DIFFERENT  
 18 COMPARATORS. PLACEBO, METFORMIN, SULFONYLUREA,  
 19 DIFFERENT COMBINATIONS, AND YOU SEE THE RESULTS  
 20 REPLICATED THROUGHOUT THE ICT 42.  
 21 THIS SLIDE ALONE, WHICH IS ALL OF THE  
 22 STATISTICALLY SIGNIFICANT AND NONSTATISTICALLY  
 23 SIGNIFICANT POINT ESTIMATES TO THE RIGHT OF ONE  
 24 REPRESENTS OVER TWO MILLION PATIENTS IN REAL WORLD  
 25 POPULATIONS, IN CLINICAL CONTROLLED -- IN CONTROLLED

1 TRIALS, ALL SHOWING AN INCREASE IN RISK. THESE ARE  
 2 PATIENTS IN RANDOMIZED CONTROLLED TRIALS, META-ANALYSES,  
 3 OBSERVATIONAL STUDIES, UNITED STATES, EUROPE, CANADA AND  
 4 IN FACT EVEN ASIA. SO REPLICATION ACROSS VARIOUS  
 5 TRIALS WITH VARIOUS INVESTIGATORS FROM VARIOUS TYPES  
 6 WITH VARIOUS PATIENT POPULATIONS, INCLUDING DIABETICS,  
 7 NONDIABETICS, THOSE AT HIGH RISK, THOSE AT LOW RISK,  
 8 THOSE IN THE REAL WORLD. AGAIN, DEFENSE EXPERT DR.  
 9 BURKHART, WHO MADE THESE CALLS AT THE FDA, AND HERE IS  
 10 HIS OPINION ON REPLICATION.  
 11 (VIDEO PLAYED.)  
 12 ANSWER: SO IN MY VIEW, ONCE YOU HAVE  
 13 REACHED THE POINT OF REPLICATING SOMETHING YOU BELIEVE  
 14 IS A STRONG RELATIONSHIP, THEN YOU HAVE REACHED A CAUSAL  
 15 STANDARD, WHICH IS WHAT WE DO A LOT IN CLINICAL TRIALS.  
 16 (VIDEO ENDED.)  
 17 THAT IS, IN FACT, WHAT HE DID AT THE FDA  
 18 FOR A LIVING. SO FOR DR. BURKHART, YOU CAN STOP AND YOU  
 19 CAN SAY THAT THAT WAS A RELIABLE METHODOLOGY UPON WHICH  
 20 TO REACH A CAUSATION OPINION.  
 21 HONORABLE CYNTHIA RUFÉ: ALL RIGHT.  
 22 LET'S JUST TAKE OUR SHORT BREAK RIGHT NOW.  
 23 MR. ZONIES: ABSOLUTELY.  
 24 HONORABLE CYNTHIA RUFÉ: WE ARE IN  
 25 RECESS.

1 (BREAK TAKEN.)  
 2 THE CLERK: ALL RISE.  
 3 HONORABLE CYNTHIA M. RUFÉ: ARE WE READY?  
 4 MR. ZONIES: YES.  
 5 HONORABLE CYNTHIA M. RUFÉ: MR. ZONIES.  
 6 MR. ZONIES: THANK YOU, YOUR HONOR. I  
 7 MAY HAVE TO INSTITUTE THE LIGHTS DIMMING THREE TIMES  
 8 THIS MORNING.  
 9 BEFORE WE BROKE, WE TOOK A LOOK AT ONE OF  
 10 THE FIRST BRADFORD-HILL CRITERIA WHICH WAS REPLICATION  
 11 AND I BELIEVE DEMONSTRATED THAT THE RESULTS HAVE BEEN  
 12 REPLICATED ACROSS MANY POPULATIONS.  
 13 ANOTHER OF THE BRADFORD-HILL CRITERIA IS  
 14 BIOLOGICAL PLAUSIBILITY. PLAUSIBILITY FOR ALL OF US  
 15 MEANS SOMETHING AND PLAUSIBILITY MEANS YOU DON'T HAVE TO  
 16 PROVE THIS TO THE UTMOST CONCLUSION. THAT IS NOT WHAT  
 17 PLAUSIBILITY MEANS IN THIS CASE. IS THERE A MECHANISM  
 18 THAT PLAUSIBLY INCREASES THESE EVENTS? THAT IS THE  
 19 QUESTION AND IT APPEARS THAT GSK'S POSITION IS THAT  
 20 THERE HAS TO BE A STATISTICALLY SIGNIFICANT RESULT FROM  
 21 A RANDOMIZED CONTROLLED TRIAL SHOWING NOT ONLY THAT  
 22 AVANDIA INCREASES HEART ATTACKS, BUT THAT AVANDIA'S  
 23 IMPACT ON CERTAIN LIPID PARAMETERS CAUSES HEART ATTACKS,  
 24 FRANKLY, SUCH A TRIAL WOULD HAVE TO BE 20 YEARS LONG AND  
 25 INCREDIBLY HUGE TO GET DOWN TO THAT LEVEL OF DETAIL

1 ABOUT WHAT HAPPENS. SO THAT IS NOT WHAT BIOLOGICAL  
 2 PLAUSIBILITY REQUIRES. IT REQUIRES SOME GOOD JUDGMENT  
 3 AND SCIENCE TO DETERMINE WHETHER OR NOT A PARTICULAR  
 4 DRUG HAS SOME MECHANISM THROUGH WHICH, FOR EXAMPLE, THE  
 5 COFFEE MECHANISM WITH LUNG CANCER, THAT NO ONE COULD  
 6 FIND A BIOLOGICAL MECHANISM BY WHICH DRINKING COFFEE  
 7 WOULD GIVE YOU LUNG CANCER. SO THAT WOULD FAIL THE  
 8 BIOLOGICAL PLAUSIBILITY MECHANISM.  
 9 IMPORTANTLY, BIOLOGICAL PLAUSIBILITY IS  
 10 JUST NOT THAT IMPORTANT. AGAIN, DR. BURKHART, WHO  
 11 WORKED AT THE FDA AS AN EPIDEMIOLOGIST MAKING THE CALL  
 12 FOR CAUSAL ISSUES, SAYS THIS ABOUT BIOLOGICAL  
 13 PLAUSIBILITY.  
 14 (VIDEO PLAYED.)  
 15 QUESTION: WOULD YOU AGREE WITH ME THAT  
 16 SCIENTISTS, AND I THINK YOU SAID THIS OR SOMETHING  
 17 SIMILAR, DON'T NECESSARILY NEED TO KNOW HOW A DRUG  
 18 MECHANISTICALLY CAUSES A DISEASE BEFORE CONCLUDING THAT  
 19 A DRUG DOES IN FACT CAUSE A DISEASE?  
 20 ANSWER: THE WITNESS: I AGREE. THE  
 21 BIOLOGIC UNDERSTANDING OF MECHANISM, BOTH FOR EFFICACY  
 22 AND SAFETY, ARE NOT THAT IMPORTANT.  
 23 (VIDEO ENDED.)  
 24 MR. ZONIES: SO ACCORDING TO DR.  
 25 BURKHART, IT'S NOT THAT IMPORTANT. NOW OUR EXPERTS

1 HAPPEN TO THINK THAT IT IS IMPORTANT PARTICULARLY IN  
 2 THIS CASE, BUT THE MEASURE OF THE METHODOLOGY AND  
 3 FRANKLY THE DAUBERT AND FRYE INQUIRY ON THIS SHOULD BE  
 4 MEASURED BY THIS FRANKLY LARGELY AGREED-WITH OPINION OF  
 5 EPIDEMIOLOGISTS AND BIostatisticians. DR. JEWELL FOR  
 6 EXAMPLE AGREES WITH THE ANALYSIS THAT BIOLOGICALLY  
 7 PLAUSIBLE MECHANISMS ARE NOT REALLY THE BE ALL AND END  
 8 ALL.

9                   HOWEVER THIS CASE HAS A NUMBER OF THOSE  
 10 BIOLOGICALLY PLAUSIBLE MECHANISMS. THE REFERENCE MANUAL  
 11 ITSELF ACTUALLY DISCUSSES BIOLOGICALLY PLAUSIBLE  
 12 MECHANISMS AND SAYS: BIOLOGICAL PLAUSIBILITY IS NOT AN  
 13 EASY CRITERION TO USE AND DEPENDS UPON EXISTING  
 14 KNOWLEDGE ABOUT THE MECHANISMS BY WHICH THE DISEASE  
 15 DEVELOPS. WHEN IT EXISTS, IT LENDS CREDENCE TO AN  
 16 INFERENCE OF CAUSALITY. AND THE EXAMPLE THAT THE MANUAL  
 17 USES IS VERY INTERESTING FOR THIS CASE. FOR EXAMPLE,  
 18 THE CONCLUSION THAT HIGH CHOLESTEROL IS A CAUSE OF  
 19 CORONARY ARTERY DISEASE IS PLAUSIBLE BECAUSE CHOLESTEROL  
 20 IS FOUND IN ATHEROSCLEROTIC PLAQUES. AND OF COURSE THAT  
 21 IS ONE OF THE MECHANISMS THAT OUR EXPERTS POSIT HERE AS  
 22 A BIOLOGICALLY PLAUSIBLE MECHANISM. THERE IS NO  
 23 QUESTION THAT THIS DRUG INCREASES BAD CHOLESTEROL. LDL  
 24 CHOLESTEROL -- I BELIEVE DR. GAVIN, THE DEFENSE EXPERT,  
 25 USED TO TEACH HIS PATIENTS THAT THAT IS THE BAD

1 CHOLESTEROL BY SAYING THE L STANDS FOR LETHAL, LETHAL  
 2 CHOLESTEROL. MY MOM LIKES TO SAY HDL WHICH IS THE GOOD  
 3 CHOLESTEROL IS THE HAPPY CHOLESTEROL. THERE IS NO  
 4 QUESTION THAT THIS DRUG INCREASES LETHAL CHOLESTEROL.  
 5                   THIS IS AN INTERNAL MEMORANDUM FROM ONE  
 6 OF GSK'S SCIENTISTS WHO HAS BEEN ON THIS DRUG FOR  
 7 YEARS -- NOT ON IT TAKING IT, BUT WORKING ON THIS  
 8 PHARMACEUTICAL PRODUCT FOR YEARS. AND HE WRITES  
 9 SOMETHING THAT IS VERY INTRIGUING. HE SAYS THE LDL  
 10 CHOLESTEROL INCREASE SEEN WITH AVANDIA IS VERY MUCH A  
 11 PART OF ITS PHARMACOLOGY. IT IS DOSE ORDERED. I WILL  
 12 GET TO THAT WHEN WE GET TO DOSE RESPONSE. IT IS DOSE  
 13 ORDERED AND SEEN IN EVERY STUDY, DIABETIC AND  
 14 NONDIABETIC. P VALUES, MEANING HOW CONFIDENT ARE WE  
 15 THAT THIS IS HAPPENING, AS CONVINCING -- AT LEAST AS  
 16 CONVINCING AS THOSE FOR WHAT IT WAS INDICATED FOR, WHICH  
 17 IS IMPROVEMENTS IN GLYCEMIA. THERE IS NO QUESTION THAT  
 18 THIS DRUG IMPACTS LETHAL CHOLESTEROL. THE NEXT SLIDE IS  
 19 FROM A 1998 PRESENTATION THAT GSK DID TO A BOARD CALLED  
 20 THE LIPID ADVISORY BOARD THAT THEY FORMED BEFORE THEY  
 21 WENT TO THE FDA TO TRY TO GET APPROVAL FOR THE DRUG,  
 22 BEFORE THEY DID THEIR ADVISORY COMMITTEE MEETING WITH  
 23 THE FDA, AND THEY WERE TRYING TO FIGURE OUT HOW CAN WE  
 24 DEAL WITH THIS ISSUE. AND SO THEY CONVENED A BOARD TO  
 25 HELP THEM TRY TO LOOK AT THIS. YOU CAN SEE THE DOSE

1 ORDERING. YOU'VE GOT THE THREE STUDIES ON THE RIGHT  
 2 THERE; IT'S 011, 024 AND 020. SO THOSE ARE EACH OF THE  
 3 THREE DIFFERENT COLORED BARS. IF YOU FOLLOW THE DARKEST  
 4 BAR, THE THIRD ONE IN THE FIRST COLUMN, THAT IS ON  
 5 PLACEBO, THERE IS ACTUALLY DECREASE IN LDL IN THAT  
 6 PLACEBO GROUP. THEN YOU CAN SEE WHEN YOU ARE USING TWO  
 7 MILLIGRAMS TWICE A DAY, SO WHEN YOU ARE TAKING FOUR  
 8 MILLIGRAMS THERE IS AN INCREASE OVER FIVE PERCENT, AND  
 9 THEN WHEN YOU'RE TAKING EIGHT MILLIGRAMS A DAY WHICH IS  
 10 WHAT FOUR MILLIGRAMS BD MEANS, YOU ARE OVER 10 PERCENT.  
 11 YOU CAN SEE THE DOSE ORDERING GOING RIGHT UP. IT'S THE  
 12 SAME FOR THE MIDDLE TRIAL. AND THE ONE ALL OF THE WAY  
 13 TO THE LEFT IS 011, WHICH REFLECTS FRANKLY PROBABLY THE  
 14 MOST ACCURATE AT LEAST THAT I HAVE SEEN PREDICTOR OF  
 15 WHAT THE MEAN EFFECT IS ACROSS A PATIENT POPULATION OF  
 16 THIS DRUG ON LDL CHOLESTEROL, WHICH IS AROUND OR ABOVE  
 17 20 PERCENT INCREASE.

18                   NOW JUST TO GIVE YOU AN IDEA OF WHAT THAT  
 19 INCREASE MEANS, A 20 PERCENT INCREASE IS HOW STATINS  
 20 GET APPROVED BY A 20 TO 30 PERCENT DECREASE IN THIS SAME  
 21 MARKER. SO IF YOU ARE IN THAT EIGHT MILLIGRAM A DAY ARM  
 22 ON ROSIGLITAZONE -- AND THIS IS COMPARED TO PLACEBO SO  
 23 YOU ARE REALLY GETTING TO SEE THE DRUG'S EFFECT, IF YOU  
 24 ARE IN THAT EIGHT-MILLIGRAM ARM, TAKING AVANDIA MEANS  
 25 NOW YOU NEED TO TAKE A STATIN. THAT'S WHAT IT MEANS.

1 YOU HAVE CREATED A CONDITION THAT NOW NEEDS TO BE  
 2 TREATED BY TAKING THIS DRUG.  
 3                   WE HAVE -- OUR EXPERTS YOU CAN SEE IN  
 4 THEIR REPORTS ACTUALLY GOT INTO THE PATIENT LEVEL --  
 5                   HONORABLE CYNTHIA M. RUFÉ: LET ME ASK  
 6 YOU A QUESTION IF I MIGHT. IS THIS WITH A NONDIABETIC  
 7 CONTROL GROUP OR IS THIS WITH DIABETICS?  
 8                   MR. ZONIES: DIABETIC ON BOTH SIDES OF  
 9 THE EQUATION. THIS WAS A TRIAL. 011 WAS ONE OF THEIR  
 10 PIVOTAL STUDIES THAT THEY USED. THIS LIPID INFORMATION  
 11 ENDS UP IN THE LABEL. IT WAS A TRIAL THAT THE MEDICAL  
 12 REVIEWER ACTUALLY HAD SOME ISSUES WITH ABOUT THE ETHICS  
 13 OF THE TRIAL BECAUSE THEY TOOK DIABETIC PATIENTS OFF OF  
 14 THEIR EXISTING THERAPY AND PUT THEM ON PLACEBO FOR  
 15 26 WEEKS. AND HE WAS VERY CONCERNED ABOUT -- WE ALL  
 16 KNOW YOU SHOULD NOT TAKE A DIABETIC PATIENT OFF OF THEIR  
 17 TREATMENT TO KEEP THEIR GLYCEMIC LEVELS UNDER CONTROL  
 18 AND HE WROTE IN THE MEDICAL OFFICER REPORT THAT HE FELT  
 19 THE INFORMATION FROM THIS TRIAL, PARTICULARLY FROM THE  
 20 PLACEBO ARM, SHOULD NOT BE USED TO SUPPORT APPROVAL OF  
 21 THIS DRUG BECAUSE IT WAS AN UNETHICAL STUDY IN THAT  
 22 SENSE.

23                   HONORABLE CYNTHIA M. RUFÉ: THESE WERE  
 24 DIAGNOSED DIABETICS IN THE PLACEBO GROUP AND ALL OF THEM  
 25 WERE DIAGNOSED DIABETIC BEING TREATED, NOT PREDIABETIC.

1 MR. ZONIES: CORRECT.  
 2 HONORABLE SANDRA MAZER MOSS: JUST ONE  
 3 QUESTION AND MAYBE YOU JUST ANSWERED IT. WHEN YOU SAY  
 4 DIABETICS AND NONDIABETICS, NONDIABETICS WOULD BE  
 5 PREDIABETICS.  
 6 MR. ZONIES: FOR EXAMPLE --  
 7 HONORABLE SANDRA MAZER MOSS: AVANDIA WAS  
 8 NOT GOING TO BE USED FOR ANYTHING OTHER THAN SOMEBODY  
 9 WITH DIABETES OR SOMEBODY ON THE WAY TO DIABETES.  
 10 MR. ZONIES: WELL, ACTUALLY THAT IS A  
 11 GREAT QUESTION. THE DREAM TRIAL ITSELF WAS JUST THAT.  
 12 SO...  
 13 HONORABLE SANDRA MAZER MOSS: THAT IS  
 14 WHAT -- GO AHEAD.  
 15 MR. ZONIES: IT WAS ONLY INDICATED FOR  
 16 USE IN DIABETICS, DIAGNOSED DIABETICS, AND GSK WANTED TO  
 17 TRY TO MOVE THE LINE BACK INTO INSULIN RESISTANCE AND  
 18 IMPAIRED GLUCOSE. SO THE WAY THEY DID THAT IS THEY  
 19 DESIGNED THE DREAM TRIAL, WHICH WAS PREDIABETICS, TO SEE  
 20 WHETHER OR NOT THE DRUG WOULD PREVENT PEOPLE FROM  
 21 DEVELOPING DIABETES. IN FACT, IT SHOWED THAT IT PUSHED  
 22 OFF THE MOVE TO DIABETES IN A STATISTICALLY SIGNIFICANT  
 23 WAY, BUT AT THE SAME TIME THOSE SAME PATIENTS HAD A  
 24 STATISTICALLY SIGNIFICANT SEVEN-FOLD INCREASE IN  
 25 CONGESTIVE HEART FAILURE AND YOU HAVE SEEN THE SLIDES

1 WHERE THERE IS NONSTATISTICALLY SIGNIFICANT INCREASE OF  
 2 MYOCARDIAL INFARCTIONS AND OTHER BAD EVENTS.  
 3 HONORABLE SANDRA MAZER MOSS: YOU'RE  
 4 SAYING PICK YOUR POISON.  
 5 MR. ZONIES: PICK YOUR POISON AND YOUR  
 6 ANTIDOTE AND YOU HAVE TO TAKE THEM TOGETHER.  
 7 HONORABLE SANDRA MAZER MOSS: THANK YOU.  
 8 MR. ZONIES: THAT IS WHAT GENERATES AN  
 9 E-MAIL LIKE THIS. ONE MONTH AFTER AVANDIA GETS  
 10 APPROVED, J.P. GARNIER IS THE CEO OF THE COMPANY. HE  
 11 MAY HAVE BEEN THE CFO AT THE TIME, BUT ONE OF THE TOP  
 12 DOGS AT THE COMPANY AT THE TIME. HE SENDS AN E-MAIL OUT  
 13 AFTER HE HAS A MEETING WITH ANALYSTS AND HE SAYS: WHAT  
 14 EXACTLY IS THE NATURE OF OUR LIPIDS PROBLEM WITH  
 15 AVANDIA? HOW SERIOUS IS IT? HOW INTENSE IS IT? HOW  
 16 LONG LASTING IS IT? IS THIS CONNECTED TO THE  
 17 CARDIOVASCULAR DEATHS? WHY IN THE FIRST PLACE ARE WE  
 18 HAVING SUCH A HIGH NUMBER OF CV DEATHS WHILE OTHER  
 19 GLITAZONES -- AND AT THAT POINT IT INCLUDED REZULIN,  
 20 WHICH WAS ON THE MARKET -- DID NOT. SO IT WAS WELL  
 21 KNOWN EARLY ON OF THIS EFFECT OF THE DRUG.  
 22 NOW THIS COMPLEX LITTLE SLIDE JUST TELLS  
 23 YOU ONE THING. ON THE LEFT-HAND SIDE IS HOW MANY  
 24 CORONARY HEART DISEASE EVENTS ARE HAPPENING. SO THE  
 25 FURTHER UP THE CHART YOU GO ON THE LEFT OR THE FURTHER

1 UP THE CHART YOU GO AT ALL, IT MEANS MORE EVENTS. THE  
 2 FURTHER RIGHT YOU GO ON THE CHART, THAT IS YOUR LDL  
 3 GOING UP USING THE ENGLISH MEASUREMENTS. AND YOU CAN  
 4 SEE ALL THIS REALLY IS INTENDED TO SHOW IS IN OVER  
 5 100,000 PATIENTS IS WHAT IT TOOK TO GET THIS STUDY  
 6 COMPLETED. THERE ARE DIABETICS IN THIS, NONDIABETICS IN  
 7 THIS, THERE ARE STATIN STUDIES IN THIS. IT SHOWS THAT  
 8 ACROSS ALL THESE STUDIES UNEQUIVOCALLY, WELL-KNOWN FOR  
 9 30 PLUS YEARS, THAT AN INCREASE IN LDL CHOLESTEROL IS  
 10 CLEARLY ASSOCIATED AND NOT JUST ASSOCIATED, BUT YOU WILL  
 11 HEAR CAUSAL FOR CARDIOVASCULAR ADVERSE EVENTS. AND IN  
 12 FACT THE RELATIONSHIP IS SOMEWHERE BETWEEN 1 AND  
 13 2 PERCENT. IF YOUR CHOLESTEROL GOES UP 20 PERCENT LIKE  
 14 THOSE IN 011, YOU CAN IMAGINE THAT YOU ARE NOW HAVING A  
 15 20 PERCENT INCREASE IN RISK.  
 16 WE DID TAKE -- YOU WILL SEE SOME OF THIS  
 17 IN PARTICULARLY DR. BRINTON'S REPORT, WE WENT AND LOOKED  
 18 AT THE PATIENTS IN 011 AND LOOKED AT THE INDIVIDUAL  
 19 IMPACT ON THEIR LIPID LEVELS BECAUSE THE MEAN CAN  
 20 SOMETIMES BE, YOU KNOW, DECEPTIVE. THE MEAN INCREASE  
 21 WAS IN FACT ABOUT 20 PERCENT IN THAT TRIAL, BUT WHEN YOU  
 22 LOOK AT JUST THE PATIENTS WHO HAD AN INCREASE WHICH  
 23 HAPPENED TO BE ABOUT THREE QUARTERS OF THE PATIENTS, SO  
 24 75 PERCENT OF THE PATIENTS IN 011 HAD AN INCREASE, THE  
 25 AVERAGE INCREASE WAS ACTUALLY MUCH HIGHER. IT WAS ABOUT

1 39 PERCENT AND THERE WERE SOME PATIENTS THAT WERE WELL  
 2 OVER 100 PERCENT INCREASE IN LDL CHOLESTEROL IN THIS  
 3 TRIAL. SO THE MEAN DOWN HERE COULD BE DECEPTIVE BECAUSE  
 4 YOU ARE TAKING OF COURSE A BUNCH OF PEOPLE AND FIGURING  
 5 OUT WHAT THE AVERAGE IS. BUT IN THIS CASE, IT'S MORE UP  
 6 HERE HAVING AN INCREASE AND NOT ONLY THAT, THE INCREASE  
 7 IS SUBSTANTIALLY MORE THAN THE MEAN.  
 8 LDL IS A CAUSAL MECHANISM. THIS IS AGAIN  
 9 THE DEFENSE CARDIOLOGIST, DR. KEANEY, AND DR. KEANEY  
 10 TESTIFIED ABOUT LDL IN THIS FASHION.  
 11 (VIDEO PLAYED.)  
 12 ANSWER: INCREASED LDL CHOLESTEROL IS  
 13 CAUSALLY ASSOCIATED WITH ATHEROSCLEROSIS AND  
 14 CARDIOVASCULAR EVENTS.  
 15 (VIDEO ENDED.)  
 16 MR. ZONIES: THAT IS BASED UPON, AS I  
 17 SAID, 30 PLUS YEARS OF VERY STRONG SCIENTIFIC EVIDENCE  
 18 THAT REFLECTS THIS RISK.  
 19 NOW, MS. HALPERN DISCUSSED THE  
 20 ATHEROSCLEROSIS STUDIES AND HOW, WELL, JEEZ, IF LDL GOES  
 21 UP, YOU WOULD TEND TO SEE A PROGRESSION IN  
 22 ATHEROSCLEROSIS. AND HERE THERE HAVE BEEN TRIALS  
 23 REFLECTING THAT THERE IS NOT A PROGRESSION IN  
 24 ATHEROSCLEROSIS WITH THIS DRUG. AND AGAIN ON FACE VALUE  
 25 THAT LOOKS LIKE A PRETTY GOOD ARGUMENT, BUT YOU REALLY

1 HAVE TO TAKE THAT EXTRA STEP, WHICH OUR EXPERTS DID, TO  
 2 LOOK AT THOSE TRIALS AND SEE WHAT HAPPENED IN THOSE  
 3 TRIALS.  
 4 AND VICTORY IS ONE OF THOSE TRIALS. THE  
 5 VICTORY TRIAL WAS SUPPORTED BY AN UNRESTRICTED GRANT  
 6 FROM GLAXOSMITHKLINE. 100 PERCENT OF THE PATIENTS IN  
 7 THAT TRIAL WERE ON ANTI-PLATELET THERAPY. 95 PERCENT AT  
 8 BASELINE WERE ON A STATIN. BY THE END OF TRIAL ONLY  
 9 THREE PATIENTS IN THE AVANDIA ARM WEREN'T. IN THIS  
 10 TRIAL LDL CHOLESTEROL ACTUALLY DECREASED IN THE AVANDIA  
 11 ARM OVER A 12-MONTH PERIOD, AS DID APO-B WHICH I WILL  
 12 DISCUSS IN A BIT, WHICH IS -- EACH ATHEROGENIC PARTICLE  
 13 HAS AN APO-B PROTEIN ON IT, AND THAT IS THE NUMBER OF  
 14 TRUCKS DELIVERING LETHAL CHOLESTEROL TO YOUR CORONARY  
 15 ARTERIES. SO WHAT YOU ARE SEEING IN VICTORY IS NOT  
 16 SURPRISING, FRANKLY. YOU WON'T SEE ATHEROSCLEROTIC  
 17 PROGRESSION IF WHAT YOU ARE HAVING IS A DECREASE IN LDL,  
 18 WHICH IS WHAT HAPPENED IN VICTORY. YOU ARE HAVING -- ON  
 19 THE RIGHT-HAND SIDE YOU SEE -- I HAVE TAKEN THAT FROM  
 20 THE AVANDIA LABEL, THAT IS THE EXPECTED EFFECT OF  
 21 AVANDIA ON LDL. WELL, IF YOU HAD THE EXPECTED EFFECT OF  
 22 AVANDIA ON LDL IN THIS ATHEROSCLEROTIC STUDY, I WOULD  
 23 POSIT THAT YOU WOULD SEE PROGRESSION IN ATHEROSCLEROSIS.  
 24 BUT WHEN YOU MANAGE THESE PATIENTS AND YOU DESIGN YOUR  
 25 STUDIES TO WIN, YOU ARE NOT GOING TO HAVE THE LDL

1 CHOLESTEROL WHERE YOU WOULD SEE THE PROGRESSION  
 2 ATHEROSCLEROSIS. IT IS NOT JUST IN VICTORY. IT'S IN  
 3 ALL OF THE ATHEROSCLEROSIS STUDIES. VICTORY, DECREASE  
 4 IN LDL-C; PPAR DECREASE EVEN GREATER IN LDL-C; STARR, WE  
 5 DON'T HAVE THE INFORMATION; APPROACH, SMALL INCREASE;  
 6 HEDBLAD, ABOUT NINE PERCENT, HALF OF WHAT AVANDIA DOES  
 7 IN THOSE ATHEROSCLEROTIC PROGRESSION STUDIES. SO IT'S  
 8 NOT SHOCKING THAT THOSE STUDIES WOULD NOT REFLECT THE  
 9 PROGRESSION THAT YOU WOULD SEE ELSEWHERE.  
 10 ONE OF GSK'S -- I HAVE SKIPPED AHEAD TWO  
 11 OR THREE SLIDES. ONE OF GSK'S PRIMARY STORIES -- THEY  
 12 HAD WHAT THEY CALLED THE LIPID STRATEGY. AND ONE OF  
 13 THEIR PRIMARY STRATEGIES WITH DEALING WITH LDL  
 14 CHOLESTEROL WAS TO ARGUE, DON'T WORRY ABOUT LETHAL  
 15 CHOLESTEROL GOING UP, HAPPY CHOLESTEROL GOES UP TOO, SO  
 16 THEY ARE GOING TO OFFSET EACH OTHER. AND IT ACTUALLY  
 17 WAS SO CONVINCING THAT IT MADE IT INTO THE LABEL. AND  
 18 IN THE LABEL IT SAYS: INCREASES IN LDL CHOLESTEROL  
 19 OCCURRED PRIMARILY DURING THE FIRST 1 TO 2 MONTHS OF  
 20 THERAPY AND REMAINED ELEVATED, WHICH WE ALL KNOW. IN  
 21 CONTRAST, HDL CONTINUED TO RISE OVER TIME. SO TO COMBAT  
 22 THE CONCERN THAT THEY -- THE VERY REAL CONCERN THEY HAD  
 23 ABOUT THE LETHAL EFFECT, THEY PUT MARKETING PIECES OUT  
 24 THAT ACTUALLY WERE ENTITLED A FAVORABLE LIPID PROFILE  
 25 AND THERE REFLECTED THE INCREASES IN HDL.

1 NOW THE PROBLEM WITH THIS IS MULTI-FOLD.  
 2 THERE ARE NO OUTCOME STUDIES DEMONSTRATING THAT THAT IS  
 3 TRUE, PARTICULARLY NOT LIKE THE LDL OUTCOME STUDIES THAT  
 4 YOU SAW. BUT MORE IMPORTANTLY, WHAT GSK DID NOT TELL  
 5 PEOPLE WAS THAT THEY HAD LARGE PARTS OF THEIR PATIENT  
 6 POPULATIONS THAT THEY KNEW HAD DECREASES IN HAPPY  
 7 CHOLESTEROL, WHICH ACTUALLY IS REFLECTIVE OF MORE RISK.  
 8 AND WE HAVE ACTUALLY LOOKED AT THE PATIENT LEVEL DATA.  
 9 AGAIN THIS IS IN DR. BRINTON'S REPORT. SOMEWHERE  
 10 BETWEEN 25 AND 30 PERCENT OF THE PATIENTS WHO TAKE  
 11 AVANDIA HAVE A DECREASE, SOME OF THEM SUBSTANTIAL, IN  
 12 HAPPY CHOLESTEROL, WHICH IS IN AND OF ITSELF A RISK  
 13 PREDICTOR.  
 14 AND THIS IS AN INTERNAL GSK SLIDE WHERE  
 15 SOMEONE WAS PRESENTING ON THIS ISSUE AND THE HDL WITH  
 16 THE DOWN ARROW, THEY SAY POST MARKETING SIGNAL DETECTION  
 17 SCORE WAS UP FOR HDL GOING DOWN, AND AN EBO5 SCORE  
 18 GREATER THAN 9 IS ACTUALLY QUITE, QUITE, QUITE LARGE.  
 19 IT WAS LARGE ENOUGH THAT THE WHO PICKED UP THE SIGNAL  
 20 AND WARNED GSK ABOUT THE SIGNAL, THE WORLD HEALTH  
 21 ORGANIZATION.  
 22 THIS COMPLEX SCATTER PLOT I'M GOING TO  
 23 ALLOW DRS. BRINTON OR SNIDERMAN TO DISCUSS WITH YOU  
 24 TOMORROW, BUT WHAT THIS SHOWS IS, YOU HAVE LDL ON THE  
 25 VERTICAL AXIS -- YOU HAVE HDL ON THE VERTICAL AXIS AND

1 LDL ON THE HORIZONTAL AXIS. SO WHAT YOU WOULD EXPECT TO  
 2 SEE IF WHEN LDL WENT UP, HDL WENT UP, EVERYBODY WOULD BE  
 3 IN THAT RIGHT-HAND BOX BECAUSE THEIR HDL IS GOING UP SO  
 4 THEY WOULD BE GOING UP THE CHART AND THEIR LDL IS GOING  
 5 UP SO THEY WOULD BE GOING UP INTO THIS RIGHT QUADRANT.  
 6 INSTEAD, WHAT YOU SEE IS THAT THEY ARE SCATTERED  
 7 EVERYWHERE. IT'S CALLED A SCATTER PLOT. WHAT THIS  
 8 REFLECTS IS, IN THOSE PATIENTS WHO HAVE THE INCREASE IN  
 9 LDL, IT'S NOT THE SAME PATIENTS WHO ARE HAVING THE  
 10 INCREASE IN HDL. IN FACT, FOR MANY IN THIS LEFT-HAND  
 11 BOTTOM BOX, IT'S THE OPPOSITE -- I'M SORRY, IN THE  
 12 RIGHT-HAND BOX. ALL OF THESE PEOPLE IN THIS BOTTOM  
 13 RIGHT QUADRANT ARE HAVING AN INCREASE IN LDL GOING THIS  
 14 WAY (INDICATING), AND A DECREASE IN HDL GOING DOWN THIS  
 15 WAY. SO THIS PATIENT IN PARTICULAR HAS AN 80 PERCENT  
 16 INCREASE OR 80 MILLIGRAMS PER DECILITER INCREASE IN LDL  
 17 AND A 25 MILLIGRAMS PER DECILITER INCREASE IN HDL. SO  
 18 THE THEORY THAT THEY POSITED WAS, DON'T WORRY ABOUT YOUR  
 19 LDL GOING UP, YOUR HDL GOES UP, TOO. THAT IS JUST NOT  
 20 TRUE AT THE PATIENT LEVEL. THIS IS USING THEIR OWN  
 21 INTERNAL PATIENT LEVEL DATA FROM STUDY 011. THEY HAD IT  
 22 BEFORE THEY MARKETED THE PRODUCT.  
 23 I WILL TALK BRIEFLY ABOUT APOLIPOPROTEIN  
 24 B OR APO-B AS THE SHORT FORM IS. THE IMPORTANCE OF  
 25 APOLIPOPROTEIN B IS, LDL-C IS MEASURING THE

1 CONCENTRATION OF THE LETHAL CHOLESTEROL IN YOUR BLOOD.  
 2 WHAT APOLIPOPROTEIN B MEASURES IS HOW MANY PARTICLES ARE  
 3 THERE WITH THIS BAD CHOLESTEROL ON IT. HOW MANY  
 4 ATHEROGENIC PARTICLES ARE DELIVERING, THAT IS WHY THE  
 5 TRUCKS -- HOW MANY TRUCKS ARE TAKING BAD CHOLESTEROL AND  
 6 DUMPING THAT BAD CHOLESTEROL INTO YOUR CORONARY  
 7 ARTERIES. THAT IS WHAT APOLIPOPROTEIN B IS. NOW DR.  
 8 SNIDERMAN, WHO YOU WILL HEAR FROM, IF YOU CHOOSE,  
 9 HAPPENS TO BE A WORLD RENOWNED EXPERT AND PROBABLY THE  
 10 PHYSICIAN IN THE WORLD, HE IS FROM CANADA, WHO  
 11 ESTABLISHED THIS AS A MORE PREDICTIVE MARKER THAN LDL  
 12 CHOLESTEROL FOR CARDIAC RISK. THIS SLIDE IS AGAIN FROM  
 13 STUDY 001 SO IT'S 1998, EARLY INFORMATION. YOU CAN SEE  
 14 THE TWO ARMS THAT SHOOT UP IN THAT FOUR-WEEK PERIOD FROM  
 15 WEEK ZERO TO WEEK FOUR, THOSE TWO ARMS THAT SHOOT UP ARE  
 16 THE TWO ROSIGLITAZONE OR AVANDIA ARMS AND IT SHOOTS  
 17 STRAIGHT UP AND THEN STAYS ELEVATED ABOVE BASELINE  
 18 THROUGHOUT THE ENTIRE 26 WEEKS. THE BOTTOM LINE IS WHAT  
 19 HAPPENS WITH PLACEBO. SO WHAT YOU ARE SEEING IS THE  
 20 DIRECT EFFECT OF THIS DRUG. HOW MANY MORE TRUCKS IT'S  
 21 CREATING TO DELIVER LETHAL CHOLESTEROL TO YOUR CORONARY  
 22 ARTERIES. THAT IS A BIOLOGICALLY PLAUSIBLE MECHANISM BY  
 23 WHICH THIS DRUG CAUSES HEART ATTACKS.  
 24 APOLIPOPROTEIN-A IS ON THE HAPPY SIDE.  
 25 IT'S THE PARTICLES WITH HAPPY CHOLESTEROL AND YOU CAN

1 SEE WHAT THIS DOES TO APOLIPOPROTEIN-A1. THE TOP LINE  
 2 IN THIS INSTANCE IS PLACEBO SO YOU CAN SEE PLACEBO IS  
 3 NOT AFFECTING IT. THE TWO THAT SHOOT DOWN ARE AVANDIA  
 4 AND SO YOU HAVE THE NUMBER OF PARTICLES DELIVERING  
 5 LETHAL CHOLESTEROL GOING UP WHILE THE NUMBER OF  
 6 PARTICLES THAT ACTUALLY TAKE IT AWAY, BECAUSE THAT'S  
 7 WHAT THE HDL DOES, IT REMOVES IT, THE NUMBER OF  
 8 PARTICLES TAKING IT AWAY OR TRUCKS TAKING IT AWAY IS  
 9 GOING DOWN.  
 10 THIS IS THE DEFENSE'S EXPERT, DR. ANTONIO  
 11 GOTTO, WHO HAS QUITE LITERALLY WRITTEN BOOKS ON SUCH  
 12 ISSUES. DR. GOTTO AGREES THAT THESE ARE MECHANISMS FOR  
 13 CAUSING MYOCARDIAL INFARCTIONS AND ISCHEMIC EVENTS.  
 14 HERE'S WHAT HE SAYS.  
 15 (TAPE PLAYED.)  
 16 QUESTION: DO YOU AGREE THAT APO-B AND  
 17 THE APO-B TO A1 RATIO SHOULD BE MEASURED IN CERTAIN  
 18 PATIENT POPULATIONS?  
 19 ANSWER: YES.  
 20 QUESTION: AND THAT THOSE ARE VALID  
 21 PREDICTORS OF CARDIOVASCULAR RISK?  
 22 ANSWER: THEY PREDICT RISK.  
 23 QUESTION: THE AMERICAN COLLEGE OF  
 24 CARDIOLOGY NOW RECOMMENDS MEASURING APO-B AND HAS FOUND  
 25 THAT APO-B IS A SUPERIOR PREDICTOR OF CARDIOVASCULAR

1 RISK?  
 2 ANSWER: I DON'T DISAGREE WITH THAT.  
 3 QUESTION: LDL APO-B HAS BEEN SUGGESTED  
 4 AS A MORE SENSITIVE RISK MARKER THAN TOTAL CHOLESTEROL  
 5 OR LDL-C BECAUSE IT MORE ACCURATELY REFLECTS THE  
 6 PRESENCE OF ALL ATHEROGENIC LIPOPROTEINS. DO YOU AGREE  
 7 WITH THAT?  
 8 ANSWER: YOU ARE READING THAT FROM WHERE?  
 9 QUESTION: THIS IS PAGE 57 OF YOUR BOOK.  
 10 ANSWER: YES, I AGREE WITH THAT.  
 11 (TAPE ENDED.)  
 12 MR. ZONIES: SO HE WAS NOT BEING RUDE IN  
 13 READING WHILE MR. CARTMELL WAS EXAMINING HIM. THESE ARE  
 14 QUOTES FROM HIS BOOK.  
 15 SO ONE OF THE STRONGEST PREDICTORS OF  
 16 RISK -- BECAUSE NOW YOU ARE DOWN AT THE PARTICLE LEVEL,  
 17 YOU ARE SEEING HOW MANY TRUCKS ARE COMING AND GOING, IS  
 18 TO ACTUALLY INSTEAD OF TAKING THE RATIO OF LDL OR LETHAL  
 19 CHOLESTEROL TO HAPPY CHOLESTEROL, YOU TAKE THE RATIO OF  
 20 THE APO-B PARTICLES, HOW MANY TRUCKS ARE DELIVERING THE  
 21 BAD STUFF TO HOW MANY -- TO THE TRUCKS TAKING IT AWAY.  
 22 THAT IS ACTUALLY BEEN SHOWN TO BE ONE OF THE STRONGEST  
 23 PREDICTORS OF CARDIOVASCULAR RISK. AND GSK KNEW THIS,  
 24 IMPORTANTLY.  
 25 IN THIS INTERNAL E-MAIL THE TOP ONE IS

1 FROM A GUY IN THE SALES DEPARTMENT WHO SAYS: HEY, I  
 2 THOUGHT THIS MIGHT BE SOMETHING TO CHEW ON WITH THIS  
 3 LIPID ISSUE, BECAUSE THEY ARE STILL TRYING TO FIGURE OUT  
 4 WHAT TO DO ABOUT THE LIPIDS AT THIS POINT. APO-B/A1  
 5 RATIO MORE ACCURATE PREDICTOR THAN LDL CHOLESTEROL OF  
 6 RISK FOR FIRST MAJOR CORONARY EVENT. HE IS CITING TO A  
 7 NEW SCIENCE ARTICLE THAT HAS COME OUT AT THE TIME. THIS  
 8 IS EARLY 2000 OR SO. YES. AND ODDLY ENOUGH, IF YOU RUN  
 9 DR. SNIDERMAN'S NAME ACROSS GSK'S DATABASE AND THE  
 10 DOCUMENTS THAT WE HAVE BEEN PRESENTED, WE SEE HIS NAME  
 11 SHOW UP A LOT BECAUSE THIS WAS A CONCERN BECAUSE DR.  
 12 SNIDERMAN WAS PUBLISHING ARTICLES JUST LIKE THIS. AND  
 13 THE RESPONSE TO THAT FROM THE CLINICAL DEPARTMENT, THIS  
 14 COMES FROM DR. FREED, SAYS: JAMES, PLEASE DO NOT BE TOO  
 15 HASTY WITH YOUR REFERENCE TO THIS ARTICLE. I'VE ASKED  
 16 MARGE TO LOOK AT THE APO-B/A1 RATIO IN OUR THREE STUDIES  
 17 AND THE RESULTS ARE SHOWN BELOW. IN ALL CASES THE  
 18 APO-B/A1 RATIO IS CHANGED, NOW HE SAYS ONLY marginally,  
 19 BUT I'LL SHOW YOU IT'S NOT, BUT NOT IN THE DIRECTION  
 20 THAT YOU WANT. HE IS TELLING THE SALES GUYS DON'T  
 21 MENTION THIS ARTICLE TO TRY TO DEAL WITH THE LIPID ISSUE  
 22 BECAUSE IT'S ACTUALLY FURTHER EVIDENCE OF BAD LIPIDS.  
 23 THIS WAS ATTACHED TO THAT E-MAIL AND AGAIN, YOU CAN SEE  
 24 STUDY 011, STUDY 020, AND STUDY 015, AND IN EACH  
 25 INSTANCE IN THE AVANDIA ARM, YOU ARE SEEING AN INCREASE

1 IN THE PERCENT CHANGE OF THE RATIO WHICH MEANS IT'S  
2 HEADING IN THE WRONG DIRECTION. AND DR. SNIDERMAN WILL  
3 TELL YOU THAT A 13 TO 16 PERCENT CHANGE IN THIS RATIO IS  
4 NOT MINIMAL OR MARGINAL.

5 ANOTHER BIOLOGICALLY PLAUSIBLE MECHANISM  
6 THAT YOU MAY HAVE HEARD A LITTLE BIT ABOUT IS CALLED  
7 LP-PLA2. WHAT IS LP-PLA2? IT ACTUALLY WAS DISCOVERED  
8 BY GSK'S SCIENTISTS IN THE EARLY 90S. AND LP-PLA2 IS AN  
9 ENZYME THAT IS FOUND IN THE BLOOD AND IT'S ACTUALLY  
10 FOUND IN ATHEROSCLEROTIC PLAQUE. SO IT'S WHAT WE CALL  
11 AN INFLAMMATORY MARKER. IN OTHER WORDS, IT'S A MEASURE  
12 OF INFLAMMATION AT WHAT DR. DEPACE SAYS IS THE SCENE OF  
13 THE CRIME. IT'S MEASURING CARDIAC INFLAMMATION IN THE  
14 CORONARY ARTERIES. ONE OF THE MEASURES THAT GSK TALKS  
15 ABOUT A LOT IS CALLED CRP. THAT ALSO IS AN INFLAMMATORY  
16 MARKER, BUT IT'S A SYSTEMIC INFLAMMATORY MARKER, IT'S  
17 MEASURING -- IF YOU HAVE ARTHRITIS, FOR EXAMPLE, YOU ARE  
18 GOING TO HAVE ELEVATED CRP.

19 LP-PLA2 IS IN THE CORONARIES MEASURING  
20 THE INFLAMMATION IN THE CORONARIES. IT'S ACTUALLY AN  
21 ACTIVE PLAYER IN DESTABILIZING A PLAQUE AND CAUSING  
22 HEART ATTACKS. AS IT SAYS IN THE LAST SENTENCE: LARGE  
23 AMOUNTS OF LP-PLA2 ARE PRESENT IN THE NECROTIC CORE OF  
24 RUPTURE PRONE HUMAN CORONARY PLAQUES, SO RIGHT IN THE  
25 PLAQUE THAT RUPTURES AND CAUSES THE HEART ATTACK. THIS

1 IS BY THE WAY FROM A GSK PRESS RELEASE. WHY FROM A GSK  
2 PRESS RELEASE? GSK IS DEVELOPING A DRUG TO LOWER THIS  
3 CARDIAC ENZYME MARKER. BECAUSE, AS THEY SAY IN THIS  
4 PRESS RELEASE: IT MODIFIES CORONARY PLAQUE COMPOSITION  
5 AND LOWERS LP-PLA2 ACTIVITY, THIS DRUG DARAPLADIB, AND  
6 LP-PLA2 ACTIVITY IS A BIOMARKER PREDICTIVE OF HEART  
7 ATTACK RISKS.

8 IN FACT GSK SPONSORED THIS STUDY WHICH  
9 WAS RECENTLY PUBLISHED AND THIS IS A GSK SPONSORED  
10 META-ANALYSIS. SO APPARENTLY GSK APPRECIATES  
11 META-ANALYSES SOMETIMES AND THIS GSK PUBLISHED  
12 META-ANALYSIS DEMONSTRATED THAT ACROSS 30 SOME ODD  
13 STUDIES THE HIGHER YOUR LEVEL OF THIS ENZYME, THE HIGHER  
14 YOUR RISK FOR HAVING A HEART ATTACK. REMEMBER THE  
15 QUESTION IS, BIOLOGICALLY PLAUSIBLE MECHANISM. THAT IS  
16 THE QUESTION.

17 IN 2000 GSK DECIDES TO MEASURE THIS IN  
18 AVANDIA BECAUSE, AS THIS E-MAIL SAYS: IF WE COULD MAKE  
19 A CONNECTION BETWEEN IMPROVED GLYCEMIC CONTROL IN  
20 PATIENTS ON AVANDIA AND A REDUCTION IN LP-PLA2, THIS  
21 MIGHT IMPLY A STRONG CARDIOVASCULAR BENEFIT FOR AVANDIA.  
22 IN OTHER WORDS, THIS E-MAIL RECOGNIZES IN 2000 THAT IF  
23 AVANDIA LOWERS LP-PLA2, WE MAY BE ABLE TO SAY IT'S A  
24 GREAT THING. SO WHAT THEY DO IS THEY GO OUT AND MEASURE  
25 IT. IT WAS THIS STUDY, STUDY 243.

1 AND STUDY 243, WHAT THESE BARS SHOW IS A  
2 STATISTICALLY SIGNIFICANT, THAT IS WHAT THIS SIGN CHANGE  
3 FROM BASELINE MEANS, STATISTICALLY SIGNIFICANT INCREASE  
4 IN LP-PLA2 WITH THE USE OF AVANDIA, STATISTICALLY  
5 SIGNIFICANT.

6 IN FACT, WE LOOKED AT THAT PATIENT LEVEL  
7 DATA AND 62, ROUGHLY, PERCENT OF THE PATIENTS IN THAT  
8 STUDY HAD AN INCREASE IN LP-PLA2 AND EACH BAND  
9 REPRESENTS A PERCENTAGE OF THE INCREASE. THE BOTTOM  
10 BAND IS THEY HAD ZERO TO 30 PERCENT INCREASE, THE NEXT  
11 BAND IS 30 TO 50 PERCENT INCREASE, THE NEXT BAND IS 50  
12 TO 100 PERCENT INCREASE. AND THE TOP BAND IS ACTUALLY 5  
13 OR 6 PATIENTS WHO HAD WELL OVER 100 PERCENT INCREASE IN  
14 THIS CARDIAC MARKER. BY WAY OF EXAMPLE DARAPLADIB  
15 LOWERS IT BY 40 TO 60 PERCENT, AND THEY ARE TRYING TO  
16 GET THAT INDICATED FOR PROTECTIVE EFFECT.

17 NOW THEY WILL SAY AND HAVE SAID IN  
18 DEPOSITIONS IN THIS CASE, WELL, THAT IS NEVER MEASURED  
19 IN PATIENTS AND GSK'S SISTER COMPANY, DIADEXUS, ACTUALLY  
20 HAS THE ONLY FDA APPROVED MEASUREMENT DEVICE FOR THIS.  
21 BUT THE REASON IT'S NOT MEASURED IS BECAUSE NOBODY KNOWS  
22 THAT WHEN YOU ARE ON AVANDIA YOU SHOULD BE MEASURING FOR  
23 THIS. WHY? THIS WAS THE ANALYSIS PLAN THAT THEY DID TO  
24 TRY TO DETERMINE WHAT TO DO WITH THAT DATA YOU JUST SAW.  
25 AND ON AUGUST 28TH OF 2000 THEY DRAFT THIS ANALYSIS

1 PLAN. THEY SAY, WE ARE GOING TO DO A PUBLICATION ON  
2 THIS STUDY. IT HAS GOT FIVE SERUM BIOMARKERS THAT WE  
3 ARE GOING TO DO. ONE OF THEM IS LP-PLA2 AND THEY HAVE A  
4 MEETING AND THEY SAY, YOU KNOW WHAT. THE RESULTS FOR  
5 LP-PLA2 DID NOT LOOK PRETTY. SO THE CROSS OUT OF  
6 LP-PLA2 THAT YOU SEE THERE IS A GSK EMPLOYEE CROSSING  
7 OUT LP-PLA2. AND THE NEXT DAY THE SAME PLAN COMES OUT  
8 AND THIS TIME IT ONLY HAS FOUR BIOMARKERS ON IT. THIS  
9 GETS PUBLISHED IN CIRCULATION, STUDY 243. THIS IS THE  
10 PUBLICATION OF IT. YOU CAN SEE METHODS AND RESULTS.  
11 THERE IS ONE CRP, IL-6, MMP-9 AND WBC. THERE ARE FOUR  
12 BIOMARKERS IN THE STUDY PUBLICATION.

13 DR. HAFFNER WAS THE LEAD AUTHOR ON THIS  
14 PUBLICATION. HERE IS FROM THE PUBLICATION THOSE FOUR  
15 MEASURES. IT WOULD NOT HAVE BEEN THAT DIFFICULT TO PUT  
16 THIS SLIDE IN AND SAY, LP-PLA2 ACTIVITY WENT UP  
17 SIGNIFICANTLY, BUT IT'S NOT IN THE PUBLICATION. SO  
18 PHYSICIANS DON'T KNOW THEY SHOULD MEASURE FOR LP-PLA2  
19 WHEN PATIENTS ARE ON AVANDIA, NOR DOES THE FDA.

20 THIS IS THE RESPONSE WHEN SOMEBODY SAYS  
21 HEY, I WOULD LIKE TO -- LATER, I WOULD LIKE TO MEASURE  
22 LP-PLA2. AND THE RESPONSE WAS: WE DID MEASURE IT IN  
23 THE FREEZER STUDY, WHICH YOU HAVE JUST SEEN THE  
24 PUBLICATION OF, BUT THE VALUES INCREASED ON TREATMENT.  
25 AND THE LAST IS THE MOST IMPORTANT. WE

1 DECIDED TO MAKE THE RESULTS AVAILABLE FOR ANYONE WITHIN  
 2 SMITHKLINE BEECHAM, NOW GSK, WHO IS INTERESTED BUT,  
 3 UNTIL WE UNDERSTAND THE ROLE OF LIPIDS BETTER NOT TO  
 4 PURSUE THE RESULTS FURTHER FOR THE AVANDIA STORY.  
 5 SO THOSE RESULTS THAT YOU JUST SAW  
 6 SHOWING A STATISTICALLY SIGNIFICANT INCREASE IN THIS IN  
 7 62 PERCENT OF THE PATIENT POPULATION OF -- SOME OVER  
 8 100 PERCENT, WERE NEVER RELEASED. SO WHEN THEY SAY TO  
 9 OUR EXPERTS, THAT IS NOT AN APPROPRIATE METHODOLOGY OR  
 10 IT'S NOT A RECOGNIZED IN THE FIELD, ET CETERA, THE  
 11 REASON IS BECAUSE IT WAS NOT PUT OUT IN THE FIELD  
 12 BECAUSE IT WAS BETTER KEPT INTERNAL TO SMITHKLINE  
 13 BEECHAM.

14 THIS PUBLICATION -- I DEPOSED ACTUALLY  
 15 DR. HAFFNER. I SAID NOW DR. HAFFNER, DID YOU KNOW THAT  
 16 THEY HAD MEASURED LP-PLA2? AND THIS WAS A NOVEL  
 17 INFLAMMATORY MARKER PAPER. THAT IS WHAT THE TITLE OF  
 18 THIS PAPER WAS, WHICH IS EXACTLY WHAT LP-PLA2 IS. DR.  
 19 HAFFNER SAID THEY NEVER TOLD ME THAT THEY MEASURED THAT.  
 20 THAT IS WHY IT DID NOT MAKE IT INTO THE PUBLICATION.

21 NOW OUR EXPERTS ARE NOT ALONE IN  
 22 RECOGNIZING THESE MECHANISMS AS BIOLOGICALLY PLAUSIBLE  
 23 MECHANISMS. THIS IS DR. NISSEN'S PUBLICATION IN THE  
 24 ARCHIVES OF INTERNAL MEDICINE WHERE HE SAYS: THERE ARE  
 25 SEVERAL REASONABLE HYPOTHESES, WHICH IS BIOLOGICAL

1 PLAUSIBILITY, BY WHICH THIS DRUG INCREASES  
 2 CARDIOVASCULAR EVENTS INCLUDING LDL-C. A DRUG THAT  
 3 INCREASES LDL-C LEVELS WOULD REASONABLY BE EXPECTED TO  
 4 INCREASE CV ADVERSE EVENTS. IT RAISES TRIGLYCERIDE  
 5 LEVELS, ANOTHER LIPID. IT INCREASES HIGH DENSITY  
 6 LIPOPROTEIN, BUT NOT AS MUCH AS ROSIGLITAZONE. AND WHAT  
 7 HE ACTUALLY DOES NOT KNOW IS, IN 25 PERCENT OF PATIENT  
 8 POPULATIONS ACROSS ALL CLINICAL TRIALS, IT DECREASES HDL  
 9 CHOLESTEROL. HE ALSO TALKS ABOUT ANOTHER MAKER CALLED  
 10 MMP-3. SO THESE ARE WELL RECOGNIZED MECHANISMS BY WHICH  
 11 THIS DRUG CAN CAUSE THE EFFECTS THAT YOU ARE SEEING.

12 DOSE RESPONSE -- I'M FINISHED WITH  
 13 BIOLOGICAL PLAUSIBILITY, BELIEVE IT OR NOT. DOSE  
 14 RESPONSE IS ANOTHER BRADFORD-HILL FACTOR. YOU HAVE SEEN  
 15 THIS SLIDE ALREADY. THIS SHOWS THE DOSE RESPONSE IN LDL  
 16 CHOLESTEROL. I DID NOT WANT TO PUT A BUNCH UP HERE BUT  
 17 YOU'LL SEE THE SAME EFFECTS WITH TOTAL CHOLESTEROL AND A  
 18 NUMBER OF OTHER BIOMARKERS. SO THERE IS A DOSE RESPONSE  
 19 IN THIS DRUG AT THE MARKERS OF THE BIOLOGICAL  
 20 MECHANISMS. AND THIS WAS, AS I POINT OUT BEFORE, THIS  
 21 INTERNAL E-MAIL SAYS THE EFFECTS OF LDL CHOLESTEROL ARE  
 22 DOSE ORDERED, AT THE END OF THAT FIRST SENTENCE.  
 23 THEY'RE DOSE ORDERED, SO THERE IS A DOSE RESPONSE THAT  
 24 IS BEING SEEN.

25 SO THOSE ARE THE CAUSATION OPINIONS OF

1 OUR EXPERTS AND HOW THEY REACHED THEM. THEY DID FIRST  
 2 DO THE ASSOCIATION. THEY DID SECOND DO BIAS AND  
 3 CONFOUNDING. THEN THEY APPLIED WELL-KNOWN,  
 4 WELL-RECOGNIZED BRADFORD-HILL FACTORS. IT'S NOT A CHECK  
 5 LIST, YOU DON'T NEED EVERY SINGLE ONE. TEMPORALITY IS  
 6 WELL ESTABLISHED IN RANDOMIZED CLINICAL -- IN CONTROLLED  
 7 TRIALS, TEMPORALITY MEANING IS THE EVENT HAPPENING WHEN  
 8 YOU ARE ON A DRUG, THAT IS WHAT HAPPENS IN AN RCT, WHICH  
 9 YOU SEE 42 OF IN THE ICT 42 ALONE.

10 REPLICATION I SHOWED YOU. IT'S A HUGE  
 11 CHART, REPLICATED ACROSS POPULATIONS ACROSS THE WORLD.  
 12 CONSISTENTLY SEEING IT OVER AND OVER AND OVER AGAIN TO  
 13 THE RIGHT OF 1.

14 BIOLOGICALLY PLAUSIBLE MECHANISMS, MANY.  
 15 DOSE RESPONSE, YOU HAVE SEEN THAT CURVE.  
 16 OUR EXPERTS ARE NOT ALONE ON THIS  
 17 CONCLUSION. YOU REMEMBER THE DEFENSE EXPERT DR.  
 18 BURKHART WHO USED TO DO THIS FOR A LIVING AT THE FDA.

19 (VIDEO PLAYED.)  
 20 QUESTION: YOU TOLD US THAT THERE IS  
 21 EVIDENCE, SUBSTANTIAL EVIDENCE OF AN ASSOCIATION BETWEEN  
 22 AVANDIA AND CARDIOVASCULAR RISK, CORRECT?

23 ANSWER: NO. IT'S NOT CORRECT. WHAT I  
 24 SAID WAS IT WAS REASONABLE LIKELIHOOD OF CAUSATION. I  
 25 NEVER SAID SUBSTANTIAL.

1 (VIDEO ENDED.)  
 2 MR. ZONIES: REASONABLE LIKELIHOOD OF  
 3 CAUSATION.

4 DR. KEANEY, REMEMBER THE QUESTION ON  
 5 GENERAL CAUSATION WHICH IS, CAN THIS CAUSE MYOCARDIAL  
 6 ISCHEMIC EVENTS AND INFARCTIONS? CAN IT CAUSE IT? NOT  
 7 -- THE NEXT QUESTION IS, IN A SPECIFIC PATIENT DID IT  
 8 CAUSE IT? DR. KEANEY ACTUALLY UNDERSTANDS THAT BECAUSE  
 9 HERE WHAT IS HIS OPINION IS ON GENERAL CAUSATION.

10 (VIDEO PLAYED.)  
 11 QUESTION: DR. KEANEY, IS IT YOUR OPINION  
 12 THAT IN NO GIVEN PATIENT COULD IT EVER BE SHOWN THAT  
 13 AVANDIA CAUSED OR CONTRIBUTED TO CAUSING MYOCARDIAL  
 14 ISCHEMIA?

15 ANSWER: I WOULD NOT BE SO CLOSE-MINDED  
 16 TO SAY IT'S NEVER POSSIBLE. IT WOULD DEPEND ON THE  
 17 PATIENT AND THE CIRCUMSTANCES.

18 MR. ZONIES: I THOROUGHLY AGREE WITH  
 19 THAT. IT WOULD DEPEND ON SPECIFIC CAUSATION. WOULDN'T  
 20 SAY IT'S NEVER POSSIBLE. OF COURSE, IT'S POSSIBLE.  
 21 YES, THIS CAN DO IT. THE QUESTION IS, IT WOULD DEPEND  
 22 ON THE PATIENT AND THE CIRCUMSTANCES, WHICH IS WHAT WE  
 23 WILL BE DOING BACK HERE IN OCTOBER, SPECIFIC CAUSATION.

24 DR. CURT FURBERG AT THE FDA ADCOM IN 2010  
 25 AND THE REASON I PUT ALL OF THIS UP HERE IS BECAUSE HE

1 ACTUALLY FOLLOWS THE METHODOLOGY OUR EXPERTS FOLLOWED,  
 2 WHICH I THOUGHT WAS IMPORTANT, AND CURT FURBERG IS A  
 3 WELL RENOWNED EPIDEMIOLOGIST FROM WAKE FOREST. HE WAS  
 4 ON THE FDA'S EXPERT PANEL. AND HE SAYS: I THINK IN MY  
 5 VIEW THE BEST EVIDENCE OF EFFICACY AND SAFETY WOULD COME  
 6 FROM DOUBLE BLIND PLACEBO CONTROLLED TRIALS. AND WE  
 7 HAVE THOSE. THEY MADE UP THE MAJORITY OF THE TRIALS IN  
 8 THE META-ANALYSES. HE UNDERSTANDS THAT THE  
 9 META-ANALYSES ARE NOT JUST RANDOM POPULATIONS. THESE  
 10 ARE RANDOMIZED CONTROLLED TRIALS THAT MAKE UP THE  
 11 META-ANALYSES. AND THEY SHOWED IN MY MIND CONVINCINGLY  
 12 THAT ROSIGLITAZONE INCREASES THE RISK OF MI'S. NOW,  
 13 WHAT DOES THAT MEAN? THAT IS ASSOCIATION, INCREASED THE  
 14 RISK. THEN HE LOOKS TO THE NEXT LEVEL OF INFORMATION:  
 15 THE HARM WAS GREATER IN PEOPLE AT HIGHER RISK, WHICH IS  
 16 EXACTLY WHAT OUR EXPERTS DID, WHICH IS A FACTOR FOR ME  
 17 TO CONSIDER, THOSE WITH THE PREVIOUS CORONARY HEART  
 18 DISEASE OR USE OF NITRATES, AND THAT IS THAT SUBGROUP  
 19 ANALYSIS THAT THE FDA DID THAT I SHOWED YOU. WHEN THERE  
 20 WAS A DISCREPANCY BETWEEN FDA AND GSK, I SIDED WITH THE  
 21 FDA. AND SO I FEEL THAT THE DRUG IS CAUSING MI AND  
 22 INCREASING MI'S PRIMARILY, BUT ALSO HEART FAILURE AND  
 23 OTHER OUTCOMES. AND THOSE OTHER OUTCOMES HE MEANS  
 24 MYOCARDIAL ISCHEMIC EVENTS.  
 25 NOW, YOU HEARD MS. HALPERN TALKING ABOUT

1 THE SMALL NUMBERS, HOW IT'S 92 PERCENT, 94 PERCENT,  
 2 WHATEVER THAT IS. THAT MAY BE SO, I DON'T THINK IT IS,  
 3 BUT THAT MAY BE SO. AND EVEN IF THAT IS SO, THIS DRUG  
 4 HAS BEEN SOLD TO MILLIONS OF PATIENTS. SO WHEN YOU TAKE  
 5 EVEN THOSE SMALL NUMBERS AND YOU EXTRAPOLATE THAT ACROSS  
 6 THE PATIENTS WHO HAVE BEEN ON THIS DRUG, YOU GET WHAT  
 7 DR. GRAHAM SAID IN 2007. HE DID WHAT'S CALLED A NUMBERS  
 8 NEEDED TO HARM ANALYSIS. WHAT HE IS SAYING IS THAT  
 9 THERE ARE ABOUT 80,000 EXCESS CASES OF CARDIAC DEATH AND  
 10 MYOCARDIAL INFARCTION ATTRIBUTABLE TO THE USE OF THIS  
 11 DRUG IN A SEVEN AND-A-HALF YEAR PERIOD. NOW, I DON'T  
 12 THINK ALL 80,000 OF THOSE PEOPLE ARE BEFORE YOUR HONOR,  
 13 BUT THAT IS THE NUMBERS NEEDED. THAT IS WHAT HE  
 14 BELIEVES THIS DRUG'S EFFECT WAS, EVEN WITH WHAT THEY  
 15 CALL A SMALL IMPACT. THAT SMALL IMPACT WAS NOT SMALL TO  
 16 THOSE 80,000 PEOPLE, AS YOU CAN WELL IMAGINE.  
 17 THEY DID NOT TOUCH ON THOSE STUDIES SO  
 18 I'M GOING TO GO AHEAD AND MOVE ON.  
 19 YOU DID HEAR A LOT ABOUT PROFESSIONAL  
 20 ORGANIZATIONS, THE AHA AND ACC, THEY ARE NOT DOING THE  
 21 ASSESSMENT, THE BREADTH OF WHAT OUR EXPERTS DID,  
 22 FRANKLY. YOU SAW THE NUMBER OF STUDIES OUR EXPERTS  
 23 REVIEWED. IT'S QUITE LITERALLY HUNDREDS AND IN SOME  
 24 INSTANCES 300 STUDIES AND PAPERS THAT THEY REVIEWED  
 25 EACH. THE AMERICAN HEART ASSOCIATION AND ACC LIST 14

1 STUDIES THAT THEY REVIEWED IN THEIR PAPER.  
 2 THERE ARE ALSO NOT DOING A CAUSATION  
 3 ANALYSIS. IN FACT THEY ARE DOING EXACTLY WHAT MS.  
 4 HALPERN SAID OUR EXPERTS ARE DOING. THEY ARE DOING A  
 5 RISK-BENEFIT ANALYSIS. THEY ARE TRYING TO FIGURE OUT,  
 6 OKAY, THERE APPEARS TO BE A RISK BUT THE BENEFIT OF THIS  
 7 DRUG MAY OUTWEIGH IT. THAT IS NOT WHAT OUR EXPERTS WERE  
 8 CHARGED TO DO AND FRANKLY NOT WHAT YOUR HONORS ARE  
 9 CHARGED TO DO. WE ARE LOOKING AT THE RISK SIDE. WE ARE  
 10 NOT LOOKING AT THE BENEFIT SIDE. THAT IS NOT WHAT  
 11 HAPPENS IN COURT. THAT IS WHAT HAPPENS AT THE FDA OR IN  
 12 THE AHA ARTICLES.  
 13 MOST IMPORTANTLY, IT'S WHAT THEY DID NOT  
 14 KNOW. SO WHEN DR. SNIDERMAN WAS ASKED ABOUT THIS IN HIS  
 15 DEPOSITION, WHEN HE SAID NO PROFESSIONAL ORGANIZATION  
 16 ENDORSES YOUR VIEW OF CAUSATION, HERE IS WHAT HE SAID.  
 17 (VIDEO PLAYED.)  
 18 QUESTION: ARE YOU AWARE OF ANY  
 19 PROFESSIONAL ORGANIZATION ANYWHERE IN THE WORLD THAT HAS  
 20 CONCLUDED, AS YOU HAVE, THAT AVANDIA CAUSES HEART  
 21 ATTACKS?  
 22 ANSWER: NO, BUT WE HAVE NOT REVIEWED THE  
 23 SAME MATERIALS. I'M NOT CONFIDENT THAT OUR OPINIONS ARE  
 24 BASED ON THE SAME BODY OF EVIDENCE.  
 25 (VIDEO ENDED.)

1 MR. ZONIES: WE KNOW THAT IS TRUE BECAUSE  
 2 OUR EXPERTS HAD ACCESS TO PATIENT LEVEL DATA. OUR  
 3 EXPERTS HAD ACCESS TO ALL OF THE STUDIES. OUR EXPERTS  
 4 PUT IN THE TIME TO FIND OUT THAT MANNUCCI AND MONAMI  
 5 DON'T HAVE ACCURATE INFORMATION IN THEM. OUR EXPERTS  
 6 APPLIED AN ANALYSIS THAT IS SET FORTH IN NICK JEWELL'S  
 7 BOOK. THEY APPLIED A CAUSATION ANALYSIS IN THIS CASE.  
 8 AND NOW SOME SOCIETIES AS I SHOWED YOU IN THE BEGINNING  
 9 ARE IN FACT FINDING CAUSATION AND THE MHRA IS SAYING THE  
 10 RISKS OF THIS DRUG FAR OUTWEIGH ITS BENEFITS.  
 11 WHY WOULD THE PROFESSIONAL ORGANIZATIONS  
 12 NOT KNOW WHAT OUR EXPERTS KNEW? ALL OF THE STUDIES, YOU  
 13 SAW THIS, WERE CHOSEN TO SHOW RESULTS IN FAVOR OF  
 14 AVANDIA. SO THE STUDIES THAT THEY ARE HAVING TO GET  
 15 ACCESS TO HAVE BEEN DESIGNED TO SHOW A WIN.  
 16 IN FACT GSK HAD A PUBLICATION POLICY AND  
 17 THE PUBLICATION POLICY SAID, DON'T PUBLISH NEGATIVE  
 18 DATA. SO THE AHA AND THE ACC DON'T HAVE ACCESS TO  
 19 ACCURATE DATA. WHEN THEY GO TO LOOK FOR THE RESULTS OF  
 20 THE 011 TRIAL, THEY END UP WHERE MANNUCCI AND MONAMI  
 21 ENDED UP. THEY END UP IN THE LEBOVITZ ARTICLE WHICH  
 22 SHOWS NO CHANGE IN ECHOCARDIOGRAM DATA, WHEN IN FACT WE  
 23 KNOW THERE WERE FIVE HEART ATTACKS IN THE AVANDIA ARM IN  
 24 THAT STUDY. SO THEY JUST DON'T KNOW.  
 25 AND WHAT DID GSK'S POLICY END UP IN? AS

1 IT SAYS HERE THESE STUDIES, DON'T PUBLISH THEM, THEY  
 2 STUDIES PUT AVANDIA IN QUITE A NEGATIVE LIGHT WHEN YOU  
 3 LOOK AT THE RESPONSE OF ROSIGLITAZONE IN THE MONOTHERAPY  
 4 ARM, IT'S A DIFFICULT STORY TO TELL AND WE WOULD HOPE  
 5 THAT THEY WOULD NOT SEE THE LIGHT OF DAY. AND THAT IS A  
 6 THEME THAT YOU SEE IN E-MAIL AFTER E-MAIL. DON'T  
 7 PUBLISH STUDY 175. THIS WAS DONE FOR THE U.S. BUSINESS,  
 8 WAY UNDER THE RADAR, AND WE LOST BOTH IN TERMS OF BAD  
 9 CHOLESTEROL AND TRIGLYCERIDES AND THIS POLICY CAME FROM  
 10 SENIOR MANAGEMENT. PER SENIOR MANAGEMENT REQUEST, THESE  
 11 DATA SHOULD NOT SEE THE LIGHT OF DAY TO ANYONE OUTSIDE  
 12 OF GSK.

13 OKAY. NOW, I WILL SAY THAT I THINK IT  
 14 WAS THIS MONTH OR A WEEK OR TWO AGO THAT 175 GOT POSTED  
 15 TO THE CLINICAL TRIAL REGISTER. I THINK WE JUST FIGURED  
 16 THAT OUT, BUT THE STUDY WAS DONE IN ROUGHLY 2000. SO --  
 17 AND AFTER MANY DEPOSITIONS IN THIS CASE WHERE THIS  
 18 DOCUMENT OBVIOUSLY WAS USED, THEY NOW DECIDED TO PUT 175  
 19 ON THE CLINICAL TRIAL REGISTRY. BUT THIS INFORMATION  
 20 JUST WAS NOT AVAILABLE TO PHYSICIANS, WAS NOT AVAILABLE  
 21 TO THE AHA AND ACC. IT'S NOT SURPRISING THAT THEY WOULD  
 22 LOOK AT RECORD WHEN IT WAS ORIGINALLY PUBLISHED LIKE DR.  
 23 BRINTON DID AND GO, HEY, RANDOMIZED CONTROLLED TRIAL,  
 24 THIS MUST BE GOOD. BUT THEN WHEN YOU DIG INTO IT AND  
 25 LOOK AT IT, IT'S NOT BECAUSE IT'S BEEN DESIGNED TO WIN

1 AND THE BAD DATA HAS BEEN HIDDEN FROM THE LIGHT OF DAY.  
 2 THESE ARE THE THREE EXPERTS THAT WE  
 3 OBVIOUSLY WILL MAKE AVAILABLE FOR YOUR HONORS IF YOU  
 4 WOULD LIKE TO TALK TO THEM, EXPERTS WHOSE CREDENTIALS  
 5 ARE NOT BEING QUESTIONED, WHO RELIABLY APPLIED AN  
 6 APPROPRIATE METHODOLOGY TO MORE THAN SUFFICIENT DATA  
 7 WHILE RECOGNIZING THE BIAS IN THAT DATA. AND FRANKLY  
 8 GSK'S ARGUMENTS ABOUT WEIGHT ARE EXACTLY THOSE KINDS OF  
 9 THINGS THAT ARE QUESTIONS FOR A JURY. NICHOLAS JEWELL,  
 10 BIostatistician; ELIOT BRINTON, AN ENDOCRINOLOGIST WITH  
 11 A SPECIALTY IN DIABETES; AND DR. SNIDERMAN, FRANKLY THE  
 12 GODFATHER OF APO-B.

13 ANY QUESTIONS?

14 HONORABLE CYNTHIA M. RUFÉ: THANK YOU. I  
 15 DON'T HAVE MORE QUESTIONS RIGHT NOW. I DON'T KNOW HOW  
 16 MUCH TIME WE REALLY HAVE LEFT TO HAVE REBUTTAL RIGHT  
 17 NOW, UNLESS IT WAS VERY SHORT. I KNOW THAT JUDGE MOSS  
 18 NEEDS TO MEET WITH HER ATTORNEYS AND SOME OF THEM NEED  
 19 TO GET HOME.

20 MS. HALPERN: I COULD DO IT VERY BRIEFLY.

21 HONORABLE CYNTHIA M. RUFÉ: IF YOU COULD  
 22 DO IT BRIEFLY. I DON'T KNOW WHAT THAT MEANS. WHEN I  
 23 TALK TO A LAWYER --

24 MS. HALPERN: ESPECIALLY THIS ONE. I  
 25 TEND TO GO ON. FIVE OR SIX MINUTES, IS THAT ALL RIGHT?

1 HONORABLE SANDRA MAZER MOSS: FIVE OR SIX  
 2 MINUTES WE CAN LIVE WITH.

3 MS. HALPERN: JUST KIND OF GO LIKE THIS,  
 4 AND I WILL SIT DOWN.

5 HONORABLE SANDRA MAZER MOSS: I HAVE THE  
 6 TIME, BUT THOSE WHO HAVE TO CATCH PLANES AND TRAINS MAY  
 7 COME CHARGING OVER THE BAR OF THE COURTROOM.

8 MS. HALPERN: I PROMISE TO STOP MID  
 9 SENTENCE IF YOU TELL ME WHEN YOU MY TIME IS UP.

10 MS. HALPERN: FIRST OF ALL, IF YOU JUST  
 11 PULL UP THE SLIDE -- WELL, THAT MAY TAKE A WHILE. LET  
 12 ME DO THE MOST IMPORTANT BECAUSE I'M SURE TO RUN OUT.

13 MR. ZONIES SHOWED YOU A SLIDE WHICH I  
 14 THINK IS PRETTY IMPORTANT FOR ME TO TALK ABOUT. IT SAID  
 15 STATISTICALLY SIGNIFICANT FINDINGS FOR MYOCARDIAL  
 16 ISCHEMIC INFARCTION. I LOOKED AT THE STUDIES THAT ARE  
 17 ON THERE THAT HE SAYS ARE STATISTICALLY SIGNIFICANT AND  
 18 THEY ARE ALL, WITH THE EXCEPTION OF SIX, THEY ARE ALL  
 19 OBSERVATIONAL STUDIES. AND OF COURSE HE DOES NOT TELL  
 20 YOU AS I SHOWED YOU BEFORE THAT THERE ARE TWO  
 21 OBSERVATIONAL STUDIES THAT DON'T FIND A STATISTICALLY  
 22 SIGNIFICANT INCREASED RISK FOR EVERYONE THAT HE HAS  
 23 LISTED THERE.

24 NUMBER TWO, HE LISTS SIX META-ANALYSES.  
 25 FOUR OF THEM ARE NISSEN, THE EXACT NISSEN DATA. IF YOU

1 LOOK, TWO OF THEM EVEN SAY NISSEN 56 BECAUSE HE DID HIS  
 2 OWN ANALYSIS TWO DIFFERENT WAYS. AND ONE OF THEM IS  
 3 NISSEN 42, WHICH HAS 42 OUT OF THE 52 STUDIES THAT ARE  
 4 IN NISSEN 52. SO HE'S GOT THREE STUDIES UP THERE THAT  
 5 ARE BASICALLY ALL NISSEN AND DAHABREH IS A REDO OF  
 6 NISSEN. WE HAVE GOT FOUR OUT OF THE SIX THAT ARE ALL  
 7 BASICALLY THE SAME DATA, THE SAME STUDY. THEN YOU HAVE  
 8 THE FDA 52 WHICH OVERLAPS HUGELY WITH NISSEN 56 AND  
 9 SINGH WHICH IS JUST ABOUT ALSO ALMOST A COMPLETE  
 10 OVERLAP. IT'S TOTALLY ENCOMPASSED WITHIN THE NISSEN  
 11 2010.

12 SO WHAT I WOULD LIKE TO SAY IS, THIS DOES  
 13 NOT AT ALL ADDRESS THE NOTION OF INCONSISTENCY THAT WE  
 14 WERE TALKING ABOUT, WHICH, YOUR HONORS, HAS NOTHING TO  
 15 DO WITH WEIGHT. IT HAS TO DO NOT WITH THE WEIGHT OF  
 16 EVIDENCE, NOT AT ALL. IT HAS TO DO WITH THE RELIABILITY  
 17 OF THE DATA AND THE BRADFORD-HILL CRITERIA.

18 MR. ZONIES SAID THAT I TALKED ABOUT  
 19 92 PERCENT AND 94 PERCENT, IF YOU HAVE THE SLIDE FROM  
 20 THE NISSEN META-ANALYSIS. BUT I DON'T KNOW IF HE DOES  
 21 NOT UNDERSTAND WHAT I PUT UP BUT 0.92 PERCENT,  
 22 0.94 PERCENT. THAT MEANS LESS THAN ONE PERCENT.  
 23 CERTAINLY NOT 92 PERCENT OR NOT 94 PERCENT.

24 HE TALKED ABOUT STUDIES 011 AND 020 AND  
 25 015. NONE OF THESE STUDIES ADJUDICATED MI.

1 LET'S SEE, HE SAID -- AND I WOULD LIKE  
 2 CLARIFICATION -- THAT DR. DEPACE IS NOT A GENERAL  
 3 CAUSATION EXPERT? WE CHALLENGED HIM ON GENERAL  
 4 CAUSATION AND THEY RESPONDED. IF THEY ARE WITHDRAWING  
 5 HIM, THAT IS THE FIRST I HEARD. ARE YOU WITHDRAWING HIM  
 6 AS A GENERAL CAUSATION EXPERT?

7 MR. ZONIES: WE JUST DIDN'T NOTE THAT --  
 8 HE HAS NOT BEEN SUBMITTED IN THE MDL AS A GENERAL  
 9 CAUSATION EXPERT. THAT IS ALL I MEANT. HE IS A  
 10 SPECIFIC CAUSATION EXPERT. HE DOES HAVE GENERAL  
 11 CAUSATION OPINIONS.

12 MS. HALPERN: SO THEN WE ARE MOVING TO  
 13 DISMISS THE PORTION OF HIS OPINION THAT ARE GENERAL  
 14 CAUSATION.

15 MR. ZONIES: THAT'S CORRECT.

16 MS. HALPERN: ALL RIGHT. THAT'S FINE.

17 I HOPE YOU LISTENED CAREFULLY TO MR.  
 18 ZONIES BECAUSE HE CONFIRMED MUCH OF WHAT I WAS SAYING.  
 19 HE TALKED A GREAT DEAL ABOUT ASSOCIATION. IF YOU PULL  
 20 UP THE SLIDE ON THE LADDER FOR ASSESSING CAUSATION,  
 21 ASSOCIATION IS BELOW THE FIRST STEP. THAT IS WHAT AN  
 22 ASSOCIATION IS. A VALID ASSOCIATION IS AFTER YOU RULE  
 23 OUT CHANCE, BIAS OR CONFOUNDING. SO WHEN HE PLAYED  
 24 TAPES OF BURKHART AND MMR AND REPEATEDLY REFERRED TO  
 25 PEOPLE WHO FOUND AN ASSOCIATION, HE IS TALKING ABOUT THE

1 STARTING POINT. WE HAVE NOT BEGUN TO CLIMB THE LADDER  
 2 YET.

3 HE TALKED A GREAT DEAL, JUST AS I SAID HE  
 4 WOULD, ABOUT STATISTICAL SIGNIFICANCE, THINGS THAT ARE  
 5 NOT TRENDS, SIGNALS, INCREASE IN RISK, LITTLE BIT OF  
 6 RISK, LITTLE BIT OF A SIGNAL. I RAN OUT OF WRITING THEM  
 7 DOWN. HE TALKED A GREAT DEAL ABOUT DATA THAT WAS NOT  
 8 STATISTICALLY SIGNIFICANT.

9 HE SAID THAT BIOLOGICAL PLAUSIBILITY IS  
 10 OF SMALL IMPORT. AND THEN HE SPENT A LOT OF TIME  
 11 TALKING ABOUT LP-PLA2, LDL AND APO-B. HE STILL SHOWED  
 12 YOU NO EVIDENCE, YOUR HONORS, THAT AN INCREASE IN ANY OF  
 13 THOSE MARKERS OCCURS WITH AVANDIA ENDING UP IN AN  
 14 INCREASED RISK OF HEART ATTACK. THERE IS NO DATA LIKE  
 15 THAT. AND IN FACT, THE ONE STUDY HE TALKED ABOUT, THE  
 16 VICTORY STUDY WHICH HE CRITICIZED ABOUT ATHEROSCLEROSIS,  
 17 HE DID NOT MENTION ANY OF THE OTHERS. THERE IS NO DATA,  
 18 NONE, SHOWING INCREASED RISK WITH AVANDIA AND  
 19 ATHEROSCLEROSIS, NONE AT ALL. AND YET HE WANTS TO PICK  
 20 AT ONE OR TWO OF THE STUDIES. HIS BURDEN IS TO SHOW YOU  
 21 THAT SOMETHING IS HAPPENING HERE, NOT TO CRITICIZE THE  
 22 STUDIES THAT GLAXO PUT UP.

23 ANOTHER POINT, HE TALKED ABOUT BIAS AND  
 24 HE SAID THAT DR. JEWELL SHOWED YOU THAT BIAS WAS IN THE  
 25 RECORD STUDY BECAUSE OF STATINS. IN FACT, THE AUTHORS

1 IN THE PUBLISHED ARTICLE SAID STATINS WERE NOT A FACTOR.  
 2 THE FDA SAID STATINS WERE NOT A FACTOR AND THEY ACTUALLY  
 3 ANALYZED IT. DR. AUSTIN, THEIR OWN EPIDEMIOLOGIST, SAID  
 4 STATINS WERE NOT A FACTOR IN RECORD. DR. JEWELL, I TOOK  
 5 HIS DEPOSITION, SAID THAT HE THOUGHT IT WAS A FACTOR BUT  
 6 HE DID NOT DO THE ANALYSIS. AND HE HAD AN OPPORTUNITY  
 7 BETWEEN THE TIME OF HIS DEPOSITION BECAUSE HE SUBMITTED  
 8 A SUPPLEMENTAL REPORT AND HE HAS NEVER SHOWN US ANY  
 9 ANALYSIS THAT STATINS ARE A FACTOR.

10 YOU ALSO TALKED ABOUT -- MR. ZONIES  
 11 TALKED ABOUT DOSE RESPONSE AND -- BUT THE DOSE RESPONSE  
 12 HE TALKED ABOUT WAS IN LDL CHOLESTEROL. THE OUTCOME IS  
 13 WHAT IS OF MEASURE HERE. DOES AVANDIA CAUSE A DOSE  
 14 RESPONSE IN THE OUTCOME OF HEART ATTACK? DOSE RESPONSE  
 15 IN BRADFORD-HILL RELATES TO OUTCOMES, NOT TO BIOMARKERS.

16 IN ADDITION MR. HABERMAN AT THE FDA  
 17 ACTUALLY LOOKED IN THE RECORD DATA. HE LOOKED AT PEOPLE  
 18 WHO HAD HEART ATTACKS ON AVANDIA AND HE LOOKED TO SEE IF  
 19 THEY HAD AN INCREASE IN LDL AND HE DID NOT FIND IT. THE  
 20 PEOPLE WHO WERE HAVING HEART ATTACKS DID NOT HAVE  
 21 INCREASED LDL.

22 LET'S SEE, HE DID AN ANALYSIS OF BIAS, HE  
 23 SAYS, ON RECORD AND MANNUCCI, WHICH IS EXACTLY WHAT I  
 24 SAID THEY DID. THEY ANALYZED AND PICKED THE STUDIES  
 25 THAT WE RELY ON BECAUSE THEY DON'T SHOW STATISTICALLY

1 SIGNIFICANT INCREASED RISK AND THEY DON'T APPLY THE SAME  
 2 METHODOLOGY.

3 AND I'M DONE. THANK YOU VERY MUCH.

4 HONORABLE CYNTHIA M. RUFÉ: THANK YOU

5 VERY MUCH.

6 ONE MOMENT, PLEASE.

7 YES. JUDGE MOSS AND I AGREE THAT

8 TOMORROW'S EXPERTS STARTING WITH THE PLAINTIFFS WE WOULD  
 9 VERY MUCH APPRECIATE TO HEAR FROM THE EXPERTS THAT YOU  
 10 HAVE LINED UP IN EACH OF YOUR CATEGORIES. EXPERTS  
 11 BRINTON, SNIDERMAN AND JEWELL AND WE WILL SEE WHERE WE  
 12 GO FROM THERE.

13 WHO MIGHT THE DEFENDANTS HAVE READY?

14 MS. GUSSACK: YOUR HONOR, AS WE ADVISED  
 15 THE PSC LAST WEEK, DR. GAVIN, KEANEY AND DR. HENNEKENS  
 16 MAY BE PRESENTED TO YOUR HONORS.

17 HONORABLE SANDRA MAZER MOSS: THEY WILL  
 18 BE WEDNESDAY?

19 MR. GUSSACK: YES, YOUR HONOR.

20 HONORABLE CYNTHIA M. RUFÉ: ALL THREE?

21 MS. GUSSACK: AS WE JUDGE NECESSARY AND  
 22 AS YOUR HONOR THINKS APPROPRIATE.

23 HONORABLE CYNTHIA M. RUFÉ: LET'S SEE HOW  
 24 THAT GOES BY THE AFTERNOON BECAUSE WEDNESDAY IS A VERY  
 25 BUSY DAY AS WELL. I DON'T KNOW HOW MANY CAN ACTUALLY

1 TESTIFY IN THE MORNING. WE NEED SOME TIME IN THE  
2 AFTERNOON FOR THE CONFERENCE OURSELVES, BUT I DON'T  
3 THINK THE CONFERENCE WILL TAKE THAT LONG.

4 MS. GUSSACK: THANK YOU.

5 MR. ZONIES: JUST TO LET YOU KNOW THE  
6 ORDER IN CASE YOU WANT TO READ BACKWARDS. WE ARE GOING  
7 TO PUT ON DR. JEWELL FIRST, WHO IS THE BIOSTATISTICIAN  
8 AND THEN DR. BRINTON AND THEN FINISH UP WITH DR.  
9 SNIDERMAN.

10 HONORABLE CYNTHIA M. RUFÉ: THANK YOU.

11 HONORABLE SANDRA MAZER MOSS: THANK YOU.

12 HONORABLE CYNTHIA M. RUFÉ: WE APPRECIATE  
13 VERY MUCH THE IMMENSE EFFORT THAT GOES INTO PREPARING  
14 FOR ORAL ARGUMENT. IT DOES HELP COURTS CLARIFY THE  
15 MANY, MANY THINGS THAT WE HAVE BEEN READING AND IT IS  
16 VERY, VERY EFFICIENTLY PRESENTED. SO WE WILL ADJOURN  
17 AND STATE COURT YOU ARE OFF TO THE JURY ROOM. THANK  
18 YOU, JUDGE MOSS.

19 HONORABLE SANDRA MAZER MOSS: YOU ALL DID  
20 A MAGNIFICENT JOB. IT WAS A PLEASURE TO LISTEN.

21 (HEARING CONCLUDED AT 5 O'CLOCK.)  
22  
23  
24  
25

1 I CERTIFY THAT THE FOREGOING IS A CORRECT  
2 TRANSCRIPT FROM THE RECORD OF PROCEEDINGS IN THE  
3 ABOVE-ENTITLED MATTER.  
4

5

6

DATE SUZANNE R. WHITE

7

OFFICIAL COURT REPORTER

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

<b>0</b>	<p><b>12-MONTH</b> [1] - 177:11</p> <p><b>12:40</b> [1] - 95:19</p> <p><b>12:45</b> [1] - 9:22</p> <p><b>13</b> [1] - 185:3</p> <p><b>136</b> [1] - 105:11</p> <p><b>14</b> [2] - 62:19, 194:25</p> <p><b>14,000</b> [2] - 105:10, 135:22</p> <p><b>14,237</b> [1] - 137:16</p> <p><b>14203-2887</b> [1] - 2:22</p> <p><b>15</b> [1] - 22:3</p> <p><b>150</b> [1] - 164:25</p> <p><b>159</b> [1] - 105:9</p> <p><b>16</b> [2] - 157:22, 185:3</p> <p><b>1600</b> [1] - 3:3</p> <p><b>164</b> [2] - 109:5, 160:16</p> <p><b>17,000</b> [1] - 105:8</p> <p><b>175</b> [3] - 197:7, 197:14, 197:18</p> <p><b>18</b> [3] - 137:15, 157:17, 157:22</p> <p><b>18901</b> [1] - 2:5</p> <p><b>18TH</b> [1] - 2:17</p> <p><b>19103</b> [1] - 3:4</p> <p><b>19103-2799</b> [1] - 2:18</p> <p><b>19106</b> [1] - 1:21</p> <p><b>1976</b> [1] - 8:3</p> <p><b>1998</b> [5] - 138:10, 138:15, 138:19, 170:19, 181:13</p>	<p><b>2010</b> [18] - 1:11, 21:25, 55:21, 56:16, 57:9, 82:9, 100:18, 101:4, 101:8, 105:3, 105:5, 107:25, 108:2, 149:22, 149:23, 156:20, 192:24, 200:11</p> <p><b>211</b> [1] - 106:22</p> <p><b>215</b> [2] - 2:5, 2:18</p> <p><b>215)627-1882</b> [1] - 1:22</p> <p><b>215)751-2000</b> [1] - 3:4</p> <p><b>243</b> [3] - 186:25, 187:1, 188:9</p> <p><b>25</b> [4] - 22:1, 179:10, 180:17, 190:7</p> <p><b>26</b> [3] - 115:7, 172:15, 181:18</p> <p><b>28</b> [1] - 116:19</p> <p><b>28TH</b> [1] - 187:25</p>	<p>191:9, 200:3</p> <p><b>46</b> [1] - 118:6</p> <p><b>4740</b> [1] - 2:13</p>	<b>9</b>	
<p><b>0.92</b> [1] - 200:21</p> <p><b>0.94</b> [1] - 200:22</p> <p><b>001</b> [1] - 181:13</p> <p><b>011</b> [12] - 138:12, 161:18, 171:2, 171:13, 172:9, 175:14, 175:18, 175:24, 180:21, 184:24, 196:20, 200:24</p> <p><b>015</b> [2] - 184:24, 200:25</p> <p><b>020</b> [3] - 171:2, 184:24, 200:24</p> <p><b>024</b> [1] - 171:2</p> <p><b>07-MD-01871</b> [1] - 1:5</p> <p><b>090</b> [1] - 138:12</p> <p><b>093</b> [1] - 138:12</p> <p><b>094</b> [1] - 138:12</p> <p><b>098</b> [1] - 138:12</p>	<p><b>2</b></p> <p><b>2</b> [7] - 9:24, 91:6, 95:8, 140:20, 146:24, 175:13, 178:19</p> <p><b>20</b> [3] - 1:11, 56:2, 56:12, 99:4, 111:3, 140:21, 167:24, 171:17, 171:19, 171:20, 175:13, 175:15, 175:21</p> <p><b>2000</b> [5] - 184:8, 186:17, 186:22, 187:25, 197:16</p> <p><b>2001</b> [1] - 160:11</p> <p><b>2005</b> [1] - 159:6</p> <p><b>2006</b> [1] - 137:13</p> <p><b>2007</b> [14] - 55:21, 56:12, 56:18, 79:9, 149:10, 149:18, 151:2, 151:6, 152:3, 152:4, 153:22, 153:25, 194:7</p> <p><b>2008</b> [2] - 12:21, 123:8</p> <p><b>2009</b> [1] - 129:15</p>	<p style="text-align: center;"><b>3</b></p> <p><b>3</b> [4] - 26:22, 56:2, 56:12, 140:20</p> <p><b>3.2</b> [1] - 147:1</p> <p><b>30</b> [12] - 22:4, 25:6, 109:22, 109:24, 110:1, 171:20, 175:9, 176:17, 179:10, 186:12, 187:10, 187:11</p> <p><b>300</b> [2] - 2:13, 194:24</p> <p><b>303</b> [1] - 2:10</p> <p><b>30TH</b> [1] - 22:9</p> <p><b>33</b> [1] - 12:9</p> <p><b>34</b> [1] - 8:4</p> <p><b>3400</b> [1] - 2:21</p> <p><b>348-7700</b> [1] - 2:5</p> <p><b>39</b> [1] - 176:1</p> <p><b>3A</b> [1] - 26:22</p> <p><b>3RD</b> [4] - 31:22, 33:11, 38:9, 125:6</p>	<p style="text-align: center;"><b>5</b></p> <p><b>5</b> [4] - 77:9, 140:20, 187:12, 205:21</p> <p><b>50</b> [4] - 23:6, 62:6, 187:11</p> <p><b>511</b> [1] - 2:8</p> <p><b>52</b> [3] - 200:3, 200:4, 200:8</p> <p><b>56</b> [5] - 45:19, 107:10, 200:1, 200:8</p> <p><b>57</b> [1] - 183:9</p> <p><b>5TH</b> [1] - 57:14</p>	<p><b>9</b> [1] - 179:18</p> <p><b>90S</b> [1] - 185:8</p> <p><b>92</b> [4] - 105:9, 194:1, 200:19, 200:23</p> <p><b>94</b> [4] - 105:11, 194:1, 200:19, 200:23</p> <p><b>95</b> [1] - 177:7</p> <p><b>981-4000</b> [1] - 2:18</p>	
<b>1</b>	<p><b>1</b> [15] - 91:6, 137:3, 140:20, 143:6, 143:10, 143:14, 144:22, 145:6, 145:14, 154:22, 157:21, 161:3, 175:12, 178:19, 191:13</p> <p><b>1.3</b> [2] - 136:23, 137:3</p> <p><b>1.37</b> [2] - 154:24, 155:4</p> <p><b>10</b> [2] - 107:20, 171:10</p> <p><b>100</b> [12] - 22:22, 22:25, 23:1, 23:3, 23:4, 23:5, 24:24, 176:2, 177:6, 187:12, 187:13, 189:8</p> <p><b>100,000</b> [1] - 175:5</p> <p><b>10:20</b> [1] - 9:17</p> <p><b>10:25</b> [1] - 9:18</p> <p><b>11</b> [1] - 44:6</p> <p><b>114</b> [1] - 114:5</p> <p><b>116</b> [2] - 103:24, 104:9</p> <p><b>117</b> [1] - 104:13</p> <p><b>119</b> [3] - 103:17, 103:19, 104:11</p> <p><b>11TH</b> [2] - 5:24, 58:12</p> <p><b>12</b> [1] - 140:21</p>	<p style="text-align: center;"><b>2</b></p> <p><b>2</b> [15] - 91:6, 137:3, 140:20, 143:6, 143:10, 143:14, 144:22, 145:6, 145:14, 154:22, 157:21, 161:3, 175:12, 178:19, 191:13</p> <p><b>1.3</b> [2] - 136:23, 137:3</p> <p><b>1.37</b> [2] - 154:24, 155:4</p> <p><b>10</b> [2] - 107:20, 171:10</p> <p><b>100</b> [12] - 22:22, 22:25, 23:1, 23:3, 23:4, 23:5, 24:24, 176:2, 177:6, 187:12, 187:13, 189:8</p> <p><b>100,000</b> [1] - 175:5</p> <p><b>10:20</b> [1] - 9:17</p> <p><b>10:25</b> [1] - 9:18</p> <p><b>11</b> [1] - 44:6</p> <p><b>114</b> [1] - 114:5</p> <p><b>116</b> [2] - 103:24, 104:9</p> <p><b>117</b> [1] - 104:13</p> <p><b>119</b> [3] - 103:17, 103:19, 104:11</p> <p><b>11TH</b> [2] - 5:24, 58:12</p> <p><b>12</b> [1] - 140:21</p>	<p style="text-align: center;"><b>3</b></p> <p><b>3</b> [4] - 26:22, 56:2, 56:12, 140:20</p> <p><b>3.2</b> [1] - 147:1</p> <p><b>30</b> [12] - 22:4, 25:6, 109:22, 109:24, 110:1, 171:20, 175:9, 176:17, 179:10, 186:12, 187:10, 187:11</p> <p><b>300</b> [2] - 2:13, 194:24</p> <p><b>303</b> [1] - 2:10</p> <p><b>30TH</b> [1] - 22:9</p> <p><b>33</b> [1] - 12:9</p> <p><b>34</b> [1] - 8:4</p> <p><b>3400</b> [1] - 2:21</p> <p><b>348-7700</b> [1] - 2:5</p> <p><b>39</b> [1] - 176:1</p> <p><b>3A</b> [1] - 26:22</p> <p><b>3RD</b> [4] - 31:22, 33:11, 38:9, 125:6</p>	<p style="text-align: center;"><b>6</b></p> <p><b>6</b> [2] - 140:20, 187:13</p> <p><b>60</b> [1] - 187:15</p> <p><b>601</b> [1] - 1:21</p> <p><b>616</b> [1] - 103:23</p> <p><b>62</b> [2] - 187:7, 189:7</p> <p><b>64112</b> [1] - 2:14</p> <p><b>65</b> [2] - 146:7, 146:9</p> <p><b>6TH</b> [2] - 7:10, 147:13</p>	<b>A</b>
<p><b>1</b> [15] - 91:6, 137:3, 140:20, 143:6, 143:10, 143:14, 144:22, 145:6, 145:14, 154:22, 157:21, 161:3, 175:12, 178:19, 191:13</p> <p><b>1.3</b> [2] - 136:23, 137:3</p> <p><b>1.37</b> [2] - 154:24, 155:4</p> <p><b>10</b> [2] - 107:20, 171:10</p> <p><b>100</b> [12] - 22:22, 22:25, 23:1, 23:3, 23:4, 23:5, 24:24, 176:2, 177:6, 187:12, 187:13, 189:8</p> <p><b>100,000</b> [1] - 175:5</p> <p><b>10:20</b> [1] - 9:17</p> <p><b>10:25</b> [1] - 9:18</p> <p><b>11</b> [1] - 44:6</p> <p><b>114</b> [1] - 114:5</p> <p><b>116</b> [2] - 103:24, 104:9</p> <p><b>117</b> [1] - 104:13</p> <p><b>119</b> [3] - 103:17, 103:19, 104:11</p> <p><b>11TH</b> [2] - 5:24, 58:12</p> <p><b>12</b> [1] - 140:21</p>	<p style="text-align: center;"><b>2</b></p> <p><b>2</b> [7] - 9:24, 91:6, 95:8, 140:20, 146:24, 175:13, 178:19</p> <p><b>20</b> [3] - 1:11, 56:2, 56:12, 99:4, 111:3, 140:21, 167:24, 171:17, 171:19, 171:20, 175:13, 175:15, 175:21</p> <p><b>2000</b> [5] - 184:8, 186:17, 186:22, 187:25, 197:16</p> <p><b>2001</b> [1] - 160:11</p> <p><b>2005</b> [1] - 159:6</p> <p><b>2006</b> [1] - 137:13</p> <p><b>2007</b> [14] - 55:21, 56:12, 56:18, 79:9, 149:10, 149:18, 151:2, 151:6, 152:3, 152:4, 153:22, 153:25, 194:7</p> <p><b>2008</b> [2] - 12:21, 123:8</p> <p><b>2009</b> [1] - 129:15</p>	<p style="text-align: center;"><b>3</b></p> <p><b>3</b> [4] - 26:22, 56:2, 56:12, 140:20</p> <p><b>3.2</b> [1] - 147:1</p> <p><b>30</b> [12] - 22:4, 25:6, 109:22, 109:24, 110:1, 171:20, 175:9, 176:17, 179:10, 186:12, 187:10, 187:11</p> <p><b>300</b> [2] - 2:13, 194:24</p> <p><b>303</b> [1] - 2:10</p> <p><b>30TH</b> [1] - 22:9</p> <p><b>33</b> [1] - 12:9</p> <p><b>34</b> [1] - 8:4</p> <p><b>3400</b> [1] - 2:21</p> <p><b>348-7700</b> [1] - 2:5</p> <p><b>39</b> [1] - 176:1</p> <p><b>3A</b> [1] - 26:22</p> <p><b>3RD</b> [4] - 31:22, 33:11, 38:9, 125:6</p>	<p style="text-align: center;"><b>6</b></p> <p><b>6</b> [2] - 140:20, 187:13</p> <p><b>60</b> [1] - 187:15</p> <p><b>601</b> [1] - 1:21</p> <p><b>616</b> [1] - 103:23</p> <p><b>62</b> [2] - 187:7, 189:7</p> <p><b>64112</b> [1] - 2:14</p> <p><b>65</b> [2] - 146:7, 146:9</p> <p><b>6TH</b> [2] - 7:10, 147:13</p>	<p style="text-align: center;"><b>A</b></p> <p><b>A1</b> [2] - 182:1, 182:17</p> <p><b>ABLE</b> [7] - 5:9, 9:11, 11:2, 34:17, 39:13, 111:13, 186:23</p> <p><b>ABOVE-ENTITLED</b> [1] - 206:3</p> <p><b>ABSENCE</b> [9] - 13:5, 14:21, 14:24, 29:24, 102:2, 102:3, 102:4, 102:9, 102:10</p> <p><b>ABSOLUTELY</b> [6] - 55:4, 83:20, 83:21, 101:16, 110:8, 166:23</p> <p><b>ABUNDANTLY</b> [1] - 41:19</p> <p><b>ACADEMICIANS</b> [3] - 46:22, 47:12, 49:20</p> <p><b>ACADEMICS</b> [1] - 47:1</p> <p><b>ACC</b> [5] - 47:8, 194:20, 194:25, 196:18, 197:21</p> <p><b>ACCEPT</b> [3] - 32:4, 63:14, 94:2</p> <p><b>ACCEPTABLE</b> [3] - 14:3, 15:15, 16:12</p> <p><b>ACCEPTANCE</b> [1] - 120:16</p> <p><b>ACCEPTED</b> [20] - 28:19, 30:5, 30:6, 31:3, 31:19, 37:11, 41:21, 54:25, 60:16, 61:22, 71:11, 71:16, 71:19, 120:19, 120:20, 120:24, 121:4, 123:13, 165:13</p> <p><b>ACCEPTING</b> [1] - 22:22</p> <p><b>ACCESS</b> [7] - 5:9, 80:6, 157:5, 196:2, 196:3, 196:15, 196:18</p> <p><b>ACCOMMODATE</b> [1] - 9:12</p> <p><b>ACCORDING</b> [12] -</p>	
<p><b>1</b> [15] - 91:6, 137:3, 140:20, 143:6, 143:10, 143:14, 144:22, 145:6, 145:14, 154:22, 157:21, 161:3, 175:12, 178:19, 191:13</p> <p><b>1.3</b> [2] - 136:23, 137:3</p> <p><b>1.37</b> [2] - 154:24, 155:4</p> <p><b>10</b> [2] - 107:20, 171:10</p> <p><b>100</b> [12] - 22:22, 22:25, 23:1, 23:3, 23:4, 23:5, 24:24, 176:2, 177:6, 187:12, 187:13, 189:8</p> <p><b>100,000</b> [1] - 175:5</p> <p><b>10:20</b> [1] - 9:17</p> <p><b>10:25</b> [1] - 9:18</p> <p><b>11</b> [1] - 44:6</p> <p><b>114</b> [1] - 114:5</p> <p><b>116</b> [2] - 103:24, 104:9</p> <p><b>117</b> [1] - 104:13</p> <p><b>119</b> [3] - 103:17, 103:19, 104:11</p> <p><b>11TH</b> [2] - 5:24, 58:12</p> <p><b>12</b> [1] - 140:21</p>	<p style="text-align: center;"><b>2</b></p> <p><b>2</b> [7] - 9:24, 91:6, 95:8, 140:20, 146:24, 175:13, 178:19</p> <p><b>20</b> [3] - 1:11, 56:2, 56:12, 99:4, 111:3, 140:21, 167:24, 171:17, 171:19, 171:20, 175:13, 175:15, 175:21</p> <p><b>2000</b> [5] - 184:8, 186:17, 186:22, 187:25, 197:16</p> <p><b>2001</b> [1] - 160:11</p> <p><b>2005</b> [1] - 159:6</p> <p><b>2006</b> [1] - 137:13</p> <p><b>2007</b> [14] - 55:21, 56:12, 56:18, 79:9, 149:10, 149:18, 151:2, 151:6, 152:3, 152:4, 153:22, 153:25, 194:7</p> <p><b>2008</b> [2] - 12:21, 123:8</p> <p><b>2009</b> [1] - 129:15</p>	<p style="text-align: center;"><b>3</b></p> <p><b>3</b> [4] - 26:22, 56:2, 56:12, 140:20</p> <p><b>3.2</b> [1] - 147:1</p> <p><b>30</b> [12] - 22:4, 25:6, 109:22, 109:24, 110:1, 171:20, 175:9, 176:17, 179:10, 186:12, 187:10, 187:11</p> <p><b>300</b> [2] - 2:13, 194:24</p> <p><b>303</b> [1] - 2:10</p> <p><b>30TH</b> [1] - 22:9</p> <p><b>33</b> [1] - 12:9</p> <p><b>34</b> [1] - 8:4</p> <p><b>3400</b> [1] - 2:21</p> <p><b>348-7700</b> [1] - 2:5</p> <p><b>39</b> [1] - 176:1</p> <p><b>3A</b> [1] - 26:22</p> <p><b>3RD</b> [4] - 31:22, 33:11, 38:9, 125:6</p>	<p style="text-align: center;"><b>6</b></p> <p><b>6</b> [2] - 140:20, 187:13</p> <p><b>60</b> [1] - 187:15</p> <p><b>601</b> [1] - 1:21</p> <p><b>616</b> [1] - 103:23</p> <p><b>62</b> [2] - 187:7, 189:7</p> <p><b>64112</b> [1] - 2:14</p> <p><b>65</b> [2] - 146:7, 146:9</p> <p><b>6TH</b> [2] - 7:10, 147:13</p>	<p style="text-align: center;"><b>7</b></p> <p><b>7</b> [2] - 77:9, 140:20</p> <p><b>700</b> [1] - 2:9</p> <p><b>702</b> [2] - 130:11, 147:5</p> <p><b>716)852-6100</b> [1] - 2:22</p> <p><b>75</b> [1] - 175:24</p> <p><b>7TH</b> [1] - 15:11</p>	<p style="text-align: center;"><b>8</b></p> <p><b>8</b> [1] - 140:20</p> <p><b>80</b> [2] - 180:15, 180:16</p> <p><b>80,000</b> [3] - 194:9, 194:12, 194:16</p> <p><b>80202</b> [1] - 2:9</p> <p><b>81</b> [2] - 97:12, 97:15</p> <p><b>86</b> [1] - 109:7</p> <p><b>87</b> [1] - 2:4</p> <p><b>893-6100</b> [1] - 2:10</p>

<p>19:16, 19:19, 22:20, 24:17, 34:20, 83:6, 142:25, 143:1, 146:3, 156:15, 164:21, 168:24</p> <p><b>ACCOUNT</b> [5] - 6:10, 24:8, 26:20, 34:17, 36:16</p> <p><b>ACCURATE</b> [4] - 171:14, 184:5, 196:5, 196:19</p> <p><b>ACCURATELY</b> [3] - 93:1, 162:1, 183:5</p> <p><b>ACCUTANE</b> [1] - 64:5</p> <p><b>ACHIEVING</b> [1] - 106:11</p> <p><b>ACKNOWLEDGE</b> [1] - 69:6</p> <p><b>ACKNOWLEDGED</b> [3] - 110:6, 112:3, 122:13</p> <p><b>ACKNOWLEDGES</b> [1] - 119:6</p> <p><b>ACKNOWLEDGING</b> [3] - 31:6, 34:9, 58:14</p> <p><b>ACTING</b> [1] - 45:20</p> <p><b>ACTION</b> [4] - 1:4, 40:22, 61:10, 62:1</p> <p><b>ACTIONS</b> [2] - 6:1, 11:25</p> <p><b>ACTIVE</b> [1] - 185:21</p> <p><b>ACTIVITY</b> [4] - 11:23, 186:5, 186:6, 188:16</p> <p><b>ACTOS</b> [1] - 84:9</p> <p><b>ACTUAL</b> [3] - 57:6, 57:13, 153:15</p> <p><b>ADCOM</b> [8] - 56:16, 82:9, 101:4, 101:8, 134:12, 152:1, 156:20, 192:24</p> <p><b>ADCOMS</b> [1] - 55:20</p> <p><b>ADD</b> [1] - 101:20</p> <p><b>ADDED</b> [2] - 107:20, 107:21</p> <p><b>ADDITION</b> [1] - 203:16</p> <p><b>ADDITIONAL</b> [4] - 5:25, 23:8, 113:5, 145:22</p> <p><b>ADDRESS</b> [6] - 10:12, 14:2, 35:13, 81:23, 126:3, 200:13</p> <p><b>ADDRESSES</b> [1] - 119:24</p> <p><b>ADDRESSING</b> [3] - 4:11, 11:7, 141:9</p> <p><b>ADEQUATE</b> [1] - 125:10</p> <p><b>ADEQUATELY</b> [1] -</p>	<p>113:15</p> <p><b>ADHERE</b> [1] - 63:5</p> <p><b>ADHERENCE</b> [2] - 17:3, 83:5</p> <p><b>ADHERING</b> [1] - 43:14</p> <p><b>ADJOURN</b> [1] - 205:16</p> <p><b>ADJUDICATE</b> [3] - 74:9, 77:13, 92:25</p> <p><b>ADJUDICATED</b> [13] - 78:6, 78:15, 86:5, 87:2, 88:5, 91:22, 91:25, 92:2, 92:5, 93:7, 107:6, 115:10, 200:25</p> <p><b>ADJUDICATION</b> [4] - 76:18, 82:6, 93:9, 158:12</p> <p><b>ADJUSTABLE</b> [1] - 10:25</p> <p><b>ADMISSIBILITY</b> [2] - 120:16, 124:22</p> <p><b>ADMISSION</b> [1] - 51:6</p> <p><b>ADMIT</b> [5] - 20:22, 88:23, 124:13, 137:21, 165:6</p> <p><b>ADMITS</b> [9] - 39:21, 39:23, 46:25, 48:4, 48:9, 62:19, 92:12, 100:24, 103:7</p> <p><b>ADMITTED</b> [5] - 20:4, 40:23, 40:25, 41:7, 116:11</p> <p><b>ADMITTING</b> [1] - 51:17</p> <p><b>ADOPT</b> [19] - 87:23, 91:20, 91:22, 92:6, 92:11, 92:22, 93:17, 100:17, 106:20, 107:6, 138:16, 144:20, 145:7, 145:8, 145:21, 159:20, 159:24, 159:25</p> <p><b>ADOPTED</b> [2] - 31:20</p> <p><b>ADVANCED</b> [1] - 76:21</p> <p><b>ADVERSE</b> [15] - 20:9, 31:12, 42:21, 43:2, 43:7, 46:18, 59:22, 63:20, 66:6, 66:8, 66:10, 111:9, 133:17, 175:11, 190:4</p> <p><b>ADVISED</b> [2] - 129:16, 204:14</p> <p><b>ADVISORY</b> [9] - 82:3, 83:2, 134:17, 151:2, 152:4, 152:6,</p>	<p>152:16, 170:20, 170:22</p> <p><b>AFFECTED</b> [1] - 85:12</p> <p><b>AFFECTING</b> [2] - 158:13, 182:3</p> <p><b>AFFECTS</b> [1] - 68:1</p> <p><b>AFFIRMED</b> [1] - 57:15</p> <p><b>AFTERNOON</b> [8] - 95:11, 95:15, 95:22, 95:23, 126:15, 126:17, 204:24, 205:2</p> <p><b>AGE</b> [2] - 136:20, 154:14</p> <p><b>AGENCY</b> [1] - 52:9</p> <p><b>AGENT</b> [5] - 59:25, 60:1, 137:7, 155:6</p> <p><b>AGO</b> [7] - 51:16, 56:24, 62:25, 80:5, 81:5, 131:12, 197:14</p> <p><b>AGREE</b> [33] - 26:3, 27:25, 34:19, 66:17, 69:21, 71:25, 72:7, 72:15, 82:16, 85:11, 92:24, 93:4, 93:6, 93:12, 103:3, 115:17, 116:17, 125:22, 132:1, 133:9, 136:6, 137:8, 141:19, 142:6, 145:23, 154:16, 168:15, 168:20, 182:16, 183:6, 183:10, 192:18, 204:7</p> <p><b>AGREED</b> [6] - 4:21, 9:5, 18:9, 63:11, 133:9, 169:4</p> <p><b>AGREED-WITH</b> [1] - 169:4</p> <p><b>AGREES</b> [8] - 29:23, 41:14, 63:7, 101:16, 106:14, 150:5, 169:6, 182:12</p> <p><b>AHA</b> [5] - 47:8, 194:20, 195:12, 196:18, 197:21</p> <p><b>AHEAD</b> [4] - 11:3, 173:14, 178:10, 194:18</p> <p><b>AIDED</b> [1] - 1:25</p> <p><b>ALABAMA</b> [1] - 6:3</p> <p><b>ALAN</b> [1] - 131:17</p> <p><b>ALGORITHM</b> [1] - 165:4</p> <p><b>ALLEGATION</b> [1] - 78:23</p> <p><b>ALLEGATIONS</b> [2] - 11:24, 12:2</p> <p><b>ALLEGE</b> [1] - 78:21</p> <p><b>ALLEGED</b> [1] - 13:8</p>	<p><b>ALLOW</b> [4] - 15:9, 112:1, 125:8, 179:23</p> <p><b>ALLOWED</b> [3] - 13:4, 85:2, 128:22</p> <p><b>ALLOWS</b> [2] - 30:6, 33:23</p> <p><b>ALMOST</b> [11] - 33:18, 41:24, 42:23, 62:6, 98:25, 102:21, 107:13, 123:24, 126:7, 148:8, 200:9</p> <p><b>ALONE</b> [11] - 20:7, 26:7, 148:25, 150:8, 150:24, 159:12, 165:15, 165:21, 189:21, 191:9, 191:16</p> <p><b>ALTERNATIVE</b> [4] - 43:4, 43:11, 52:13, 58:1</p> <p><b>ALZHEIMER'S</b> [1] - 109:17</p> <p><b>ALZHEIMERS</b> [1] - 91:17</p> <p><b>AMERICAN</b> [9] - 21:25, 22:1, 22:8, 44:12, 46:22, 101:6, 129:14, 182:23, 194:25</p> <p><b>AMOUNTS</b> [1] - 185:23</p> <p><b>ANALYSES</b> [62] - 35:25, 36:9, 41:10, 52:12, 57:25, 72:10, 72:17, 74:6, 81:11, 88:22, 91:4, 91:14, 92:4, 92:21, 93:15, 93:20, 93:21, 94:20, 98:7, 98:9, 98:20, 99:12, 99:25, 100:3, 100:10, 100:13, 100:15, 107:9, 107:11, 107:12, 107:22, 108:13, 108:14, 109:1, 109:9, 110:4, 110:7, 111:24, 112:11, 119:17, 119:22, 123:25, 124:9, 129:1, 134:25, 135:5, 135:8, 135:16, 135:17, 146:5, 146:12, 146:13, 146:17, 157:14, 164:10, 166:2, 186:11, 193:8, 193:9, 193:11, 199:24</p> <p><b>ANALYSIS</b> [134] - 19:6, 20:1, 20:23, 23:17, 29:5, 30:17, 31:23, 32:6, 32:16, 36:7, 37:5, 38:14,</p>	<p>38:18, 39:22, 40:3, 41:3, 41:8, 41:15, 41:17, 42:15, 42:19, 43:10, 43:12, 46:2, 47:24, 48:11, 53:11, 58:15, 58:19, 58:20, 58:21, 59:3, 60:10, 60:14, 60:15, 61:7, 65:17, 71:22, 79:13, 79:19, 79:21, 80:1, 80:22, 80:25, 81:19, 81:20, 81:25, 86:8, 89:25, 90:1, 90:2, 90:7, 90:8, 90:20, 91:16, 92:18, 92:19, 98:12, 99:11, 99:16, 100:18, 101:4, 101:17, 103:4, 103:5, 103:10, 103:12, 104:20, 104:22, 105:3, 105:5, 105:21, 105:25, 106:16, 106:19, 107:17, 107:18, 107:19, 107:20, 107:24, 107:25, 108:1, 108:2, 108:10, 109:4, 109:11, 109:14, 109:19, 110:3, 110:21, 112:5, 114:19, 124:3, 127:19, 132:6, 133:12, 135:9, 135:21, 137:16, 145:4, 145:24, 149:10, 149:14, 149:17, 149:18, 149:22, 149:23, 155:2, 155:7, 156:9, 156:15, 160:16, 160:20, 161:1, 161:25, 162:22, 169:6, 186:10, 186:12, 187:23, 187:25, 193:19, 194:8, 195:3, 195:5, 196:6, 196:7, 200:2, 200:20, 203:6, 203:9, 203:22</p> <p><b>ANALYSTS</b> [1] - 174:13</p> <p><b>ANALYTIC</b> [3] - 98:25, 103:8, 103:9</p> <p><b>ANALYZE</b> [2] - 32:21, 102:22</p> <p><b>ANALYZED</b> [2] - 203:3, 203:24</p> <p><b>AND-A-HALF</b> [1] - 194:11</p> <p><b>ANGINA</b> [3] - 17:16,</p>
--	---	---	---	--

<p>137:20, 139:18  <b>ANIMATION</b> [1] - 107:16  <b>ANSWER</b> [110] - 11:9, 19:2, 19:4, 20:15, 20:20, 25:2, 25:5, 25:8, 25:11, 25:16, 25:17, 25:23, 26:2, 26:8, 29:2, 38:23, 39:3, 39:13, 40:4, 44:11, 44:15, 44:23, 45:2, 46:9, 46:17, 47:9, 48:15, 48:16, 48:19, 48:20, 49:7, 49:12, 49:18, 56:20, 64:21, 65:7, 65:12, 69:16, 69:20, 69:24, 70:7, 70:13, 72:25, 76:5, 76:12, 77:24, 79:15, 85:17, 85:18, 85:20, 85:23, 86:2, 86:6, 86:10, 86:13, 88:21, 90:9, 90:12, 90:17, 90:21, 90:24, 99:16, 99:17, 110:18, 110:25, 111:7, 116:1, 116:4, 116:7, 116:10, 116:21, 116:25, 117:4, 117:11, 117:16, 117:24, 118:3, 118:10, 118:15, 118:21, 118:24, 119:2, 119:3, 121:11, 121:17, 122:7, 132:13, 134:4, 134:7, 142:3, 142:4, 142:12, 149:13, 149:16, 149:21, 150:1, 150:16, 164:1, 166:12, 168:20, 176:12, 182:19, 182:22, 183:2, 183:8, 183:10, 191:23, 192:15, 195:22  <b>ANSWERED</b> [3] - 36:11, 93:10, 173:3  <b>ANSWERING</b> [1] - 100:2  <b>ANTI</b> [1] - 177:7  <b>ANTI-PLATELET</b> [1] - 177:7  <b>ANTIDIABETIC</b> [1] - 77:2  <b>ANTIDOTE</b> [1] - 174:6  <b>ANTIRETROVIRUS</b> [1] - 66:6  <b>ANTONIO</b> [1] - 182:10</p>	<p><b>ANYWAY</b> [1] - 98:2  <b>APO</b> [27] - 59:17, 59:24, 61:9, 62:14, 63:8, 66:19, 66:22, 67:4, 67:11, 68:4, 68:22, 70:17, 124:15, 177:11, 177:13, 180:24, 182:16, 182:17, 182:24, 182:25, 183:3, 183:20, 184:4, 184:16, 184:18, 198:12, 202:11  <b>APO-B</b> [24] - 59:17, 59:24, 61:9, 62:14, 63:8, 66:19, 66:22, 67:4, 67:11, 68:4, 68:22, 70:17, 124:15, 177:11, 177:13, 180:24, 182:16, 182:17, 182:24, 182:25, 183:3, 183:20, 198:12, 202:11  <b>APO-B/A1</b> [3] - 184:4, 184:16, 184:18  <b>APOLIPOPROTEIN</b> [6] - 131:19, 180:23, 180:25, 181:7, 181:24, 182:1  <b>APOLIPOPROTEIN -A</b> [1] - 181:24  <b>APOLIPOPROTEIN -A1</b> [1] - 182:1  <b>APOLIPOPROTIEN</b> [1] - 181:2  <b>APOLOGIZE</b> [3] - 50:14, 52:23, 63:22  <b>APPEAL</b> [1] - 59:5  <b>APPEAR</b> [4] - 47:22, 123:2, 125:18, 130:14  <b>APPEARANCES</b> [1] - 2:1  <b>APPEARED</b> [1] - 79:16  <b>APPLES</b> [1] - 99:10  <b>APPLICABLE</b> [2] - 16:13, 93:25  <b>APPLICATION</b> [4] - 21:20, 94:6, 94:17, 131:9  <b>APPLIED</b> [16] - 14:14, 42:7, 48:16, 105:20, 130:10, 130:19, 130:21, 131:24, 132:11, 142:21, 142:22, 147:5, 191:3, 196:6, 196:7, 198:5  <b>APPLIES</b> [2] - 54:7,</p>	<p>54:14  <b>APPLY</b> [22] - 13:18, 35:10, 38:11, 39:8, 40:2, 40:7, 41:25, 42:5, 45:18, 58:25, 89:12, 89:18, 94:12, 94:15, 109:8, 111:19, 114:9, 127:23, 130:9, 131:4, 204:1  <b>APPLYING</b> [10] - 13:13, 35:2, 37:14, 37:17, 42:2, 44:3, 51:9, 120:21, 121:3, 123:13  <b>APPRECIATE</b> [5] - 15:19, 126:10, 127:6, 204:9, 205:12  <b>APPRECIATES</b> [1] - 186:10  <b>APPROACH</b> [5] - 34:24, 54:11, 82:16, 106:11, 178:5  <b>APPROACHED</b> [2] - 42:2, 128:2  <b>APPROPRIATE</b> [12] - 7:24, 12:19, 49:1, 52:4, 101:14, 135:6, 141:24, 142:25, 146:2, 189:9, 198:6, 204:22  <b>APPROPRIATELY</b> [2] - 162:6, 164:6  <b>APPROVAL</b> [2] - 170:21, 172:20  <b>APPROVE</b> [1] - 58:5  <b>APPROVED</b> [4] - 151:21, 171:20, 174:10, 187:20  <b>APRIL</b> [1] - 101:4  <b>ARBITER</b> [2] - 42:24  <b>ARCH</b> [1] - 2:17  <b>ARCHIVES</b> [2] - 118:19, 189:24  <b>AREA</b> [1] - 103:8  <b>ARGUABLY</b> [1] - 88:5  <b>ARGUE</b> [4] - 6:20, 6:21, 7:11, 178:14  <b>ARGUMENT</b> [10] - 9:9, 9:25, 13:25, 67:1, 89:16, 125:23, 155:20, 156:12, 176:25, 205:14  <b>ARGUMENTS</b> [3] - 7:19, 95:13, 198:8  <b>ARM</b> [23] - 29:12, 85:9, 138:14, 154:6, 154:7, 156:10, 160:25, 161:1, 161:14, 161:21,</p>	<p>162:16, 163:3, 163:10, 171:21, 171:24, 172:20, 177:9, 177:11, 184:25, 196:23, 197:4  <b>ARMS</b> [4] - 136:2, 181:14, 181:15, 181:16  <b>ARRIVE</b> [1] - 40:15  <b>ARRIVED</b> [1] - 22:9  <b>ARRIVING</b> [1] - 120:25  <b>ARROW</b> [1] - 179:16  <b>ARTERIES</b> [4] - 177:15, 181:7, 181:22, 185:14  <b>ARTERY</b> [3] - 76:23, 76:24, 169:19  <b>ARTHRITIS</b> [1] - 185:17  <b>ARTICLE</b> [14] - 33:19, 61:23, 69:2, 79:17, 80:8, 101:2, 105:23, 121:6, 121:12, 184:7, 184:15, 184:21, 196:21, 203:1  <b>ARTICLES</b> [2] - 184:12, 195:12  <b>ASBESTOS</b> [1] - 96:22  <b>ASCERTAINED</b> [1] - 113:15  <b>ASCERTAINMENT</b> [5] - 36:12, 82:6, 155:13, 155:25, 156:12  <b>ASIA</b> [1] - 166:4  <b>ASIDE</b> [4] - 70:9, 100:23, 108:12  <b>ASPECTS</b> [1] - 47:17  <b>ASSAIL</b> [1] - 131:21  <b>ASSERT</b> [1] - 13:6  <b>ASSESS</b> [17] - 18:5, 38:3, 38:4, 41:4, 46:23, 51:19, 72:1, 72:5, 76:17, 76:19, 80:2, 93:1, 93:19, 93:22, 104:24, 123:14, 124:9  <b>ASSESSING</b> [11] - 33:9, 37:11, 41:21, 48:6, 48:13, 57:18, 58:4, 58:24, 93:5, 120:17, 201:20  <b>ASSESSMENT</b> [6] - 41:12, 82:11, 94:3, 94:4, 103:5, 194:21  <b>ASSESSMENTS</b> [2] - 40:9, 150:5</p>	<p><b>ASSIGN</b> [1] - 34:25  <b>ASSIGNED</b> [3] - 5:20, 5:21, 41:11  <b>ASSIST</b> [1] - 37:13  <b>ASSOCIATED</b> [16] - 68:7, 72:2, 72:6, 113:6, 128:20, 133:1, 137:19, 145:9, 148:22, 150:14, 151:22, 152:10, 163:24, 175:10, 176:13  <b>ASSOCIATES</b> [1] - 150:17  <b>ASSOCIATION</b> [103] - 21:25, 22:8, 26:22, 26:24, 27:3, 27:12, 27:17, 27:18, 27:21, 28:1, 28:2, 28:4, 28:5, 28:11, 28:15, 28:21, 29:2, 29:15, 29:19, 29:21, 30:2, 30:9, 30:12, 30:18, 30:20, 31:8, 31:17, 32:1, 32:7, 32:8, 32:12, 32:15, 32:17, 32:20, 32:24, 33:15, 34:17, 34:23, 35:5, 36:3, 36:10, 36:18, 37:7, 37:16, 44:13, 45:11, 45:15, 45:17, 46:22, 60:23, 71:21, 81:10, 101:6, 108:16, 108:17, 110:8, 112:4, 113:4, 113:9, 117:7, 123:18, 123:24, 124:10, 129:15, 132:1, 132:14, 132:20, 132:23, 133:7, 133:8, 137:6, 137:8, 137:9, 137:10, 137:11, 137:22, 138:24, 144:10, 145:24, 149:5, 149:11, 149:19, 149:24, 150:6, 150:23, 152:12, 152:14, 152:19, 152:25, 153:4, 164:15, 191:2, 191:21, 193:13, 194:25, 201:19, 201:21, 201:22, 201:25  <b>ASSOCIATIONS</b> [4] - 27:2, 29:5, 130:20, 164:18  <b>ASSUME</b> [2] - 11:12, 65:5  <b>ASSUMING</b> [1] -</p>
---	---	--	---	---

<p>102:13  <b>ASSUMPTION</b> [1] - 65:19  <b>ATHEROGENIC</b> [3] - 177:12, 181:4, 183:6  <b>ATHEROSCLEROSIS</b> [47] - 35:20, 40:24, 61:11, 61:12, 61:17, 61:18, 62:18, 66:16, 67:3, 67:8, 68:5, 68:7, 68:10, 68:13, 68:14, 68:18, 68:20, 68:23, 68:25, 69:4, 69:8, 69:12, 69:14, 69:19, 69:23, 69:25, 70:6, 70:12, 70:17, 70:20, 70:24, 75:1, 75:2, 76:20, 102:24, 108:21, 123:23, 124:20, 176:13, 176:20, 176:22, 176:24, 177:23, 178:2, 178:3, 202:16, 202:19  <b>ATHEROSCLEROTIC</b> [7] - 73:10, 123:10, 169:20, 177:16, 177:22, 178:7, 185:10  <b>ATTACHED</b> [2] - 6:25, 184:23  <b>ATTACK</b> [114] - 11:10, 11:13, 16:25, 17:8, 22:3, 22:5, 22:7, 22:13, 22:16, 22:19, 22:22, 22:24, 23:1, 23:3, 23:11, 23:16, 23:18, 23:23, 24:7, 24:17, 25:1, 28:10, 28:15, 34:8, 35:4, 35:5, 35:17, 40:16, 42:6, 43:14, 45:16, 47:7, 48:7, 49:10, 49:15, 59:2, 59:7, 59:14, 59:19, 60:1, 60:5, 61:12, 61:15, 61:19, 63:3, 63:10, 63:25, 67:3, 67:9, 68:2, 68:4, 70:16, 71:1, 71:8, 72:2, 74:2, 74:5, 74:9, 74:12, 74:17, 74:21, 74:24, 75:9, 75:18, 76:3, 76:9, 77:14, 78:13, 78:15, 78:17, 78:20, 81:12, 81:15, 81:25, 85:18, 87:1, 87:3, 87:18, 88:1, 88:4, 88:8, 88:12, 88:14, 92:13, 92:24, 100:21, 105:6, 108:6, 108:19,</p>	<p>109:7, 109:24, 110:24, 113:9, 113:23, 114:2, 114:24, 116:9, 116:14, 119:8, 119:11, 120:20, 122:6, 123:19, 123:22, 124:13, 124:18, 129:2, 139:18, 185:25, 186:7, 186:14, 202:14, 203:14  <b>ATTACKS</b> [103] - 12:17, 16:21, 16:22, 16:23, 16:24, 17:2, 17:6, 17:20, 17:21, 18:6, 18:11, 18:12, 18:14, 18:19, 19:12, 19:13, 19:15, 19:23, 20:2, 20:6, 20:17, 20:24, 21:2, 21:4, 21:5, 21:9, 21:12, 21:22, 21:24, 23:13, 24:8, 24:9, 24:12, 24:24, 25:14, 25:21, 26:1, 34:6, 37:21, 39:2, 40:25, 54:21, 56:4, 63:16, 64:12, 64:13, 65:20, 66:13, 66:20, 67:18, 68:13, 68:23, 69:3, 71:10, 74:10, 77:12, 77:21, 81:7, 81:11, 82:25, 83:10, 87:20, 88:18, 92:25, 93:2, 102:15, 105:9, 105:11, 105:14, 105:19, 108:24, 108:25, 115:2, 115:5, 115:8, 115:10, 121:7, 121:14, 121:16, 121:19, 121:23, 122:11, 122:13, 123:6, 123:15, 124:16, 134:2, 134:3, 155:24, 161:20, 161:22, 163:2, 167:22, 167:23, 181:23, 185:22, 195:21, 196:23, 203:18, 203:20  <b>ATTEMPTS</b> [1] - 82:22  <b>ATTENTION</b> [1] - 138:2  <b>ATTORNEYS</b> [1] - 198:18  <b>ATTRIBUTABLE</b> [2] - 24:13, 194:10  <b>ATTRIBUTE</b> [2] -</p>	<p>24:25, 25:14  <b>ATTRIBUTION</b> [2] - 25:3, 25:6  <b>AUDIO</b> [2] - 5:9, 5:16  <b>AUDIT</b> [5] - 134:20, 157:15, 158:4, 158:5, 159:2  <b>AUGUST</b> [1] - 187:25  <b>AUSTIN</b> [30] - 18:9, 18:20, 19:10, 19:16, 19:19, 21:3, 24:21, 31:21, 32:5, 32:19, 33:3, 37:6, 37:10, 39:24, 41:18, 60:24, 76:6, 92:11, 92:17, 92:20, 93:17, 106:14, 109:18, 109:23, 110:5, 115:14, 116:11, 119:17, 121:8, 203:3  <b>AUTHOR</b> [3] - 101:6, 103:6, 188:13  <b>AUTHORITATIVE</b> [1] - 27:14  <b>AUTHORS</b> [8] - 30:17, 112:24, 113:17, 114:25, 115:1, 161:11, 161:12, 202:25  <b>AUTOMATICALLY</b> [2] - 62:21, 63:2  <b>AVAILABILITY</b> [1] - 52:12  <b>AVAILABLE</b> [16] - 5:5, 5:18, 6:24, 42:17, 43:4, 44:17, 45:3, 58:1, 79:5, 125:4, 145:21, 162:18, 189:1, 197:20, 198:3  <b>AVANDIA</b> [225] - 1:4, 4:12, 4:13, 11:10, 11:13, 11:22, 12:17, 16:21, 16:25, 17:2, 18:17, 18:19, 19:23, 21:23, 23:11, 23:13, 23:17, 23:23, 24:9, 24:12, 24:13, 24:16, 24:24, 25:1, 25:13, 25:15, 25:22, 26:1, 28:9, 28:12, 28:15, 31:11, 34:6, 34:8, 35:4, 35:5, 35:17, 35:18, 35:20, 39:1, 40:16, 42:6, 43:14, 45:15, 47:7, 48:7, 49:10, 49:15, 50:5, 54:21, 55:21, 56:3, 56:13, 59:1, 59:14, 59:16, 59:18, 61:8, 61:9, 63:8, 63:21,</p>	<p>63:22, 64:11, 66:19, 67:10, 67:15, 68:1, 68:6, 68:9, 68:11, 68:12, 68:18, 68:21, 68:24, 69:3, 69:9, 69:15, 70:5, 70:11, 70:16, 70:24, 71:1, 71:9, 72:2, 72:6, 72:23, 73:25, 74:12, 74:20, 74:22, 74:25, 75:9, 75:16, 75:18, 76:2, 76:4, 76:9, 76:15, 76:20, 77:1, 77:7, 77:21, 78:2, 82:25, 83:11, 84:10, 84:13, 85:8, 85:17, 85:19, 86:9, 86:22, 87:11, 87:17, 87:18, 87:20, 88:12, 88:14, 88:19, 92:14, 93:2, 102:2, 102:14, 105:6, 105:9, 105:10, 106:23, 108:6, 108:15, 108:21, 108:22, 108:23, 108:25, 109:24, 110:17, 113:2, 113:4, 113:9, 113:14, 113:22, 114:2, 114:24, 116:9, 116:14, 119:8, 119:10, 120:20, 121:7, 121:14, 121:22, 122:5, 122:10, 122:13, 123:5, 123:15, 123:18, 123:21, 123:22, 124:13, 124:17, 124:20, 129:6, 131:11, 137:4, 137:12, 137:17, 137:18, 138:14, 139:2, 139:12, 139:15, 146:20, 146:25, 149:11, 149:19, 149:24, 150:14, 150:17, 151:3, 153:13, 154:7, 156:24, 159:7, 160:13, 161:8, 162:16, 163:3, 163:10, 167:22, 170:10, 171:24, 173:7, 174:9, 174:15, 177:9, 177:10, 177:20, 177:21, 177:22, 178:6, 179:11, 181:16, 182:3, 184:25, 186:18, 186:20, 186:21, 186:23,</p>	<p>187:4, 187:22, 188:19, 189:4, 191:22, 192:13, 195:20, 196:14, 196:23, 197:2, 202:13, 202:18, 203:13, 203:18  <b>AVANDIA'S</b> [3] - 67:25, 91:11, 167:22  <b>AVENUE</b> [1] - 2:13  <b>AVERAGE</b> [4] - 98:15, 140:10, 175:25, 176:5  <b>AVOID</b> [1] - 63:23  <b>AWAIT</b> [2] - 57:23, 101:2  <b>AWAITED</b> [1] - 89:6  <b>AWARE</b> [21] - 17:7, 22:9, 26:2, 44:11, 44:22, 56:21, 69:17, 70:10, 86:7, 115:23, 115:25, 116:2, 117:3, 117:9, 117:11, 117:12, 118:10, 121:20, 121:25, 122:4, 195:18  <b>AXIS</b> [3] - 179:25, 180:1</p> <p style="text-align: center;"><b>B</b></p> <p><b>B/A1</b> [3] - 184:4, 184:16, 184:18  <b>BACKGROUND</b> [18] - 23:16, 24:3, 24:6, 25:20, 25:23, 26:4, 26:7, 26:8, 26:13, 136:5, 136:9, 136:19, 153:17, 154:2, 154:10, 154:16, 154:18, 154:25  <b>BACKWARD</b> [2] - 112:14, 115:3  <b>BACKWARDS</b> [2] - 92:1, 205:6  <b>BAD</b> [15] - 12:10, 59:11, 62:5, 62:14, 66:4, 169:23, 169:25, 174:2, 181:3, 181:5, 181:6, 183:21, 184:22, 197:8, 198:1  <b>BALANCE</b> [1] - 144:9  <b>BALANCED</b> [1] - 136:9  <b>BAND</b> [5] - 187:8, 187:10, 187:11, 187:12  <b>BAR</b> [2] - 171:4,</p>
--	---	---	--	--

<p>199:7  <b>BARS</b> [3] - 138:20, 171:3, 187:1  <b>BASE</b> [5] - 12:25, 15:9, 36:15, 125:8, 163:8  <b>BASED</b> [25] - 14:8, 14:17, 21:17, 28:21, 30:11, 33:12, 34:21, 43:12, 45:12, 46:13, 50:7, 61:21, 67:23, 70:19, 82:10, 106:10, 109:11, 109:20, 127:25, 135:16, 148:17, 149:6, 151:21, 176:16, 195:24  <b>BASELINE</b> [5] - 154:14, 161:7, 177:8, 181:17, 187:3  <b>BASES</b> [1] - 65:19  <b>BASIC</b> [2] - 46:12, 81:6  <b>BASIS</b> [4] - 42:8, 92:14, 93:18, 112:20  <b>BASKET</b> [2] - 21:7, 21:10  <b>BATCH</b> [5] - 68:17, 98:16, 98:17, 98:18, 107:8  <b>BD</b> [1] - 171:10  <b>BECAME</b> [1] - 119:15  <b>BECOME</b> [1] - 141:9  <b>BECOMES</b> [1] - 131:23  <b>BEECHAM</b> [2] - 189:2, 189:13  <b>BEGIN</b> [5] - 16:17, 53:6, 60:20, 65:14, 98:3  <b>BEGINNING</b> [4] - 60:14, 85:4, 125:25, 196:8  <b>BEGINS</b> [1] - 132:7  <b>BEGUN</b> [1] - 202:1  <b>BEHALF</b> [1] - 8:7  <b>BEHAVIOR</b> [1] - 12:18  <b>BELIEVES</b> [2] - 132:20, 194:14  <b>BELONGS</b> [1] - 97:16  <b>BELOW</b> [4] - 35:24, 144:7, 184:17, 201:21  <b>BENCH</b> [1] - 95:8  <b>BENEFICIAL</b> [2] - 67:13, 102:25  <b>BENEFIT</b> [24] - 42:3, 42:18, 43:3, 43:10,</p>	<p>48:11, 51:7, 51:9, 52:12, 57:25, 58:15, 58:19, 62:22, 134:9, 143:18, 143:20, 143:23, 144:1, 144:5, 144:7, 151:11, 186:21, 195:5, 195:6, 195:10  <b>BENEFITS</b> [4] - 42:22, 129:21, 151:13, 196:10  <b>BENNES</b> [1] - 8:19  <b>BERFER</b> [1] - 148:1  <b>BERKELEY</b> [2] - 130:24  <b>BEST</b> [19] - 10:17, 42:16, 73:8, 73:13, 79:5, 79:11, 80:15, 81:23, 84:18, 85:11, 85:18, 93:1, 95:15, 99:5, 99:17, 130:17, 140:9, 193:5  <b>BETA</b> [1] - 66:8  <b>BETTER</b> [8] - 10:8, 33:23, 43:11, 86:1, 86:5, 96:24, 189:3, 189:12  <b>BETWEEN</b> [32] - 26:24, 28:1, 28:12, 28:15, 31:8, 35:5, 45:15, 81:10, 88:12, 99:6, 105:13, 113:4, 113:9, 117:7, 123:18, 123:21, 125:10, 132:16, 137:7, 137:11, 146:18, 148:10, 149:11, 149:19, 149:24, 150:6, 175:12, 179:10, 186:19, 191:21, 193:20, 203:7  <b>BETZ</b> [3] - 54:17, 54:22, 96:20  <b>BEYOND</b> [2] - 110:15, 140:3  <b>BIAS</b> [60] - 23:24, 26:16, 30:24, 32:12, 32:18, 32:23, 36:5, 36:7, 36:10, 36:13, 36:16, 36:18, 36:22, 36:25, 37:3, 41:3, 72:19, 94:4, 94:21, 112:17, 112:23, 123:5, 124:6, 124:11, 132:1, 152:19, 152:24, 153:3, 153:9, 153:17, 155:11, 155:13, 155:25, 156:5, 156:12, 156:22, 156:23,</p>	<p>157:18, 157:19, 157:25, 158:6, 158:23, 159:18, 160:8, 160:10, 160:18, 160:20, 162:20, 163:5, 163:13, 163:16, 164:8, 164:16, 191:2, 198:7, 201:23, 202:23, 202:24, 203:22  <b>BIASED</b> [1] - 82:8  <b>BIASES</b> [8] - 112:15, 153:12, 157:16, 157:17, 157:24, 158:24, 158:25, 164:4  <b>BIG</b> [2] - 72:22, 89:2  <b>BIOLOGIC</b> [1] - 168:21  <b>BIOLOGICAL</b> [28] - 41:4, 59:3, 59:13, 59:15, 60:12, 60:17, 60:23, 60:25, 61:6, 64:5, 64:7, 66:18, 66:25, 67:5, 71:6, 97:16, 124:12, 167:14, 168:1, 168:6, 168:8, 168:9, 168:12, 169:12, 189:25, 190:13, 190:19, 202:9  <b>BIOLOGICALLY</b> [9] - 169:6, 169:10, 169:11, 169:22, 181:22, 185:5, 186:15, 189:22, 191:14  <b>BIOMARKER</b> [1] - 186:6  <b>BIOMARKERS</b> [7] - 67:13, 67:14, 188:2, 188:8, 188:12, 190:18, 203:15  <b>BIOSTATISTICIAN</b> [5] - 40:7, 157:2, 157:13, 198:10, 205:7  <b>BIOSTATISTICIAN S</b> [1] - 169:5  <b>BIT</b> [11] - 10:5, 20:15, 50:22, 101:20, 106:22, 106:24, 152:23, 177:12, 185:6, 202:5, 202:6  <b>BLIND</b> [4] - 73:21, 86:21, 87:24, 193:6  <b>BLINDED</b> [8] - 72:14, 76:18, 78:16, 82:20, 87:2, 88:7, 92:6, 92:9  <b>BLOCKBUSTER</b> [1] - 131:14  <b>BLOCKER</b> [1] -</p>	<p>81:19  <b>BLOCKERS</b> [7] - 66:8, 81:3, 81:4, 81:10, 81:12, 81:16, 100:8  <b>BLOOD</b> [5] - 67:19, 139:16, 139:17, 181:1, 185:9  <b>BLUES</b> [1] - 140:24  <b>BLURRY</b> [1] - 156:8  <b>BMI</b> [1] - 146:10  <b>BOARD</b> [7] - 131:7, 145:17, 145:18, 145:20, 170:19, 170:20, 170:24  <b>BODIES</b> [1] - 122:4  <b>BODY</b> [9] - 69:2, 88:21, 88:23, 120:6, 120:11, 122:4, 129:10, 129:24, 195:24  <b>BOLD</b> [1] - 60:6  <b>BOLDED</b> [1] - 122:15  <b>BOOK</b> [10] - 10:23, 15:21, 16:1, 130:17, 130:22, 131:2, 132:23, 183:9, 183:14, 196:7  <b>BOOKS</b> [1] - 182:11  <b>BOSS</b> [1] - 82:15  <b>BOTHER</b> [2] - 110:2, 157:12  <b>BOTHERED</b> [1] - 80:7  <b>BOTTOM</b> [14] - 32:6, 35:25, 36:24, 67:18, 97:20, 104:22, 112:16, 114:21, 138:12, 143:19, 180:11, 180:12, 181:18, 187:9  <b>BOX</b> [4] - 10:20, 180:3, 180:11, 180:12  <b>BRADFORD</b> [36] - 37:5, 37:10, 37:17, 38:2, 38:11, 38:14, 38:16, 38:18, 38:22, 39:8, 39:20, 39:22, 40:2, 40:8, 40:11, 40:12, 40:15, 40:20, 41:2, 41:5, 41:14, 60:13, 60:19, 60:21, 61:1, 114:19, 164:22, 165:2, 165:9, 167:10, 167:13, 190:14, 191:4, 200:17, 203:15  <b>BRADFORD-HILL</b> [36] - 37:5, 37:10, 37:17, 38:2, 38:11, 38:14, 38:16, 38:18,</p>	<p>38:22, 39:8, 39:20, 39:22, 40:2, 40:8, 40:11, 40:12, 40:15, 40:20, 41:2, 41:5, 41:14, 60:13, 60:19, 60:21, 61:1, 114:19, 164:22, 165:2, 165:9, 167:10, 167:13, 190:14, 191:4, 200:17, 203:15  <b>BREADTH</b> [1] - 194:21  <b>BREAK</b> [14] - 9:11, 9:20, 9:23, 50:19, 50:21, 50:23, 52:15, 52:21, 53:1, 94:25, 95:19, 166:22, 167:1  <b>BRIEF</b> [6] - 9:14, 12:8, 28:7, 50:16, 126:7, 126:11  <b>BRIEFING</b> [1] - 87:22  <b>BRIEFLY</b> [6] - 55:20, 73:1, 98:11, 180:23, 198:20, 198:22  <b>BRIEFS</b> [3] - 51:4, 78:20, 156:12  <b>BRING</b> [3] - 7:14, 127:3, 133:19  <b>BRINTON</b> [28] - 22:21, 22:23, 42:1, 48:4, 48:14, 50:5, 51:12, 63:7, 63:13, 72:20, 73:17, 75:24, 77:22, 78:10, 79:1, 79:4, 80:14, 84:25, 85:14, 86:17, 131:5, 131:10, 131:11, 179:23, 197:23, 198:10, 204:11, 205:8  <b>BRINTON'S</b> [2] - 175:17, 179:9  <b>BRITISH</b> [1] - 117:8  <b>BROAD</b> [5] - 2:4, 17:19, 60:1, 132:11, 156:19  <b>BROADER</b> [1] - 17:12  <b>BROKE</b> [2] - 53:8, 167:9  <b>BROUGHT</b> [1] - 164:23  <b>BROWN</b> [2] - 6:6, 10:23  <b>BROWNSTEIN</b> [3] - 113:8, 114:22, 114:25  <b>BRUCE</b> [1] - 3:2  <b>BUFFALO</b> [1] - 2:22  <b>BUFORD</b> [1] - 148:1  <b>BUILD</b> [1] - 32:2  <b>BUNCH</b> [5] - 7:15,</p>
---	---	--	--	---

<p>135:12, 155:12, 176:4, 190:16 <b>BURDEN</b> [11] - 43:9, 50:10, 50:11, 64:24, 65:23, 65:24, 102:16, 124:21, 124:25, 125:3, 202:20 <b>BUREAU</b> [1] - 131:10 <b>BURKHART</b> [10] - 149:2, 149:7, 150:3, 164:12, 166:9, 166:18, 168:10, 168:25, 191:18, 201:24 <b>BURN</b> [1] - 136:14 <b>BUSINESS</b> [1] - 197:7 <b>BUSY</b> [1] - 204:25 <b>BUY</b> [1] - 27:6</p>	<p>76:18, 77:7, 78:5, 78:11, 78:17, 81:15, 82:1, 82:5, 82:7, 85:25, 86:4, 87:3, 88:9, 92:15, 93:5, 93:7, 93:19, 93:23, 108:16, 111:10, 113:5, 131:20, 140:25, 145:9, 149:24, 151:4, 159:10, 160:2, 162:9, 163:24, 174:17, 175:11, 176:14, 182:21, 182:25, 183:23, 186:21, 190:2, 191:22 <b>CARDIOVASCULA</b> <b>RLY</b> [1] - 62:15 <b>CARE</b> [2] - 15:3, 136:5 <b>CAREFUL</b> [1] - 23:22 <b>CAREFULLY</b> [4] - 89:1, 124:9, 130:4, 201:17 <b>CAROLYN</b> [1] - 5:1 <b>CARRIED</b> [1] - 7:2 <b>CARRIES</b> [1] - 153:18 <b>CARTMELL</b> [5] - 2:12, 2:12, 8:12, 183:13 <b>CASE</b> [60] - 5:25, 12:21, 13:20, 21:15, 21:18, 24:4, 24:6, 28:7, 29:21, 34:21, 36:14, 44:10, 45:7, 48:16, 48:23, 53:12, 55:16, 58:10, 58:18, 60:21, 61:19, 64:22, 65:18, 66:14, 75:15, 94:8, 98:10, 101:20, 102:7, 103:2, 114:6, 119:24, 122:16, 125:6, 128:4, 128:6, 128:9, 128:19, 129:9, 132:3, 132:9, 133:17, 141:24, 147:13, 147:16, 147:17, 149:2, 149:10, 150:6, 167:17, 169:2, 169:9, 169:17, 176:5, 187:18, 196:7, 197:17, 205:6 <b>CASES</b> [12] - 4:16, 4:18, 6:8, 6:18, 6:19, 92:2, 125:10, 147:8, 147:10, 148:1, 184:17, 194:9 <b>CASSCELLS</b> [1] - 118:6</p>	<p><b>CAST</b> [1] - 18:2 <b>CATCH</b> [1] - 199:6 <b>CATEGORIAL</b> [1] - 35:1 <b>CATEGORIES</b> [1] - 204:10 <b>CATEGORY</b> [2] - 17:19, 60:2 <b>CAUSAL</b> [30] - 27:19, 28:1, 28:3, 28:4, 29:22, 30:3, 31:6, 32:25, 37:7, 43:12, 46:4, 71:20, 101:14, 101:18, 103:14, 112:20, 130:20, 133:7, 137:8, 149:5, 164:11, 164:13, 164:18, 165:5, 165:12, 166:14, 168:12, 175:11, 176:8 <b>CAUSALITY</b> [2] - 37:11, 169:16 <b>CAUSALLY</b> [2] - 17:5, 176:13 <b>CAUSATION</b> [136] - 10:14, 11:9, 11:12, 11:15, 13:5, 14:24, 15:4, 16:20, 18:5, 19:17, 19:20, 20:23, 21:1, 21:17, 23:17, 26:23, 26:25, 27:2, 27:13, 27:17, 27:22, 27:23, 28:16, 28:19, 28:20, 28:21, 29:3, 29:7, 29:9, 29:10, 29:15, 29:19, 30:1, 30:8, 30:10, 31:2, 31:5, 31:7, 31:11, 31:17, 31:23, 32:13, 33:2, 35:7, 36:14, 37:13, 37:17, 38:10, 41:15, 41:17, 41:21, 41:24, 41:25, 42:15, 42:19, 43:15, 44:1, 44:2, 44:3, 45:12, 46:3, 46:23, 46:24, 48:6, 48:14, 48:15, 50:9, 51:8, 51:9, 51:12, 51:17, 51:20, 54:24, 56:9, 57:16, 57:18, 58:4, 58:8, 58:20, 58:25, 59:3, 59:15, 60:10, 60:16, 61:7, 61:12, 61:22, 64:3, 64:8, 65:25, 71:7, 71:12, 71:24, 80:22, 98:9, 101:1, 112:8, 120:2, 120:4, 121:3, 123:14,</p>	<p>129:14, 132:2, 132:21, 147:24, 148:5, 148:7, 148:11, 148:12, 148:23, 166:20, 190:25, 191:24, 192:3, 192:5, 192:9, 192:19, 192:23, 195:2, 195:16, 196:7, 196:9, 201:3, 201:4, 201:6, 201:9, 201:10, 201:11, 201:14, 201:20 <b>CAUSATIVE</b> [2] - 59:25, 60:1 <b>CAUSED</b> [4] - 21:9, 27:5, 27:9, 192:13 <b>CAUSES</b> [53] - 12:17, 16:21, 16:22, 17:2, 18:16, 18:23, 21:24, 28:10, 39:2, 40:16, 42:6, 43:2, 43:6, 43:14, 46:17, 48:7, 49:10, 49:15, 54:21, 58:7, 59:2, 59:14, 59:18, 61:9, 61:12, 64:11, 64:18, 66:19, 68:4, 68:18, 69:3, 70:16, 71:1, 74:20, 85:17, 116:14, 120:20, 121:7, 121:14, 121:19, 121:22, 122:5, 122:11, 123:15, 124:13, 134:7, 139:3, 155:14, 167:23, 168:18, 181:23, 185:25, 195:20 <b>CAUSING</b> [12] - 19:23, 66:24, 68:13, 68:22, 84:16, 93:2, 108:23, 108:25, 182:13, 185:21, 192:13, 193:21 <b>CAUTION</b> [3] - 57:22, 79:22, 103:13 <b>CAVEAT</b> [1] - 56:20 <b>CENTER</b> [1] - 2:21 <b>CEO</b> [1] - 174:10 <b>CERTAIN</b> [4] - 42:21, 110:9, 167:23, 182:17 <b>CERTAINLY</b> [12] - 9:11, 27:7, 32:9, 51:1, 54:25, 60:20, 102:3, 102:10, 111:14, 111:20, 134:9, 200:23 <b>CERTAINTY</b> [1] - 39:3 <b>CERTIFIED</b> [2] - 1:20, 131:7</p>	<p><b>CERTIFY</b> [1] - 206:1 <b>CETERA</b> [1] - 189:10 <b>CFO</b> [1] - 174:11 <b>CHAIR</b> [1] - 10:22 <b>CHAired</b> [2] - 152:3, 152:7 <b>CHALLENGE</b> [8] - 11:7, 12:25, 14:17, 16:3, 16:4, 28:8, 57:6, 80:19 <b>CHALLENGED</b> [2] - 16:6, 201:3 <b>CHALLENGES</b> [4] - 9:7, 11:15, 11:19, 14:18 <b>CHALLENGING</b> [1] - 10:13 <b>CHAMBERS</b> [1] - 4:23 <b>CHANCE</b> [19] - 26:16, 30:24, 32:12, 32:22, 33:7, 33:9, 33:14, 34:18, 36:18, 72:19, 94:22, 96:7, 112:17, 123:5, 132:18, 136:15, 153:2, 153:3, 201:23 <b>CHANGE</b> [7] - 106:9, 106:24, 124:1, 185:1, 185:3, 187:2, 196:22 <b>CHANGED</b> [7] - 5:4, 57:10, 57:11, 106:22, 107:2, 107:4, 184:18 <b>CHANGES</b> [5] - 62:20, 63:19, 106:8, 161:7, 161:9 <b>CHANNEL</b> [7] - 81:2, 81:4, 81:10, 81:12, 81:16, 81:19, 100:8 <b>CHAPTER</b> [1] - 130:19 <b>CHARACTERISTIC</b> <b>S</b> [1] - 135:10 <b>CHARACTERIZE</b> [1] - 142:3 <b>CHARACTERIZED</b> [2] - 28:11, 28:14 <b>CHARGE</b> [1] - 122:24 <b>CHARGED</b> [4] - 4:14, 5:18, 195:8, 195:9 <b>CHARGING</b> [1] - 199:7 <b>CHARLIE</b> [1] - 10:22 <b>CHART</b> [6] - 145:4, 174:25, 175:1, 175:2, 180:4, 191:11 <b>CHATTING</b> [1] - 4:23 <b>CHECK</b> [4] - 7:22, 52:18, 152:18, 191:4</p>
<b>C</b>				
<p><b>C-A-S-S-C-E-L-L-S</b> [1] - 118:7 <b>C-U-E-T-O</b> [1] - 6:3 <b>CALCIUM</b> [7] - 81:2, 81:4, 81:10, 81:12, 81:16, 81:19, 100:8 <b>CALIFORNIA</b> [1] - 5:2 <b>CALM</b> [1] - 13:21 <b>CANADA</b> [2] - 166:3, 181:10 <b>CANCER</b> [5] - 132:25, 133:4, 133:6, 168:5, 168:7 <b>CAPABLE</b> [1] - 157:13 <b>CAPTURING</b> [3] - 57:5, 115:2, 115:5 <b>CARDIAC</b> [5] - 181:12, 185:13, 186:3, 187:14, 194:9 <b>CARDIO</b> [1] - 62:16 <b>CARDIO-</b> <b>PROTECTIVE</b> [1] - 62:16 <b>CARDIOLOGIST</b> [6] - 47:13, 47:14, 101:9, 141:20, 150:9, 176:9 <b>CARDIOLOGY</b> [1] - 182:24 <b>CARDIOVASCULA</b> <b>R</b> [56] - 20:9, 22:18, 29:13, 35:19, 57:3, 62:4, 62:8, 62:10, 62:11, 62:17, 63:13, 66:5, 66:7, 66:9, 66:11, 72:5, 76:17,</p>				

<p><b>CHERRY</b> [3] - 38:6, 111:19, 119:16</p> <p><b>CHERRY-PICKING</b> [1] - 119:16</p> <p><b>CHEST</b> [1] - 139:18</p> <p><b>CHEW</b> [1] - 184:2</p> <p><b>CHF</b> [6] - 155:15, 155:16, 155:20, 155:21, 156:10, 156:13</p> <p><b>CHIP</b> [1] - 55:16</p> <p><b>CHOICE</b> [1] - 106:10</p> <p><b>CHOLESTEROL</b> [53] - 23:4, 59:6, 59:24, 62:5, 62:14, 62:21, 64:24, 66:5, 67:19, 169:18, 169:19, 169:23, 169:24, 170:1, 170:2, 170:3, 170:4, 170:10, 170:18, 171:16, 175:9, 175:13, 176:2, 176:12, 177:10, 177:14, 178:1, 178:14, 178:15, 178:18, 179:7, 179:12, 181:1, 181:3, 181:5, 181:6, 181:12, 181:21, 181:25, 182:5, 183:4, 183:19, 184:5, 190:9, 190:16, 190:17, 190:21, 197:9, 203:12</p> <p><b>CHOOSE</b> [2] - 43:1, 181:8</p> <p><b>CHOSEN</b> [2] - 160:12, 196:13</p> <p><b>CINDY</b> [1] - 8:18</p> <p><b>CIRCUIT</b> [14] - 5:24, 6:4, 15:11, 31:22, 33:11, 38:9, 51:14, 53:12, 57:15, 58:12, 125:6, 125:13, 132:4, 147:13</p> <p><b>CIRCULATION</b> [1] - 188:9</p> <p><b>CIRCUMSTANCES</b> [2] - 192:17, 192:22</p> <p><b>CITE</b> [6] - 55:3, 64:4, 69:7, 117:20, 118:8, 124:18</p> <p><b>CITED</b> [5] - 118:18, 128:5, 128:18, 129:8, 147:14</p> <p><b>CITING</b> [2] - 51:15, 184:6</p> <p><b>CITY</b> [2] - 2:14, 7:10</p> <p><b>CIVIL</b> [1] - 1:4</p> <p><b>CLAIM</b> [2] - 68:3, 100:15</p>	<p><b>CLAIMANTS</b> [1] - 147:2</p> <p><b>CLAIMED</b> [1] - 26:19</p> <p><b>CLAIMING</b> [1] - 80:10</p> <p><b>CLAIMS</b> [1] - 13:8</p> <p><b>CLARIFICATION</b> [1] - 201:2</p> <p><b>CLARIFY</b> [1] - 205:14</p> <p><b>CLARIFYING</b> [1] - 79:21</p> <p><b>CLEAR</b> [13] - 14:15, 21:6, 21:16, 23:21, 24:4, 41:19, 54:6, 57:9, 99:24, 119:15, 135:6, 141:4, 153:14</p> <p><b>CLEARLY</b> [24] - 12:11, 18:9, 18:12, 27:16, 27:20, 31:24, 32:10, 38:17, 48:12, 54:21, 58:19, 60:16, 60:21, 61:22, 63:10, 65:19, 71:23, 78:24, 80:6, 84:17, 94:8, 144:9, 158:13, 175:10</p> <p><b>CLERK</b> [5] - 4:1, 53:3, 95:20, 126:14, 167:2</p> <p><b>CLIFFORD</b> [1] - 152:2</p> <p><b>CLIMB</b> [1] - 202:1</p> <p><b>CLINICAL</b> [77] - 11:22, 15:3, 40:4, 42:3, 42:8, 42:13, 42:18, 42:25, 43:7, 43:11, 43:19, 43:20, 45:4, 45:18, 46:8, 46:10, 46:11, 46:13, 47:13, 47:14, 48:8, 48:11, 48:21, 48:25, 49:2, 49:4, 49:11, 49:16, 50:1, 50:7, 51:19, 51:21, 53:9, 53:10, 53:15, 62:22, 63:20, 73:4, 78:1, 111:14, 113:7, 113:16, 127:25, 131:8, 131:10, 135:17, 137:16, 138:13, 145:10, 145:15, 147:5, 147:7, 148:6, 148:11, 148:13, 149:6, 155:15, 156:9, 158:8, 159:22, 160:6, 160:19, 161:15, 161:19, 162:5, 162:7, 162:10, 162:12, 162:14, 165:25,</p>	<p>166:15, 184:13, 190:8, 191:6, 197:15, 197:19</p> <p><b>CLINICALLY</b> [7] - 40:14, 45:17, 45:24, 46:1, 56:5, 111:9, 147:12</p> <p><b>CLINICIAN</b> [8] - 39:23, 40:5, 44:16, 45:23, 46:24, 47:2, 65:5</p> <p><b>CLINICIANS</b> [8] - 14:25, 41:16, 42:2, 44:4, 45:3, 52:3, 52:6, 52:7</p> <p><b>CLIP</b> [8] - 18:15, 18:20, 24:20, 28:22, 44:6, 64:14, 75:11, 77:22</p> <p><b>CLOCK</b> [1] - 9:17</p> <p><b>CLOSE</b> [2] - 128:23, 192:15</p> <p><b>CLOSE-MINDED</b> [1] - 192:15</p> <p><b>CLOSER</b> [3] - 10:7, 85:2, 113:19</p> <p><b>CLOTING</b> [1] - 67:6</p> <p><b>CM</b> [1] - 1:19</p> <p><b>CO</b> [1] - 2:9</p> <p><b>COFFEE</b> [7] - 132:25, 133:4, 133:5, 133:7, 148:24, 168:5, 168:6</p> <p><b>COHORT</b> [2] - 115:18, 116:18</p> <p><b>COLLEAGUE</b> [1] - 4:20</p> <p><b>COLLEAGUES</b> [3] - 8:18, 47:22, 72:21</p> <p><b>COLLECT</b> [1] - 99:15</p> <p><b>COLLECTED</b> [2] - 77:20, 92:14</p> <p><b>COLLECTION</b> [2] - 17:13, 98:25</p> <p><b>COLLECTS</b> [1] - 98:16</p> <p><b>COLLEGE</b> [1] - 182:23</p> <p><b>COLORED</b> [1] - 171:3</p> <p><b>COLUMN</b> [5] - 114:21, 157:16, 157:18, 160:24, 171:4</p> <p><b>COMBAT</b> [1] - 178:21</p> <p><b>COMBINATION</b> [4] - 120:4, 146:25, 147:3, 159:8</p> <p><b>COMBINATIONS</b> [1] - 165:19</p>	<p><b>COMBINE</b> [1] - 143:11</p> <p><b>COMBINED</b> [1] - 81:21</p> <p><b>COMFORT</b> [1] - 9:20</p> <p><b>COMFORTABLE</b> [2] - 33:24, 142:11</p> <p><b>COMING</b> [5] - 44:9, 67:22, 126:25, 128:12, 183:17</p> <p><b>COMMENT</b> [1] - 48:22</p> <p><b>COMMENTED</b> [2] - 81:18, 113:14</p> <p><b>COMMENTING</b> [1] - 48:14</p> <p><b>COMMENTS</b> [1] - 7:17</p> <p><b>COMMERCIALS</b> [1] - 131:16</p> <p><b>COMMITTED</b> [1] - 80:13</p> <p><b>COMMITTEE</b> [13] - 8:8, 13:17, 57:2, 82:4, 82:20, 83:3, 101:8, 134:17, 151:3, 152:3, 152:4, 152:7, 170:22</p> <p><b>COMMITTEES</b> [1] - 152:16</p> <p><b>COMMON</b> [3] - 4:19, 83:10, 107:13</p> <p><b>COMMONLY</b> [1] - 67:17</p> <p><b>COMMONWEALTH</b> [1] - 4:19</p> <p><b>COMMUNITY</b> [4] - 27:23, 55:1, 120:19, 121:4</p> <p><b>COMPANY</b> [8] - 12:22, 13:6, 129:24, 145:19, 154:11, 174:10, 174:12, 187:19</p> <p><b>COMPANY'S</b> [1] - 12:18</p> <p><b>COMPARATIVE</b> [1] - 84:12</p> <p><b>COMPARATOR</b> [4] - 70:1, 84:12, 89:4, 146:18</p> <p><b>COMPARATORS</b> [2] - 152:11, 165:18</p> <p><b>COMPARE</b> [2] - 84:17, 143:21</p> <p><b>COMPARED</b> [6] - 68:10, 70:1, 137:17, 151:4, 151:13, 171:22</p> <p><b>COMPARING</b> [1] - 84:8</p> <p><b>COMPARISON</b> [2] -</p>	<p>70:1, 85:2</p> <p><b>COMPATIBLE</b> [1] - 145:4</p> <p><b>COMPETENT</b> [1] - 157:12</p> <p><b>COMPLAINT</b> [1] - 89:1</p> <p><b>COMPLETE</b> [2] - 36:7, 200:9</p> <p><b>COMPLETED</b> [1] - 175:6</p> <p><b>COMPLETELY</b> [3] - 97:25, 141:24, 142:25</p> <p><b>COMPLEX</b> [3] - 6:16, 174:22, 179:22</p> <p><b>COMPLICATED</b> [1] - 67:5</p> <p><b>COMPLICATIONS</b> [1] - 160:1</p> <p><b>COMPONENTS</b> [2] - 133:24, 133:25</p> <p><b>COMPOSITE</b> [6] - 18:13, 19:5, 21:10, 145:12, 154:23, 155:4</p> <p><b>COMPOSITION</b> [1] - 186:4</p> <p><b>COMPOUNDED</b> [2] - 23:7, 94:18</p> <p><b>COMPRISED</b> [1] - 88:22</p> <p><b>COMPRISES</b> [1] - 74:5</p> <p><b>COMPUTER</b> [2] - 1:24, 1:25</p> <p><b>COMPUTER-AIDED</b> [1] - 1:25</p> <p><b>CONCEDE</b> [1] - 75:7</p> <p><b>CONCEDED</b> [1] - 46:3</p> <p><b>CONCENTRATION</b> [1] - 181:1</p> <p><b>CONCEPT</b> [1] - 114:17</p> <p><b>CONCERN</b> [9] - 27:11, 50:1, 57:17, 58:4, 59:21, 160:3, 178:22, 184:11</p> <p><b>CONCERNED</b> [5] - 47:20, 58:2, 102:18, 129:7, 172:15</p> <p><b>CONCERNING</b> [1] - 47:7</p> <p><b>CONCERNS</b> [7] - 27:1, 57:13, 57:22, 134:14, 135:2, 157:3, 157:7</p> <p><b>CONCLUDE</b> [4] - 37:6, 100:5, 120:15, 123:15</p> <p><b>CONCLUDED</b> [12] -</p>
---	--	---	--	---

<p>7:5, 82:8, 113:5, 122:10, 122:20, 145:22, 148:16, 152:8, 153:22, 158:17, 195:20, 205:21</p> <p><b>CONCLUDES</b> [4] - 120:1, 121:10, 141:10, 151:22</p> <p><b>CONCLUDING</b> [1] - 168:18</p> <p><b>CONCLUSION</b> [22] - 14:23, 21:17, 21:18, 45:12, 46:13, 62:20, 64:17, 110:5, 120:25, 121:3, 121:19, 121:22, 142:7, 146:14, 152:8, 152:12, 152:13, 153:13, 159:1, 167:16, 169:18, 191:17</p> <p><b>CONCLUSIONS</b> [24] - 13:1, 13:4, 15:10, 18:10, 21:11, 39:1, 40:14, 40:16, 44:9, 45:22, 54:20, 54:24, 57:6, 65:24, 82:10, 100:4, 109:10, 120:5, 125:9, 130:7, 142:20, 151:2, 153:11</p> <p><b>CONCLUSIVE</b> [2] - 47:12, 113:14</p> <p><b>CONCUR</b> [1] - 150:21</p> <p><b>CONDITION</b> [1] - 172:1</p> <p><b>CONDUCT</b> [13] - 11:25, 12:10, 13:7, 20:23, 43:10, 43:12, 80:10, 134:21, 135:1, 157:4, 157:23, 157:24, 158:24</p> <p><b>CONDUCTED</b> [11] - 12:23, 32:16, 73:25, 82:19, 89:9, 89:24, 91:13, 118:7, 133:10, 158:18</p> <p><b>CONDUCTING</b> [2] - 42:15, 99:12</p> <p><b>CONFERENCE</b> [4] - 5:3, 7:4, 205:2, 205:3</p> <p><b>CONFERS</b> [1] - 151:10</p> <p><b>CONFIDENCE</b> [3] - 33:10, 123:9, 143:6</p> <p><b>CONFIDENT</b> [2] - 170:14, 195:23</p> <p><b>CONFIRMED</b> [3] - 112:21, 157:7, 201:18</p>	<p><b>CONFIRMING</b> [1] - 124:19</p> <p><b>CONFIRMS</b> [2] - 24:18, 158:20</p> <p><b>CONFOUNDER</b> [3] - 153:16, 163:5, 163:14</p> <p><b>CONFOUNDING</b> [36] - 26:17, 30:24, 32:13, 32:23, 36:5, 36:8, 36:11, 36:16, 36:19, 36:22, 37:1, 37:4, 41:4, 72:19, 94:4, 94:21, 112:17, 112:23, 124:7, 124:11, 132:1, 152:20, 152:24, 153:3, 153:9, 153:13, 156:22, 156:23, 158:7, 158:23, 163:17, 164:4, 164:8, 164:16, 191:3, 201:23</p> <p><b>CONFUSING</b> [2] - 13:10, 17:10</p> <p><b>CONGESTIVE</b> [1] - 173:25</p> <p><b>CONNECTED</b> [1] - 174:16</p> <p><b>CONNECTION</b> [2] - 52:20, 186:19</p> <p><b>CONSENSUS</b> [2] - 129:15, 129:16</p> <p><b>CONSERVATIVE</b> [1] - 101:12</p> <p><b>CONSIDER</b> [18] - 33:22, 47:11, 49:10, 49:15, 49:20, 49:22, 60:13, 69:5, 90:22, 110:4, 116:12, 117:14, 117:22, 118:13, 118:14, 119:1, 156:4, 193:17</p> <p><b>CONSIDERABLY</b> [1] - 145:20</p> <p><b>CONSIDERATION</b> [3] - 48:8, 49:2, 49:4</p> <p><b>CONSIDERATIONS</b> [1] - 57:25</p> <p><b>CONSIDERED</b> [13] - 19:22, 19:24, 20:6, 20:10, 60:19, 67:1, 80:1, 100:22, 104:23, 111:17, 117:22, 118:25, 145:20</p> <p><b>CONSIDERING</b> [2] - 48:10, 49:6</p> <p><b>CONSIST</b> [1] - 37:12</p> <p><b>CONSISTENCY</b> [11] - 37:22, 37:25, 38:3, 38:13, 88:10, 94:9, 113:21, 114:3, 114:7,</p>	<p>114:18, 115:12</p> <p><b>CONSISTENT</b> [8] - 38:7, 63:6, 68:19, 111:18, 115:13, 119:6, 123:3, 123:18</p> <p><b>CONSISTENTLY</b> [1] - 191:12</p> <p><b>CONSULT</b> [1] - 41:1</p> <p><b>CONTAINED</b> [1] - 109:15</p> <p><b>CONTAINS</b> [1] - 15:16</p> <p><b>CONTEND</b> [2] - 24:10, 45:13</p> <p><b>CONTENDS</b> [1] - 45:16</p> <p><b>CONTEST</b> [1] - 12:1</p> <p><b>CONTEXT</b> [15] - 48:8, 48:10, 48:12, 48:21, 48:25, 49:2, 49:4, 49:6, 49:11, 49:16, 49:17, 50:1, 105:1, 138:1, 147:16</p> <p><b>CONTINUE</b> [2] - 11:23, 96:14</p> <p><b>CONTINUED</b> [3] - 109:25, 120:22, 178:21</p> <p><b>CONTRADICTORY</b> [3] - 120:1, 120:6, 129:10</p> <p><b>CONTRADICTS</b> [1] - 70:18</p> <p><b>CONTRARY</b> [1] - 71:3</p> <p><b>CONTRAST</b> [2] - 105:10, 178:21</p> <p><b>CONTRIBUTED</b> [3] - 70:5, 70:11, 192:13</p> <p><b>CONTRIBUTING</b> [1] - 59:25</p> <p><b>CONTRIBUTION</b> [1] - 80:22</p> <p><b>CONTROL</b> [13] - 72:14, 84:18, 84:21, 85:6, 85:10, 146:22, 154:2, 154:6, 154:7, 162:11, 172:7, 172:17, 186:19</p> <p><b>CONTROLLED</b> [122] - 23:19, 24:1, 24:18, 26:5, 26:12, 28:24, 30:16, 34:3, 34:5, 34:11, 35:3, 35:15, 35:16, 35:18, 35:20, 35:24, 36:2, 36:20, 65:13, 65:15, 68:8, 68:24, 69:12, 69:22, 70:22, 71:5, 71:17, 71:18, 71:24, 71:25,</p>	<p>72:4, 72:8, 72:16, 72:23, 73:22, 73:25, 74:4, 74:8, 74:11, 74:13, 74:22, 74:25, 75:4, 75:8, 76:1, 76:8, 77:5, 77:6, 78:14, 80:21, 81:1, 83:11, 83:12, 84:22, 85:21, 86:8, 86:22, 86:25, 87:8, 87:9, 87:11, 87:12, 87:24, 88:3, 88:15, 88:17, 88:24, 88:25, 89:9, 89:11, 89:18, 91:12, 92:4, 93:6, 93:8, 93:15, 93:21, 94:22, 98:13, 98:17, 99:22, 100:14, 100:16, 112:3, 112:5, 112:10, 112:20, 113:12, 113:16, 119:17, 119:21, 123:20, 127:20, 133:11, 133:13, 133:21, 135:23, 136:7, 144:12, 144:14, 144:15, 144:17, 145:25, 148:20, 154:5, 154:8, 154:12, 154:14, 159:18, 160:7, 163:7, 163:21, 165:25, 166:2, 167:21, 191:6, 193:6, 193:10, 197:23</p> <p><b>CONTROLLING</b> [5] - 136:5, 136:18, 136:20, 146:21, 154:10</p> <p><b>CONTROLS</b> [3] - 87:5, 146:17, 154:3</p> <p><b>CONVENED</b> [1] - 170:24</p> <p><b>CONVENTIONAL</b> [1] - 34:24</p> <p><b>CONVINCED</b> [1] - 47:23</p> <p><b>CONVINCING</b> [6] - 72:4, 80:1, 104:23, 170:15, 170:16, 178:17</p> <p><b>CONVINCINGLY</b> [3] - 46:25, 47:25, 193:11</p> <p><b>COORDINATING</b> [3] - 4:10, 4:15, 5:2</p> <p><b>COORDINATION</b> [2] - 6:11, 6:16</p> <p><b>COPIES</b> [3] - 7:13, 7:16, 15:16</p> <p><b>COPY</b> [2] - 117:25, 147:15</p> <p><b>CORE</b> [1] - 185:23</p>	<p><b>CORN</b> [1] - 55:15</p> <p><b>CORNER</b> [3] - 11:6, 22:14, 143:19</p> <p><b>CORONARIES</b> [2] - 185:19, 185:20</p> <p><b>CORONARY</b> [17] - 22:2, 67:14, 73:9, 76:23, 153:24, 154:13, 169:19, 174:24, 177:14, 181:6, 181:21, 184:6, 185:14, 185:24, 186:4, 193:17</p> <p><b>CORR</b> [1] - 2:3</p> <p><b>CORRECT</b> [19] - 75:22, 85:19, 86:5, 102:13, 116:4, 128:12, 131:4, 142:20, 149:12, 149:15, 149:20, 149:25, 163:25, 164:1, 173:1, 191:22, 191:23, 201:15, 206:1</p> <p><b>CORRECTLY</b> [2] - 82:17, 115:6</p> <p><b>COUNSEL</b> [9] - 4:9, 7:1, 12:5, 27:25, 28:7, 28:13, 79:3, 95:23, 126:17</p> <p><b>COUNTENANCE</b> [1] - 94:6</p> <p><b>COUNTENANCED</b> [1] - 57:20</p> <p><b>COUNTIES</b> [1] - 5:22</p> <p><b>COUNTRY</b> [5] - 4:16, 21:25, 22:5, 31:23, 131:12</p> <p><b>COUNTY</b> [4] - 4:18, 5:20, 6:4, 6:12</p> <p><b>COUPLE</b> [5] - 56:7, 61:20, 62:2, 108:2, 134:12</p> <p><b>COURSE</b> [13] - 6:4, 6:12, 11:11, 17:1, 33:4, 36:25, 38:3, 56:8, 103:7, 169:20, 176:4, 192:20, 199:19</p> <p><b>COURT</b> [30] - 1:1, 4:1, 4:19, 6:4, 6:10, 6:17, 8:2, 13:15, 13:17, 15:15, 17:7, 21:16, 43:17, 51:16, 54:5, 54:17, 55:12, 57:15, 57:18, 58:16, 58:22, 96:3, 120:1, 120:13, 132:4, 195:11, 205:17, 206:7</p> <p><b>COURT'S</b> [1] - 9:12</p> <p><b>COURTHOUSE</b> [4] - 1:20, 8:3, 13:12,</p>
---	---	--	---	---

<p>13:13  <b>COURTROOM</b> [11] - 6:25, 15:11, 27:15, 27:23, 51:23, 53:17, 54:8, 125:14, 130:16, 131:5, 199:7  <b>COURTS</b> [12] - 4:16, 6:17, 13:4, 27:20, 31:23, 32:4, 33:11, 37:14, 38:9, 41:22, 57:22, 205:14  <b>COVER</b> [2] - 15:22, 15:25  <b>CREAM</b> [2] - 27:6, 27:7  <b>CREATED</b> [1] - 172:21  <b>CREATING</b> [1] - 181:21  <b>CREDENCE</b> [1] - 169:15  <b>CREDENTIALS</b> [3] - 14:18, 14:19, 198:4  <b>CREDIT</b> [1] - 44:24  <b>CRIME</b> [1] - 185:13  <b>CRITERIA</b> [29] - 29:4, 37:5, 37:9, 37:10, 37:18, 38:2, 38:12, 38:16, 38:22, 40:20, 41:5, 41:7, 42:13, 51:10, 60:13, 60:22, 61:2, 61:4, 78:10, 94:12, 99:3, 111:19, 125:2, 164:22, 165:2, 165:10, 167:10, 167:13, 200:17  <b>CRITERION</b> [1] - 169:13  <b>CRITICAL</b> [10] - 13:11, 14:9, 23:12, 23:19, 26:12, 34:1, 34:20, 79:23, 148:12, 165:3  <b>CRITICISMS</b> [1] - 89:17  <b>CRITICIZE</b> [2] - 80:9, 202:21  <b>CRITICIZED</b> [8] - 82:6, 91:3, 91:7, 91:9, 92:8, 93:17, 109:18, 202:16  <b>CRITICIZES</b> [1] - 92:11  <b>CRITICIZING</b> [2] - 79:2, 94:12  <b>CROSS</b> [2] - 143:6, 188:5  <b>CROSSING</b> [1] - 188:6  <b>CROWDED</b> [1] -</p>	<p>144:2  <b>CRP</b> [4] - 67:16, 185:15, 185:18, 188:11  <b>CRUCIAL</b> [1] - 41:16  <b>CRUDE</b> [4] - 39:22, 40:8, 40:11, 99:13  <b>CUETO</b> [1] - 6:3  <b>CURRENT</b> [4] - 123:10, 131:9, 131:14, 137:15  <b>CURSORY</b> [1] - 94:3  <b>CURT</b> [2] - 192:24, 193:2  <b>CURVE</b> [1] - 191:15  <b>CUT</b> [1] - 125:24  <b>CV</b> [3] - 140:24, 174:18, 190:4  <b>CYNTHIA</b> [54] - 1:13, 4:2, 4:8, 7:21, 8:11, 8:15, 8:21, 8:25, 9:4, 9:15, 10:6, 10:19, 10:24, 15:18, 50:15, 51:1, 52:17, 52:24, 53:4, 53:7, 83:18, 94:24, 95:2, 95:6, 95:18, 95:21, 95:25, 96:13, 96:25, 97:10, 98:4, 103:23, 104:8, 104:13, 125:20, 126:6, 126:11, 126:15, 126:18, 128:7, 152:22, 166:21, 166:24, 167:3, 167:5, 172:5, 172:23, 198:14, 198:21, 204:4, 204:20, 204:23, 205:10, 205:12</p>	<p>30:1, 30:5, 30:8, 33:12, 33:24, 35:8, 38:5, 38:6, 38:7, 40:10, 41:8, 45:11, 45:16, 46:11, 46:13, 47:3, 47:15, 47:23, 48:2, 57:12, 59:1, 63:19, 64:11, 64:20, 68:15, 69:4, 70:10, 70:23, 71:3, 72:17, 73:3, 73:13, 77:20, 78:22, 79:5, 79:7, 80:14, 82:12, 82:13, 82:20, 86:8, 86:9, 87:21, 88:24, 89:25, 90:2, 91:15, 91:18, 91:22, 92:6, 98:16, 98:20, 98:21, 100:24, 101:11, 101:15, 101:17, 101:18, 102:5, 102:11, 102:12, 102:23, 103:14, 105:7, 105:24, 105:25, 106:3, 106:7, 106:9, 106:13, 107:2, 107:3, 107:4, 107:7, 107:13, 107:19, 107:22, 107:23, 108:4, 108:7, 108:20, 112:7, 116:23, 119:7, 119:21, 119:22, 120:8, 120:11, 120:13, 122:11, 122:13, 122:20, 123:5, 123:7, 123:25, 125:4, 125:7, 125:12, 129:4, 129:5, 130:11, 131:25, 142:5, 142:6, 142:8, 143:16, 145:21, 156:2, 156:4, 156:5, 156:6, 157:6, 160:4, 161:23, 161:24, 162:24, 162:25, 179:8, 180:21, 187:7, 187:24, 196:2, 196:18, 196:19, 196:22, 197:11, 198:1, 198:6, 198:7, 199:25, 200:7, 200:17, 202:7, 202:14, 202:17, 203:17  <b>DATABASE</b> [3] - 112:15, 115:4, 184:9  <b>DATABASES</b> [1] - 77:16  <b>DATE</b> [1] - 206:6  <b>DAUBERT</b> [45] - 1:16, 6:22, 7:18, 9:7,</p>	<p>12:24, 13:3, 13:15, 13:18, 13:21, 13:25, 14:7, 14:10, 14:16, 14:23, 15:4, 16:3, 16:8, 19:21, 28:8, 31:25, 37:15, 41:22, 42:5, 43:18, 43:21, 43:24, 50:8, 53:11, 54:4, 57:17, 57:20, 58:13, 59:9, 71:13, 80:19, 94:5, 112:1, 112:6, 114:15, 120:18, 124:23, 130:7, 142:18, 169:3  <b>DAVID</b> [2] - 6:9, 153:19  <b>DAYS</b> [5] - 6:20, 56:23, 109:22, 109:24, 110:1  <b>DEAL</b> [6] - 154:1, 170:24, 184:21, 201:19, 202:3, 202:7  <b>DEALING</b> [2] - 24:2, 178:13  <b>DEATH</b> [11] - 21:24, 29:13, 31:14, 78:11, 78:18, 82:1, 87:3, 88:9, 113:5, 162:8, 194:9  <b>DEATHS</b> [4] - 27:7, 27:8, 174:17, 174:18  <b>DECEPTIVE</b> [2] - 175:20, 176:3  <b>DECIDE</b> [2] - 18:4, 38:7  <b>DECIDED</b> [4] - 56:14, 129:24, 189:1, 197:18  <b>DECIDES</b> [2] - 52:9, 186:17  <b>DECIDING</b> [2] - 4:15, 164:17  <b>DECILITER</b> [2] - 180:16, 180:17  <b>DECISION</b> [17] - 13:21, 42:14, 42:18, 43:7, 44:18, 45:4, 45:5, 51:15, 54:17, 54:22, 57:15, 58:9, 59:5, 96:20, 111:14, 114:16, 148:5  <b>DECISIONS</b> [3] - 42:9, 52:4, 52:7  <b>DECLARE</b> [1] - 56:5  <b>DECLARED</b> [1] - 74:20  <b>DECREASE</b> [11] - 62:10, 62:17, 86:19, 151:23, 171:5, 171:20, 177:17, 178:3, 178:4, 179:11,</p>	<p>180:14  <b>DECREASED</b> [2] - 62:5, 177:10  <b>DECREASES</b> [3] - 84:10, 179:6, 190:8  <b>DEEP</b> [3] - 100:4, 161:24, 162:25  <b>DEEPLY</b> [1] - 39:10  <b>DEFAULT</b> [2] - 15:5, 29:25  <b>DEFAULTING</b> [1] - 30:4  <b>DEFECT</b> [1] - 153:2  <b>DEFENDANT</b> [4] - 2:19, 2:23, 10:10, 65:23  <b>DEFENDANT'S</b> [1] - 150:9  <b>DEFENDANTS</b> [2] - 15:24, 204:13  <b>DEFENSE</b> [9] - 10:12, 64:12, 130:25, 150:8, 150:20, 166:8, 169:24, 176:9, 191:17  <b>DEFENSE'S</b> [4] - 149:1, 152:17, 164:12, 182:10  <b>DEFER</b> [1] - 125:23  <b>DEFERRED</b> [1] - 11:16  <b>DEFINE</b> [3] - 46:16, 74:1, 85:5  <b>DEFINED</b> [4] - 31:24, 54:18, 136:25, 139:8  <b>DEFINITELY</b> [1] - 31:25  <b>DEFINITION</b> [3] - 42:14, 139:11, 164:12  <b>DEFINITIONS</b> [1] - 29:2  <b>DEFINITIVELY</b> [1] - 65:13  <b>DEGREE</b> [3] - 99:9, 113:11, 123:8  <b>DELETERIOUS</b> [1] - 70:24  <b>DELIGHT</b> [1] - 4:9  <b>DELIGHTED</b> [2] - 4:22, 8:20  <b>DELIVER</b> [1] - 181:21  <b>DELIVERED</b> [1] - 147:15  <b>DELIVERING</b> [4] - 177:14, 181:4, 182:4, 183:20  <b>DEMANDED</b> [1] - 58:22  <b>DEMANDS</b> [2] - 15:4, 43:22</p>
<b>D</b>				
<p><b>CRITICISMS</b> [1] - 89:17  <b>CRITICIZE</b> [2] - 80:9, 202:21  <b>CRITICIZED</b> [8] - 82:6, 91:3, 91:7, 91:9, 92:8, 93:17, 109:18, 202:16  <b>CRITICIZES</b> [1] - 92:11  <b>CRITICIZING</b> [2] - 79:2, 94:12  <b>CROSS</b> [2] - 143:6, 188:5  <b>CROSSING</b> [1] - 188:6  <b>CROWDED</b> [1] -</p>	<p><b>D-O-W-D</b> [1] - 6:9  <b>DAHABREH</b> [2] - 106:21, 200:5  <b>DAILY</b> [1] - 42:8  <b>DALZELL</b> [2] - 12:21, 15:7  <b>DAMAGES</b> [1] - 58:17  <b>DARAPLADIB</b> [2] - 186:5, 187:14  <b>DARGIE</b> [1] - 106:21  <b>DARKEST</b> [1] - 171:3  <b>DATA</b> [157] - 13:1, 13:6, 14:21, 14:24, 15:2, 15:6, 15:8, 18:11, 19:12, 19:25, 20:5, 21:18, 28:18,</p>	<p>156:5, 156:6, 157:6, 160:4, 161:23, 161:24, 162:24, 162:25, 179:8, 180:21, 187:7, 187:24, 196:2, 196:18, 196:19, 196:22, 197:11, 198:1, 198:6, 198:7, 199:25, 200:7, 200:17, 202:7, 202:14, 202:17, 203:17  <b>DATABASE</b> [3] - 112:15, 115:4, 184:9  <b>DATABASES</b> [1] - 77:16  <b>DATE</b> [1] - 206:6  <b>DAUBERT</b> [45] - 1:16, 6:22, 7:18, 9:7,</p>	<p>178:3, 178:4, 179:11,</p>	

<p><b>DEMONSTRATE</b> [2] - 69:25, 153:15</p> <p><b>DEMONSTRATED</b> [4] - 146:13, 153:14, 167:11, 186:12</p> <p><b>DEMONSTRATES</b> [5] - 64:11, 106:6, 114:3, 130:3, 158:6</p> <p><b>DEMONSTRATING</b> [3] - 119:7, 124:22, 179:2</p> <p><b>DENSE</b> [1] - 124:24</p> <p><b>DENSITY</b> [1] - 190:5</p> <p><b>DENVER</b> [1] - 2:9</p> <p><b>DENY</b> [1] - 160:3</p> <p><b>DEPACE</b> [13] - 39:21, 39:25, 42:1, 46:21, 47:4, 50:5, 51:12, 66:21, 72:12, 147:22, 148:4, 185:12, 201:2</p> <p><b>DEPARTMENT</b> [2] - 184:1, 184:13</p> <p><b>DEPOSED</b> [1] - 189:14</p> <p><b>DEPOSITION</b> [7] - 28:17, 40:20, 91:21, 110:6, 195:15, 203:5, 203:7</p> <p><b>DEPOSITIONS</b> [4] - 20:4, 156:1, 187:18, 197:17</p> <p><b>DEPUTY</b> [1] - 82:14</p> <p><b>DESCRIBE</b> [1] - 153:6</p> <p><b>DESCRIBED</b> [4] - 37:9, 132:14, 152:7, 159:16</p> <p><b>DESERVE</b> [1] - 98:2</p> <p><b>DESERVING</b> [1] - 101:12</p> <p><b>DESIGN</b> [21] - 78:22, 78:24, 79:2, 79:6, 79:9, 80:4, 85:1, 94:19, 134:18, 138:17, 157:4, 157:16, 157:21, 157:22, 158:24, 159:17, 160:10, 177:24</p> <p><b>DESIGNED</b> [28] - 12:23, 65:12, 76:17, 76:19, 77:6, 77:19, 80:2, 86:22, 89:24, 93:18, 93:22, 104:24, 127:18, 131:8, 133:10, 134:2, 134:3, 134:6, 138:4, 138:16, 138:17, 158:15,</p>	<p>158:18, 160:13, 173:19, 196:15, 197:25</p> <p><b>DESIGNING</b> [1] - 138:6</p> <p><b>DESIGNS</b> [1] - 94:5</p> <p><b>DESPITE</b> [5] - 82:22, 88:14, 88:15, 122:17, 161:3</p> <p><b>DESTABILIZING</b> [1] - 185:21</p> <p><b>DETAIL</b> [3] - 82:3, 148:16, 167:25</p> <p><b>DETECTION</b> [1] - 179:16</p> <p><b>DETERMINATION</b> [4] - 42:25, 43:10, 67:23, 165:7</p> <p><b>DETERMINE</b> [11] - 12:17, 12:19, 26:5, 30:22, 32:17, 42:6, 45:24, 68:1, 111:5, 168:3, 187:24</p> <p><b>DETERMINED</b> [5] - 58:11, 115:6, 162:24, 164:15, 164:16</p> <p><b>DETERMINING</b> [1] - 148:9</p> <p><b>DEVELOPED</b> [2] - 68:9, 77:3</p> <p><b>DEVELOPING</b> [2] - 173:21, 186:2</p> <p><b>DEVELOPMENT</b> [2] - 67:7, 86:23</p> <p><b>DEVELOPS</b> [1] - 169:15</p> <p><b>DEVICE</b> [1] - 187:20</p> <p><b>DEVOTED</b> [1] - 12:9</p> <p><b>DIABETES</b> [38] - 17:1, 22:6, 22:8, 22:12, 22:15, 22:20, 22:23, 23:17, 60:4, 86:23, 86:24, 87:25, 109:18, 122:25, 129:14, 131:7, 136:6, 136:19, 152:9, 153:17, 153:18, 153:23, 153:25, 154:2, 154:4, 154:6, 154:10, 154:12, 154:15, 154:17, 173:9, 173:21, 173:22, 198:11</p> <p><b>DIABETIC</b> [20] - 22:17, 22:18, 22:21, 22:25, 23:2, 23:8, 83:19, 84:3, 84:5, 85:4, 136:4, 146:19, 154:19, 170:13, 172:8, 172:13,</p>	<p>172:16, 172:25</p> <p><b>DIABETICS</b> [24] - 16:24, 21:23, 22:8, 22:17, 23:12, 24:7, 25:20, 31:14, 76:21, 91:13, 91:19, 99:4, 100:22, 135:25, 136:3, 154:7, 166:6, 172:7, 172:24, 173:4, 173:16, 175:6</p> <p><b>DIADEXUS</b> [1] - 187:19</p> <p><b>DIAGNOSED</b> [5] - 87:25, 156:14, 172:24, 172:25, 173:16</p> <p><b>DIAGNOSING</b> [1] - 40:24</p> <p><b>DIAGNOSIS</b> [3] - 148:12, 159:21, 160:1</p> <p><b>DIAMOND</b> [2] - 129:4, 138:22</p> <p><b>DIANE</b> [1] - 8:10</p> <p><b>DIE</b> [4] - 22:2, 22:17, 108:19, 108:21</p> <p><b>DIED</b> [1] - 22:5</p> <p><b>DIET</b> [2] - 85:6, 85:8</p> <p><b>DIFFER</b> [1] - 49:24</p> <p><b>DIFFERENCE</b> [1] - 46:1</p> <p><b>DIFFERENCE</b> [7] - 27:25, 83:15, 105:13, 105:15, 105:16, 106:5, 116:3</p> <p><b>DIFFERENCES</b> [5] - 35:1, 99:6, 99:7, 107:7, 146:18</p> <p><b>DIFFERENT</b> [43] - 5:21, 11:11, 12:23, 16:2, 16:11, 17:11, 21:9, 29:3, 30:12, 40:11, 42:6, 48:5, 48:9, 48:13, 49:5, 49:16, 51:22, 53:16, 54:2, 71:20, 73:11, 73:12, 78:21, 98:19, 98:21, 98:22, 99:1, 99:2, 111:1, 153:1, 153:5, 165:11, 165:12, 165:16, 165:17, 165:19, 171:3, 200:2</p> <p><b>DIFFERENTLY</b> [3] - 12:24, 72:9, 105:12</p> <p><b>DIFFICULT</b> [3] - 124:24, 188:15, 197:4</p> <p><b>DIFFICULTY</b> [1] - 105:1</p> <p><b>DIG</b> [2] - 161:16, 197:24</p> <p><b>DILEMMA</b> [1] - 52:6</p>	<p><b>DIMMING</b> [1] - 167:7</p> <p><b>DIRECT</b> [4] - 7:17, 7:18, 59:25, 181:20</p> <p><b>DIRECTION</b> [5] - 87:19, 117:21, 120:9, 184:19, 185:2</p> <p><b>DIRECTIONS</b> [1] - 40:11</p> <p><b>DIRECTLY</b> [2] - 55:23, 70:7</p> <p><b>DIRECTOR</b> [1] - 82:14</p> <p><b>DIRTY</b> [3] - 99:14, 99:20, 99:21</p> <p><b>DISAGREE</b> [3] - 103:10, 142:20, 183:2</p> <p><b>DISAGREES</b> [1] - 103:15</p> <p><b>DISALLOWED</b> [1] - 147:18</p> <p><b>DISCIPLINE</b> [1] - 30:13</p> <p><b>DISCOUNT</b> [5] - 89:8, 89:17, 91:12, 144:13, 144:16</p> <p><b>DISCOUNTED</b> [4] - 78:23, 80:18, 91:21, 144:12</p> <p><b>DISCOVER</b> [1] - 155:8</p> <p><b>DISCOVERED</b> [2] - 153:12, 185:7</p> <p><b>DISCREPANCY</b> [1] - 193:20</p> <p><b>DISCRETION</b> [1] - 51:17</p> <p><b>DISCUSS</b> [5] - 11:20, 30:24, 155:10, 177:12, 179:23</p> <p><b>DISCUSSED</b> [10] - 41:20, 43:18, 73:7, 82:3, 93:16, 154:3, 155:2, 156:18, 163:6, 176:19</p> <p><b>DISCUSSES</b> [2] - 151:20, 169:11</p> <p><b>DISCUSSION</b> [1] - 9:8</p> <p><b>DISEASE</b> [31] - 17:4, 22:18, 26:4, 26:5, 26:14, 26:20, 35:19, 39:16, 50:6, 60:9, 62:10, 65:1, 66:7, 67:14, 75:21, 76:23, 76:24, 81:15, 122:25, 125:11, 137:7, 148:10, 153:24, 154:14, 154:25, 168:18, 168:19, 169:14, 169:19,</p>	<p>174:24, 193:18</p> <p><b>DISEASES</b> [1] - 21:7</p> <p><b>DISINGENUOUS</b> [1] - 156:13</p> <p><b>DISMISS</b> [1] - 201:13</p> <p><b>DISPARATE</b> [1] - 163:22</p> <p><b>DISPLAY</b> [1] - 32:3</p> <p><b>DISPOSAL</b> [1] - 45:4</p> <p><b>DISPROVEN</b> [1] - 80:25</p> <p><b>DISPUTE</b> [3] - 54:19, 92:19, 153:18</p> <p><b>DISREGARD</b> [1] - 117:10</p> <p><b>DISTINCT</b> [1] - 5:19</p> <p><b>DISTINCTION</b> [1] - 26:24</p> <p><b>DISTINGUISHES</b> [1] - 151:11</p> <p><b>DISTRICT</b> [8] - 1:1, 1:2, 4:12, 5:23, 12:22, 13:2, 51:16, 125:7</p> <p><b>DIURETICS</b> [2] - 66:9, 146:11</p> <p><b>DIVISION</b> [2] - 82:4, 83:7</p> <p><b>DOCTOR</b> [9] - 40:4, 42:20, 43:1, 75:14, 75:15, 110:14, 127:24, 157:8</p> <p><b>DOCTOR'S</b> [1] - 13:17</p> <p><b>DOCTORS</b> [6] - 42:7, 42:9, 131:11, 144:24, 155:16, 158:9</p> <p><b>DOCTORS'</b> [1] - 155:22</p> <p><b>DOCUMENT</b> [4] - 145:17, 159:7, 159:15, 197:18</p> <p><b>DOCUMENTS</b> [2] - 87:22, 184:10</p> <p><b>DOGS</b> [1] - 174:12</p> <p><b>DONE</b> [22] - 13:9, 29:23, 42:12, 59:14, 74:3, 80:18, 82:13, 84:22, 92:9, 95:13, 96:11, 99:14, 125:17, 131:8, 133:14, 135:18, 146:5, 157:15, 165:15, 197:7, 197:16, 204:3</p> <p><b>DORE</b> [2] - 118:12, 118:13</p> <p><b>DOSE</b> [20] - 41:6, 41:8, 41:12, 170:11, 170:12, 170:25, 171:11, 190:12, 190:13, 190:15,</p>
--	---	--	---	--

<p>190:18, 190:22, 190:23, 191:15, 203:11, 203:13, 203:14</p> <p><b>DOSES</b> [1] - 41:11</p> <p><b>DOUBLE</b> [6] - 72:14, 73:21, 86:21, 87:24, 138:14, 193:6</p> <p><b>DOUBLES</b> [1] - 22:19</p> <p><b>DOWD</b> [1] - 6:9</p> <p><b>DOWN</b> [20] - 44:10, 52:16, 54:22, 64:10, 65:21, 88:25, 134:25, 145:13, 154:21, 164:9, 167:25, 176:3, 179:16, 179:17, 180:14, 182:3, 182:9, 183:16, 199:4, 202:7</p> <p><b>DOYLESTOWN</b> [1] - 2:5</p> <p><b>DOZEN</b> [1] - 113:25</p> <p><b>DR</b> [245] - 10:16, 11:5, 11:7, 18:9, 18:20, 19:10, 19:16, 19:19, 19:22, 20:3, 20:5, 20:11, 20:25, 21:3, 22:20, 22:23, 24:21, 27:25, 28:1, 28:4, 28:6, 28:8, 28:9, 28:10, 28:17, 28:22, 29:20, 30:7, 31:5, 31:10, 31:21, 32:4, 32:19, 33:3, 34:20, 35:2, 35:8, 35:9, 36:11, 37:5, 38:19, 39:7, 39:19, 39:21, 39:24, 40:20, 41:18, 44:5, 45:9, 45:13, 45:19, 46:3, 46:21, 47:4, 48:4, 48:14, 51:5, 51:8, 55:24, 55:25, 56:16, 59:19, 60:3, 60:6, 60:24, 62:18, 62:23, 63:4, 63:7, 63:13, 63:18, 64:9, 66:18, 66:21, 66:22, 72:3, 72:7, 72:12, 72:20, 73:17, 75:13, 75:24, 76:6, 77:22, 78:10, 79:1, 79:4, 79:18, 79:25, 80:14, 81:18, 81:22, 82:5, 82:9, 82:13, 82:15, 82:17, 82:23, 82:25, 84:20, 84:25, 85:13, 86:17, 90:4, 90:7, 91:21, 92:9, 92:11, 92:17, 92:20, 93:3, 93:17, 100:24,</p>	<p>101:3, 101:5, 101:8, 101:9, 101:11, 101:15, 101:16, 102:1, 102:13, 103:3, 103:4, 103:7, 103:11, 103:12, 103:15, 105:2, 106:6, 106:14, 106:17, 109:10, 109:18, 109:22, 110:4, 110:5, 110:8, 110:11, 111:23, 112:18, 112:19, 115:14, 116:11, 119:12, 119:17, 121:8, 121:13, 121:20, 122:2, 130:15, 130:16, 130:21, 131:5, 131:10, 131:11, 131:17, 132:23, 134:14, 134:19, 139:23, 139:25, 140:1, 141:20, 142:16, 147:22, 148:4, 149:1, 149:7, 150:3, 150:8, 150:24, 151:17, 153:19, 153:22, 155:1, 155:2, 156:19, 157:1, 157:2, 157:6, 157:7, 157:9, 157:14, 158:2, 158:24, 159:1, 162:4, 162:11, 162:17, 163:17, 164:12, 166:8, 166:18, 168:10, 168:24, 169:5, 169:24, 175:17, 176:9, 179:9, 181:7, 182:10, 182:12, 184:9, 184:11, 184:14, 185:2, 185:12, 188:13, 189:15, 189:18, 189:23, 191:17, 192:4, 192:8, 192:11, 192:24, 194:7, 195:14, 197:22, 198:11, 201:2, 202:24, 203:3, 203:4, 204:15, 205:7, 205:8</p> <p><b>DRAFT</b> [1] - 187:25</p> <p><b>DRAFTED</b> [1] - 13:25</p> <p><b>DRAMATIC</b> [1] - 80:13</p> <p><b>DRAW</b> [3] - 13:4, 18:10, 21:11</p> <p><b>DRAWING</b> [2] - 45:22, 165:5</p> <p><b>DRAWN</b> [1] - 32:14</p>	<p><b>DREAM</b> [25] - 85:1, 85:2, 85:9, 86:8, 86:9, 86:19, 86:21, 91:9, 91:12, 91:15, 93:22, 100:18, 106:20, 138:17, 144:21, 145:11, 145:21, 154:19, 154:20, 155:1, 155:3, 173:11, 173:19</p> <p><b>DRINK</b> [1] - 132:25</p> <p><b>DRINKING</b> [3] - 133:5, 133:7, 168:6</p> <p><b>DRIVES</b> [1] - 157:20</p> <p><b>DRIVING</b> [2] - 26:14, 140:13</p> <p><b>DROPPED</b> [1] - 106:22</p> <p><b>DROWNING</b> [2] - 27:7, 27:8</p> <p><b>DRS</b> [6] - 19:20, 42:1, 50:4, 51:11, 70:15, 179:23</p> <p><b>DRUG</b> [90] - 11:23, 26:6, 42:20, 42:22, 43:1, 43:3, 44:18, 44:19, 47:21, 57:2, 58:5, 58:6, 58:7, 60:7, 61:15, 62:3, 62:7, 62:13, 64:22, 65:2, 65:20, 81:4, 82:14, 83:14, 84:7, 84:8, 84:9, 84:12, 84:13, 87:6, 87:13, 87:14, 89:4, 102:18, 117:19, 129:17, 129:18, 129:20, 129:25, 131:12, 131:14, 134:7, 137:18, 138:10, 138:15, 146:14, 146:15, 148:21, 150:7, 153:16, 153:22, 154:18, 155:8, 155:14, 157:19, 157:20, 157:23, 158:19, 159:10, 162:2, 168:4, 168:17, 168:19, 169:23, 170:4, 170:6, 170:18, 170:21, 171:16, 172:2, 172:21, 173:20, 174:21, 176:24, 181:20, 181:23, 186:2, 186:5, 190:1, 190:2, 190:11, 190:19, 191:8, 193:21, 194:3, 194:6, 194:11, 195:7, 196:10</p> <p><b>DRUG'S</b> [2] - 171:23,</p>	<p>194:14</p> <p><b>DRUGS</b> [11] - 43:4, 52:13, 70:1, 77:2, 82:17, 87:6, 97:6, 122:17, 149:5, 150:5</p> <p><b>DUE</b> [7] - 32:17, 32:22, 32:23, 124:11, 153:2</p> <p><b>DUMPING</b> [1] - 181:6</p> <p><b>DURATION</b> [1] - 99:4</p> <p><b>DURING</b> [2] - 16:8, 178:19</p> <p><b>DYNAMIC</b> [1] - 67:21</p>	<p><b>EFFICACY</b> [3] - 93:8, 168:21, 193:5</p> <p><b>EFFICIENTLY</b> [1] - 205:16</p> <p><b>EFFORT</b> [2] - 124:8, 205:13</p> <p><b>EIGHT</b> [6] - 10:15, 33:2, 130:19, 171:9, 171:21, 171:24</p> <p><b>EIGHT-MILLIGRAM</b> [1] - 171:24</p> <p><b>EITHER</b> [11] - 38:15, 50:19, 102:5, 108:21, 112:19, 117:18, 140:16, 144:4, 144:17, 150:24, 158:1</p> <p><b>EKGS</b> [1] - 155:23</p> <p><b>ELDERLY</b> [1] - 76:25</p> <p><b>ELECTROCARDIOGRAM</b> [1] - 161:8</p> <p><b>ELECTROCARDIOGRAMS</b> [1] - 161:10</p> <p><b>ELECTRONIC</b> [1] - 5:14</p> <p><b>ELEMENT</b> [2] - 60:19, 148:9</p> <p><b>ELEMENTS</b> [2] - 38:18, 137:1</p> <p><b>ELEVATED</b> [4] - 117:3, 178:20, 181:17, 185:18</p> <p><b>ELIOT</b> [1] - 198:10</p> <p><b>ELSEWHERE</b> [1] - 178:9</p> <p><b>EMBARKED</b> [1] - 155:7</p> <p><b>EMBEDDED</b> [1] - 17:22</p> <p><b>EMBRACED</b> [1] - 31:22</p> <p><b>EMPHASIZED</b> [1] - 60:6</p> <p><b>EMPLOY</b> [2] - 39:1, 44:25</p> <p><b>EMPLOYED</b> [3] - 12:16, 14:20, 44:9</p> <p><b>EMPLOYEE</b> [1] - 188:6</p> <p><b>EMPLOYEES</b> [1] - 161:12</p> <p><b>EMPLOYS</b> [1] - 48:11</p> <p><b>ENCOMPASS</b> [1] - 56:4</p> <p><b>ENCOMPASSED</b> [1] - 200:10</p> <p><b>ENCOURAGES</b> [1] - 71:13</p> <p><b>END</b> [48] - 14:2, 16:6, 16:12, 32:9, 33:23,</p>
<b>E</b>				
		<p><b>E-MAIL</b> [9] - 174:9, 174:12, 183:25, 184:23, 186:18, 186:22, 190:21, 197:6</p> <p><b>E-MAILS</b> [1] - 12:14</p> <p><b>EARLY</b> [11] - 76:21, 95:14, 135:24, 138:3, 159:21, 159:25, 160:11, 174:21, 181:13, 184:8, 185:8</p> <p><b>EASIER</b> [1] - 36:19</p> <p><b>EASTERN</b> [3] - 1:2, 12:22, 125:6</p> <p><b>EASY</b> [3] - 67:5, 97:22, 169:13</p> <p><b>EATING</b> [1] - 27:7</p> <p><b>EBO5</b> [1] - 179:17</p> <p><b>ECHOCARDIOGRAM</b> [1] - 196:22</p> <p><b>EDDIE</b> [1] - 6:7</p> <p><b>EDIT</b> [1] - 136:16</p> <p><b>EDUCATED</b> [1] - 44:17</p> <p><b>EFFECT</b> [24] - 43:2, 59:11, 59:22, 64:23, 67:25, 70:24, 76:19, 83:17, 84:8, 89:7, 91:11, 114:1, 133:8, 137:18, 164:14, 171:15, 171:23, 174:21, 177:20, 177:21, 178:23, 181:20, 187:16, 194:14</p> <p><b>EFFECTIVELY</b> [2] - 138:4, 138:5</p> <p><b>EFFECTIVENESS</b> [1] - 101:7</p> <p><b>EFFECTS</b> [10] - 66:2, 67:11, 67:13, 67:15, 68:1, 81:14, 160:2, 190:11, 190:17, 190:21</p>		

<p>60:13, 61:3, 61:15, 64:20, 74:2, 77:10, 77:15, 78:4, 82:7, 87:1, 88:18, 89:4, 92:20, 92:25, 93:7, 93:8, 93:23, 96:4, 125:5, 125:24, 133:24, 136:24, 136:25, 139:8, 139:10, 140:7, 140:18, 140:19, 140:22, 140:23, 145:12, 147:25, 151:21, 154:23, 155:4, 158:13, 164:17, 169:7, 177:8, 190:22, 196:20, 196:21, 196:25</p> <p><b>ENDED</b> [30] - 19:9, 26:10, 29:16, 39:6, 39:18, 40:18, 45:8, 46:20, 48:3, 50:3, 57:7, 70:14, 73:15, 78:7, 86:15, 91:1, 111:11, 115:19, 119:4, 142:15, 150:2, 150:19, 164:2, 166:16, 168:23, 176:15, 183:11, 192:1, 195:25, 196:21</p> <p><b>ENDING</b> [1] - 202:13</p> <p><b>ENDOCRINOLOGIST</b> [2] - 131:6, 198:10</p> <p><b>ENDORSED</b> [3] - 32:6, 121:19, 121:22</p> <p><b>ENDORSES</b> [3] - 84:21, 84:25, 195:16</p> <p><b>ENDORISING</b> [1] - 65:18</p> <p><b>ENDPOINT</b> [7] - 17:5, 37:21, 74:9, 100:21, 110:23, 115:9, 139:10</p> <p><b>ENDPOINTS</b> [1] - 99:2</p> <p><b>ENDS</b> [1] - 172:11</p> <p><b>ENGLAND</b> [5] - 6:7, 123:6, 145:8, 151:18, 152:5</p> <p><b>ENGLISH</b> [1] - 175:3</p> <p><b>ENROLL</b> [1] - 29:11</p> <p><b>ENTIRE</b> [3] - 31:18, 60:15, 181:18</p> <p><b>ENTITLED</b> [2] - 178:24, 206:3</p> <p><b>ENUMERATING</b> [1] - 16:7</p> <p><b>ENUNCIATED</b> [1] - 55:12</p> <p><b>ENZIME</b> [3] - 185:9,</p>	<p>186:3, 186:13</p> <p><b>EPIDEMIOLOGIC</b> [3] - 27:18, 119:25, 141:8</p> <p><b>EPIDEMIOLOGICAL</b> [5] - 120:6, 129:10, 133:8, 147:11, 147:19</p> <p><b>EPIDEMIOLOGIST</b> [16] - 18:8, 20:1, 24:11, 31:22, 33:5, 39:23, 40:6, 40:7, 60:25, 106:13, 115:15, 119:6, 149:4, 168:11, 193:3, 203:3</p> <p><b>EPIDEMIOLOGIST</b> [6] - 48:13, 130:22, 134:15, 145:1, 165:13, 169:5</p> <p><b>EPIDEMIOLOGY</b> [5] - 40:6, 130:18, 132:16, 151:1, 151:8</p> <p><b>EQUAL</b> [11] - 18:23, 19:2, 19:3, 27:12, 27:22, 30:9, 30:10, 31:4, 53:10, 64:8, 93:11</p> <p><b>EQUALLING</b> [1] - 26:22</p> <p><b>EQUALLY</b> [2] - 93:25, 142:6</p> <p><b>EQUALS</b> [1] - 132:20</p> <p><b>EQUATE</b> [2] - 31:1, 59:15</p> <p><b>EQUATES</b> [2] - 31:10, 56:8</p> <p><b>EQUATING</b> [2] - 28:21, 31:16</p> <p><b>EQUATION</b> [1] - 172:9</p> <p><b>EQUIPMENT</b> [3] - 52:19, 52:22, 53:4</p> <p><b>EQUIVALENT</b> [3] - 27:17, 38:17, 39:20</p> <p><b>ERRONEOUS</b> [1] - 111:7</p> <p><b>ERROR</b> [6] - 32:17, 33:9, 72:10, 80:13, 97:9, 141:10</p> <p><b>ESPECIALLY</b> [4] - 26:18, 43:3, 124:6, 198:24</p> <p><b>ESQUIRE</b> [11] - 2:2, 2:3, 2:3, 2:7, 2:12, 2:12, 2:15, 2:16, 2:20, 3:1, 3:2</p> <p><b>ESR</b> [1] - 5:14</p> <p><b>ESSENTIALLY</b> [7] - 127:13, 127:17, 127:18, 128:19, 147:10, 152:25, 153:4</p> <p><b>ESTABLISHED</b> [4] -</p>	<p>27:11, 31:18, 181:11, 191:6</p> <p><b>ESTABLISHES</b> [1] - 111:8</p> <p><b>ESTABLISHING</b> [2] - 58:8, 131:19</p> <p><b>ESTIMATE</b> [3] - 140:9, 143:9, 161:3</p> <p><b>ESTIMATES</b> [2] - 140:11, 165:23</p> <p><b>ET</b> [1] - 189:10</p> <p><b>ETHICS</b> [1] - 172:12</p> <p><b>ETIOLOGY</b> [2] - 51:20, 51:21</p> <p><b>EUROPE</b> [2] - 137:13, 166:3</p> <p><b>EUROPEAN</b> [2] - 77:18, 78:25</p> <p><b>EVALUATE</b> [4] - 46:10, 77:7, 77:13, 86:22</p> <p><b>EVALUATING</b> [3] - 36:15, 109:9, 113:22</p> <p><b>EVALUATION</b> [1] - 82:15</p> <p><b>EVENT</b> [13] - 17:12, 17:16, 17:17, 17:23, 22:2, 29:14, 42:21, 43:7, 46:18, 133:17, 184:6, 191:7</p> <p><b>EVENTS</b> [66] - 17:13, 17:19, 17:25, 18:1, 18:13, 18:25, 19:7, 19:13, 19:25, 20:9, 20:12, 20:18, 20:21, 21:7, 21:8, 21:11, 31:13, 40:17, 57:3, 60:2, 62:4, 62:8, 62:9, 62:17, 63:20, 64:19, 73:10, 78:6, 82:18, 92:15, 111:10, 115:7, 121:15, 122:6, 132:16, 137:12, 137:20, 138:9, 139:3, 140:2, 140:24, 140:25, 145:9, 148:22, 149:20, 149:24, 150:7, 152:11, 158:4, 160:25, 161:5, 161:14, 163:11, 163:24, 167:18, 174:2, 174:24, 175:1, 175:11, 176:14, 182:13, 190:2, 190:4, 192:6, 193:24</p> <p><b>EVENTUALLY</b> [1] - 137:14</p> <p><b>EVERYWHERE</b> [2] - 22:11, 180:7</p>	<p><b>EVIDENCE</b> [73] - 13:22, 27:16, 27:20, 29:24, 37:8, 37:9, 38:8, 43:13, 43:25, 45:23, 54:8, 54:13, 61:21, 64:24, 66:20, 68:6, 70:18, 71:23, 72:3, 72:5, 73:9, 73:23, 79:24, 80:15, 83:1, 83:8, 88:22, 88:23, 102:2, 102:3, 102:9, 102:10, 102:14, 110:9, 111:8, 111:13, 111:16, 111:17, 111:21, 113:15, 119:13, 119:16, 120:7, 120:23, 123:7, 123:19, 124:19, 128:23, 129:11, 133:9, 133:11, 133:13, 133:14, 133:15, 134:23, 140:3, 140:17, 147:11, 149:6, 149:7, 150:6, 150:10, 150:13, 150:16, 150:22, 176:17, 184:22, 191:21, 193:5, 195:24, 200:16, 202:12</p> <p><b>EXACT</b> [11] - 71:12, 89:20, 105:24, 105:25, 106:3, 107:3, 107:18, 107:23, 153:20, 162:2, 199:25</p> <p><b>EXACTING</b> [1] - 50:8</p> <p><b>EXACTLY</b> [18] - 14:9, 59:9, 64:6, 83:20, 107:13, 107:21, 122:21, 131:3, 135:7, 147:16, 150:4, 156:7, 174:14, 189:18, 193:16, 195:3, 198:8, 203:23</p> <p><b>EXAMINE</b> [4] - 77:20, 89:4, 141:25, 164:5</p> <p><b>EXAMINED</b> [5] - 14:11, 32:15, 146:4, 162:23, 163:15</p> <p><b>EXAMINING</b> [1] - 183:13</p> <p><b>EXAMPLE</b> [23] - 29:7, 44:5, 81:1, 89:23, 100:7, 109:10, 114:20, 129:3, 130:19, 132:23, 133:20, 138:6, 146:25, 149:9, 158:7, 160:22, 168:4, 169:6,</p>	<p>169:16, 169:17, 173:6, 185:17, 187:14</p> <p><b>EXAMPLES</b> [6] - 16:10, 59:19, 62:2, 89:22, 100:9, 128:4</p> <p><b>EXCEED</b> [2] - 151:9, 151:13</p> <p><b>EXCEEDED</b> [1] - 51:17</p> <p><b>EXCELLENT</b> [2] - 79:22, 133:14</p> <p><b>EXCEPT</b> [1] - 83:18</p> <p><b>EXCEPTION</b> [2] - 93:22, 199:18</p> <p><b>EXCEPTIONS</b> [1] - 91:6</p> <p><b>EXCESS</b> [2] - 109:23, 194:9</p> <p><b>EXCITED</b> [1] - 62:7</p> <p><b>EXCITING</b> [1] - 148:3</p> <p><b>EXCLUDE</b> [6] - 16:19, 33:11, 37:15, 99:4, 99:5, 109:20</p> <p><b>EXCLUDED</b> [9] - 19:21, 21:2, 55:14, 58:13, 64:4, 94:15, 114:9, 120:3, 120:13</p> <p><b>EXCLUDING</b> [1] - 64:2</p> <p><b>EXCLUSION</b> [2] - 51:11, 57:15</p> <p><b>EXCLUSIONARY</b> [1] - 99:3</p> <p><b>EXCUSE</b> [1] - 19:17</p> <p><b>EXECUTION</b> [1] - 80:10</p> <p><b>EXERCISE</b> [2] - 85:6, 85:7</p> <p><b>EXHIBIT</b> [2] - 116:19, 118:6</p> <p><b>EXHIBITS</b> [1] - 7:12</p> <p><b>EXIST</b> [6] - 5:16, 32:7, 37:9, 125:13, 129:12</p> <p><b>EXISTENCE</b> [3] - 15:8, 30:2, 54:18</p> <p><b>EXISTING</b> [5] - 13:1, 71:11, 98:15, 169:13, 172:14</p> <p><b>EXISTS</b> [1] - 169:15</p> <p><b>EXPECT</b> [4] - 26:7, 132:18, 163:11, 180:1</p> <p><b>EXPECTED</b> [6] - 62:9, 62:16, 83:6, 177:20, 177:21, 190:3</p> <p><b>EXPERIENCE</b> [5] - 46:11, 124:15, 124:16, 147:7</p> <p><b>EXPERIMENTAL</b> [1] - 135:7</p>
---	--	--	---	---

<p><b>EXPERT</b> <sup>[59]</sup> - 7:12, 12:19, 14:12, 15:9, 16:6, 22:20, 22:23, 28:6, 28:14, 31:21, 32:5, 33:1, 33:12, 37:15, 38:4, 38:10, 41:18, 43:18, 45:7, 50:8, 50:11, 51:9, 51:18, 60:7, 73:17, 77:22, 94:15, 114:9, 120:23, 121:1, 125:8, 125:11, 126:21, 128:21, 128:22, 134:16, 135:2, 139:2, 141:13, 141:19, 147:10, 147:17, 147:24, 147:25, 149:1, 149:2, 150:9, 166:8, 169:24, 181:9, 182:10, 191:17, 193:4, 201:3, 201:6, 201:9, 201:10</p> <p><b>EXPERTS</b> <sup>[12]</sup> - 14:11, 16:5, 21:16, 54:19, 64:5, 94:14, 94:18, 120:18, 125:25, 128:21, 132:6, 164:12</p> <p><b>EXPERTISE</b> <sup>[4]</sup> - 51:19, 132:4, 165:6, 165:7</p> <p><b>EXPERTS</b> <sup>[121]</sup> - 10:15, 12:5, 12:16, 12:25, 13:4, 16:10, 16:20, 18:9, 20:22, 27:24, 34:8, 34:19, 35:7, 36:6, 36:15, 38:11, 38:15, 41:24, 44:2, 49:25, 51:6, 51:10, 51:13, 57:16, 58:14, 61:5, 64:2, 66:17, 68:11, 69:6, 71:25, 72:20, 75:7, 78:19, 79:3, 80:18, 92:23, 94:1, 94:11, 100:13, 102:22, 110:2, 119:11, 120:7, 121:2, 123:16, 123:17, 124:8, 127:17, 128:2, 130:9, 130:13, 130:14, 131:22, 131:24, 132:12, 132:20, 132:21, 133:9, 138:23, 141:2, 141:18, 142:17, 142:21, 143:2, 143:24, 144:12, 144:13, 144:24, 145:25, 146:3, 146:4, 147:4, 147:21,</p>	<p>148:15, 150:21, 152:13, 152:17, 153:8, 156:1, 156:16, 156:22, 157:1, 158:3, 158:23, 160:7, 160:18, 161:23, 162:21, 163:6, 163:15, 163:16, 164:8, 164:20, 165:7, 168:25, 169:21, 172:3, 177:1, 189:9, 189:21, 191:1, 191:16, 193:1, 193:16, 194:21, 194:22, 195:4, 195:7, 196:2, 196:3, 196:5, 196:12, 198:2, 198:4, 204:8, 204:9, 204:10</p> <p><b>EXPERTS'</b> <sup>[9]</sup> - 54:3, 54:20, 54:23, 55:13, 114:8, 120:2, 127:10, 142:18, 148:17</p> <p><b>EXPLAIN</b> <sup>[3]</sup> - 32:22, 45:25, 124:7</p> <p><b>EXPLAINABLE</b> <sup>[1]</sup> - 36:10</p> <p><b>EXPLANATION</b> <sup>[2]</sup> - 37:7, 108:24</p> <p><b>EXPLANATIONS</b> <sup>[2]</sup> - 23:20, 32:11</p> <p><b>EXPLICITLY</b> <sup>[2]</sup> - 14:19, 56:14</p> <p><b>EXPLORING</b> <sup>[1]</sup> - 99:19</p> <p><b>EXPOSED</b> <sup>[1]</sup> - 137:4</p> <p><b>EXPOSES</b> <sup>[1]</sup> - 106:12</p> <p><b>EXPOSURE</b> <sup>[9]</sup> - 31:9, 68:21, 72:6, 76:15, 109:25, 113:14, 123:18, 137:7, 148:10</p> <p><b>EXPOSURE-YEARS</b> <sup>[1]</sup> - 76:15</p> <p><b>EXPOSURES</b> <sup>[1]</sup> - 98:15</p> <p><b>EXPRESS</b> <sup>[1]</sup> - 4:8</p> <p><b>EXTENSIVELY</b> <sup>[1]</sup> - 77:1</p> <p><b>EXTRA</b> <sup>[1]</sup> - 177:1</p> <p><b>EXTRACTED</b> <sup>[1]</sup> - 40:14</p> <p><b>EXTRAORDINARY</b> <sup>[1]</sup> - 83:3</p> <p><b>EXTRAPOLATE</b> <sup>[1]</sup> - 194:5</p> <p><b>EXTRAPOLATING</b> <sup>[2]</sup> - 21:17, 63:24</p> <p><b>EXTREME</b> <sup>[3]</sup> - 99:7,</p>	<p>100:5, 146:23</p> <p><b>EXTREMELY</b> <sup>[4]</sup> - 16:24, 23:11, 157:12</p> <hr/> <p style="text-align: center;"><b>F</b></p> <hr/> <p><b>FABULOUS</b> <sup>[1]</sup> - 132:24</p> <p><b>FACE</b> <sup>[9]</sup> - 42:10, 52:6, 52:8, 52:14, 57:4, 70:21, 71:10, 120:5, 176:24</p> <p><b>FACT</b> <sup>[61]</sup> - 13:12, 14:16, 14:18, 17:23, 22:17, 33:25, 34:10, 61:25, 63:8, 70:18, 71:2, 78:2, 79:4, 81:22, 83:2, 92:19, 98:13, 102:25, 108:8, 109:11, 109:15, 112:24, 114:12, 119:15, 122:17, 123:16, 128:22, 130:13, 131:9, 134:11, 135:21, 135:23, 136:19, 137:1, 137:10, 138:23, 140:11, 144:13, 147:13, 153:8, 154:3, 156:23, 158:21, 160:1, 163:17, 163:24, 166:4, 166:17, 168:19, 173:21, 175:12, 175:21, 180:10, 186:8, 187:6, 195:3, 196:9, 196:16, 196:22, 202:15, 202:25</p> <p><b>FACTOR</b> <sup>[12]</sup> - 23:8, 31:5, 114:18, 120:17, 154:16, 190:14, 193:16, 203:1, 203:2, 203:4, 203:5, 203:9</p> <p><b>FACTORS</b> <sup>[7]</sup> - 25:17, 67:6, 67:7, 136:20, 154:15, 191:4</p> <p><b>FACTS</b> <sup>[1]</sup> - 130:10</p> <p><b>FAIL</b> <sup>[3]</sup> - 34:7, 89:12, 168:7</p> <p><b>FAILED</b> <sup>[8]</sup> - 13:6, 39:7, 40:25, 110:4, 111:24, 116:13, 129:2</p> <p><b>FAILINGS</b> <sup>[1]</sup> - 89:21</p> <p><b>FAILS</b> <sup>[4]</sup> - 35:10, 63:5, 94:15, 114:9</p> <p><b>FAILURE</b> <sup>[4]</sup> - 41:24, 158:20, 173:25, 193:22</p> <p><b>FAILURES</b> <sup>[1]</sup> -</p>	<p>119:14</p> <p><b>FAIR</b> <sup>[2]</sup> - 35:6, 38:25</p> <p><b>FALL</b> <sup>[2]</sup> - 14:12, 119:11</p> <p><b>FALSE</b> <sup>[1]</sup> - 123:9</p> <p><b>FAMILIAR</b> <sup>[4]</sup> - 6:18, 38:24, 39:4, 116:18</p> <p><b>FAMILIARITY</b> <sup>[1]</sup> - 40:21</p> <p><b>FAR</b> <sup>[2]</sup> - 47:20, 196:10</p> <p><b>FASCINATING</b> <sup>[2]</sup> - 50:25, 53:24</p> <p><b>FASHION</b> <sup>[7]</sup> - 16:9, 45:22, 63:6, 82:20, 92:7, 164:7, 176:10</p> <p><b>FASTER</b> <sup>[1]</sup> - 101:10</p> <p><b>FAVOR</b> <sup>[6]</sup> - 82:8, 157:19, 157:20, 157:23, 160:13, 196:13</p> <p><b>FAVORABLE</b> <sup>[1]</sup> - 178:24</p> <p><b>FAVORED</b> <sup>[3]</sup> - 153:13, 156:24, 158:1</p> <p><b>FAVORS</b> <sup>[1]</sup> - 144:9</p> <p><b>FDA</b> <sup>[66]</sup> - 11:24, 13:16, 55:20, 56:2, 56:11, 58:5, 58:10, 63:14, 74:7, 78:25, 79:1, 79:9, 80:6, 81:22, 82:3, 83:7, 87:8, 87:22, 92:18, 107:9, 107:18, 107:19, 110:21, 122:12, 129:5, 129:18, 134:12, 139:9, 146:5, 146:16, 146:17, 149:2, 149:4, 149:6, 149:17, 149:23, 150:4, 150:25, 151:7, 151:15, 151:16, 151:25, 152:6, 152:16, 157:7, 162:14, 162:15, 162:19, 166:9, 166:17, 168:11, 170:21, 170:23, 187:20, 188:19, 191:18, 192:24, 193:19, 193:20, 193:21, 195:11, 200:8, 203:2, 203:16</p> <p><b>FDA'S</b> <sup>[5]</sup> - 58:15, 82:4, 82:14, 138:24, 193:4</p> <p><b>FE</b> <sup>[1]</sup> - 5:20</p> <p><b>FEDERAL</b> <sup>[3]</sup> - 1:20,</p>	<p>4:10, 13:12</p> <p><b>FELLOW</b> <sup>[3]</sup> - 10:18, 82:5, 106:18</p> <p><b>FELT</b> <sup>[2]</sup> - 141:24, 172:18</p> <p><b>FEW</b> <sup>[8]</sup> - 15:22, 37:19, 51:15, 59:19, 74:8, 89:22, 128:4, 156:25</p> <p><b>FEWER</b> <sup>[1]</sup> - 87:20</p> <p><b>FIBRILLATION</b> <sup>[1]</sup> - 17:15</p> <p><b>FIELD</b> <sup>[3]</sup> - 120:25, 189:10, 189:11</p> <p><b>FIGURE</b> <sup>[4]</sup> - 98:8, 170:23, 184:3, 195:5</p> <p><b>FIGURED</b> <sup>[1]</sup> - 197:15</p> <p><b>FIGURING</b> <sup>[1]</sup> - 176:4</p> <p><b>FILE</b> <sup>[1]</sup> - 142:18</p> <p><b>FILLED</b> <sup>[1]</sup> - 158:9</p> <p><b>FINAL</b> <sup>[6]</sup> - 37:7, 106:25, 107:5, 159:6, 162:13, 162:14</p> <p><b>FINALLY</b> <sup>[1]</sup> - 81:13</p> <p><b>FINANCE</b> <sup>[1]</sup> - 13:16</p> <p><b>FINDINGS</b> <sup>[17]</sup> - 26:14, 35:12, 57:6, 81:24, 82:23, 86:12, 101:23, 106:4, 108:5, 108:9, 113:22, 113:23, 114:3, 116:9, 119:25, 141:1, 199:15</p> <p><b>FINE</b> <sup>[5]</sup> - 9:16, 50:19, 50:20, 96:10, 201:16</p> <p><b>FINISH</b> <sup>[1]</sup> - 205:8</p> <p><b>FINISHED</b> <sup>[1]</sup> - 190:12</p> <p><b>FIRMER</b> <sup>[1]</sup> - 112:20</p> <p><b>FIRST</b> <sup>[29]</sup> - 1:20, 5:23, 8:4, 12:9, 30:18, 33:6, 37:9, 56:8, 61:20, 64:1, 78:21, 85:13, 101:5, 113:3, 132:22, 144:14, 151:3, 158:15, 167:10, 171:4, 174:17, 178:19, 184:6, 190:22, 191:1, 199:10, 201:5, 201:21, 205:7</p> <p><b>FISH</b> <sup>[2]</sup> - 66:4, 131:15</p> <p><b>FIVE</b> <sup>[8]</sup> - 126:12, 162:15, 163:2, 171:8, 188:2, 196:23, 198:25, 199:1</p> <p><b>FLAWED</b> <sup>[4]</sup> - 90:8,</p>
--	---	--	---	---

<p>90:13, 90:20, 92:22  <b>FLAWS</b> [1] - 16:7  <b>FLEXIBLE</b> [2] - 10:7, 95:16  <b>FLICKERING</b> [1] - 53:13  <b>FLIES</b> [1] - 71:10  <b>FLIP</b> [1] - 101:24  <b>FLIPS</b> [1] - 65:21  <b>FLOOR</b> [1] - 1:20  <b>FLOW</b> [2] - 139:16, 139:17  <b>FLY</b> [1] - 70:20  <b>FOCUS</b> [1] - 14:19  <b>FOCUSED</b> [1] - 20:5  <b>FOLD</b> [2] - 173:24, 179:1  <b>FOLLOW</b> [4] - 16:2, 77:9, 97:22, 171:3  <b>FOLLOWED</b> [2] - 44:14, 193:1  <b>FOLLOWING</b> [2] - 26:21, 104:16  <b>FOLLOWS</b> [2] - 152:8, 193:1  <b>FOLLY</b> [1] - 61:25  <b>FORCE</b> [1] - 131:14  <b>FORGOING</b> [1] - 206:1  <b>FOREST</b> [1] - 193:3  <b>FORGET</b> [2] - 133:15, 146:16  <b>FORGIVE</b> [1] - 13:24  <b>FORGOTTEN</b> [1] - 97:6  <b>FORM</b> [1] - 180:24  <b>FORMAL</b> [1] - 40:12  <b>FORMED</b> [2] - 90:23, 170:20  <b>FORMING</b> [1] - 117:15  <b>FORMS</b> [1] - 158:8  <b>FORMULA</b> [1] - 165:4  <b>FORTH</b> [1] - 196:6  <b>FORTUNATELY</b> [2] - 37:8, 79:18  <b>FOUNDATION</b> [1] - 112:7  <b>FOUR</b> [12] - 22:17, 97:18, 107:22, 171:7, 171:10, 181:14, 181:15, 188:8, 188:11, 188:14, 199:25, 200:6  <b>FOUR-WEEK</b> [1] - 181:14  <b>FOURTH</b> [1] - 161:11  <b>FOUTZ</b> [2] - 5:24  <b>FRAGILE</b> [14] -</p>	<p>100:25, 101:12, 101:14, 101:19, 103:4, 103:12, 112:7, 122:14, 123:4, 125:3, 138:19, 138:20, 143:16  <b>FRAGILITY</b> [4] - 101:22, 103:11, 106:7, 106:12  <b>FRANKLY</b> [10] - 139:1, 167:24, 169:3, 169:4, 171:13, 177:16, 194:22, 195:8, 198:7, 198:11  <b>FREED</b> [1] - 184:14  <b>FREEZER</b> [1] - 188:23  <b>FRENZY</b> [1] - 13:22  <b>FREQUENCY</b> [1] - 56:3  <b>FREQUENT</b> [1] - 100:4  <b>FREQUENTLY</b> [1] - 132:17  <b>FRIEND</b> [1] - 4:20  <b>FRIENDLY</b> [1] - 71:7  <b>FRITO</b> [1] - 55:13  <b>FRITO-LAY</b> [1] - 55:13  <b>FRONT</b> [3] - 15:25, 21:15, 47:19  <b>FRUGAL</b> [1] - 101:13  <b>FRYE</b> [16] - 6:20, 7:17, 9:8, 14:2, 16:4, 16:14, 53:22, 54:5, 54:6, 54:14, 59:9, 120:20, 120:21, 130:7, 142:18, 169:3  <b>FULL</b> [2] - 80:20, 162:13  <b>FULLY</b> [1] - 157:13  <b>FUNCTION</b> [1] - 105:20  <b>FUNDAMENTALLY</b> [2] - 70:25, 100:6  <b>FURBERG</b> [3] - 144:25, 192:24, 193:2</p>	<p><b>GENERAL</b> [29] - 10:13, 11:9, 16:9, 16:20, 16:23, 21:1, 21:17, 35:7, 36:14, 38:10, 41:23, 44:2, 48:15, 51:12, 51:17, 57:16, 60:16, 72:7, 120:2, 120:15, 147:23, 192:5, 192:9, 201:2, 201:3, 201:6, 201:8, 201:10, 201:13  <b>GENERALLY</b> [15] - 24:8, 29:5, 30:19, 41:20, 52:1, 53:20, 54:25, 61:22, 71:19, 119:12, 120:19, 120:24, 121:4, 123:13, 125:11  <b>GENERATE</b> [5] - 18:2, 27:21, 71:21, 99:16, 99:21  <b>GENERATED</b> [2] - 100:10, 100:25  <b>GENERATES</b> [1] - 174:8  <b>GENERATING</b> [1] - 100:1  <b>GENERIC</b> [1] - 14:1  <b>GEORGE</b> [2] - 2:16, 8:19  <b>GERMANE</b> [1] - 12:6  <b>GIVEN</b> [6] - 40:10, 42:15, 55:24, 134:18, 148:10, 192:12  <b>GLAXO</b> [2] - 12:12, 202:22  <b>GLAXO'S</b> [3] - 11:25, 12:10, 16:19  <b>GLAXOSMITHKLIN</b> <b>E</b> [3] - 8:17, 10:10, 177:6  <b>GLITAZONES</b> [1] - 174:19  <b>GLOBAL</b> [3] - 145:17, 145:18, 145:20  <b>GLUCOSE</b> [2] - 85:5, 173:18  <b>GLYCEMIA</b> [1] - 170:17  <b>GLYCEMIC</b> [2] - 172:17, 186:19  <b>GOD</b> [1] - 59:7  <b>GODFATHER</b> [1] - 198:12  <b>GOLD</b> [9] - 34:4, 35:16, 36:20, 65:16, 71:17, 71:23, 73:22, 93:24, 112:3  <b>GOTTO</b> [2] - 182:11,</p>	<p>182:12  <b>GOVERNMENTAL</b> [1] - 152:14  <b>GOVERNS</b> [1] - 145:19  <b>GRADY</b> [1] - 55:12  <b>GRAHAM</b> [4] - 150:25, 153:19, 153:22, 194:7  <b>GRAND</b> [1] - 2:13  <b>GRANT</b> [3] - 5:23, 131:9, 177:5  <b>GRANTED</b> [1] - 73:4  <b>GRAPHS</b> [1] - 128:24  <b>GRAPPLED</b> [1] - 13:15  <b>GRATITUDE</b> [1] - 4:9  <b>GREAT</b> [9] - 43:6, 62:7, 126:10, 127:5, 173:11, 186:24, 201:19, 202:3, 202:7  <b>GREATER</b> [7] - 108:22, 137:3, 137:4, 152:10, 178:4, 179:18, 193:15  <b>GREATEST</b> [2] - 22:15, 124:15  <b>GREEN</b> [1] - 138:22  <b>GREENS</b> [1] - 140:22  <b>GROUNDS</b> [3] - 14:12, 57:17, 78:21  <b>GROUP</b> [12] - 17:24, 18:12, 18:13, 37:22, 105:15, 129:16, 140:14, 146:13, 162:11, 171:6, 172:7, 172:24  <b>GROUPING</b> [1] - 19:24  <b>GROUPS</b> [3] - 105:13, 146:18, 153:1  <b>GSK</b> [45] - 9:6, 9:19, 106:25, 107:10, 107:17, 107:19, 110:21, 129:23, 131:9, 131:11, 131:13, 135:13, 135:19, 136:22, 136:25, 137:10, 138:1, 139:8, 145:16, 156:7, 159:23, 160:12, 161:12, 162:13, 164:21, 170:19, 173:16, 179:4, 179:14, 179:20, 183:23, 185:14, 186:1, 186:2, 186:8, 186:9, 186:10, 186:11, 186:17, 188:6, 189:2, 193:20,</p>	<p>196:16, 197:12  <b>GSK'S</b> [18] - 37:14, 127:10, 135:19, 137:21, 138:23, 139:13, 149:18, 159:14, 161:15, 167:19, 170:6, 178:10, 178:11, 184:9, 185:8, 187:19, 196:25, 198:8  <b>GUESS</b> [3] - 25:19, 55:19, 61:22  <b>GUESSWORK</b> [2] - 15:12, 125:14  <b>GUIDELINES</b> [1] - 37:12  <b>GUIDING</b> [1] - 58:9  <b>GUISE</b> [1] - 79:3  <b>GUSSACK</b> [9] - 2:15, 8:16, 8:17, 9:6, 10:2, 204:14, 204:19, 204:21, 205:4  <b>GUY</b> [2] - 130:24, 184:1  <b>GUYS</b> [3] - 47:18, 65:4, 184:20</p>
<b>H</b>				
<p><b>H-A-R-D-A-W-A-Y</b> [1] - 6:8  <b>HABERMAN</b> [1] - 203:16  <b>HAFFNER</b> [4] - 188:13, 189:15, 189:19  <b>HALF</b> [7] - 9:10, 22:5, 83:14, 108:19, 178:6, 194:11  <b>HALFWAY</b> [1] - 32:25  <b>HALL</b> [1] - 7:10  <b>HALLMARK</b> [5] - 37:23, 94:9, 94:10, 114:7, 114:12  <b>HALPERN</b> [80] - 2:20, 8:18, 10:4, 10:8, 10:10, 11:4, 11:18, 14:6, 15:21, 16:17, 19:10, 26:11, 29:17, 39:7, 39:19, 40:19, 45:9, 46:21, 48:4, 50:4, 50:18, 50:22, 51:3, 52:23, 53:6, 53:8, 54:1, 54:12, 55:4, 55:7, 55:11, 55:17, 57:8, 65:14, 70:15, 73:16, 78:8, 83:20, 83:25, 86:16,</p>				

<p>91:2, 95:1, 96:13, 96:15, 97:4, 97:12, 97:15, 97:19, 97:23, 98:1, 98:6, 103:22, 104:2, 104:7, 104:12, 104:14, 104:18, 111:12, 115:20, 119:5, 125:24, 126:23, 128:5, 128:23, 137:23, 144:11, 147:15, 155:9, 160:17, 164:24, 176:19, 193:25, 195:4, 198:20, 198:24, 199:3, 199:8, 199:10, 201:12, 201:16</p> <p><b>HALPERN'S</b> [2] - 127:7, 130:2</p> <p><b>HAMILTON</b> [1] - 2:16</p> <p><b>HAMMERED</b> [1] - 134:12</p> <p><b>HAND</b> [14] - 7:13, 7:16, 11:6, 15:15, 103:15, 136:14, 157:16, 157:17, 157:25, 174:23, 177:19, 180:3, 180:10, 180:12</p> <p><b>HANDLED</b> [1] - 6:9</p> <p><b>HANDS</b> [2] - 13:13, 114:16</p> <p><b>HANG</b> [1] - 96:4</p> <p><b>HAPPY</b> [10] - 55:8, 128:14, 132:12, 170:3, 178:15, 179:6, 179:12, 181:24, 181:25, 183:19</p> <p><b>HARD</b> [7] - 15:16, 59:8, 59:20, 84:6, 102:20, 114:17, 156:5</p> <p><b>HARDAWAY</b> [1] - 6:7</p> <p><b>HARDEST</b> [1] - 112:17</p> <p><b>HARM</b> [9] - 59:22, 62:11, 62:12, 66:24, 81:12, 83:1, 102:23, 193:15, 194:8</p> <p><b>HARMFUL</b> [3] - 65:5, 81:7, 81:14</p> <p><b>HARRISON</b> [1] - 3:3</p> <p><b>HASTY</b> [1] - 184:15</p> <p><b>HAZARD</b> [2] - 154:22, 155:3</p> <p><b>HDL</b> [17] - 23:3, 62:20, 67:18, 170:2, 178:21, 178:25, 179:15, 179:17, 179:25, 180:2, 180:3, 180:10, 180:14,</p>	<p>180:17, 180:19, 182:7, 190:8</p> <p><b>HEAD</b> [4] - 13:3, 64:10, 77:25, 152:3</p> <p><b>HEADED</b> [1] - 152:16</p> <p><b>HEADING</b> [1] - 185:2</p> <p><b>HEALTH</b> [3] - 118:8, 122:24, 179:20</p> <p><b>HEALTHY</b> [3] - 91:10, 159:23, 160:4</p> <p><b>HEAR</b> [19] - 9:24, 11:3, 12:4, 17:9, 33:25, 34:3, 35:11, 36:24, 73:20, 74:6, 115:14, 135:11, 147:25, 148:16, 149:3, 175:11, 181:8, 194:19, 204:9</p> <p><b>HEARD</b> [18] - 38:16, 38:21, 38:23, 54:8, 56:23, 82:3, 119:11, 127:10, 134:11, 139:25, 147:4, 151:25, 157:8, 159:1, 160:16, 185:6, 193:25, 201:5</p> <p><b>HEARING</b> [10] - 1:16, 14:3, 16:13, 17:14, 26:25, 43:18, 58:13, 79:9, 135:2, 205:21</p> <p><b>HEARINGS</b> [2] - 36:25, 83:3</p> <p><b>HEART</b> [239] - 11:10, 11:13, 12:17, 16:21, 16:22, 16:23, 16:25, 17:2, 17:6, 17:8, 17:20, 17:21, 18:6, 18:10, 18:11, 18:14, 18:19, 19:12, 19:15, 19:23, 20:2, 20:6, 20:16, 20:23, 21:1, 21:3, 21:4, 21:8, 21:12, 21:22, 21:23, 21:25, 22:3, 22:5, 22:7, 22:13, 22:16, 22:19, 22:22, 22:24, 23:1, 23:3, 23:11, 23:12, 23:16, 23:18, 23:23, 24:6, 24:7, 24:8, 24:9, 24:12, 24:17, 24:24, 24:25, 25:13, 25:21, 25:25, 26:14, 28:10, 28:15, 34:6, 34:8, 35:4, 35:5, 35:17, 37:21, 39:2, 40:16, 40:25, 41:15, 42:6, 43:14, 45:16, 46:22, 47:7, 48:7, 49:10, 49:15, 50:6, 54:21, 56:3, 59:2,</p>	<p>59:7, 59:14, 59:19, 60:1, 60:5, 60:9, 61:12, 61:15, 61:19, 63:3, 63:9, 63:16, 63:25, 64:11, 64:13, 64:25, 65:20, 66:13, 66:19, 67:3, 67:9, 67:14, 67:18, 68:1, 68:4, 68:13, 68:22, 69:3, 70:16, 71:1, 71:8, 71:10, 72:2, 74:1, 74:5, 74:9, 74:12, 74:16, 74:21, 74:24, 75:9, 75:18, 75:21, 76:3, 76:9, 77:12, 77:13, 77:21, 78:13, 78:14, 78:17, 81:7, 81:10, 81:12, 81:15, 81:25, 82:25, 85:18, 87:1, 87:3, 87:18, 87:20, 88:1, 88:4, 88:8, 88:12, 88:14, 88:18, 92:13, 92:24, 92:25, 93:2, 100:21, 101:6, 102:15, 105:6, 105:9, 105:11, 105:14, 105:19, 108:6, 108:19, 108:24, 108:25, 109:6, 109:24, 110:24, 113:9, 113:23, 114:2, 114:18, 114:24, 115:2, 115:5, 115:8, 115:10, 116:9, 116:14, 119:8, 120:20, 121:7, 121:14, 121:15, 121:19, 121:22, 122:5, 122:11, 122:13, 122:25, 123:6, 123:15, 123:19, 123:22, 124:13, 124:16, 124:18, 129:2, 134:2, 134:3, 139:15, 139:17, 139:18, 153:24, 154:13, 155:19, 155:22, 155:24, 158:20, 161:20, 161:22, 163:2, 167:22, 167:23, 173:25, 174:24, 181:23, 185:22, 185:25, 186:6, 186:14, 193:17, 193:22, 194:25, 195:20, 196:23, 202:14, 203:14, 203:18, 203:20</p>	<p><b>HECK</b> [1] - 96:24</p> <p><b>HEDBLAD</b> [1] - 178:6</p> <p><b>HELD</b> [3] - 29:4, 51:16, 57:18</p> <p><b>HELLO</b> [1] - 8:15</p> <p><b>HELP</b> [5] - 44:17, 79:20, 102:15, 170:25, 205:14</p> <p><b>HENDERSON</b> [1] - 129:9</p> <p><b>HENDERSON'S</b> [1] - 129:9</p> <p><b>HENNEKENS</b> [1] - 204:15</p> <p><b>HENRY</b> [2] - 6:6</p> <p><b>HETEROGENEITY</b> [2] - 99:8, 99:9</p> <p><b>HIDDEN</b> [1] - 198:1</p> <p><b>HIERARCHY</b> [7] - 35:23, 72:12, 72:13, 73:2, 75:3, 94:3, 119:19</p> <p><b>HIGH</b> [17] - 16:25, 17:2, 23:5, 23:11, 23:25, 24:2, 24:5, 59:6, 65:18, 76:24, 85:5, 159:17, 163:22, 166:7, 169:18, 174:18, 190:5</p> <p><b>HIGHER</b> [17] - 22:7, 26:6, 29:4, 46:22, 47:1, 47:10, 47:11, 71:8, 134:22, 145:9, 148:21, 175:25, 186:13, 193:15</p> <p><b>HIGHEST</b> [2] - 124:18, 133:11</p> <p><b>HIGHLIGHTED</b> [1] - 120:7</p> <p><b>HILL</b> [36] - 37:5, 37:10, 37:17, 38:2, 38:11, 38:14, 38:16, 38:18, 38:22, 39:8, 39:20, 39:22, 40:2, 40:8, 40:11, 40:12, 40:15, 40:20, 41:2, 41:5, 41:14, 60:13, 60:19, 60:21, 61:1, 114:19, 164:22, 165:2, 165:9, 167:10, 167:13, 190:14, 191:4, 200:17, 203:15</p> <p><b>HIMSELF</b> [5] - 79:25, 80:14, 82:13, 100:24, 103:6</p> <p><b>HINTS</b> [1] - 125:12</p> <p><b>HISTORY</b> [2] - 22:25, 151:20</p> <p><b>HOC</b> [3] - 82:11,</p>	<p>91:24, 92:5</p> <p><b>HOLD</b> [3] - 29:17, 58:17, 95:4</p> <p><b>HOLDING</b> [2] - 89:10, 130:15</p> <p><b>HOLES</b> [2] - 30:7, 61:7</p> <p><b>HOLLANDER</b> [1] - 64:1</p> <p><b>HOLMAN</b> [2] - 159:20, 159:24</p> <p><b>HOME</b> [1] - 198:19</p> <p><b>HONOR</b> [18] - 4:4, 8:1, 8:10, 8:16, 8:24, 9:3, 9:6, 9:10, 10:3, 12:7, 16:12, 126:10, 126:17, 167:6, 194:12, 204:14, 204:19, 204:22</p> <p><b>HONORABLE</b> [117] - 1:13, 1:14, 4:2, 4:6, 4:8, 5:20, 5:22, 5:23, 6:1, 6:2, 6:5, 6:6, 6:7, 6:9, 7:8, 7:21, 8:11, 8:15, 8:21, 8:25, 9:4, 9:15, 10:6, 10:19, 10:21, 10:24, 11:1, 11:17, 14:4, 15:18, 15:20, 16:15, 50:15, 50:20, 50:24, 51:1, 52:17, 52:24, 53:4, 53:7, 53:23, 54:10, 55:2, 55:5, 55:9, 55:15, 83:18, 83:23, 94:24, 95:2, 95:4, 95:6, 95:9, 95:18, 95:21, 95:25, 96:2, 96:13, 96:21, 96:25, 97:2, 97:10, 97:13, 97:17, 97:21, 97:24, 98:4, 98:5, 103:20, 103:23, 103:25, 104:5, 104:8, 104:10, 104:13, 104:15, 125:20, 126:4, 126:6, 126:11, 126:15, 126:18, 126:20, 127:1, 127:5, 128:7, 128:8, 128:10, 136:10, 136:13, 148:2, 152:22, 166:21, 166:24, 167:3, 167:5, 172:5, 172:23, 173:2, 173:7, 173:13, 174:3, 174:7, 198:14, 198:21, 199:1, 199:5, 204:4, 204:17, 204:20, 204:23, 205:10, 205:11, 205:12,</p>
---	---	--	--	---

<p>205:19  <b>HONORS</b> <sup>[16]</sup> - 4:5, 8:12, 8:13, 13:11, 67:2, 89:14, 95:24, 96:15, 124:21, 127:7, 128:14, 195:8, 198:3, 200:14, 202:12, 204:16  <b>HOPE</b> <sup>[9]</sup> - 10:15, 16:12, 16:13, 89:15, 97:20, 107:15, 136:16, 197:4, 201:17  <b>HOPEFULLY</b> <sup>[2]</sup> - 79:14, 95:8  <b>HORIZONTAL</b> <sup>[1]</sup> - 180:1  <b>HORMONE</b> <sup>[1]</sup> - 100:9  <b>HORRIBLE</b> <sup>[1]</sup> - 138:7  <b>HOSPITALIZATION</b> <sup>[1]</sup> - 78:12  <b>HOST</b> <sup>[3]</sup> - 67:12, 110:22  <b>HOT</b> <sup>[2]</sup> - 136:10, 136:12  <b>HOUR</b> <sup>[3]</sup> - 9:22, 39:14, 126:7  <b>HOURS</b> <sup>[1]</sup> - 9:10  <b>HOUSEKEEPING</b> <sup>[1]</sup> - 96:19  <b>HOUSTON</b> <sup>[1]</sup> - 6:6  <b>HSBC</b> <sup>[1]</sup> - 2:21  <b>HUGE</b> <sup>[3]</sup> - 153:6, 167:25, 191:10  <b>HUGELY</b> <sup>[2]</sup> - 108:4, 200:8  <b>HUMAN</b> <sup>[2]</sup> - 67:21, 185:24  <b>HUNDREDS</b> <sup>[6]</sup> - 73:24, 73:25, 131:20, 165:16, 165:17, 194:23  <b>HYPERTENSION</b> <sup>[1]</sup> - 23:6  <b>HYPOTHESES</b> <sup>[1]</sup> - 189:25  <b>HYPOTHESIS</b> <sup>[11]</sup> - 18:2, 27:21, 52:1, 53:20, 59:13, 68:12, 70:19, 99:21, 100:1, 124:13, 124:19  <b>HYPOTHESIS-GENERATING</b> <sup>[1]</sup> - 100:1</p>	<p><b>ICT</b> <sup>[14]</sup> - 74:7, 92:18, 135:18, 135:24, 137:17, 138:23, 138:24, 144:15, 145:24, 154:3, 154:9, 165:14, 165:20, 191:9  <b>ICT-42</b> <sup>[1]</sup> - 129:4  <b>IDEA</b> <sup>[2]</sup> - 36:12, 171:18  <b>IDEALLY</b> <sup>[1]</sup> - 85:16  <b>IDENTIFIED</b> <sup>[5]</sup> - 27:18, 60:21, 75:16, 88:13, 115:7  <b>IDENTIFY</b> <sup>[4]</sup> - 38:17, 59:12, 124:12, 135:21  <b>IDENTIFYING</b> <sup>[1]</sup> - 46:8  <b>IGNORE</b> <sup>[3]</sup> - 70:17, 109:3, 145:25  <b>IGNORES</b> <sup>[1]</sup> - 40:22  <b>IL-6</b> <sup>[1]</sup> - 188:11  <b>ILLINOIS</b> <sup>[1]</sup> - 5:25  <b>ILLUSTRATED</b> <sup>[1]</sup> - 105:2  <b>IMAGINE</b> <sup>[4]</sup> - 124:25, 163:2, 175:14, 194:16  <b>IMMENSE</b> <sup>[1]</sup> - 205:13  <b>IMMERSED</b> <sup>[1]</sup> - 39:11  <b>IMPACT</b> <sup>[7]</sup> - 49:22, 63:14, 69:18, 167:23, 175:19, 194:15  <b>IMPACTS</b> <sup>[1]</sup> - 170:18  <b>IMPAIRED</b> <sup>[1]</sup> - 173:18  <b>IMPLICATION</b> <sup>[1]</sup> - 127:19  <b>IMPLY</b> <sup>[1]</sup> - 186:21  <b>IMPORT</b> <sup>[1]</sup> - 202:10  <b>IMPORTANCE</b> <sup>[3]</sup> - 34:9, 35:1, 180:24  <b>IMPORTANT</b> <sup>[37]</sup> - 23:14, 26:24, 33:17, 37:18, 38:1, 49:19, 59:4, 67:10, 67:20, 79:21, 80:11, 84:17, 89:15, 95:12, 104:21, 120:17, 124:6, 127:9, 127:15, 136:17, 151:11, 155:5, 156:21, 158:6, 159:14, 159:15, 162:20, 164:4, 165:10, 168:10, 168:22, 168:25, 169:1, 188:25, 193:2,</p>	<p>199:12, 199:14  <b>IMPORTANTLY</b> <sup>[6]</sup> - 136:2, 154:11, 168:9, 179:4, 183:24, 195:13  <b>IMPOSSIBLE</b> <sup>[1]</sup> - 102:21  <b>IMPRESSION</b> <sup>[3]</sup> - 47:18, 53:10, 127:22  <b>IMPRESSIONS</b> <sup>[3]</sup> - 15:3, 43:20, 53:9  <b>IMPROVED</b> <sup>[1]</sup> - 186:19  <b>IMPROVEMENTS</b> <sup>[1]</sup> - 170:17  <b>INADEQUATE</b> <sup>[4]</sup> - 15:10, 30:1, 52:8, 125:9  <b>INADEQUATELY</b> <sup>[1]</sup> - 158:18  <b>INADMISSIBLE</b> <sup>[5]</sup> - 52:2, 53:21, 54:4, 125:12  <b>INADVERTENTLY</b> <sup>[1]</sup> - 111:6  <b>INAPPROPRIATE</b> <sup>[2]</sup> - 81:20, 148:13  <b>INCIDENCE</b> <sup>[1]</sup> - 153:23  <b>INCLUDE</b> <sup>[9]</sup> - 76:13, 76:15, 76:16, 76:20, 76:24, 91:15, 100:17, 109:16, 142:8  <b>INCLUDED</b> <sup>[9]</sup> - 92:22, 93:14, 109:7, 109:12, 110:1, 135:9, 142:4, 154:4, 174:19  <b>INCLUDES</b> <sup>[2]</sup> - 19:5, 91:16  <b>INCLUDING</b> <sup>[18]</sup> - 4:16, 6:19, 35:8, 38:9, 52:11, 81:15, 85:25, 86:4, 113:7, 121:15, 139:4, 145:21, 148:19, 148:22, 166:6, 190:2  <b>INCLUSION</b> <sup>[1]</sup> - 90:7  <b>INCLUSIONARY</b> <sup>[1]</sup> - 99:2  <b>INCOMPATIBLE</b> <sup>[1]</sup> - 21:19  <b>INCOMPLETE</b> <sup>[4]</sup> - 30:5, 42:11, 52:8, 52:14  <b>INCONCLUSIVE</b> <sup>[9]</sup> - 112:7, 122:14, 122:21, 123:7, 123:8, 123:10, 123:11  <b>INCONSISTENCIES</b> <sup>[1]</sup> - 130:2</p>	<p><b>INCONSISTENCY</b> <sup>[4]</sup> - 113:23, 114:11, 124:5, 200:13  <b>INCONSISTENT</b> <sup>[19]</sup> - 35:21, 70:25, 88:21, 93:23, 94:6, 94:17, 108:14, 109:8, 112:6, 112:11, 119:21, 119:22, 120:1, 120:6, 120:13, 122:14, 122:21, 123:4, 125:4  <b>INCONTROVERTIB LE</b> <sup>[1]</sup> - 83:2  <b>INCONVENIENT</b> <sup>[1]</sup> - 70:18  <b>INCORRECT</b> <sup>[1]</sup> - 163:13  <b>INCREASE</b> <sup>[69]</sup> - 23:5, 27:1, 27:12, 31:4, 56:5, 60:5, 61:9, 63:9, 68:7, 68:14, 68:20, 69:14, 69:25, 71:9, 76:3, 78:13, 86:14, 86:18, 87:4, 88:1, 111:9, 129:2, 133:1, 138:8, 138:9, 139:15, 151:23, 153:21, 154:9, 155:15, 155:21, 160:5, 166:1, 170:10, 171:8, 171:17, 171:19, 173:24, 174:1, 175:9, 175:15, 175:20, 175:22, 175:24, 175:25, 176:2, 176:6, 178:5, 180:8, 180:10, 180:13, 180:16, 180:17, 184:25, 187:3, 187:8, 187:9, 187:10, 187:11, 187:12, 187:13, 189:6, 190:4, 202:5, 202:12, 203:19  <b>INCREASED</b> <sup>[83]</sup> - 23:1, 23:3, 23:15, 23:21, 28:12, 28:16, 29:13, 30:10, 30:11, 30:20, 30:22, 30:25, 31:1, 31:6, 31:8, 31:11, 31:17, 32:1, 32:8, 32:21, 34:14, 34:23, 56:3, 56:9, 56:13, 56:15, 58:3, 62:4, 63:3, 66:5, 66:7, 66:9, 66:10, 69:8, 72:5, 74:16, 74:24, 75:1, 75:9, 75:17, 75:21, 76:9, 78:11, 82:24, 84:15, 88:8,</p>	<p>88:13, 88:18, 90:3, 92:13, 105:2, 105:6, 108:6, 108:15, 108:21, 109:6, 110:3, 110:16, 110:24, 111:25, 113:1, 113:13, 114:23, 116:6, 119:10, 123:21, 137:19, 140:5, 140:8, 146:8, 146:9, 148:18, 150:14, 153:19, 161:2, 176:12, 188:24, 193:13, 199:22, 202:14, 202:18, 203:21, 204:1  <b>INCREASES</b> <sup>[43]</sup> - 22:21, 22:24, 23:4, 31:12, 57:2, 59:16, 60:4, 60:7, 60:8, 63:2, 63:11, 63:12, 64:18, 65:10, 65:20, 66:4, 66:6, 68:25, 84:10, 84:11, 111:13, 119:8, 124:15, 124:20, 136:7, 139:3, 151:3, 153:23, 155:14, 158:22, 167:18, 167:22, 169:23, 170:4, 178:18, 178:25, 190:1, 190:3, 190:5, 193:12  <b>INCREASING</b> <sup>[4]</sup> - 64:23, 66:24, 193:22  <b>INCREASINGLY</b> <sup>[1]</sup> - 141:9  <b>INCREDIBLE</b> <sup>[1]</sup> - 78:23  <b>INCREDIBLY</b> <sup>[1]</sup> - 167:25  <b>INDEED</b> <sup>[1]</sup> - 54:14  <b>INDEPENDENT</b> <sup>[6]</sup> - 77:17, 92:7, 98:14, 108:5, 135:1, 152:15  <b>INDICATE</b> <sup>[1]</sup> - 25:25  <b>INDICATED</b> <sup>[3]</sup> - 170:16, 173:15, 187:16  <b>INDICATING</b> <sup>[1]</sup> - 180:14  <b>INDICATION</b> <sup>[4]</sup> - 52:11, 102:22, 102:24, 108:20  <b>INDIVIDUAL</b> <sup>[16]</sup> - 16:5, 16:10, 23:7, 44:20, 45:6, 48:23, 49:23, 73:5, 133:23, 133:25, 143:13, 153:10, 160:19, 164:9, 164:10, 175:18</p>
<b>I</b>				
<p><b>ICE</b> <sup>[2]</sup> - 27:6, 27:7</p>				

<p><b>INDIVIDUALLY</b> [1] - 126:1</p> <p><b>INDIVIDUALS</b> [2] - 137:4, 137:5</p> <p><b>INDUCED</b> [6] - 24:17, 26:1, 62:21, 63:2, 66:2, 70:17</p> <p><b>INDULGE</b> [1] - 53:14</p> <p><b>INERT</b> [3] - 83:17, 87:13, 87:14</p> <p><b>INESCAPABLE</b> [1] - 62:20</p> <p><b>INFARCT</b> [1] - 18:23</p> <p><b>INFARCTION</b> [39] - 17:8, 17:22, 19:1, 20:8, 64:19, 110:17, 134:1, 134:8, 134:9, 137:2, 137:20, 139:4, 139:5, 139:6, 139:7, 139:10, 139:19, 139:22, 140:7, 140:11, 140:13, 140:20, 140:22, 140:23, 143:8, 145:5, 148:23, 149:11, 150:15, 150:18, 151:20, 151:24, 154:21, 156:14, 158:14, 158:22, 162:9, 194:10, 199:16</p> <p><b>INFARCTIONS</b> [8] - 155:18, 156:10, 162:8, 162:16, 174:2, 182:13, 192:6</p> <p><b>INFECTED</b> [2] - 23:24, 36:21</p> <p><b>INFECTIOUS</b> [1] - 39:16</p> <p><b>INFER</b> [1] - 101:1</p> <p><b>INFERENCE</b> [7] - 29:22, 71:20, 101:14, 101:18, 103:14, 112:21, 169:16</p> <p><b>INFERENCES</b> [3] - 32:13, 130:20, 165:5</p> <p><b>INFERIOR</b> [1] - 94:18</p> <p><b>INFERRING</b> [1] - 71:24</p> <p><b>INFLAMMATION</b> [3] - 185:12, 185:13, 185:20</p> <p><b>INFLAMMATORY</b> [6] - 59:18, 67:7, 185:11, 185:15, 185:16, 189:17</p> <p><b>INFORMATION</b> [32] - 13:24, 18:14, 19:8, 19:14, 20:2, 29:8, 29:12, 42:11, 42:17, 44:17, 45:3, 52:8,</p>	<p>52:14, 113:11, 141:3, 145:22, 148:15, 150:13, 157:5, 159:9, 159:13, 160:22, 161:13, 162:1, 162:4, 172:10, 172:19, 178:5, 181:13, 193:14, 196:5, 197:19</p> <p><b>INFORMED</b> [2] - 129:8, 165:5</p> <p><b>INHERENT</b> [4] - 94:5, 99:10, 108:12, 112:15</p> <p><b>INHERENTLY</b> [1] - 99:25</p> <p><b>INITIAL</b> [1] - 47:23</p> <p><b>INNOCENCE</b> [2] - 65:1, 65:2</p> <p><b>INQUIRIES</b> [1] - 37:12</p> <p><b>INQUIRY</b> [3] - 33:23, 71:13, 169:3</p> <p><b>INSIDE</b> [2] - 15:21, 15:22</p> <p><b>INSIGNIFICANT</b> [1] - 56:5</p> <p><b>INSIST</b> [1] - 29:10</p> <p><b>INSPIRED</b> [2] - 15:12, 125:15</p> <p><b>INSTANCE</b> [5] - 134:18, 145:2, 158:16, 182:2, 184:25</p> <p><b>INSTANCES</b> [5] - 49:24, 80:23, 146:24, 158:1, 194:24</p> <p><b>INSTEAD</b> [8] - 7:10, 62:11, 89:7, 119:16, 125:21, 127:23, 180:6, 183:18</p> <p><b>INSTITUTE</b> [1] - 167:7</p> <p><b>INSUFFICIENT</b> [6] - 41:8, 41:10, 50:7, 57:17, 102:14, 123:7</p> <p><b>INSULIN</b> [2] - 159:8, 173:17</p> <p><b>INSURANCE</b> [1] - 115:3</p> <p><b>INTEGRATED</b> [1] - 156:9</p> <p><b>INTENDED</b> [3] - 59:9, 134:4, 175:4</p> <p><b>INTENSE</b> [1] - 174:15</p> <p><b>INTENTIONALLY</b> [1] - 39:5</p> <p><b>INTEREST</b> [2] - 80:3, 104:25</p> <p><b>INTERESTED</b> [1] - 189:2</p>	<p><b>INTERESTING</b> [6] - 22:10, 87:5, 105:23, 109:2, 130:12, 169:17</p> <p><b>INTERESTINGLY</b> [1] - 116:13</p> <p><b>INTERFACING</b> [1] - 52:20</p> <p><b>INTERIM</b> [6] - 72:22, 73:18, 79:7, 107:5, 144:20, 145:2</p> <p><b>INTERJECT</b> [1] - 128:16</p> <p><b>INTERNAL</b> [12] - 118:19, 135:19, 145:17, 159:7, 160:11, 170:5, 179:14, 180:21, 183:25, 189:12, 189:24, 190:21</p> <p><b>INTERNATIONALL</b> Y [1] - 131:18</p> <p><b>INTERNET</b> [1] - 80:7</p> <p><b>INTERPRET</b> [2] - 23:22, 84:7</p> <p><b>INTERPRETATION</b> [4] - 79:23, 101:13, 112:1, 112:6</p> <p><b>INTERPRETED</b> [1] - 103:13</p> <p><b>INTERRUPT</b> [1] - 11:2</p> <p><b>INTERVALS</b> [2] - 33:10, 143:6</p> <p><b>INTERVENTION</b> [1] - 60:3</p> <p><b>INTRIGUING</b> [1] - 170:9</p> <p><b>INTRODUCE</b> [1] - 8:8</p> <p><b>INVESTIGATE</b> [1] - 18:5</p> <p><b>INVESTIGATED</b> [1] - 36:9</p> <p><b>INVESTIGATING</b> [1] - 88:11</p> <p><b>INVESTIGATION</b> [1] - 83:7</p> <p><b>INVESTIGATORS</b> [6] - 113:20, 158:9, 159:25, 165:12, 165:16, 166:5</p> <p><b>INVITED</b> [1] - 4:17</p> <p><b>INVOKING</b> [1] - 111:15</p> <p><b>INVOLVE</b> [2] - 42:18, 111:14</p> <p><b>INVOLVED</b> [4] - 48:24, 58:15, 81:2, 92:19</p> <p><b>INVOLVES</b> [1] -</p>	<p>58:21</p> <p><b>INVOLVING</b> [1] - 91:19</p> <p><b>IRRELEVANT</b> [2] - 12:24, 13:23</p> <p><b>ISCHEMIA</b> [17] - 136:24, 136:25, 137:1, 138:22, 138:25, 139:5, 139:7, 139:9, 139:11, 139:17, 139:20, 139:21, 140:6, 140:12, 140:13, 192:14</p> <p><b>ISCHEMIC</b> [41] - 17:12, 17:16, 17:17, 17:19, 17:23, 17:25, 18:1, 18:13, 18:25, 19:7, 19:13, 19:25, 20:12, 20:17, 20:21, 21:7, 31:13, 40:17, 50:6, 57:3, 60:2, 60:9, 64:19, 64:25, 75:21, 121:15, 122:6, 137:12, 137:20, 138:9, 139:3, 140:2, 140:23, 148:22, 149:20, 150:7, 152:10, 182:13, 192:6, 193:24, 199:16</p> <p><b>ISOLATING</b> [1] - 20:7</p> <p><b>ISOLATION</b> [1] - 79:25</p> <p><b>ISSUE</b> [16] - 13:15, 20:7, 46:24, 47:20, 51:24, 53:17, 59:21, 79:19, 79:21, 157:22, 159:3, 164:13, 170:24, 179:15, 184:3, 184:21</p> <p><b>ISSUED</b> [1] - 129:15</p> <p><b>ISSUES</b> [17] - 4:11, 9:8, 12:6, 13:10, 73:5, 73:7, 141:10, 146:21, 146:22, 156:19, 157:4, 157:22, 168:12, 172:12, 182:12</p> <p><b>IT</b> [1] - 66:21</p> <p><b>ITEMIZE</b> [1] - 39:11</p> <p><b>ITSELF</b> [8] - 17:5, 76:10, 122:12, 136:6, 163:1, 169:11, 173:11, 179:12</p>	<p><b>JEEZ</b> [2] - 138:1, 176:20</p> <p><b>JENKINS</b> [1] - 56:17</p> <p><b>JEROME</b> [1] - 3:1</p> <p><b>JEWELL</b> [25] - 28:2, 40:20, 72:3, 84:20, 91:21, 93:3, 103:5, 103:7, 103:15, 110:4, 112:18, 112:19, 130:15, 130:16, 130:21, 132:23, 157:2, 163:17, 169:5, 198:9, 202:24, 203:4, 204:11, 205:7</p> <p><b>JEWELL'S</b> [2] - 157:7, 196:6</p> <p><b>JOB</b> [4] - 13:9, 149:4, 150:3, 205:20</p> <p><b>JOE</b> [1] - 8:14</p> <p><b>JOHN</b> [1] - 6:6</p> <p><b>JOIN</b> [1] - 8:20</p> <p><b>JOKE</b> [1] - 84:1</p> <p><b>JOSEPH</b> [1] - 2:7</p> <p><b>JOURNAL</b> [12] - 30:13, 33:19, 117:9, 117:19, 118:20, 118:21, 118:23, 121:5, 123:6, 145:8, 151:18, 152:5</p> <p><b>JOURNALS</b> [1] - 123:2</p> <p><b>JUDGE</b> [24] - 4:20, 5:1, 5:5, 5:8, 6:12, 6:14, 7:4, 7:6, 10:9, 12:21, 13:3, 13:21, 13:24, 15:7, 53:21, 95:7, 96:6, 96:10, 96:23, 198:17, 204:7, 204:21, 205:18</p> <p><b>JUDGE'S</b> [1] - 59:5</p> <p><b>JUDGES</b> [14] - 4:17, 4:22, 4:24, 5:6, 5:18, 5:21, 5:25, 6:4, 6:5, 6:11, 9:21, 51:23, 53:16, 114:17</p> <p><b>JUDGMENT</b> [14] - 9:12, 29:6, 37:13, 43:12, 128:1, 147:5, 148:6, 148:7, 148:9, 148:11, 148:13, 164:19, 164:20, 168:2</p> <p><b>JUDICIAL</b> [3] - 5:23, 5:24, 27:15</p> <p><b>JUMP</b> [2] - 30:7, 84:20</p> <p><b>JUNE</b> [1] - 151:7</p> <p><b>JUNIOR</b> [1] - 6:7</p> <p><b>JURIES</b> [2] - 51:23, 53:17</p> <p><b>JURISDICTION</b> [2] -</p>
		<b>J</b>		
		<p><b>J.P</b> [1] - 174:10</p> <p><b>JAMES</b> [1] - 184:14</p>		

<p>13:14, 13:19  <b>JURISDICTIONS</b> [2] - 5:19, 14:2  <b>JURORS</b> [1] - 59:8  <b>JURY</b> [11] - 6:24, 14:8, 44:1, 59:10, 71:7, 71:15, 114:14, 124:25, 125:2, 198:9, 205:17  <b>JUSTIFICATION</b> [1] - 132:8  <b>JUSTIFIES</b> [1] - 132:5</p>	<p>39:14, 39:20, 164:23  <b>KUHL</b> [3] - 5:1, 5:5, 5:9</p>	<p>41:17, 43:16, 52:1, 53:20, 54:13, 55:11, 57:19, 58:16, 58:18, 58:22, 63:25, 65:22, 73:21, 119:24, 125:15  <b>LAWYER</b> [2] - 65:3, 198:23  <b>LAWYERS</b> [2] - 95:11, 96:3  <b>LAY</b> [1] - 55:13  <b>LDL</b> [73] - 59:16, 59:23, 60:4, 60:7, 61:9, 61:17, 62:14, 63:2, 63:8, 63:12, 63:15, 64:18, 64:23, 64:24, 65:2, 65:11, 65:20, 66:5, 66:21, 66:22, 67:3, 67:11, 68:4, 68:14, 68:22, 70:17, 71:8, 71:9, 124:16, 169:23, 170:9, 171:5, 171:16, 175:2, 175:9, 176:2, 176:8, 176:10, 176:12, 176:20, 177:10, 177:17, 177:21, 177:22, 177:25, 178:4, 178:13, 178:18, 179:3, 179:24, 180:1, 180:2, 180:4, 180:9, 180:13, 180:16, 180:19, 180:25, 181:11, 183:3, 183:5, 183:18, 184:5, 190:2, 190:3, 190:15, 190:21, 202:11, 203:12, 203:19, 203:21  <b>LDL-C</b> [6] - 178:4, 180:25, 183:5, 190:2, 190:3  <b>LEAD</b> [7] - 15:13, 29:9, 51:11, 57:19, 62:10, 125:16, 188:13  <b>LEADER</b> [1] - 6:16  <b>LEADING</b> [2] - 21:24, 153:13  <b>LEADS</b> [2] - 61:10, 67:9  <b>LEAP</b> [1] - 139:6  <b>LEAPFROG</b> [1] - 61:6  <b>LEAST</b> [5] - 4:18, 108:10, 150:5, 170:15, 171:14  <b>LEAVE</b> [3] - 9:22, 56:24, 57:3  <b>LEBOVITZ</b> [5] - 160:23, 161:5,</p>	<p>161:19, 196:21  <b>LEFT</b> [11] - 11:6, 107:16, 127:20, 127:22, 143:22, 146:6, 171:13, 174:23, 174:25, 180:10, 198:16  <b>LEFT-HAND</b> [3] - 11:6, 174:23, 180:10  <b>LEGAL</b> [4] - 44:1, 44:12, 51:24, 53:18  <b>LEGITIMATE</b> [1] - 54:18  <b>LEHNER</b> [2] - 2:16, 8:19  <b>LENDS</b> [1] - 169:15  <b>LESS</b> [9] - 36:21, 61:3, 72:9, 80:1, 88:23, 104:23, 112:22, 163:11, 200:22  <b>LESSENE</b> [1] - 125:3  <b>LESSER</b> [3] - 89:12, 89:19  <b>LESSONS</b> [1] - 152:6  <b>LETHAL</b> [11] - 170:1, 170:4, 170:18, 177:14, 178:14, 178:23, 181:1, 181:21, 182:5, 183:18  <b>LETTERS</b> [1] - 17:11  <b>LEVEL</b> [14] - 65:18, 134:22, 153:10, 164:6, 167:25, 172:4, 179:8, 180:20, 180:21, 183:16, 186:13, 187:6, 193:14, 196:2  <b>LEVELS</b> [4] - 172:17, 175:19, 190:3, 190:5  <b>LEVIED</b> [1] - 83:10  <b>LEWIS</b> [1] - 3:3  <b>LIABILITY</b> [3] - 1:5, 4:13, 6:19  <b>LIABLE</b> [1] - 58:17  <b>LICENSING</b> [1] - 52:5  <b>LIFE</b> [2] - 42:23, 96:12  <b>LIGHT</b> [6] - 39:22, 79:12, 197:2, 197:5, 197:11, 198:1  <b>LIGHTS</b> [1] - 167:7  <b>LIKELIHOOD</b> [4] - 36:17, 94:22, 191:24, 192:2  <b>LIKELY</b> [2] - 12:4, 21:9  <b>LIMIT</b> [1] - 150:22</p>	<p><b>LIMITATION</b> [3] - 99:11, 159:14, 159:15  <b>LIMITATIONS</b> [1] - 104:22  <b>LIMITED</b> [3] - 42:17, 125:3, 133:23  <b>LINCHPIN</b> [1] - 120:16  <b>LINE</b> [7] - 144:3, 144:6, 151:3, 163:8, 173:17, 181:18, 182:1  <b>LINED</b> [2] - 157:3, 204:10  <b>LINES</b> [1] - 47:19  <b>LINK</b> [4] - 28:3, 28:4, 125:10, 125:13  <b>LINKING</b> [1] - 63:19  <b>LINKS</b> [1] - 58:12  <b>LIPID</b> [18] - 59:17, 59:22, 59:23, 63:19, 64:11, 66:6, 66:8, 66:10, 167:23, 170:20, 172:10, 175:19, 178:12, 178:24, 184:3, 184:21, 190:5  <b>LIPIDOLOGIST</b> [1] - 131:7  <b>LIPIDS</b> [10] - 40:24, 61:9, 63:14, 66:2, 66:16, 71:2, 174:14, 184:4, 184:22, 189:3  <b>LIPOPROTEIN</b> [1] - 190:6  <b>LIPOPROTEINS</b> [1] - 183:6  <b>LIPPMAN</b> [8] - 10:17, 11:5, 11:7, 28:6, 28:8, 28:9, 51:5, 51:8  <b>LIPPMAN'S</b> [1] - 28:10  <b>LIST</b> [8] - 5:8, 7:23, 10:15, 39:14, 64:3, 157:24, 191:5, 194:25  <b>LISTED</b> [4] - 68:17, 162:10, 164:22, 199:23  <b>LISTEN</b> [6] - 38:18, 69:9, 72:19, 89:16, 114:24, 205:20  <b>LISTENED</b> [1] - 201:17  <b>LISTENING</b> [1] - 104:17  <b>LISTS</b> [1] - 199:24  <b>LITANY</b> [1] - 89:10  <b>LITERALLY</b> [4] - 130:18, 131:18, 182:11, 194:23  <b>LITERATURE</b> [6] -</p>
<b>K</b>	<b>L</b>			
<p><b>KANSAS</b> [1] - 2:14  <b>KAUL</b> [5] - 101:5, 101:8, 101:15, 103:3, 106:6  <b>KEANEY</b> [8] - 141:20, 142:16, 176:9, 192:4, 192:8, 192:11, 204:15  <b>KEEP</b> [9] - 14:7, 47:16, 48:1, 50:17, 50:22, 59:10, 152:21, 172:17  <b>KEEPING</b> [1] - 5:10  <b>KELLER</b> [1] - 132:3  <b>KEPT</b> [1] - 189:12  <b>KEY</b> [1] - 37:12  <b>KEYS</b> [1] - 38:13  <b>KICK</b> [1] - 7:9  <b>KIND</b> [9] - 25:24, 30:16, 67:17, 83:4, 89:20, 99:6, 99:23, 124:5, 199:3  <b>KINDLY</b> [1] - 7:14  <b>KINDS</b> [3] - 72:17, 98:20, 198:8  <b>KNOWING</b> [2] - 23:23, 40:23  <b>KNOWLEDGE</b> [4] - 10:17, 25:16, 71:11, 169:14  <b>KNOWLEDGEABLE</b> [1] - 40:6  <b>KNOWN</b> [12] - 18:17, 58:5, 78:25, 94:4, 137:24, 137:25, 138:2, 138:7, 144:25, 174:21, 175:8, 191:3  <b>KNOWS</b> [6] - 7:19, 28:13, 35:10, 46:4, 131:3, 187:21  <b>KOBEL'S</b> [1] - 96:23  <b>KOCH'S</b> [7] - 38:16, 38:21, 39:8, 39:12,</p>	<p><b>LABEL</b> [11] - 52:9, 106:23, 129:6, 137:13, 137:14, 137:15, 137:21, 172:11, 177:20, 178:17, 178:18  <b>LABELING</b> [1] - 52:5  <b>LACK</b> [1] - 102:12  <b>LADDER</b> [8] - 32:25, 33:7, 36:5, 37:4, 60:11, 112:9, 201:20, 202:1  <b>LAGS</b> [2] - 15:13, 125:15  <b>LAID</b> [2] - 60:15, 78:10  <b>LANGUAGE</b> [2] - 97:3, 122:7  <b>LARGE</b> [27] - 19:24, 74:10, 74:14, 74:22, 77:4, 77:5, 77:8, 77:19, 78:13, 80:2, 81:13, 86:24, 88:2, 88:11, 93:15, 100:16, 101:2, 104:23, 115:18, 116:18, 144:16, 146:1, 148:20, 179:5, 179:18, 179:19, 185:22  <b>LARGELY</b> [5] - 74:5, 108:4, 108:7, 109:3, 169:4  <b>LARGER</b> [1] - 17:24  <b>LARGEST</b> [1] - 109:4  <b>LAST</b> [12] - 29:18, 51:14, 54:15, 54:16, 56:22, 60:19, 96:17, 144:2, 164:11, 185:22, 188:25, 204:15  <b>LASTING</b> [1] - 174:16  <b>LATE</b> [1] - 95:15  <b>LAUNCH</b> [1] - 11:19  <b>LAUNCHED</b> [1] - 155:1  <b>LAW</b> [32] - 13:14, 13:18, 14:1, 14:10, 14:15, 15:13, 21:13, 24:4, 27:20, 30:4, 30:6, 31:7, 31:24, 33:17, 36:14, 38:8,</p>			

<p>70:10, 79:17, 80:5, 122:22, 123:3, 132:15  <b>LITIGATION</b> [16] - 1:5, 4:12, 4:14, 6:16, 23:10, 32:5, 34:1, 35:8, 35:13, 38:1, 38:12, 55:24, 64:5, 123:17, 147:2, 162:19  <b>LITTLEST</b> [1] - 101:23  <b>LIVE</b> [1] - 199:2  <b>LIVING</b> [2] - 166:18, 191:18  <b>LLOYD</b> [1] - 6:3  <b>LLP</b> [4] - 2:8, 2:16, 2:21, 3:3  <b>LOGAN</b> [1] - 2:17  <b>LONG-TERM</b> [1] - 145:10  <b>LOOK</b> [77] - 13:21, 15:21, 17:25, 18:6, 18:11, 19:12, 20:20, 20:21, 20:25, 21:6, 38:4, 38:5, 45:21, 45:23, 47:16, 52:22, 57:1, 60:11, 61:15, 66:12, 66:13, 66:15, 67:24, 68:14, 68:17, 74:5, 75:3, 77:4, 77:12, 77:16, 80:7, 83:17, 85:12, 86:19, 91:23, 97:19, 98:21, 99:13, 99:15, 105:7, 105:19, 106:1, 111:4, 111:21, 112:14, 113:2, 115:3, 125:1, 128:23, 133:8, 138:20, 138:23, 138:25, 139:24, 140:2, 140:17, 143:17, 144:18, 153:8, 156:22, 156:23, 158:23, 160:18, 162:22, 163:16, 167:9, 170:25, 175:22, 177:2, 184:16, 188:5, 196:19, 197:3, 197:22, 197:25, 200:1  <b>LOOKED</b> [34] - 20:11, 20:24, 21:3, 40:13, 69:24, 74:17, 83:8, 88:4, 105:17, 110:22, 115:6, 126:1, 138:4, 138:5, 140:1, 143:25, 144:18, 153:9, 153:11, 156:7, 156:25, 160:19, 161:23, 161:24, 162:21, 162:23,</p>	<p>175:17, 175:18, 179:8, 187:6, 199:16, 203:17, 203:18  <b>LOOKING</b> [31] - 5:6, 17:6, 18:1, 19:13, 20:6, 21:6, 21:10, 26:18, 33:24, 34:5, 36:5, 37:20, 37:21, 47:16, 48:1, 48:2, 63:15, 64:20, 68:8, 69:12, 69:18, 86:9, 98:14, 99:1, 101:6, 114:1, 157:11, 165:1, 165:14, 195:9, 195:10  <b>LOOKS</b> [6] - 52:16, 66:24, 140:3, 143:13, 176:25, 193:14  <b>LOOP</b> [1] - 146:11  <b>LOOSE</b> [1] - 52:20  <b>LOST</b> [2] - 56:21, 197:8  <b>LOVAZA</b> [1] - 131:15  <b>LOVE</b> [1] - 96:25  <b>LOW</b> [3] - 23:3, 76:24, 166:7  <b>LOWER</b> [11] - 11:6, 14:22, 29:25, 30:4, 35:21, 42:14, 58:15, 58:21, 88:23, 94:2, 186:2  <b>LOWERED</b> [1] - 67:19  <b>LOWERING</b> [2] - 14:25, 63:15  <b>LOWERS</b> [5] - 62:14, 186:5, 186:23, 187:15  <b>LP</b> [27] - 59:17, 63:8, 66:24, 66:20, 66:21, 66:24, 67:11, 185:7, 185:8, 185:19, 185:23, 186:5, 186:6, 186:20, 186:23, 187:4, 187:8, 188:3, 188:5, 188:6, 188:7, 188:18, 188:16, 188:18, 188:22, 189:16, 189:18, 202:11  <b>LP-PLA2</b> [27] - 59:17, 63:8, 66:20, 66:21, 66:24, 67:11, 185:7, 185:8, 185:19, 185:23, 186:5, 186:6, 186:20, 186:23, 187:4, 187:8, 188:3, 188:5, 188:6, 188:7, 188:16, 188:18, 188:22, 189:16, 189:18, 202:11  <b>LUCKY</b> [1] - 130:24  <b>LUGGAGE</b> [1] - 7:2</p>	<p><b>LUMPED</b> [7] - 17:18, 17:24, 18:12, 19:24, 20:12, 21:11, 37:22  <b>LUNCH</b> [3] - 9:22, 55:9, 94:25  <b>LUNG</b> [5] - 132:25, 133:4, 133:6, 168:5, 168:7  <b>LUXURY</b> [1] - 45:20  <b>LYMPHOMA</b> [1] - 21:19  <b>LYMPHOMAS</b> [1] - 21:18  <b>LYTLE</b> [3] - 2:21, 8:18, 8:19</p>	<p>[1] - 58:17  <b>MARCINIAK</b> [11] - 82:6, 82:13, 82:23, 92:9, 134:14, 156:19, 157:1, 157:6, 157:10, 157:14, 158:24  <b>MARCINIAK'S</b> [4] - 82:10, 82:15, 134:19, 158:2  <b>MARGE</b> [1] - 184:16  <b>MARGINAL</b> [1] - 185:4  <b>MARGINALLY</b> [1] - 184:18  <b>MARGOLIS</b> [2] - 143:20, 143:22  <b>MARK</b> [1] - 152:18  <b>MARKER</b> [15] - 24:15, 25:24, 26:19, 59:18, 67:23, 131:19, 171:21, 181:11, 183:4, 185:11, 185:16, 186:3, 187:14, 189:17  <b>MARKERS</b> [6] - 63:24, 67:6, 67:23, 67:24, 190:19, 202:13  <b>MARKET</b> [11] - 1:21, 3:3, 7:10, 11:22, 52:5, 58:11, 129:22, 129:25, 151:5, 151:14, 174:20  <b>MARKETED</b> [4] - 52:10, 138:11, 138:16, 180:22  <b>MARKETING</b> [5] - 1:4, 4:13, 12:14, 178:23, 179:16  <b>MASTER</b> [3] - 3:1, 8:22, 10:9  <b>MATCHED</b> [1] - 81:21  <b>MATERIAL</b> [5] - 55:3, 101:1, 101:17, 111:1, 124:24  <b>MATERIALS</b> [3] - 55:8, 130:4, 195:23  <b>MATTER</b> [6] - 12:18, 30:14, 30:15, 164:18, 164:19, 206:3  <b>MATTERS</b> [2] - 23:18, 26:23  <b>MAZER</b> [54] - 1:14, 4:6, 4:21, 7:8, 10:21, 11:1, 11:17, 14:4, 15:20, 16:15, 50:20, 50:24, 53:23, 54:10, 55:2, 55:5, 55:9, 55:15, 83:23, 95:4, 95:9, 96:2, 96:10,</p>	<p>96:21, 97:2, 97:13, 97:17, 97:21, 97:24, 98:5, 103:20, 103:25, 104:5, 104:10, 104:15, 126:4, 126:20, 127:1, 127:5, 128:8, 128:10, 136:10, 136:13, 148:2, 173:2, 173:7, 173:13, 174:3, 174:7, 199:1, 199:5, 204:17, 205:11, 205:19  <b>MCAFFEE</b> [5] - 115:18, 116:18, 116:19, 116:24, 117:1  <b>MDL</b> [3] - 6:11, 147:24, 201:8  <b>MEAGHER</b> [1] - 150:8  <b>MEAN</b> [23] - 11:2, 23:17, 27:4, 27:9, 33:17, 35:4, 36:12, 61:14, 63:12, 83:13, 101:19, 102:6, 105:12, 114:13, 128:10, 133:24, 147:5, 171:15, 175:19, 175:20, 176:3, 176:7, 193:13  <b>MEANING</b> [5] - 48:21, 54:22, 142:14, 170:14, 191:7  <b>MEANINGFUL</b> [1] - 41:12  <b>MEANINGLESS</b> [1] - 111:16  <b>MEANS</b> [33] - 23:9, 23:18, 26:15, 27:3, 28:23, 37:20, 67:20, 71:9, 73:18, 77:10, 77:20, 83:13, 91:25, 101:23, 102:12, 105:12, 120:10, 143:10, 153:4, 165:10, 167:15, 167:17, 171:10, 171:19, 171:24, 171:25, 175:1, 185:1, 187:3, 193:23, 198:22, 200:22  <b>MEANT</b> [2] - 45:25, 201:9  <b>MEASURE</b> [10] - 17:6, 19:5, 169:2, 185:11, 186:17, 186:24, 188:18, 188:21, 188:22, 203:13  <b>MEASURED</b> [7] - 19:1, 169:4, 182:17,</p>
<b>M</b>				
		<p><b>M.D./PH.D</b> [1] - 11:5  <b>MAGNIFICENT</b> [1] - 205:20  <b>MAIL</b> [9] - 174:9, 174:12, 183:25, 184:23, 186:18, 186:22, 190:21, 197:6  <b>MAILS</b> [1] - 12:14  <b>MAIN</b> [3] - 33:8, 59:20, 129:9  <b>MAJOR</b> [2] - 31:14, 184:6  <b>MAJORITY</b> [1] - 193:7  <b>MAKER</b> [1] - 190:9  <b>MALPRACTICE</b> [1] - 84:4  <b>MANAGE</b> [1] - 177:24  <b>MANAGEMENT</b> [2] - 197:10  <b>MANDATE</b> [1] - 13:18  <b>MANNUCCI</b> [14] - 109:5, 109:11, 109:18, 110:1, 110:22, 160:15, 160:16, 160:21, 161:22, 162:2, 163:4, 196:4, 196:20, 203:23  <b>MANUAL</b> [24] - 27:15, 31:20, 32:4, 32:10, 32:20, 33:7, 33:18, 41:18, 71:22, 99:24, 132:15, 135:6, 137:2, 141:7, 141:8, 143:1, 148:6, 148:8, 152:25, 164:17, 164:25, 165:3, 169:10, 169:16  <b>MANUFACTURER</b></p>		

<p>187:18, 187:21, 189:16, 189:19 <b>MEASUREMENT</b> [1] - 187:20 <b>MEASUREMENTS</b> [1] - 175:3 <b>MEASURES</b> [3] - 181:2, 185:14, 188:15 <b>MEASURING</b> [7] - 136:3, 180:25, 182:24, 185:13, 185:17, 185:19, 187:22 <b>MECHANISM</b> [22] - 40:22, 59:13, 61:10, 62:1, 66:18, 66:20, 70:22, 71:2, 81:6, 81:8, 124:12, 167:17, 168:4, 168:5, 168:6, 168:8, 168:21, 169:22, 176:8, 181:22, 185:5, 186:15 <b>MECHANISMS</b> [13] - 63:25, 64:3, 169:7, 169:10, 169:12, 169:14, 169:21, 182:12, 189:22, 189:23, 190:10, 190:20, 191:14 <b>MECHANISTIC</b> [1] - 62:9 <b>MECHANISTICALLY</b> [1] - 168:18 <b>MEDICAL</b> [6] - 72:21, 88:4, 105:1, 117:9, 172:11, 172:18 <b>MEDICALLY</b> [1] - 151:11 <b>MEDICATION</b> [8] - 17:1, 52:5, 52:10, 62:21, 63:2, 64:17, 66:2, 136:1 <b>MEDICATIONS</b> [1] - 42:10 <b>MEDICINE</b> [8] - 43:20, 44:12, 118:19, 123:6, 145:8, 151:18, 152:5, 189:24 <b>MEDICINES</b> [1] - 40:9 <b>MEET</b> [4] - 50:7, 50:11, 102:16, 198:18 <b>MEETING</b> [6] - 9:21, 56:22, 95:10, 170:22, 174:13, 188:4 <b>MEETINGS</b> [1] - 82:4 <b>MEETS</b> [2] - 78:9, 125:1 <b>MELLON</b> [5] - 2:2, 2:3, 2:4, 4:4, 7:25</p>	<p><b>MEMBER</b> [1] - 101:7 <b>MEMBERS</b> [2] - 129:16, 145:20 <b>MEMO</b> [1] - 37:14 <b>MEMORANDUM</b> [1] - 170:5 <b>MEN</b> [1] - 61:16 <b>MENTION</b> [5] - 37:19, 55:20, 137:24, 184:21, 202:17 <b>MENTIONED</b> [6] - 39:19, 51:15, 73:6, 105:4, 151:17, 164:24 <b>MENTIONS</b> [1] - 80:3 <b>MERE</b> [1] - 63:7 <b>MERELY</b> [3] - 31:8, 64:6, 92:14 <b>MERENSTEIN</b> [3] - 3:2, 9:1, 9:2 <b>MET</b> [2] - 6:21 <b>META</b> [129] - 29:5, 30:17, 35:25, 36:9, 41:10, 65:17, 72:10, 72:17, 74:6, 79:19, 79:21, 80:1, 80:25, 81:11, 81:20, 81:25, 88:22, 89:25, 90:2, 90:7, 90:8, 90:20, 92:4, 92:18, 92:19, 92:21, 93:15, 93:20, 93:21, 94:20, 98:7, 98:9, 98:12, 98:25, 99:11, 99:12, 99:25, 100:3, 100:10, 100:13, 100:15, 101:4, 101:17, 103:4, 103:5, 103:8, 103:9, 103:10, 103:12, 104:20, 104:22, 105:3, 105:5, 105:21, 105:25, 106:16, 106:19, 107:9, 107:11, 107:12, 107:17, 107:18, 107:19, 107:20, 107:22, 107:24, 107:25, 108:1, 108:2, 108:10, 108:13, 108:14, 109:4, 109:9, 109:11, 109:14, 109:19, 110:3, 110:4, 110:7, 110:21, 111:24, 112:5, 112:11, 119:17, 119:22, 123:25, 124:3, 124:9, 127:19, 129:1, 133:12, 134:25, 135:5, 135:8, 135:9, 135:16,</p>	<p>135:17, 135:21, 137:16, 145:4, 149:10, 149:14, 149:17, 149:18, 149:22, 149:23, 155:2, 155:7, 160:16, 160:20, 161:1, 161:25, 162:22, 164:10, 166:2, 166:10, 166:11, 186:12, 193:8, 193:9, 193:11, 199:24, 200:20 <b>META-ANALYSES</b> [52] - 35:25, 36:9, 72:10, 72:17, 74:6, 81:11, 88:22, 91:4, 91:14, 92:4, 92:21, 93:15, 93:20, 93:21, 94:20, 98:7, 98:9, 99:12, 99:25, 100:3, 100:10, 100:13, 100:15, 107:9, 107:11, 107:12, 107:22, 108:13, 108:14, 109:9, 110:4, 110:7, 111:24, 112:11, 119:17, 119:22, 123:25, 124:9, 129:1, 134:25, 135:5, 135:8, 135:16, 135:17, 164:10, 166:2, 186:11, 193:8, 193:9, 193:11, 199:24 <b>META-ANALYSIS</b> [73] - 29:5, 30:17, 65:17, 79:19, 79:21, 80:1, 80:25, 81:20, 81:25, 89:25, 90:2, 90:7, 90:8, 90:20, 91:16, 92:18, 92:19, 98:12, 99:11, 101:4, 101:17, 103:4, 103:5, 103:10, 103:12, 104:20, 104:22, 105:3, 105:5, 105:21, 106:16, 107:17, 107:18, 107:19, 107:20, 107:24, 107:25, 108:1, 108:2, 108:10, 109:4, 109:11, 109:14, 109:19, 110:3, 110:7, 110:21, 111:24, 112:5, 112:11, 119:17, 119:22, 123:25, 124:3, 124:9, 127:19, 129:1, 133:12, 135:9, 135:21, 137:16, 145:4, 149:10, 149:14, 149:17, 149:18, 149:22, 149:23,</p>	<p>155:2, 155:7, 160:16, 160:20, 161:1, 161:25, 162:22, 186:10, 186:12, 200:20 <b>META-ANALYTIC</b> [3] - 98:25, 103:8, 103:9 <b>METABOLIC</b> [1] - 76:22 <b>METFORMIN</b> [5] - 84:9, 87:10, 147:1, 159:12, 165:18 <b>METHOD</b> [14] - 21:20, 31:19, 32:3, 37:11, 58:24, 72:1, 94:7, 94:9, 100:7, 106:8, 114:7, 114:12, 120:25 <b>METHODOLOGIC</b> [9] - 42:5, 42:7, 63:6, 89:19, 98:20, 100:23, 106:10, 111:18, 119:14 <b>METHODOLOGICA</b> L [1] - 135:10 <b>METHODOLOGICAL</b> L [1] - 50:12 <b>METHODOLOGIES</b> [8] - 16:11, 54:24, 130:6, 130:8, 130:9, 142:19, 142:21 <b>METHODOLOGY</b> [71] - 12:16, 12:20, 14:11, 14:14, 14:16, 14:20, 15:4, 16:5, 16:8, 23:18, 23:22, 24:1, 24:5, 26:11, 26:23, 31:24, 33:3, 35:11, 41:21, 41:25, 43:15, 43:18, 43:21, 43:23, 44:8, 44:13, 44:15, 44:21, 44:24, 45:1, 60:17, 61:13, 61:23, 64:10, 66:1, 71:12, 71:16, 71:19, 93:24, 94:16, 94:18, 103:9, 105:20, 109:9, 114:10, 120:18, 120:23, 121:3, 123:14, 125:25, 127:23, 128:21, 130:18, 130:21, 131:1, 131:2, 131:4, 131:24, 132:6, 132:9, 132:10, 142:17, 146:2, 165:3, 165:8, 166:19, 169:2, 189:9, 193:1, 198:6, 204:2 <b>METHODS</b> [4] - 15:5, 28:19, 113:10, 188:10</p>	<p><b>MEXICO</b> [1] - 5:21 <b>MHRA</b> [1] - 196:9 <b>MI</b> [31] - 17:9, 17:11, 18:10, 18:11, 18:14, 18:16, 18:18, 18:23, 19:5, 19:7, 20:5, 20:19, 31:13, 85:25, 86:4, 86:9, 108:15, 110:3, 111:25, 113:2, 115:25, 117:2, 117:7, 117:21, 121:10, 145:12, 145:13, 156:11, 158:11, 193:21, 200:25 <b>MI'S</b> [7] - 19:6, 20:16, 20:21, 139:24, 140:3, 193:12, 193:22 <b>MICHAEL</b> [1] - 6:2 <b>MID</b> [1] - 199:8 <b>MIDDLE</b> [3] - 37:20, 61:16, 171:12 <b>MIGHT</b> [11] - 53:21, 53:22, 54:16, 71:7, 100:5, 124:11, 125:13, 172:6, 184:2, 186:21, 204:13 <b>MIGHTILY</b> [1] - 13:15 <b>MILITARY</b> [1] - 118:8 <b>MILLIGRAM</b> [2] - 171:21, 171:24 <b>MILLIGRAMS</b> [6] - 171:7, 171:8, 171:9, 171:10, 180:16, 180:17 <b>MILLION</b> [1] - 165:24 <b>MILLIONS</b> [1] - 194:4 <b>MIND</b> [2] - 111:7, 193:11 <b>MINDED</b> [1] - 192:15 <b>MINIMAL</b> [1] - 185:4 <b>MINIMUM</b> [1] - 94:3 <b>MINUTE</b> [5] - 22:2, 31:16, 62:25, 115:22, 129:11 <b>MINUTES</b> [4] - 22:3, 126:12, 198:25, 199:2 <b>MISCHARACTERIZ</b> <b>ED</b> [1] - 12:18 <b>MISLEADING</b> [1] - 13:23 <b>MISREPRESENT</b> [1] - 56:23 <b>MISREPRESENTS</b> [1] - 56:10 <b>MISS</b> [2] - 8:3, 96:13 <b>MISSED</b> [2] - 84:1, 161:22 <b>MISSING</b> [1] - 104:6 <b>MISSOURI</b> [2] - 2:14, 6:8</p>
--	--	--	---	---

<p><b>MISUNDERSTANDI NG</b> <sup>[1]</sup> - 56:18</p> <p><b>MISUNDERSTOOD</b> <sup>[1]</sup> - 56:10</p> <p><b>MIXED</b> <sup>[2]</sup> - 81:20, 103:21</p> <p><b>MIXING</b> <sup>[1]</sup> - 99:10</p> <p><b>MMP-3</b> <sup>[1]</sup> - 190:10</p> <p><b>MMP-9</b> <sup>[1]</sup> - 188:11</p> <p><b>MMR</b> <sup>[1]</sup> - 201:24</p> <p><b>MODEST</b> <sup>[1]</sup> - 123:9</p> <p><b>MODIFIED</b> <sup>[1]</sup> - 152:1</p> <p><b>MODIFIES</b> <sup>[1]</sup> - 186:4</p> <p><b>MOM</b> <sup>[1]</sup> - 170:2</p> <p><b>MOMENT</b> <sup>[11]</sup> - 5:8, 10:20, 11:19, 24:10, 26:16, 55:20, 59:2, 86:20, 90:24, 100:24, 204:6</p> <p><b>MOMENTS</b> <sup>[1]</sup> - 51:16</p> <p><b>MONAMI</b> <sup>[6]</sup> - 109:7, 160:21, 161:12, 163:4, 196:4, 196:20</p> <p><b>MONDAY</b> <sup>[1]</sup> - 1:11</p> <p><b>MONOTHERAPY</b> <sup>[3]</sup> - 159:8, 159:11, 197:3</p> <p><b>MONTH</b> <sup>[4]</sup> - 54:16, 129:17, 174:9, 197:14</p> <p><b>MONTHS</b> <sup>[5]</sup> - 54:15, 134:13, 137:15, 157:11, 178:19</p> <p><b>MORNING</b> <sup>[17]</sup> - 4:3, 4:4, 7:25, 8:11, 8:13, 8:16, 8:20, 8:21, 8:23, 8:24, 9:2, 10:4, 10:8, 50:16, 95:15, 167:8, 205:1</p> <p><b>MORTALITY</b> <sup>[2]</sup> - 108:17, 108:18</p> <p><b>MOSS</b> <sup>[66]</sup> - 1:14, 4:6, 4:21, 6:13, 6:14, 7:4, 7:6, 7:8, 10:9, 10:21, 11:1, 11:17, 13:24, 14:4, 15:20, 16:15, 50:20, 50:24, 53:21, 53:23, 54:10, 55:2, 55:5, 55:9, 55:15, 83:23, 95:4, 95:7, 95:9, 96:2, 96:6, 96:10, 96:21, 97:2, 97:13, 97:17, 97:21, 97:24, 98:5, 103:20, 103:25, 104:5, 104:10, 104:15, 126:4, 126:20, 127:1, 127:5, 128:8, 128:10, 136:10, 136:13,</p>	<p>148:2, 173:2, 173:7, 173:13, 174:3, 174:7, 198:17, 199:1, 199:5, 204:7, 204:17, 205:11, 205:18, 205:19</p> <p><b>MOST</b> <sup>[33]</sup> - 6:10, 21:8, 27:24, 31:25, 35:15, 38:1, 38:15, 41:23, 44:1, 45:2, 47:22, 56:9, 61:1, 61:4, 72:1, 72:4, 77:1, 80:13, 89:15, 93:14, 122:17, 135:9, 136:2, 137:17, 142:20, 153:12, 157:7, 158:1, 171:14, 188:25, 195:13, 199:12</p> <p><b>MOTION</b> <sup>[6]</sup> - 11:15, 11:25, 12:6, 12:11, 14:9, 127:13</p> <p><b>MOTIONS</b> <sup>[5]</sup> - 4:15, 9:7, 10:13, 12:9, 142:18</p> <p><b>MOUTHS</b> <sup>[1]</sup> - 148:17</p> <p><b>MOVE</b> <sup>[9]</sup> - 6:23, 16:19, 36:4, 96:17, 112:12, 152:19, 173:17, 173:22, 194:18</p> <p><b>MOVING</b> <sup>[3]</sup> - 55:19, 126:22, 201:12</p> <p><b>MULTI</b> <sup>[2]</sup> - 4:12, 179:1</p> <p><b>MULTI-FOLD</b> <sup>[1]</sup> - 179:1</p> <p><b>MULTIPLE</b> <sup>[14]</sup> - 34:2, 34:5, 68:8, 68:16, 74:22, 74:25, 80:23, 92:7, 108:5, 108:7, 112:2, 113:24, 153:11</p> <p><b>MUST</b> <sup>[14]</sup> - 14:25, 24:8, 32:15, 42:14, 44:4, 45:23, 52:13, 57:23, 60:4, 94:11, 114:16, 120:3, 148:8, 197:24</p> <p><b>MYOCARDIAL</b> <sup>[91]</sup> - 17:8, 17:12, 17:15, 17:17, 17:19, 17:22, 17:23, 17:24, 18:1, 18:13, 18:23, 18:25, 19:1, 19:7, 19:13, 19:25, 20:8, 20:11, 20:17, 20:21, 21:7, 31:12, 60:2, 64:18, 64:19, 110:17, 121:15, 122:6, 134:1,</p>	<p>134:8, 134:9, 136:24, 136:25, 137:1, 137:12, 137:19, 137:20, 138:9, 138:22, 138:24, 138:25, 139:3, 139:4, 139:6, 139:7, 139:8, 139:10, 139:11, 139:18, 139:20, 139:21, 139:22, 140:2, 140:6, 140:7, 140:11, 140:20, 140:21, 140:23, 143:7, 145:5, 148:22, 148:23, 149:11, 149:19, 150:7, 150:15, 150:17, 151:20, 151:24, 152:10, 154:21, 155:17, 155:18, 156:10, 156:14, 158:14, 158:22, 162:7, 162:9, 162:15, 174:2, 182:13, 192:5, 192:13, 193:24, 194:10, 199:15</p>	<p>194:13</p> <p><b>NEEDS</b> <sup>[3]</sup> - 129:25, 172:1, 198:18</p> <p><b>NEGATIVE</b> <sup>[5]</sup> - 11:24, 102:20, 102:21, 196:17, 197:2</p> <p><b>NEUTRAL</b> <sup>[2]</sup> - 157:21, 157:22</p> <p><b>NEVER</b> <sup>[19]</sup> - 20:4, 20:6, 20:9, 31:1, 38:15, 39:19, 103:7, 103:9, 115:8, 134:4, 158:12, 187:18, 189:8, 189:19, 191:25, 192:16, 192:20, 203:8</p> <p><b>NEW</b> <sup>[10]</sup> - 5:21, 82:17, 98:14, 123:6, 126:24, 145:7, 151:18, 152:4, 184:7</p> <p><b>NEWLY</b> <sup>[1]</sup> - 87:25</p> <p><b>NEXT</b> <sup>[16]</sup> - 6:20, 37:4, 59:8, 138:21, 143:18, 145:16, 151:7, 152:18, 156:7, 170:18, 187:10, 187:11, 188:7, 192:7, 193:14</p>	<p><b>NITPICKING</b> <sup>[1]</sup> - 89:1</p> <p><b>NITRATE</b> <sup>[1]</sup> - 146:10</p> <p><b>NITRATES</b> <sup>[3]</sup> - 146:19, 146:20, 193:18</p> <p><b>NOBLE</b> <sup>[1]</sup> - 6:5</p> <p><b>NOBODY</b> <sup>[2]</sup> - 132:19, 187:21</p> <p><b>NOISE</b> <sup>[1]</sup> - 11:21</p> <p><b>NON</b> <sup>[1]</sup> - 15:8</p> <p><b>NON-EXISTENCE</b> <sup>[1]</sup> - 15:8</p> <p><b>NONADJUDICATE D</b> <sup>[1]</sup> - 92:20</p> <p><b>NONAVANDIA</b> <sup>[1]</sup> - 105:15</p> <p><b>NONDIABETIC</b> <sup>[3]</sup> - 154:20, 170:14, 172:6</p> <p><b>NONDIABETICS</b> <sup>[8]</sup> - 91:17, 109:12, 109:15, 154:25, 166:7, 173:4, 175:6</p> <p><b>NONE</b> <sup>[18]</sup> - 4:18, 36:2, 74:23, 75:1, 77:15, 88:11, 93:13, 93:20, 108:17, 132:21, 161:21, 161:23, 162:10, 162:16, 163:3, 200:25, 202:18, 202:19</p> <p><b>NONETHELESS</b> <sup>[3]</sup> - 31:10, 58:12, 82:22</p> <p><b>NONEXISTENCE</b> <sup>[1]</sup> - 125:7</p> <p><b>NONSIGNIFICANT</b> <sup>[4]</sup> - 86:13, 86:18, 142:7</p> <p><b>NONSTATISTICAL LY</b> <sup>[23]</sup> - 108:11, 140:8, 141:3, 141:4, 141:14, 141:17, 142:10, 142:13, 142:23, 143:3, 143:5, 143:9, 143:12, 143:15, 143:25, 144:6, 144:8, 144:19, 144:21, 145:14, 148:19, 165:22, 174:1</p> <p><b>NONUSE</b> <sup>[1]</sup> - 151:4</p> <p><b>NORMAL</b> <sup>[1]</sup> - 35:2</p> <p><b>NORMALLY</b> <sup>[1]</sup> - 111:4</p> <p><b>NORRIS</b> <sup>[1]</sup> - 147:9</p> <p><b>NORTH</b> <sup>[1]</sup> - 2:4</p> <p><b>NOTABLE</b> <sup>[1]</sup> - 41:23</p> <p><b>NOTABLY</b> <sup>[1]</sup> - 56:9</p> <p><b>NOTE</b> <sup>[4]</sup> - 8:1,</p>
<b>N</b>		<p><b>NAME</b> <sup>[4]</sup> - 10:9, 70:4, 184:9, 184:10</p> <p><b>NAMED</b> <sup>[2]</sup> - 82:5, 101:5</p> <p><b>NAMES</b> <sup>[2]</sup> - 5:8, 144:3</p> <p><b>NAST</b> <sup>[3]</sup> - 8:10, 96:6</p> <p><b>NATURE</b> <sup>[2]</sup> - 78:5, 174:14</p> <p><b>NEARLY</b> <sup>[2]</sup> - 154:23, 155:4</p> <p><b>NECESSARILY</b> <sup>[5]</sup> - 28:5, 66:3, 134:22, 142:6, 168:17</p> <p><b>NECESSARY</b> <sup>[2]</sup> - 26:13, 204:21</p> <p><b>NECROTIC</b> <sup>[1]</sup> - 185:23</p> <p><b>NEED</b> <sup>[28]</sup> - 7:15, 9:22, 10:20, 15:2, 18:6, 18:11, 26:4, 26:9, 29:23, 32:7, 33:14, 38:4, 43:6, 50:23, 65:16, 65:17, 66:11, 111:5, 125:22, 126:20, 129:23, 133:17, 146:11, 168:17, 171:25, 191:5, 198:18, 205:1</p> <p><b>NEEDED</b> <sup>[5]</sup> - 24:19, 30:23, 84:5, 194:8,</p>		

<p>18:15, 67:10, 201:7  <b>NOTEBOOK</b> [1] - 15:15  <b>NOTEBOOKS</b> [1] - 126:24  <b>NOTED</b> [7] - 15:11, 82:17, 82:25, 83:2, 113:21, 113:23, 125:13  <b>NOTES</b> [1] - 5:11  <b>NOTHING</b> [9] - 26:23, 34:13, 46:25, 47:24, 84:5, 87:16, 87:17, 100:11, 200:14  <b>NOTICE</b> [2] - 142:17, 155:18  <b>NOTICED</b> [1] - 5:6  <b>NOTING</b> [1] - 65:15  <b>NOTION</b> [1] - 200:13  <b>NOVARTIS</b> [2] - 128:9, 128:19  <b>NOVEL</b> [5] - 54:7, 54:11, 54:14, 54:21, 189:16  <b>NOVELTY</b> [1] - 54:18  <b>NOWADAYS</b> [1] - 67:17  <b>NUANCE</b> [1] - 56:21  <b>NULL</b> [2] - 157:19, 158:1  <b>NUMBER</b> [20] - 4:17, 6:1, 64:18, 64:23, 65:11, 81:5, 96:8, 98:9, 104:6, 105:19, 160:17, 169:9, 174:18, 177:13, 182:4, 182:5, 182:7, 190:18, 194:22, 199:24  <b>NUMBERED</b> [1] - 97:20  <b>NUMBERS</b> [9] - 35:1, 59:24, 59:25, 103:21, 162:3, 194:1, 194:5, 194:7, 194:13  <b>NY</b> [1] - 2:22</p>	<p>72:18, 77:14, 80:24, 81:8, 81:9, 88:22, 91:5, 91:6, 92:5, 92:17, 93:13, 94:20, 98:18, 99:20, 112:13, 112:21, 112:22, 112:25, 113:18, 113:22, 113:24, 114:1, 114:4, 114:22, 115:11, 115:13, 115:24, 116:3, 116:12, 117:8, 118:14, 119:7, 119:18, 119:22, 123:23, 133:13, 134:23, 134:25, 136:8, 166:3, 199:19, 199:21  <b>OBSERVATIONS</b> [1] - 40:13  <b>OBSERVED</b> [2] - 60:25, 145:24  <b>OBVIOUSLY</b> [5] - 7:13, 29:3, 108:25, 197:18, 198:3  <b>OCCUR</b> [5] - 27:4, 27:8, 83:6, 132:17, 139:16  <b>OCCURRED</b> [3] - 77:14, 80:16, 178:19  <b>OCCURRING</b> [1] - 26:6  <b>OCCURS</b> [1] - 202:13  <b>OCTOBER</b> [4] - 11:16, 147:25, 149:3, 192:23  <b>ODD</b> [1] - 186:12  <b>ODDLY</b> [1] - 184:8  <b>ODDS</b> [2] - 47:7, 47:9  <b>OFFERED</b> [1] - 50:9  <b>OFFERS</b> [1] - 29:25  <b>OFFICE</b> [7] - 13:17, 82:14, 82:17, 150:25, 151:8, 151:15, 155:22  <b>OFFICER</b> [1] - 172:18  <b>OFFICIAL</b> [4] - 5:10, 5:15, 40:12, 206:7  <b>OFFSET</b> [1] - 178:16  <b>OFTEN</b> [6] - 42:17, 52:6, 108:9, 108:10, 119:11, 142:12  <b>OFTENTIMES</b> [1] - 142:9  <b>OFTTIMES</b> [1] - 13:23  <b>OIL</b> [1] - 66:4  <b>OLD</b> [1] - 164:25</p>	<p><b>ONCE</b> [2] - 63:3, 166:12  <b>ONE</b> [143] - 4:25, 5:15, 5:22, 5:24, 7:1, 8:3, 19:4, 19:5, 21:24, 22:11, 23:25, 26:6, 27:5, 27:9, 32:6, 33:1, 34:6, 34:8, 34:12, 36:6, 38:1, 41:3, 41:5, 41:6, 45:20, 46:9, 49:23, 54:13, 55:6, 55:21, 56:20, 60:12, 60:18, 61:2, 61:3, 66:15, 67:16, 67:22, 67:23, 68:19, 68:25, 69:1, 70:3, 72:20, 74:13, 74:15, 77:1, 81:1, 81:2, 82:4, 82:13, 83:10, 85:8, 87:10, 87:22, 92:3, 92:10, 93:13, 96:19, 97:25, 98:19, 99:3, 99:13, 100:5, 100:12, 101:20, 101:24, 105:11, 106:8, 106:11, 106:16, 111:15, 113:3, 121:18, 122:9, 122:17, 123:16, 124:4, 124:7, 127:18, 128:8, 132:17, 132:19, 134:15, 135:20, 135:21, 136:25, 140:6, 140:16, 143:6, 143:8, 143:19, 144:4, 145:3, 145:10, 145:13, 146:5, 146:20, 147:22, 153:16, 154:1, 154:4, 154:21, 155:9, 156:9, 156:13, 159:25, 162:8, 164:23, 165:9, 165:23, 167:9, 168:5, 169:21, 170:5, 171:4, 171:12, 172:9, 173:2, 174:9, 174:11, 174:23, 177:4, 178:10, 178:11, 178:12, 183:15, 183:22, 183:25, 185:14, 188:3, 188:11, 191:5, 198:24, 200:2, 200:22, 202:15, 202:20, 204:6  <b>ONES</b> [14] - 7:2, 74:1, 89:19, 107:3, 110:22, 116:13, 122:24, 124:17, 140:20, 143:7,</p>	<p>144:24, 146:1, 146:6, 148:20  <b>OPEN</b> [1] - 30:12  <b>OPENED</b> [1] - 8:2  <b>OPENS</b> [1] - 4:1  <b>OPINING</b> [1] - 28:9  <b>OPINION</b> [44] - 13:5, 14:25, 18:22, 19:11, 21:4, 24:13, 28:19, 28:20, 30:1, 30:3, 30:8, 32:25, 34:21, 39:24, 48:7, 50:6, 51:8, 51:24, 53:18, 55:14, 55:23, 65:19, 70:19, 90:23, 96:23, 98:10, 110:10, 112:8, 116:14, 117:15, 139:2, 139:21, 141:23, 142:2, 142:5, 146:2, 148:24, 163:20, 166:10, 166:20, 169:4, 192:9, 192:11, 201:13  <b>OPINIONS</b> [21] - 12:20, 15:5, 21:1, 30:11, 36:16, 41:25, 44:3, 44:9, 45:14, 47:7, 54:3, 75:6, 127:11, 127:16, 139:1, 148:12, 149:5, 190:25, 195:23, 201:11  <b>OPPORTUNITY</b> [1] - 203:6  <b>OPPOSED</b> [3] - 16:10, 58:4, 100:2  <b>OPPOSITE</b> [1] - 180:11  <b>OPPOSITION</b> [2] - 12:8, 28:8  <b>ORAL</b> [4] - 9:24, 13:25, 89:16, 205:14  <b>ORANGES</b> [1] - 99:10  <b>ORDER</b> [4] - 14:22, 43:7, 80:19, 205:6  <b>ORDERED</b> [4] - 170:11, 170:13, 190:22, 190:23  <b>ORDERING</b> [2] - 171:1, 171:11  <b>ORGANIZATION</b> [11] - 61:24, 69:2, 74:19, 121:18, 121:25, 122:1, 122:10, 129:19, 179:21, 195:15, 195:19  <b>ORGANIZATIONS</b> [9] - 121:21, 122:12, 122:16, 122:20,</p>	<p>122:23, 130:1, 152:14, 194:20, 196:11  <b>ORIGINALLY</b> [1] - 197:22  <b>ORTIZ</b> [1] - 5:22  <b>OTHERWISE</b> [2] - 60:9, 65:21  <b>OURSELVES</b> [1] - 205:2  <b>OUTCOME</b> [27] - 18:24, 19:1, 31:9, 61:13, 61:14, 63:16, 63:17, 63:25, 64:20, 66:4, 66:11, 66:14, 67:20, 68:15, 70:23, 74:14, 74:15, 78:15, 79:20, 80:2, 86:4, 87:1, 104:24, 179:2, 179:3, 203:12, 203:14  <b>OUTCOMES</b> [9] - 62:1, 76:19, 85:25, 142:10, 142:13, 164:16, 193:23, 203:15  <b>OUTLINE</b> [2] - 15:25, 96:16  <b>OUTLINED</b> [1] - 44:16  <b>OUTSIDE</b> [1] - 197:11  <b>OUTWEIGH</b> [4] - 42:22, 129:21, 195:7, 196:10  <b>OVER-ASCERTAINMENT</b> [3] - 155:13, 155:25, 156:12  <b>OVERLAP</b> [2] - 128:25, 200:10  <b>OVERLAPPING</b> [2] - 108:4, 129:6  <b>OVERLAPS</b> [1] - 200:8  <b>OVERSTATEMENT S</b> [1] - 100:4  <b>OVERTURNED</b> [1] - 47:24  <b>OVERVIEW</b> [2] - 12:8, 37:14  <b>OVERWHELMING</b> [2] - 120:5, 129:10  <b>OVERWHELMINGLY Y</b> [1] - 57:2  <b>OWN</b> [30] - 4:15, 6:15, 19:17, 19:20, 22:20, 24:10, 31:21, 35:10, 44:20, 51:5, 63:5, 77:22, 82:10, 94:11, 94:16, 94:18,</p>
<b>O</b>				
<p><b>O'CLOCK</b> [3] - 9:24, 95:8, 205:21  <b>O'MALLEY</b> [1] - 6:2  <b>OATH</b> [1] - 111:6  <b>OBESITY</b> [1] - 123:10  <b>OBSERVATIONAL</b> [51] - 30:17, 35:25, 36:7, 36:23, 37:1, 37:2, 65:17, 72:11,</p>				

<p>114:9, 115:1, 137:21, 143:1, 146:3, 149:18, 152:17, 155:2, 156:15, 157:14, 159:14, 180:20, 200:2, 203:3</p>	<p>61:19, 106:10, 111:2, 132:12, 157:2, 163:9, 168:3, 180:15 <b>PARTICULARLY</b> [12] - 37:2, 59:4, 84:6, 133:12, 141:6, 142:14, 163:8, 164:13, 169:1, 172:19, 175:17, 179:3</p>	<p>118:22, 121:6, 121:9, 121:11, 123:2, 131:20 <b>PENNSYLVANIA</b> [10] - 1:2, 1:10, 4:20, 13:2, 54:5, 54:16, 55:11, 55:12, 65:22, 125:7</p>	<p>39:11 <b>PERIOD</b> [4] - 165:15, 177:11, 181:14, 194:11 <b>PERMIT</b> [3] - 14:22, 14:23, 52:10 <b>PERMITS</b> [4] - 9:13, 14:17, 30:1, 112:6</p>	<p>83:16, 83:21, 83:24, 83:25, 87:15, 87:16 <b>PILOT</b> [1] - 99:23 <b>PIOGLITAZONE</b> [4] - 73:10, 151:10, 151:12, 151:14</p>
<b>P</b>				
<p><b>PACER</b> [2] - 5:10, 5:17 <b>PAGE</b> [5] - 15:25, 62:19, 97:12, 156:7, 183:9 <b>PAGES</b> [1] - 12:9 <b>PAIN</b> [1] - 139:18 <b>PAINT</b> [1] - 130:25 <b>PAINTED</b> [1] - 127:17 <b>PANACEA</b> [1] - 119:13 <b>PANEL</b> [3] - 56:2, 92:10, 193:4 <b>PANOPLY</b> [1] - 20:8 <b>PAPER</b> [11] - 101:6, 117:4, 119:2, 151:18, 152:5, 160:23, 161:4, 189:17, 189:18, 195:1 <b>PAPERS</b> [9] - 131:21, 155:12, 155:25, 156:2, 156:21, 157:11, 158:8, 163:4, 194:24 <b>PARAMETERS</b> [2] - 161:8, 167:23 <b>PARLODEL</b> [1] - 58:10 <b>PART</b> [12] - 7:24, 30:25, 37:5, 45:5, 48:11, 67:7, 87:5, 92:25, 97:9, 158:2, 165:3, 170:11 <b>PARTIAL</b> [1] - 82:12 <b>PARTIALLY</b> [1] - 91:8 <b>PARTICIPATE</b> [1] - 4:25 <b>PARTICIPATING</b> [2] - 5:3, 7:2 <b>PARTICLE</b> [5] - 64:18, 64:23, 65:11, 177:12, 183:16 <b>PARTICLES</b> [8] - 60:8, 181:2, 181:4, 181:25, 182:4, 182:6, 182:8, 183:20 <b>PARTICULAR</b> [15] - 5:7, 11:14, 24:6, 46:4, 46:9, 46:18, 52:11,</p>	<p><b>PARTICULARS</b> [1] - 48:23 <b>PARTS</b> [1] - 179:5 <b>PATHWAY</b> [1] - 163:14 <b>PATIENT</b> [27] - 42:11, 42:12, 43:8, 63:19, 136:4, 147:20, 148:10, 165:17, 166:6, 171:15, 172:4, 172:16, 179:5, 179:8, 180:15, 180:20, 180:21, 182:18, 187:6, 189:7, 190:7, 192:7, 192:12, 192:17, 192:22, 196:2 <b>PATIENTS</b> [71] - 15:1, 15:2, 23:16, 25:17, 40:8, 41:11, 42:10, 42:16, 44:4, 47:14, 49:23, 60:4, 68:9, 68:10, 75:10, 76:1, 76:3, 76:14, 76:22, 76:23, 76:24, 76:25, 77:9, 86:23, 87:25, 92:13, 105:8, 105:10, 113:13, 124:15, 135:22, 137:16, 153:21, 153:24, 154:20, 155:16, 155:21, 159:17, 160:3, 160:5, 161:9, 161:10, 163:10, 163:14, 165:24, 166:2, 169:25, 172:13, 173:23, 175:5, 175:18, 175:22, 175:23, 175:24, 176:1, 177:6, 177:9, 177:24, 179:10, 180:8, 180:9, 186:20, 187:7, 187:13, 187:19, 188:19, 194:4, 194:6 <b>PATIENTS'</b> [1] - 76:14 <b>PATRICK</b> [1] - 6:1 <b>PAY</b> [1] - 138:1 <b>PEER</b> [10] - 30:13, 33:18, 74:19, 80:5,</p>	<p><b>PEOPLE</b> [51] - 22:4, 22:6, 22:15, 24:11, 24:14, 24:24, 25:13, 29:11, 40:10, 48:1, 56:11, 59:6, 77:12, 81:3, 81:7, 82:21, 83:14, 85:3, 87:6, 87:9, 87:20, 91:7, 91:10, 91:17, 96:8, 98:21, 99:5, 105:16, 106:3, 108:19, 108:20, 108:23, 109:17, 124:17, 135:22, 147:2, 155:19, 159:21, 173:20, 176:4, 179:5, 180:12, 193:15, 194:12, 194:16, 201:25, 203:17, 203:20 <b>PEPPER</b> [2] - 2:16, 8:20 <b>PER</b> [3] - 180:16, 180:17, 197:10 <b>PERCENT</b> [49] - 22:22, 22:25, 23:2, 23:3, 23:4, 23:6, 25:6, 62:6, 105:9, 105:11, 115:7, 171:8, 171:10, 171:17, 171:19, 171:20, 175:13, 175:15, 175:21, 175:24, 176:1, 176:2, 177:6, 177:7, 178:6, 179:10, 180:15, 185:1, 185:3, 187:7, 187:10, 187:11, 187:12, 187:13, 187:15, 189:7, 189:8, 190:7, 194:1, 200:19, 200:21, 200:22, 200:23 <b>PERCENTAGE</b> [3] - 24:25, 158:10, 187:9 <b>PERFECT</b> [3] - 29:14, 29:18, 83:16 <b>PERFECTLY</b> [1] - 49:1 <b>PERFORM</b> [2] - 41:11, 98:19 <b>PERFORMED</b> [4] - 34:11, 85:3, 109:4, 136:22 <b>PERHAPS</b> [2] - 9:13,</p>	<p><b>PERSON</b> [3] - 67:21, 82:13, 156:13 <b>PERSONAL</b> [1] - 8:1 <b>PERSONALLY</b> [1] - 4:21 <b>PERSPECTIVE</b> [4] - 25:25, 51:25, 53:19, 65:10 <b>PERTAINING</b> [2] - 20:5, 51:5 <b>PHARMACEUTICA</b> [2] - 6:19, 170:8 <b>PHARMACOEPIDE</b> [2] - 117:19, 123:8 <b>PHARMACOLOGY</b> [1] - 170:11 <b>PHENOMENA</b> [1] - 32:15 <b>PHILADELPHIA</b> [7] - 1:10, 1:21, 2:18, 3:4, 4:19, 6:12, 6:17 <b>PHILLIPS</b> [3] - 2:21, 8:18, 8:19 <b>PHRASE</b> [1] - 142:11 <b>PHYSICIAN</b> [4] - 40:23, 41:1, 81:22, 181:10 <b>PHYSICIAN'S</b> [1] - 53:10 <b>PHYSICIANS</b> [7] - 51:20, 53:14, 57:24, 144:25, 148:8, 188:18, 197:20 <b>PHYSIOLOGICAL</b> [2] - 139:12, 139:19 <b>PICK</b> [6] - 38:6, 111:19, 155:17, 174:4, 174:5, 202:19 <b>PICKED</b> [3] - 161:13, 179:19, 203:24 <b>PICKING</b> [1] - 119:16 <b>PIECE</b> [2] - 79:5, 90:13 <b>PIECES</b> [3] - 73:8, 73:13, 178:23 <b>PILE</b> [1] - 112:16 <b>PILL</b> [7] - 83:15,</p>	<p>73:10, 151:10, 151:12, 151:14 <b>PIVOTAL</b> [3] - 16:22, 138:13, 172:10 <b>PLA2</b> [27] - 59:17, 63:8, 66:20, 66:21, 66:24, 67:11, 185:7, 185:8, 185:19, 185:23, 186:5, 186:6, 186:20, 186:23, 187:4, 187:8, 188:3, 188:5, 188:6, 188:7, 188:16, 188:18, 188:22, 189:16, 189:18, 202:11 <b>PLACE</b> [9] - 15:11, 37:25, 60:18, 77:12, 95:3, 123:25, 125:14, 129:22, 174:17 <b>PLACEBO</b> [35] - 72:4, 83:12, 84:18, 84:21, 84:23, 85:2, 85:10, 85:19, 86:8, 86:21, 87:7, 87:8, 87:9, 87:11, 87:12, 87:18, 87:21, 135:24, 136:1, 137:18, 161:1, 161:21, 162:17, 163:3, 165:18, 171:5, 171:6, 171:22, 172:14, 172:20, 172:24, 181:19, 182:2, 193:6 <b>PLAINTIFF</b> [3] - 11:14, 23:9, 57:19 <b>PLAINTIFF'S</b> [18] - 13:7, 54:3, 54:20, 54:23, 55:13, 60:24, 61:5, 66:17, 68:11, 69:6, 71:1, 71:25, 72:20, 73:17, 77:21, 79:3, 80:18, 144:12 <b>PLAINTIFFS</b> [45] - 2:6, 2:11, 2:14, 9:13, 10:16, 13:9, 15:23, 18:8, 24:10, 31:4, 33:1, 34:8, 35:11, 50:10, 51:5, 59:12, 65:24, 67:2, 68:3, 75:5, 80:9, 80:12, 80:16, 83:11, 87:19, 88:16, 88:20, 89:23, 91:11, 93:24, 98:7, 98:8, 100:15, 102:16, 106:17, 107:8, 108:13, 109:2, 109:8,</p>

<p>110:2, 112:1, 114:21, 124:21, 126:19, 204:8</p> <p><b>PLAINTIFFS'</b> [48] - 8:7, 9:24, 10:13, 12:5, 12:8, 12:16, 12:25, 16:19, 19:16, 19:17, 19:19, 20:1, 22:20, 22:23, 27:24, 28:7, 28:13, 31:21, 32:5, 34:19, 35:7, 36:6, 38:4, 38:15, 41:18, 41:23, 43:9, 44:1, 51:10, 51:18, 57:16, 58:14, 75:7, 78:19, 92:23, 94:1, 94:10, 100:12, 106:13, 119:5, 119:11, 120:2, 120:7, 121:2, 123:16, 123:17, 124:8, 125:22</p> <p><b>PLAN</b> [4] - 15:25, 187:23, 188:1, 188:7</p> <p><b>PLANES</b> [1] - 199:6</p> <p><b>PLAQUE</b> [5] - 67:8, 185:10, 185:21, 185:25, 186:4</p> <p><b>PLAQUES</b> [2] - 169:20, 185:24</p> <p><b>PLATELET</b> [1] - 177:7</p> <p><b>PLAUSIBILITY</b> [25] - 41:4, 59:3, 59:15, 59:22, 60:12, 60:18, 60:23, 61:1, 61:6, 64:7, 67:1, 71:6, 97:16, 167:14, 167:15, 167:17, 168:2, 168:8, 168:9, 168:13, 169:12, 190:1, 190:13, 202:9</p> <p><b>PLAUSIBLE</b> [15] - 59:13, 64:7, 66:18, 70:21, 124:12, 169:7, 169:10, 169:11, 169:19, 169:22, 181:22, 185:5, 186:15, 189:22, 191:14</p> <p><b>PLAUSIBLY</b> [1] - 167:18</p> <p><b>PLAY</b> [7] - 18:19, 56:16, 64:14, 67:7, 75:11, 77:22, 116:15</p> <p><b>PLAYED</b> [33] - 18:21, 24:22, 29:1, 30:25, 38:20, 39:9, 40:1, 44:7, 46:6, 47:5, 48:18, 56:19, 64:15, 69:10, 72:24, 77:23, 85:15, 90:5, 110:13, 115:16, 116:16,</p>	<p>141:22, 149:8, 150:11, 163:19, 166:11, 168:14, 176:11, 182:15, 191:19, 192:10, 195:17, 201:23</p> <p><b>PLAYER</b> [1] - 185:21</p> <p><b>PLEAS</b> [1] - 4:19</p> <p><b>PLEASURE</b> [4] - 8:1, 8:5, 96:5, 205:20</p> <p><b>PLOT</b> [2] - 179:22, 180:7</p> <p><b>PLUS</b> [3] - 108:2, 175:9, 176:17</p> <p><b>POIGNANTLY</b> [1] - 13:20</p> <p><b>POINT</b> [54] - 9:11, 26:12, 29:9, 29:10, 31:8, 32:2, 58:10, 59:8, 60:22, 61:15, 64:6, 65:23, 74:2, 75:6, 77:15, 78:4, 87:1, 88:18, 89:4, 90:15, 92:25, 93:7, 93:9, 98:8, 106:5, 108:3, 129:9, 130:1, 133:24, 136:24, 136:25, 139:8, 139:10, 140:9, 140:11, 143:9, 145:13, 147:17, 148:24, 151:21, 152:20, 154:23, 155:4, 158:13, 160:24, 161:2, 165:23, 166:13, 174:19, 184:4, 190:20, 202:1, 202:23</p> <p><b>POINTED</b> [2] - 123:17, 147:23</p> <p><b>POINTING</b> [1] - 53:12</p> <p><b>POINTS</b> [15] - 37:14, 63:13, 64:20, 77:10, 82:7, 92:20, 93:23, 136:17, 140:7, 140:18, 140:19, 140:22, 140:23, 146:12, 146:24</p> <p><b>POISON</b> [2] - 174:4, 174:5</p> <p><b>POLICY</b> [5] - 160:12, 196:16, 196:17, 196:25, 197:9</p> <p><b>POLITICS</b> [1] - 13:22</p> <p><b>POOL</b> [1] - 98:18</p> <p><b>POOLING</b> [1] - 135:7</p> <p><b>POORLY</b> [3] - 89:24, 127:18</p> <p><b>POPPED</b> [1] - 147:1</p>	<p><b>POPULAR</b> [1] - 81:4</p> <p><b>POPULATION</b> [16] - 16:23, 16:24, 17:3, 84:3, 89:3, 91:10, 105:8, 113:7, 140:10, 146:19, 146:20, 148:21, 154:19, 159:24, 171:15, 189:7</p> <p><b>POPULATIONS</b> [13] - 73:12, 99:1, 146:23, 165:11, 165:17, 165:25, 166:6, 167:12, 179:6, 182:18, 190:8, 191:11, 193:9</p> <p><b>PORTION</b> [2] - 5:9, 201:13</p> <p><b>POSIT</b> [2] - 169:21, 177:23</p> <p><b>POSITED</b> [1] - 180:18</p> <p><b>POSITION</b> [7] - 12:11, 45:6, 45:7, 47:8, 127:12, 147:9, 167:19</p> <p><b>POSITIVE</b> [8] - 37:8, 37:9, 46:18, 61:4, 62:9, 67:15, 80:24, 137:6</p> <p><b>POSSIBILITIES</b> [1] - 57:21</p> <p><b>POSSIBILITY</b> [3] - 32:14, 41:12, 90:19</p> <p><b>POSSIBLE</b> [8] - 42:16, 43:2, 63:24, 64:3, 89:1, 192:16, 192:20</p> <p><b>POSSIBLY</b> [1] - 12:5</p> <p><b>POST</b> [5] - 82:11, 88:5, 91:24, 92:5, 179:16</p> <p><b>POSTED</b> [2] - 161:16, 197:14</p> <p><b>POSTER</b> [1] - 22:12</p> <p><b>POSTERS</b> [1] - 22:10</p> <p><b>POSTULATES</b> [7] - 38:16, 38:22, 39:8, 39:12, 39:15, 39:20, 164:23</p> <p><b>POTENTIAL</b> [2] - 81:11, 114:1</p> <p><b>POTENTIALLY</b> [1] - 81:6</p> <p><b>POW</b> [1] - 95:12</p> <p><b>POW-WOW</b> [1] - 95:12</p> <p><b>POWER</b> [1] - 133:23</p> <p><b>POWERED</b> [3] - 113:15, 134:1, 158:15</p> <p><b>POWERFUL</b> [1] -</p>	<p>72:9</p> <p><b>POZNER</b> [1] - 2:8</p> <p><b>PPAR</b> [1] - 178:4</p> <p><b>PPD'S</b> [1] - 101:7</p> <p><b>PRACTICE</b> [4] - 35:2, 42:8, 43:19, 45:6</p> <p><b>PRACTICES</b> [2] - 1:5, 4:13</p> <p><b>PRACTICING</b> [2] - 45:2, 47:13</p> <p><b>PRECISE</b> [5] - 19:22, 56:17, 65:23, 119:25, 122:7</p> <p><b>PREDEFINE</b> [5] - 74:2, 74:8, 77:15, 88:6, 92:1</p> <p><b>PREDEFINED</b> [11] - 74:4, 74:14, 74:15, 77:10, 78:14, 87:1, 88:3, 92:24, 93:6, 100:21, 115:9</p> <p><b>PREDIABETIC</b> [1] - 172:25</p> <p><b>PREDIABETICS</b> [5] - 76:21, 85:3, 91:14, 173:5, 173:19</p> <p><b>PREDICT</b> [3] - 62:1, 63:9, 182:22</p> <p><b>PREDICTIVE</b> [2] - 181:11, 186:6</p> <p><b>PREDICTOR</b> [5] - 140:9, 171:14, 179:13, 182:25, 184:5</p> <p><b>PREDICTORS</b> [3] - 182:21, 183:15, 183:23</p> <p><b>PREEXISTING</b> [1] - 154:13</p> <p><b>PREFERABLE</b> [1] - 93:7</p> <p><b>PREFERRED</b> [1] - 85:22</p> <p><b>PREJUDICIAL</b> [2] - 59:11, 71:14</p> <p><b>PREPARED</b> [3] - 9:7, 16:5, 126:5</p> <p><b>PREPARING</b> [1] - 205:13</p> <p><b>PRESCRIBE</b> [3] - 42:20, 43:1, 47:21</p> <p><b>PRESCRIBED</b> [1] - 81:16</p> <p><b>PRESCRIBING</b> [1] - 42:10</p> <p><b>PRESENCE</b> [1] - 183:6</p> <p><b>PRESENT</b> [2] - 9:7, 185:23</p> <p><b>PRESENTATION</b> [9] - 16:9, 126:24, 127:7,</p>	<p>129:7, 130:3, 145:12, 151:2, 157:6, 170:19</p> <p><b>PRESENTED</b> [6] - 82:9, 101:3, 156:20, 184:10, 204:16, 205:16</p> <p><b>PRESENTING</b> [1] - 179:15</p> <p><b>PRESENTS</b> [1] - 50:6</p> <p><b>PRESERVING</b> [1] - 5:16</p> <p><b>PRESPECIFIED</b> [3] - 78:5, 85:25, 86:4</p> <p><b>PRESS</b> [7] - 11:21, 13:23, 136:11, 136:12, 186:1, 186:2, 186:4</p> <p><b>PRESSURE</b> [1] - 67:19</p> <p><b>PRESUME</b> [4] - 24:9, 59:16, 62:25, 63:1</p> <p><b>PRESUMED</b> [1] - 60:5</p> <p><b>PRESUMPTION</b> [2] - 65:1, 65:2</p> <p><b>PRETEND</b> [1] - 65:3</p> <p><b>PRETTY</b> [7] - 47:23, 54:6, 62:23, 78:23, 176:25, 188:5, 199:14</p> <p><b>PREVENT</b> [3] - 62:8, 71:13, 173:20</p> <p><b>PREVIOUS</b> [1] - 193:17</p> <p><b>PRIMARILY</b> [5] - 147:23, 158:3, 165:10, 178:19, 193:22</p> <p><b>PRIMARY</b> [5] - 78:4, 133:24, 133:25, 178:11, 178:13</p> <p><b>PRINCIPLES</b> [3] - 14:9, 17:4, 63:6</p> <p><b>PRIORITY</b> [1] - 77:19</p> <p><b>PRIVILEGE</b> [1] - 125:18</p> <p><b>PROACTIVE</b> [1] - 73:6</p> <p><b>PROBLEM</b> [13] - 37:1, 57:4, 58:6, 78:22, 90:1, 104:3, 108:13, 128:16, 128:17, 155:22, 162:11, 174:14, 179:1</p> <p><b>PROBLEMS</b> [16] - 61:20, 66:4, 83:9, 100:3, 100:15, 100:19, 100:23, 108:12, 128:20, 134:18, 134:21,</p>
--	---	--	--	---

<p>134:22, 135:1, 139:15, 155:17, 155:19</p> <p><b>PROCEED</b> [4] - 9:5, 9:19, 37:4, 126:19</p> <p><b>PROCEEDING</b> [2] - 4:10, 5:17</p> <p><b>PROCEEDINGS</b> [4] - 1:24, 7:4, 10:11, 206:2</p> <p><b>PROCEEDS</b> [1] - 37:15</p> <p><b>PROCESS</b> [5] - 32:9, 60:17, 139:12, 139:19</p> <p><b>PRODUCED</b> [1] - 1:25</p> <p><b>PRODUCT</b> [3] - 6:19, 170:8, 180:22</p> <p><b>PRODUCTS</b> [3] - 1:5, 4:13, 82:5</p> <p><b>PROFESSIONAL</b> [14] - 69:2, 74:19, 121:18, 121:21, 121:25, 122:1, 122:9, 122:16, 122:20, 129:13, 194:19, 195:15, 195:19, 196:11</p> <p><b>PROFFERED</b> [1] - 16:20</p> <p><b>PROFFERING</b> [1] - 50:11</p> <p><b>PROFILE</b> [5] - 59:23, 66:6, 159:10, 178:24</p> <p><b>PROFILES</b> [2] - 66:8, 66:10</p> <p><b>PROGRAM</b> [1] - 91:8</p> <p><b>PROGRESSES</b> [1] - 68:18</p> <p><b>PROGRESSION</b> [15] - 16:2, 69:13, 69:14, 69:22, 70:5, 70:11, 123:22, 124:20, 176:21, 176:23, 177:17, 177:23, 178:1, 178:7, 178:9</p> <p><b>PROJECTOR</b> [1] - 104:4</p> <p><b>PROMINENTLY</b> [1] - 98:8</p> <p><b>PROMISE</b> [1] - 199:8</p> <p><b>PRONE</b> [1] - 185:24</p> <p><b>PRONOUNCE</b> [2] - 97:5, 98:2</p> <p><b>PROOF</b> [8] - 27:22, 47:1, 47:2, 47:12, 50:9, 50:10, 64:8, 72:13</p> <p><b>PROPER</b> [3] - 14:15, 33:2, 38:18</p>	<p><b>PROPERLY</b> [4] - 28:11, 57:21, 94:15, 114:8</p> <p><b>PROPONENT</b> [1] - 120:22</p> <p><b>PROPORTION</b> [1] - 159:16</p> <p><b>PROPOSE</b> [1] - 70:16</p> <p><b>PROPOSED</b> [4] - 61:10, 94:14, 114:8, 124:22</p> <p><b>PROPOSITION</b> [2] - 72:8, 128:20</p> <p><b>PROSPECTIVE</b> [4] - 75:16, 80:2, 104:24, 113:11</p> <p><b>PROTECTIVE</b> [6] - 62:16, 84:16, 87:19, 115:24, 117:21, 187:16</p> <p><b>PROTEIN</b> [1] - 177:13</p> <p><b>PROTOCOL</b> [2] - 9:5, 83:5</p> <p><b>PROVE</b> [12] - 13:7, 46:5, 46:19, 64:24, 64:25, 65:9, 65:23, 102:19, 102:20, 102:21, 120:23, 167:16</p> <p><b>PROVEN</b> [6] - 60:9, 64:7, 64:13, 65:6, 65:21, 102:7</p> <p><b>PROVIDE</b> [12] - 18:14, 19:8, 19:14, 20:2, 37:11, 79:24, 89:10, 112:20, 113:10, 158:19, 159:9, 159:13</p> <p><b>PROVIDED</b> [1] - 43:24</p> <p><b>PROVIDES</b> [2] - 44:5, 72:4</p> <p><b>PROVIDING</b> [2] - 51:7, 111:6</p> <p><b>PROVING</b> [1] - 65:25</p> <p><b>PROVISION</b> [3] - 30:3, 30:6, 84:21</p> <p><b>PRUDENT</b> [1] - 37:6</p> <p><b>PSATY</b> [3] - 144:24, 145:7, 151:17</p> <p><b>PSC</b> [1] - 204:15</p> <p><b>PSORIASIS</b> [2] - 91:18, 109:17</p> <p><b>PUBLICATION</b> [20] - 74:20, 105:23, 121:9, 133:22, 134:5, 161:4, 161:6, 161:19, 188:1, 188:10, 188:12,</p>	<p>188:14, 188:17, 188:24, 189:14, 189:20, 189:23, 196:16, 196:17</p> <p><b>PUBLICATIONS</b> [1] - 123:1</p> <p><b>PUBLICLY</b> [1] - 162:18</p> <p><b>PUBLISH</b> [3] - 196:17, 197:1, 197:7</p> <p><b>PUBLISHED</b> [23] - 61:23, 69:1, 73:19, 78:25, 79:16, 80:5, 103:10, 106:3, 106:4, 117:8, 117:18, 118:19, 121:6, 145:7, 151:18, 152:4, 155:3, 161:15, 186:9, 186:11, 188:9, 197:22, 203:1</p> <p><b>PUBLISHING</b> [1] - 184:12</p> <p><b>PUBMED</b> [1] - 80:8</p> <p><b>PULL</b> [4] - 58:6, 118:5, 199:11, 201:19</p> <p><b>PULLED</b> [1] - 135:25</p> <p><b>PULLING</b> [1] - 28:6</p> <p><b>PURE</b> [4] - 45:20, 70:20, 87:18, 87:21</p> <p><b>PURELY</b> [3] - 45:21, 49:21</p> <p><b>PURPORT</b> [4] - 11:9, 59:12, 124:10, 124:11</p> <p><b>PURPORTED</b> [1] - 23:20</p> <p><b>PURPOSE</b> [3] - 93:5, 96:9, 99:12</p> <p><b>PURPOSES</b> [3] - 5:15, 45:7, 74:3</p> <p><b>PURSUANT</b> [1] - 57:16</p> <p><b>PURSUE</b> [1] - 189:4</p> <p><b>PUSHED</b> [1] - 173:21</p> <p><b>PUT</b> [27] - 10:6, 47:8, 52:9, 61:14, 72:9, 73:1, 73:3, 79:22, 84:5, 131:3, 136:1, 137:13, 140:1, 144:3, 149:2, 172:14, 178:23, 188:15, 189:11, 190:16, 192:25, 196:4, 197:2, 197:18, 200:21, 202:22, 205:7</p> <p><b>PUTTING</b> [2] - 100:23, 108:12</p> <p><b>PYRAMID</b> [1] - 134:24</p>	<p style="text-align: center;"><b>Q</b></p> <p><b>QUADRANT</b> [2] - 180:5, 180:13</p> <p><b>QUALIFICATIONS</b> [2] - 14:17, 131:21</p> <p><b>QUALIFIED</b> [6] - 58:14, 82:20, 130:13, 130:14, 131:22, 147:6</p> <p><b>QUALIFY</b> [2] - 63:23, 102:17</p> <p><b>QUARTER</b> [1] - 9:9</p> <p><b>QUARTERS</b> [1] - 175:23</p> <p><b>QUESTIONED</b> [1] - 198:5</p> <p><b>QUESTIONS</b> [12] - 49:20, 57:5, 125:21, 125:23, 128:15, 128:17, 132:12, 134:4, 155:6, 198:9, 198:13, 198:15</p> <p><b>QUICK</b> [5] - 99:13, 99:16, 99:20, 99:21, 103:10</p> <p><b>QUICKLY</b> [4] - 96:18, 112:12, 114:5, 155:10</p> <p><b>QUITE</b> [9] - 130:11, 131:18, 131:22, 179:18, 182:11, 194:23, 197:2</p> <p><b>QUOTE</b> [6] - 62:19, 64:12, 70:7, 125:5, 139:24, 152:2</p> <p><b>QUOTES</b> [2] - 157:8, 183:14</p> <p style="text-align: center;"><b>R</b></p> <p><b>RADAR</b> [1] - 197:8</p> <p><b>RAISE</b> [3] - 10:22, 57:12, 100:1</p> <p><b>RAISED</b> [2] - 67:19, 79:14</p> <p><b>RAISES</b> [6] - 58:4, 63:8, 66:19, 114:14, 155:5, 190:4</p> <p><b>RAISING</b> [3] - 59:23, 59:24, 63:14</p> <p><b>RAMIREZ</b> [1] - 113:3</p> <p><b>RAN</b> [1] - 202:6</p> <p><b>RANDOM</b> [4] - 33:9, 141:10, 158:10, 193:9</p> <p><b>RANDOMIZED</b> [118] - 28:24, 30:16, 34:3, 34:5, 34:11, 35:3, 35:15, 35:16, 35:18, 35:19, 35:24, 36:2, 36:20, 65:12, 65:15,</p>	<p>68:8, 68:24, 69:12, 69:22, 70:22, 71:5, 71:18, 71:24, 71:25, 72:3, 72:8, 72:14, 72:15, 72:22, 73:4, 73:21, 73:24, 74:4, 74:8, 74:11, 74:13, 74:22, 74:25, 75:4, 75:8, 75:25, 76:1, 76:7, 77:4, 77:6, 77:8, 77:19, 78:1, 78:2, 78:3, 78:14, 80:20, 80:25, 81:13, 83:11, 84:22, 85:21, 86:25, 87:24, 88:2, 88:15, 88:16, 88:24, 88:25, 89:8, 89:11, 89:17, 91:12, 92:4, 93:6, 93:8, 93:15, 93:21, 94:22, 98:13, 98:17, 99:22, 100:11, 100:14, 100:16, 112:2, 112:5, 112:10, 112:14, 112:19, 113:7, 113:11, 119:17, 119:20, 123:20, 127:20, 133:10, 133:12, 133:21, 135:7, 135:11, 135:12, 135:13, 135:17, 135:23, 136:7, 136:18, 144:12, 144:14, 144:15, 144:16, 145:10, 145:15, 145:25, 148:20, 154:5, 159:18, 163:21, 166:2, 167:21, 191:6, 193:10, 197:23</p> <p><b>RARE</b> [1] - 85:10</p> <p><b>RATE</b> [9] - 24:3, 25:20, 25:23, 26:4, 26:6, 26:7, 26:9, 26:13, 108:22</p> <p><b>RATHER</b> [5] - 19:24, 28:10, 45:16, 96:18, 151:23</p> <p><b>RATIO</b> [11] - 136:23, 154:22, 155:3, 182:17, 183:18, 183:19, 184:5, 184:16, 184:18, 185:1, 185:3</p> <p><b>RAYMOND</b> [1] - 5:22</p> <p><b>RCT</b> [4] - 28:23, 29:11, 134:24, 191:8</p> <p><b>RE</b> [2] - 1:4, 4:12</p> <p><b>REACH</b> [11] - 12:20, 14:23, 14:24, 19:11,</p>
---	--	---	--	--

<p>30:2, 30:7, 44:2, 45:11, 64:16, 148:23, 166:20 <b>REACHED</b> [8] - 47:15, 48:6, 109:24, 121:2, 146:14, 166:13, 166:14, 191:1 <b>REACHING</b> [7] - 18:22, 39:1, 54:24, 141:23, 142:2, 142:5, 146:1 <b>READ</b> [14] - 40:13, 59:20, 75:15, 78:20, 115:21, 116:12, 116:13, 127:11, 127:16, 133:21, 143:13, 147:18, 205:6 <b>READING</b> [5] - 30:14, 119:9, 183:8, 183:13, 205:15 <b>READJUDICATED</b> [1] - 92:6 <b>READJUDICATION</b> [5] - 82:18, 92:8, 134:19, 158:4, 159:3 <b>READY</b> [5] - 6:23, 9:4, 167:3, 204:13 <b>REAL</b> [9] - 23:15, 30:23, 32:17, 62:6, 155:8, 157:4, 165:24, 166:8, 178:22 <b>REALITY</b> [2] - 42:15, 134:20 <b>REALIZED</b> [1] - 96:22 <b>REALLY</b> [27] - 18:3, 19:7, 19:14, 48:20, 61:16, 77:13, 79:13, 83:17, 84:17, 85:10, 87:7, 87:14, 91:11, 102:5, 108:23, 115:2, 115:5, 125:17, 127:22, 156:11, 156:13, 159:3, 169:7, 171:23, 175:4, 176:25, 198:16 <b>REALTIME</b> [1] - 1:20 <b>REASON</b> [24] - 12:7, 19:22, 37:7, 48:24, 55:22, 66:25, 69:1, 72:16, 74:21, 89:8, 102:18, 112:22, 114:16, 117:10, 122:9, 129:19, 133:19, 153:20, 156:20, 158:5, 158:6, 187:21, 189:11, 192:25 <b>REASONABLE</b> [4] - 123:14, 189:25,</p>	<p>191:24, 192:2 <b>REASONABLY</b> [1] - 190:3 <b>REASONED</b> [1] - 13:21 <b>REASONS</b> [5] - 49:24, 54:2, 89:10, 93:25, 156:25 <b>REASSURANCE</b> [1] - 158:19 <b>REBUTTAL</b> [3] - 9:14, 10:1, 198:16 <b>RECAP</b> [1] - 53:9 <b>RECEIVE</b> [1] - 76:2 <b>RECEIVING</b> [1] - 83:4 <b>RECENT</b> [4] - 53:12, 54:16, 57:14, 113:13 <b>RECENTLY</b> [1] - 186:9 <b>RECESS</b> [6] - 50:16, 52:25, 95:7, 126:8, 126:13, 166:25 <b>RECOGNIZE</b> [3] - 29:11, 47:6, 160:7 <b>RECOGNIZED</b> [5] - 44:21, 131:18, 189:10, 190:10, 191:4 <b>RECOGNIZES</b> [5] - 28:18, 137:10, 141:7, 159:23, 186:22 <b>RECOGNIZING</b> [3] - 9:10, 189:22, 198:7 <b>RECOMMENDED</b> [1] - 151:5 <b>RECOMMENDS</b> [1] - 182:24 <b>RECORD</b> [69] - 5:14, 7:24, 72:22, 73:7, 73:18, 77:5, 77:17, 77:25, 78:9, 78:10, 78:20, 78:24, 79:11, 79:14, 80:3, 80:9, 80:11, 80:14, 80:17, 81:24, 82:2, 82:7, 82:12, 82:18, 82:23, 82:25, 83:3, 83:9, 89:23, 89:25, 90:7, 90:14, 91:2, 91:6, 100:17, 101:3, 106:20, 106:25, 107:5, 133:20, 133:22, 134:2, 134:6, 134:11, 134:17, 134:23, 135:2, 138:6, 138:16, 144:20, 145:1, 145:2, 145:3, 151:19, 156:18, 157:3, 159:5, 159:7, 159:16, 159:22,</p>	<p>163:8, 197:22, 202:25, 203:4, 203:17, 203:23, 206:2 <b>RECORDED</b> [1] - 1:24 <b>RECORDING</b> [1] - 5:14 <b>RECORDS</b> [1] - 88:4 <b>RED</b> [2] - 140:19, 143:7 <b>REDID</b> [3] - 105:25, 106:21, 106:23 <b>REDO</b> [1] - 200:5 <b>REDONE</b> [1] - 124:1 <b>REDUCE</b> [2] - 62:3, 62:18 <b>REDUCED</b> [3] - 86:23, 139:16, 139:17 <b>REDUCES</b> [3] - 84:13, 84:14, 153:2 <b>REDUCTION</b> [1] - 186:20 <b>REFER</b> [1] - 134:10 <b>REFERENCE</b> [23] - 27:15, 31:19, 32:10, 90:18, 99:24, 116:20, 117:5, 117:18, 118:2, 132:15, 135:5, 137:2, 141:7, 141:8, 143:1, 148:6, 148:8, 152:25, 164:17, 164:25, 165:3, 169:10, 184:15 <b>REFERENCES</b> [2] - 57:1, 123:4 <b>REFERENCING</b> [1] - 70:3 <b>REFERRED</b> [5] - 17:9, 17:18, 19:25, 158:12, 201:24 <b>REFERS</b> [1] - 28:23 <b>REFLECT</b> [1] - 178:8 <b>REFLECTED</b> [4] - 138:8, 160:23, 162:6, 178:25 <b>REFLECTING</b> [2] - 162:1, 176:23 <b>REFLECTIVE</b> [1] - 179:7 <b>REFLECTS</b> [8] - 137:21, 138:18, 140:18, 161:20, 171:13, 176:18, 180:8, 183:5 <b>REFRESHMENTS</b> [1] - 6:25 <b>REGARD</b> [5] - 49:25, 61:17, 61:18, 67:18, 73:9 <b>REGARDING</b> [2] - 54:19, 159:10</p>	<p><b>REGARDLESS</b> [1] - 60:7 <b>REGISTER</b> [1] - 197:15 <b>REGISTRY</b> [7] - 161:15, 161:20, 162:5, 162:7, 162:10, 162:12, 197:19 <b>REGULATE</b> [1] - 52:13 <b>REGULATORS</b> [6] - 52:3, 52:13, 57:24, 77:18, 79:1, 80:6 <b>REGULATORY</b> [8] - 45:5, 52:9, 58:9, 69:2, 74:19, 122:3, 122:4, 122:10 <b>REHASH</b> [2] - 47:3, 48:2 <b>REILLY</b> [1] - 2:8 <b>REINTERPRET</b> [1] - 82:23 <b>REJECT</b> [5] - 38:10, 93:24, 112:2, 118:13, 141:11 <b>REJECTED</b> [3] - 109:11, 117:23, 119:1 <b>REJECTION</b> [1] - 31:18 <b>RELATED</b> [2] - 17:5, 67:14 <b>RELATES</b> [1] - 203:15 <b>RELATING</b> [1] - 52:4 <b>RELATIONSHIP</b> [12] - 28:1, 28:14, 33:21, 33:22, 57:21, 74:12, 88:12, 132:16, 148:9, 165:12, 166:14, 175:12 <b>RELATIVE</b> [3] - 136:23, 137:2, 147:1 <b>RELATIVELY</b> [2] - 159:23, 160:4 <b>RELEASE</b> [5] - 72:21, 73:17, 186:1, 186:2, 186:4 <b>RELEASED</b> [1] - 189:8 <b>RELEVANT</b> [6] - 40:15, 41:16, 55:23, 59:1, 61:3, 120:24 <b>RELIABILITY</b> [13] - 14:12, 14:13, 51:24, 53:18, 54:19, 94:12, 103:11, 114:15, 120:17, 125:2, 132:5, 132:9, 200:16 <b>RELIABLE</b> [26] - 13:5, 14:21, 21:13,</p>	<p>21:20, 24:4, 27:19, 30:23, 33:22, 35:15, 43:13, 43:15, 43:25, 50:13, 53:11, 58:24, 64:16, 65:25, 72:1, 73:21, 88:24, 112:8, 112:22, 130:9, 162:24, 163:1, 166:19 <b>RELIABLY</b> [4] - 94:16, 130:10, 131:24, 198:5 <b>RELIED</b> [7] - 51:18, 90:10, 92:17, 92:20, 93:19, 127:18, 160:22 <b>RELUCTANT</b> [1] - 91:23 <b>RELY</b> [30] - 25:9, 35:8, 35:14, 57:24, 79:19, 89:13, 91:14, 91:18, 92:8, 94:1, 94:13, 94:14, 94:19, 98:7, 100:13, 106:17, 107:8, 109:2, 109:14, 116:23, 120:3, 134:8, 135:14, 141:13, 141:14, 147:8, 148:5, 158:3, 161:1, 203:25 <b>RELYING</b> [6] - 36:19, 39:24, 61:25, 88:21, 112:4, 163:1 <b>REMAIN</b> [1] - 11:22 <b>REMAINED</b> [1] - 178:20 <b>REMAINING</b> [1] - 11:8 <b>REMAINS</b> [1] - 122:16 <b>REMARKABLE</b> [1] - 88:10 <b>REMEMBER</b> [9] - 70:4, 73:16, 91:25, 100:7, 111:3, 115:3, 186:14, 191:17, 192:4 <b>REMIND</b> [1] - 129:23 <b>REMOVED</b> [1] - 151:14 <b>REMOVES</b> [1] - 182:7 <b>RENAL</b> [1] - 82:5 <b>RENOWNED</b> [4] - 131:6, 144:25, 181:9, 193:3 <b>REPEAT</b> [2] - 49:12, 53:14 <b>REPEATEDLY</b> [4] - 56:25, 62:2, 156:21, 201:24 <b>REPLACEMENT</b> [1] - 100:9 <b>REPLICATED</b> [4] -</p>
--	--	--	--	--

<p>165:11, 165:20, 167:12, 191:11 <b>REPLICATING</b> [1] - 166:13 <b>REPLICATION</b> [5] - 165:9, 166:4, 166:10, 167:10, 191:10 <b>REPORT</b> [27] - 5:7, 39:21, 41:1, 45:19, 60:7, 62:19, 75:15, 90:11, 90:19, 92:12, 109:23, 116:20, 117:6, 117:20, 118:4, 118:9, 118:18, 123:10, 142:9, 158:3, 162:14, 162:15, 164:7, 172:18, 175:17, 179:9, 203:8 <b>REPORTED</b> [3] - 56:22, 87:21, 113:8 <b>REPORTER</b> [2] - 1:20, 206:7 <b>REPORTING</b> [2] - 30:15, 133:17 <b>REPORTS</b> [6] - 7:12, 111:2, 111:3, 126:21, 160:9, 172:4 <b>REPRESENT</b> [2] - 10:10, 47:18 <b>REPRESENTED</b> [1] - 138:22 <b>REPRESENTING</b> [5] - 2:6, 2:11, 2:14, 2:19, 2:23 <b>REPRESENTS</b> [2] - 165:24, 187:9 <b>REQUEST</b> [1] - 197:10 <b>REQUIRE</b> [2] - 33:19, 120:22 <b>REQUIRED</b> [6] - 21:14, 41:22, 58:16, 77:18, 94:11, 120:22 <b>REQUIREMENT</b> [2] - 89:19, 148:14 <b>REQUIREMENTS</b> [2] - 43:24, 154:4 <b>REQUIRES</b> [8] - 14:10, 17:3, 24:5, 36:14, 61:13, 148:6, 168:2 <b>RESCUE</b> [1] - 91:8 <b>RESEARCH</b> [2] - 81:6, 147:19 <b>RESEARCHER</b> [1] - 98:16 <b>RESEARCHERS</b> [5] - 37:13, 77:11, 77:17, 99:1, 106:8 <b>RESISTANCE</b> [1] -</p>	<p>173:17 <b>RESPECTED</b> [1] - 118:23 <b>RESPOND</b> [1] - 9:13 <b>RESPONDED</b> [3] - 40:21, 101:15, 201:4 <b>RESPONSE</b> [18] - 41:6, 41:9, 41:13, 170:12, 184:13, 188:20, 188:22, 190:12, 190:14, 190:15, 190:18, 190:23, 191:15, 197:3, 203:11, 203:14 <b>RESPONSIBILITY</b> [2] - 5:19, 45:21 <b>REST</b> [2] - 100:19, 114:16 <b>RESULT</b> [8] - 34:22, 106:2, 141:7, 144:5, 145:6, 151:12, 162:23, 167:20 <b>RESULTED</b> [2] - 79:8, 108:8 <b>RESULTS</b> [47] - 30:15, 35:14, 36:17, 45:21, 57:23, 79:7, 79:11, 81:24, 82:8, 87:3, 89:6, 93:20, 98:22, 106:9, 117:1, 123:11, 124:1, 124:7, 141:5, 141:14, 141:16, 141:17, 142:24, 143:4, 143:9, 143:14, 144:19, 144:22, 145:1, 145:3, 145:18, 158:14, 159:4, 160:13, 161:17, 162:6, 164:7, 165:19, 167:11, 184:17, 188:4, 188:10, 189:1, 189:4, 189:5, 196:13, 196:19 <b>RETROSPECTIVE</b> [1] - 77:16 <b>RETROVIRAL</b> [1] - 97:6 <b>RETURN</b> [1] - 56:1 <b>RETURNED</b> [1] - 136:22 <b>REVIEW</b> [10] - 41:9, 80:5, 82:12, 110:2, 110:6, 111:1, 111:4, 119:15, 123:2, 158:18 <b>REVIEWED</b> [18] - 30:13, 33:18, 48:23, 74:20, 111:18, 118:22, 121:6, 121:9, 121:12, 131:20, 150:13, 150:17,</p>	<p>158:10, 164:6, 194:23, 194:24, 195:1, 195:22 <b>REVIEWER</b> [3] - 82:4, 157:10, 172:12 <b>REVIEWERS</b> [1] - 92:7 <b>REZULIN</b> [1] - 174:19 <b>RID</b> [1] - 61:16 <b>RIGHT-HAND</b> [6] - 157:16, 157:17, 157:25, 177:19, 180:3, 180:12 <b>RIGOR</b> [2] - 14:13, 111:18 <b>RIGOROUS</b> [3] - 43:14, 78:9, 111:19 <b>RIGOROUSLY</b> [1] - 77:2 <b>RISE</b> [6] - 14:12, 53:3, 95:20, 126:14, 167:2, 178:21 <b>RISK</b> [211] - 16:25, 17:2, 22:6, 22:16, 22:19, 22:21, 22:24, 23:1, 23:2, 23:4, 23:5, 23:8, 23:11, 23:16, 23:21, 24:6, 25:17, 27:1, 27:12, 28:12, 28:16, 30:10, 30:11, 30:20, 30:22, 31:1, 31:4, 31:5, 31:6, 31:8, 31:11, 31:12, 31:17, 32:1, 32:8, 32:21, 34:14, 34:23, 42:2, 42:18, 42:23, 43:5, 43:10, 48:11, 50:6, 51:6, 51:8, 52:12, 56:3, 56:6, 56:9, 56:13, 56:15, 57:3, 57:25, 58:3, 58:15, 58:18, 58:19, 58:20, 59:7, 60:5, 63:9, 63:13, 66:5, 66:7, 66:9, 66:11, 69:8, 71:9, 74:16, 74:24, 75:1, 75:9, 75:17, 75:21, 76:9, 76:24, 76:25, 78:11, 78:13, 82:24, 84:10, 84:11, 84:13, 84:15, 86:24, 88:8, 88:13, 88:18, 90:3, 92:13, 105:2, 105:6, 108:6, 108:15, 109:6, 109:20, 109:23, 110:3, 110:16, 110:24, 111:25, 113:1, 113:13, 114:23,</p>	<p>116:6, 119:8, 119:10, 123:21, 124:4, 124:18, 127:21, 131:1, 131:3, 131:20, 134:10, 136:5, 136:7, 136:9, 136:19, 136:23, 137:3, 137:5, 137:19, 138:3, 138:5, 138:14, 138:19, 138:20, 139:15, 140:6, 140:8, 143:10, 143:11, 143:22, 144:8, 144:23, 145:5, 145:9, 146:8, 146:9, 146:13, 146:23, 147:1, 148:18, 148:19, 148:21, 150:15, 151:4, 151:19, 151:23, 152:10, 153:14, 153:15, 153:17, 153:19, 153:21, 154:2, 154:9, 154:10, 154:14, 154:16, 154:17, 154:21, 154:24, 155:1, 158:20, 158:22, 159:17, 160:5, 160:7, 161:2, 162:2, 163:24, 166:1, 166:7, 175:15, 176:18, 179:7, 179:12, 181:12, 182:21, 182:22, 183:1, 183:4, 183:16, 183:23, 184:6, 186:14, 191:22, 193:12, 193:14, 193:15, 195:5, 195:6, 195:9, 199:22, 202:5, 202:6, 202:14, 202:18, 204:1 <b>RISK-BENEFIT</b> [5] - 42:18, 43:10, 48:11, 52:12, 195:5 <b>RISKS</b> [10] - 42:22, 68:2, 72:5, 113:6, 129:20, 151:9, 151:12, 155:8, 186:7, 196:10 <b>ROBUST</b> [2] - 83:1, 88:6 <b>ROD</b> [1] - 147:16 <b>ROLE</b> [2] - 13:10, 189:3 <b>ROLL</b> [1] - 7:22 <b>ROOM</b> [5] - 6:25, 8:4, 81:3, 132:19, 205:17 <b>ROSEN</b> [1] - 152:2 <b>ROSI</b> [19] - 18:16, 18:18, 18:23, 41:11,</p>	<p>69:18, 69:23, 69:25, 82:8, 113:6, 115:24, 116:3, 117:2, 117:7, 117:21, 121:9, 121:10, 121:19, 163:25 <b>ROSIGLITAZONE</b> [28] - 18:17, 59:21, 69:18, 73:11, 78:3, 129:21, 145:8, 151:9, 151:10, 151:13, 151:19, 152:6, 152:9, 156:10, 157:18, 158:2, 158:21, 160:25, 161:10, 161:14, 161:21, 162:16, 163:10, 171:22, 181:16, 190:6, 193:12, 197:3 <b>ROUGHLY</b> [3] - 155:13, 187:7, 197:16 <b>ROUTINELY</b> [4] - 33:11, 37:15, 38:10, 38:13 <b>RUDE</b> [1] - 183:12 <b>RUFE</b> [55] - 1:13, 4:2, 4:8, 7:21, 8:11, 8:15, 8:21, 8:25, 9:4, 9:15, 10:6, 10:9, 10:19, 10:24, 15:18, 50:15, 51:1, 52:17, 52:24, 53:4, 53:7, 83:18, 94:24, 95:2, 95:6, 95:18, 95:21, 95:25, 96:13, 96:25, 97:10, 98:4, 103:23, 104:8, 104:13, 125:20, 126:6, 126:11, 126:15, 126:18, 128:7, 152:22, 166:21, 166:24, 167:3, 167:5, 172:5, 172:23, 198:14, 198:21, 204:4, 204:20, 204:23, 205:10, 205:12 <b>RULE</b> [9] - 26:16, 33:7, 33:13, 37:3, 41:3, 112:17, 120:21, 130:11, 201:22 <b>RULED</b> [1] - 23:21 <b>RULING</b> [2] - 36:18, 96:23 <b>RUN</b> [2] - 184:8, 199:12 <b>RUNNING</b> [1] - 53:5 <b>RUPTURE</b> [1] - 185:24 <b>RUPTURES</b> [1] -</p>
---	---	--	--	---

<p>185:25  <b>RUPTURING</b> [1] - 67:8  <b>RURY</b> [2] - 159:20, 159:24</p>	<p>101:1, 108:18, 141:15, 153:5, 156:3, 158:23, 158:24, 179:4, 187:24, 189:5, 194:22, 196:13  <b>SCALE</b> [2] - 77:19, 81:13</p>	<p><b>SCORE</b> [2] - 179:17  <b>SCREEN</b> [5] - 10:14, 10:20, 21:16, 53:13, 96:15  <b>SCRUTINY</b> [3] - 83:4, 83:5, 89:21</p>	<p>177:15, 181:19, 183:17, 184:25, 190:11, 191:12  <b>SEGAL</b> [1] - 3:3  <b>SEGMENT</b> [1] - 56:16</p>	<p>53:15  <b>SETTLED</b> [3] - 46:24, 47:20, 126:8  <b>SEVEN</b> [6] - 10:12, 11:8, 16:11, 18:9, 173:24, 194:11</p>
<b>S</b>				
<p><b>SACCHARINE</b> [3] - 83:24, 83:25, 87:16  <b>SAFE</b> [6] - 64:25, 65:6, 65:10, 65:13, 102:7, 102:12  <b>SAFETY</b> [16] - 57:13, 76:17, 77:7, 93:5, 93:19, 117:19, 122:24, 145:17, 145:18, 145:19, 145:20, 151:15, 155:6, 158:19, 168:22, 193:5  <b>SALES</b> [5] - 1:5, 4:13, 131:14, 184:1, 184:20  <b>SANCTIONED</b> [1] - 71:11  <b>SANDOZ</b> [2] - 64:2, 147:9  <b>SANDRA</b> [54] - 1:14, 4:6, 4:21, 7:8, 10:21, 11:1, 11:17, 14:4, 15:20, 16:15, 50:20, 50:24, 53:23, 54:10, 55:2, 55:5, 55:9, 55:15, 83:23, 95:4, 95:9, 96:2, 96:10, 96:21, 97:2, 97:13, 97:17, 97:21, 97:24, 98:5, 103:20, 103:25, 104:5, 104:10, 104:15, 126:4, 126:20, 127:1, 127:5, 128:8, 128:10, 136:10, 136:13, 148:2, 173:2, 173:7, 173:13, 174:3, 174:7, 199:1, 199:5, 204:17, 205:11, 205:19  <b>SANJAY</b> [2] - 101:5, 101:8  <b>SANTA</b> [1] - 5:20  <b>SARAH</b> [1] - 5:20  <b>SAT</b> [1] - 134:16  <b>SATISFY</b> [3] - 38:11, 43:23, 94:11  <b>SAVE</b> [1] - 12:2  <b>SAVING</b> [1] - 42:23  <b>SAW</b> [16] - 62:24, 63:4, 68:5, 72:19,</p>	<p><b>SCATTER</b> [2] - 179:22, 180:7  <b>SCATTERED</b> [1] - 180:6  <b>SCENE</b> [1] - 185:12  <b>SCHEDULE</b> [1] - 5:4  <b>SCHNADER</b> [1] - 3:3  <b>SCHOLARLY</b> [1] - 49:21  <b>SCIENCE</b> [22] - 15:10, 15:13, 21:13, 27:14, 27:19, 30:5, 30:7, 31:24, 43:15, 46:12, 51:25, 53:19, 57:20, 59:11, 61:21, 63:23, 73:21, 102:20, 125:9, 125:15, 168:3, 184:7  <b>SCIENTIFIC</b> [63] - 4:11, 14:8, 14:11, 14:13, 15:4, 15:12, 16:7, 21:20, 23:22, 24:5, 27:16, 27:23, 30:13, 31:19, 32:3, 32:4, 32:19, 33:7, 33:18, 35:2, 41:18, 43:13, 43:21, 43:25, 46:2, 46:13, 48:10, 49:6, 49:17, 50:9, 53:11, 54:7, 55:1, 61:24, 64:17, 65:25, 71:12, 71:14, 71:22, 72:13, 73:22, 83:7, 94:7, 94:9, 94:10, 111:15, 111:17, 114:7, 114:12, 114:15, 120:19, 121:4, 121:5, 122:22, 123:1, 125:14, 127:23, 132:15, 164:19, 165:2, 165:6, 165:8, 176:17  <b>SCIENTIFICALLY</b> [6] - 17:3, 33:12, 46:5, 46:19, 50:12, 58:24  <b>SCIENTIST</b> [3] - 33:19, 45:20, 123:14  <b>SCIENTISTS</b> [12] - 27:10, 31:20, 41:22, 47:1, 48:6, 49:19, 105:24, 120:24, 152:15, 168:16, 170:6, 185:8</p>	<p><b>SEATED</b> [3] - 4:3, 96:1, 126:18  <b>SECOND</b> [5] - 29:18, 145:13, 154:21, 161:11, 191:2  <b>SECONDS</b> [1] - 22:1  <b>SECTION</b> [6] - 6:17, 16:18, 26:22, 97:10, 97:14, 97:16  <b>SECTIONS</b> [1] - 96:17  <b>SEE</b> [98] - 5:7, 6:22, 7:16, 10:14, 11:2, 17:21, 18:3, 18:16, 22:12, 24:20, 28:23, 31:16, 38:2, 46:15, 52:18, 57:1, 64:20, 64:21, 68:9, 68:15, 83:15, 85:13, 90:4, 91:11, 95:15, 96:7, 96:17, 97:1, 97:21, 98:22, 99:17, 102:18, 104:16, 106:7, 114:5, 117:5, 118:2, 122:15, 123:3, 124:6, 125:1, 130:19, 135:18, 138:13, 138:21, 140:3, 140:4, 140:9, 141:17, 143:4, 145:12, 146:6, 154:9, 154:16, 154:21, 156:3, 157:17, 157:25, 159:18, 160:6, 161:18, 162:5, 162:25, 165:19, 170:25, 171:6, 171:11, 171:23, 172:3, 173:19, 175:4, 175:16, 176:21, 177:2, 177:16, 177:19, 177:23, 178:1, 178:9, 180:2, 180:6, 181:13, 182:1, 182:2, 184:10, 184:23, 188:6, 188:10, 190:17, 191:9, 197:5, 197:6, 197:11, 201:1, 203:18, 203:22, 204:11, 204:23  <b>SEEING</b> [15] - 15:17, 117:4, 118:3, 137:18, 138:11, 146:22, 154:24, 160:2, 160:5,</p>	<p><b>SELF</b> [1] - 103:8  <b>SELLER</b> [1] - 130:17  <b>SELLING</b> [1] - 130:17  <b>SENATE</b> [1] - 13:16  <b>SENDS</b> [1] - 174:12  <b>SENIOR</b> [3] - 81:22, 197:10  <b>SENSE</b> [11] - 31:15, 48:21, 49:21, 49:22, 102:18, 108:23, 111:17, 126:24, 132:11, 133:3, 172:22  <b>SENSITIVE</b> [1] - 183:4  <b>SENT</b> [1] - 7:14  <b>SENTENCE</b> [4] - 29:18, 185:22, 190:22, 199:9  <b>SEPARATE</b> [1] - 135:22  <b>SEPTEMBER</b> [1] - 1:11  <b>SEPTIMUS</b> [20] - 19:21, 20:3, 20:11, 28:4, 31:5, 36:11, 38:19, 42:1, 45:13, 45:19, 46:3, 50:4, 51:11, 60:6, 64:9, 66:22, 70:16, 121:20, 122:2, 140:1  <b>SEPTIMUS'</b> [2] - 139:24, 139:25  <b>SEPTIMUS'S</b> [1] - 21:1  <b>SEQUENCE</b> [2] - 57:20, 60:18  <b>SEQUENCED</b> [1] - 60:17  <b>SERIOUS</b> [5] - 37:1, 78:22, 151:9, 155:6, 174:15  <b>SERIOUSLY</b> [1] - 100:6  <b>SERUM</b> [1] - 188:2  <b>SERVES</b> [1] - 43:19  <b>SET</b> [9] - 80:11, 89:25, 95:10, 98:21, 105:24, 105:25, 106:3, 111:19, 196:6  <b>SETS</b> [6] - 50:8, 106:9, 107:19, 107:22, 107:23, 124:1  <b>SETTING</b> [2] - 51:21,</p>	<p><b>SEVEN-FOLD</b> [1] - 173:24  <b>SEVENTH</b> [1] - 125:13  <b>SEVERAL</b> [8] - 6:3, 6:20, 37:12, 49:24, 56:23, 69:20, 78:20, 189:25  <b>SEVERE</b> [1] - 20:8  <b>SEVERITY</b> [1] - 153:24  <b>SHARED</b> [1] - 135:9  <b>SHELLY</b> [1] - 2:4  <b>SHESTACK</b> [3] - 3:1, 8:23, 8:24  <b>SHOCKING</b> [2] - 62:23, 178:8  <b>SHOOT</b> [4] - 88:25, 181:14, 181:15, 182:3  <b>SHOOTS</b> [1] - 181:16  <b>SHORT</b> [5] - 18:18, 76:16, 166:22, 180:24, 198:17  <b>SHORTEST</b> [1] - 109:25  <b>SHORTLY</b> [2] - 126:25, 153:7  <b>SHORTNESS</b> [1] - 109:21  <b>SHOULDERS</b> [1] - 77:25  <b>SHOW</b> [43] - 37:24, 45:14, 45:17, 61:8, 69:22, 70:5, 86:16, 102:21, 106:15, 107:14, 107:15, 108:15, 108:17, 111:24, 113:19, 114:25, 122:23, 128:1, 129:11, 134:10, 134:13, 135:3, 135:8, 141:5, 143:4, 144:21, 145:15, 149:23, 153:10, 156:25, 160:13, 160:21, 161:2, 161:4, 175:4, 184:11, 184:19, 187:1, 196:13, 196:15, 202:20, 203:25  <b>SHOWED</b> [18] - 45:10, 78:11, 81:11, 87:3, 105:5, 107:3,</p>

<p>137:18, 141:18, 156:14, 173:21, 191:10, 193:11, 193:19, 196:8, 199:13, 199:20, 202:11, 202:24</p> <p><b>SHOWING</b> [9] - 22:11, 65:13, 88:18, 89:7, 155:21, 166:1, 167:21, 189:6, 202:18</p> <p><b>SHOWN</b> [11] - 46:25, 47:25, 62:1, 75:8, 101:9, 124:14, 153:5, 183:22, 184:17, 192:12, 203:8</p> <p><b>SHOWS</b> [14] - 122:22, 125:10, 135:13, 137:11, 143:10, 143:19, 149:10, 149:14, 149:19, 155:11, 175:7, 179:24, 190:15, 196:22</p> <p><b>SHRED</b> [2] - 68:6</p> <p><b>SHUSTER</b> [1] - 79:18</p> <p><b>SICK</b> [3] - 91:7, 91:11, 146:10</p> <p><b>SICKER</b> [1] - 146:15</p> <p><b>SIDE</b> [14] - 22:11, 22:13, 23:25, 85:8, 85:13, 87:12, 150:8, 151:15, 157:25, 174:23, 177:19, 181:24, 195:9, 195:10</p> <p><b>SIDED</b> [1] - 193:20</p> <p><b>SIDES</b> [3] - 87:10, 114:13, 172:8</p> <p><b>SIGN</b> [1] - 187:2</p> <p><b>SIGNAL</b> [11] - 18:2, 27:11, 99:18, 100:10, 123:9, 145:23, 145:24, 179:16, 179:19, 179:20, 202:6</p> <p><b>SIGNALS</b> [4] - 12:14, 24:16, 27:1, 202:5</p> <p><b>SIGNATURE</b> [1] - 26:19</p> <p><b>SIGNIFICANCE</b> [12] - 33:10, 33:16, 34:7, 34:10, 34:20, 34:25, 45:18, 46:8, 63:5, 106:11, 112:2, 202:4</p> <p><b>SIGNIFICANT</b> [146] - 30:19, 30:21, 33:13, 33:14, 33:20, 34:12, 34:14, 34:16, 34:22, 35:9, 35:12, 35:14, 36:1, 36:4, 45:15, 45:17, 45:24, 46:1, 57:13, 69:4, 69:8,</p>	<p>69:14, 74:12, 74:16, 74:23, 75:5, 75:9, 75:17, 75:21, 76:3, 76:8, 78:12, 78:17, 82:24, 84:15, 87:4, 88:1, 88:8, 88:13, 88:17, 90:3, 92:13, 101:21, 101:22, 105:6, 105:16, 105:18, 106:2, 106:5, 106:19, 106:23, 106:25, 107:1, 108:6, 108:8, 108:11, 109:3, 109:6, 109:20, 110:8, 110:11, 110:16, 110:24, 111:9, 111:22, 111:25, 112:10, 113:1, 113:4, 113:9, 113:13, 113:18, 114:23, 116:6, 119:10, 119:20, 120:9, 120:11, 120:12, 123:21, 124:2, 124:3, 129:2, 135:10, 136:24, 138:9, 140:5, 140:8, 140:19, 140:21, 141:1, 141:3, 141:5, 141:7, 141:12, 141:14, 141:16, 141:17, 141:25, 142:1, 142:10, 142:13, 142:23, 142:25, 143:4, 143:5, 143:9, 143:11, 143:12, 143:15, 143:16, 143:18, 143:20, 143:22, 143:23, 144:1, 144:5, 144:6, 144:8, 144:19, 144:21, 145:14, 146:7, 146:9, 148:18, 148:19, 154:23, 155:5, 161:7, 165:22, 165:23, 167:20, 173:22, 173:24, 174:1, 187:2, 187:3, 187:5, 189:6, 199:15, 199:17, 199:22, 202:8, 204:1</p> <p><b>SIGNIFICANTLY</b> [5] - 31:12, 56:2, 117:2, 124:8, 188:17</p> <p><b>SIGNS</b> [1] - 161:7</p> <p><b>SIHARATH</b> [1] - 51:15</p> <p><b>SIMILAR</b> [1] - 168:17</p> <p><b>SIMPLE</b> [1] - 88:21</p> <p><b>SIMPLEST</b> [1] - 108:24</p>	<p><b>SIMPLY</b> [6] - 15:6, 23:20, 27:3, 67:4, 122:11, 147:19</p> <p><b>SINGH</b> [16] - 90:1, 90:20, 91:15, 92:21, 106:17, 107:5, 107:6, 107:11, 107:24, 108:1, 110:15, 110:18, 149:14, 149:16, 200:9</p> <p><b>SINGH'S</b> [1] - 90:7</p> <p><b>SINGLE</b> [16] - 23:9, 34:6, 69:7, 75:16, 75:23, 77:14, 78:1, 78:16, 88:16, 92:3, 92:16, 100:12, 123:20, 132:19, 143:8, 191:5</p> <p><b>SINGLETON</b> [1] - 5:20</p> <p><b>SINGLY</b> [1] - 120:4</p> <p><b>SISTER</b> [1] - 187:19</p> <p><b>SIT</b> [1] - 199:4</p> <p><b>SITE</b> [1] - 7:3</p> <p><b>SITUATION</b> [5] - 29:15, 29:19, 87:9, 119:25, 128:3</p> <p><b>SITUATIONS</b> [1] - 24:2</p> <p><b>SIX</b> [6] - 157:10, 198:25, 199:1, 199:18, 199:24, 200:6</p> <p><b>SIXTEENTH</b> [1] - 2:8</p> <p><b>SIXTH</b> [2] - 51:14, 53:12</p> <p><b>SIZE</b> [1] - 60:8</p> <p><b>SKEPTICALLY</b> [1] - 67:2</p> <p><b>SKIP</b> [2] - 104:2, 104:14</p> <p><b>SKIPPED</b> [2] - 103:25, 178:10</p> <p><b>SLIDE</b> [40] - 16:6, 45:19, 64:1, 75:12, 97:5, 97:7, 97:15, 103:18, 103:19, 104:6, 112:24, 114:2, 114:5, 128:25, 138:11, 138:21, 140:18, 141:15, 143:4, 143:12, 143:18, 144:2, 144:20, 145:11, 145:16, 151:7, 152:18, 153:6, 165:21, 170:18, 174:22, 179:14, 181:12, 188:16, 190:15, 199:11, 199:13, 200:19,</p>	<p>201:20</p> <p><b>SLIDES</b> [9] - 15:16, 55:6, 56:25, 126:1, 126:23, 126:25, 164:24, 173:25, 178:11</p> <p><b>SLIGHTLY</b> [2] - 105:14</p> <p><b>SMALL</b> [18] - 17:23, 43:4, 74:3, 74:14, 82:11, 85:9, 100:13, 100:20, 105:2, 106:21, 159:16, 178:5, 194:1, 194:5, 194:15, 202:10</p> <p><b>SMALLER</b> [1] - 74:1</p> <p><b>SMITHKLINE</b> [2] - 189:2, 189:12</p> <p><b>SMOKED</b> [3] - 23:2, 23:25, 99:5</p> <p><b>SMOKING</b> [2] - 133:5, 148:24</p> <p><b>SNIDERMAN</b> [40] - 19:20, 19:22, 20:3, 20:6, 20:25, 27:25, 31:10, 34:21, 35:8, 35:9, 39:7, 42:1, 50:4, 51:12, 55:24, 55:25, 60:3, 62:18, 62:24, 63:4, 63:18, 66:19, 70:15, 72:7, 75:13, 110:8, 110:12, 111:23, 119:12, 121:13, 122:3, 131:17, 179:23, 181:8, 184:12, 185:2, 195:14, 198:11, 204:11, 205:9</p> <p><b>SNIDERMAN'S</b> [2] - 35:3, 184:9</p> <p><b>SO..</b> [1] - 173:12</p> <p><b>SOCIETIES</b> [2] - 129:13, 196:8</p> <p><b>SOFT</b> [1] - 10:5</p> <p><b>SOLD</b> [1] - 194:4</p> <p><b>SOLDO</b> [1] - 114:6</p> <p><b>SOLE</b> [1] - 143:22</p> <p><b>SOLELY</b> [1] - 141:14</p> <p><b>SOLID</b> [1] - 33:21</p> <p><b>SOMEONE</b> [2] - 22:2, 179:15</p> <p><b>SOMETIMES</b> [8] - 28:2, 28:3, 46:18, 52:7, 52:19, 99:7, 175:20, 186:11</p> <p><b>SOMEWHERE</b> [4] - 25:6, 25:8, 175:12, 179:9</p> <p><b>SOON</b> [2] - 52:22, 95:8</p>	<p><b>SOPHISTICATED</b> [1] - 141:9</p> <p><b>SORRY</b> [15] - 19:18, 20:14, 49:12, 50:14, 55:7, 60:25, 75:12, 84:1, 97:15, 103:19, 115:20, 122:2, 125:6, 139:14, 180:11</p> <p><b>SORT</b> [7] - 15:3, 15:12, 39:15, 43:21, 125:15, 127:12, 133:18</p> <p><b>SORTS</b> [1] - 98:15</p> <p><b>SOUND</b> [4] - 5:14, 14:8, 17:4, 50:12</p> <p><b>SOURCE</b> [1] - 88:24</p> <p><b>SPARK</b> [1] - 57:22</p> <p><b>SPEAKERS</b> [2] - 56:23, 131:10</p> <p><b>SPEAKING</b> [4] - 16:8, 25:12, 25:15, 56:17</p> <p><b>SPEAKS</b> [1] - 55:23</p> <p><b>SPECIAL</b> [5] - 3:1, 8:22, 10:9, 24:16, 142:14</p> <p><b>SPECIALTY</b> [2] - 131:6, 198:11</p> <p><b>SPECIFIC</b> [16] - 7:19, 11:12, 11:15, 16:4, 16:7, 19:6, 21:19, 39:14, 147:24, 148:5, 148:7, 148:11, 192:7, 192:19, 192:23, 201:10</p> <p><b>SPECIFICALLY</b> [10] - 13:25, 20:5, 20:16, 20:23, 21:12, 21:22, 59:23, 76:17, 77:6, 121:12</p> <p><b>SPECIFICITY</b> [5] - 18:7, 21:13, 37:19, 37:22, 38:12</p> <p><b>SPECIFIED</b> [1] - 101:3</p> <p><b>SPECULATE</b> [2] - 15:9, 125:8</p> <p><b>SPECULATION</b> [3] - 52:2, 53:21, 70:20</p> <p><b>SPENT</b> [4] - 128:24, 133:20, 157:10, 202:10</p> <p><b>SPIN</b> [1] - 140:1</p> <p><b>SPONSOR</b> [1] - 159:4</p> <p><b>SPONSORED</b> [3] - 154:11, 186:8, 186:9</p> <p><b>SQUIRE</b> [1] - 2:17</p> <p><b>STAGE</b> [4] - 128:5, 128:7, 128:11, 128:13</p>
--	---	--	--	--

<p><b>STAND</b> <sup>[1]</sup> - 16:20</p> <p><b>STANDARD</b> <sup>[47]</sup> - 6:21, 6:22, 29:4, 29:25, 30:4, 34:4, 35:3, 35:16, 36:20, 42:3, 42:5, 42:7, 44:3, 45:18, 46:1, 46:2, 46:4, 46:7, 46:10, 47:1, 47:11, 47:14, 48:5, 48:9, 48:16, 49:5, 49:9, 49:14, 49:16, 50:8, 54:5, 58:9, 58:16, 58:21, 65:16, 71:6, 71:17, 71:23, 73:22, 93:25, 103:4, 103:6, 112:3, 114:15, 166:15</p> <p><b>STANDARDS</b> <sup>[8]</sup> - 14:22, 14:25, 46:23, 50:7, 59:1, 89:11, 89:13, 94:11</p> <p><b>STANDING</b> <sup>[3]</sup> - 22:4, 102:6, 103:1</p> <p><b>STANDS</b> <sup>[2]</sup> - 77:25, 170:1</p> <p><b>STARR</b> <sup>[1]</sup> - 178:4</p> <p><b>START</b> <sup>[6]</sup> - 32:8, 33:6, 36:5, 61:8, 127:11, 132:8</p> <p><b>STARTED</b> <sup>[1]</sup> - 79:2</p> <p><b>STARTING</b> <sup>[6]</sup> - 23:10, 32:2, 60:22, 202:1, 204:8</p> <p><b>STARTS</b> <sup>[3]</sup> - 32:6, 59:21, 71:21</p> <p><b>STATE</b> <sup>[12]</sup> - 4:10, 4:16, 4:17, 5:1, 6:10, 13:12, 27:20, 51:7, 95:11, 96:3, 102:1, 205:17</p> <p><b>STATEMENT</b> <sup>[4]</sup> - 47:8, 49:23, 84:24, 129:15</p> <p><b>STATEMENTS</b> <sup>[2]</sup> - 49:25, 71:14</p> <p><b>STATES</b> <sup>[8]</sup> - 1:1, 13:14, 18:12, 32:10, 48:12, 64:10, 99:25, 166:3</p> <p><b>STATIN</b> <sup>[10]</sup> - 91:3, 91:4, 163:6, 163:7, 163:9, 163:11, 163:12, 171:25, 175:7, 177:8</p> <p><b>STATINS</b> <sup>[8]</sup> - 163:22, 163:23, 171:19, 202:25, 203:1, 203:2, 203:4, 203:9</p> <p><b>STATION</b> <sup>[1]</sup> - 22:10</p>	<p><b>STATISTICAL</b> <sup>[19]</sup> - 25:2, 25:5, 33:10, 33:16, 34:7, 34:9, 34:20, 34:25, 36:10, 45:22, 47:2, 47:17, 63:4, 98:20, 106:8, 106:11, 133:23, 157:14, 202:4</p> <p><b>STATISTICALLY</b> <sup>[118]</sup> - 25:12, 25:15, 30:19, 30:21, 33:13, 33:14, 33:20, 34:12, 34:14, 34:16, 34:22, 35:9, 35:12, 35:14, 36:1, 36:3, 45:15, 69:7, 69:13, 74:11, 74:16, 74:23, 75:5, 75:8, 75:17, 75:20, 76:2, 76:8, 78:12, 78:16, 82:24, 84:15, 87:4, 88:1, 88:7, 88:13, 88:17, 90:3, 92:12, 101:21, 101:22, 105:5, 105:16, 105:18, 106:2, 106:5, 106:19, 106:23, 106:24, 107:1, 108:5, 108:8, 109:3, 109:6, 109:19, 110:7, 110:11, 110:16, 110:23, 111:22, 111:25, 112:10, 113:1, 113:3, 113:8, 113:12, 113:18, 114:23, 116:5, 117:2, 119:10, 119:20, 120:9, 120:10, 120:11, 120:12, 123:21, 124:2, 124:3, 129:1, 136:23, 138:8, 140:5, 140:19, 140:21, 140:25, 141:6, 141:11, 141:16, 141:25, 142:1, 142:24, 143:11, 143:15, 143:17, 143:20, 143:21, 143:23, 144:4, 144:7, 146:7, 146:8, 148:18, 154:23, 155:4, 165:22, 167:20, 173:22, 173:24, 187:2, 187:3, 187:4, 189:6, 199:15, 199:17, 199:21, 202:8, 203:25</p> <p><b>STATISTICIAN</b> <sup>[1]</sup> - 40:23</p> <p><b>STATISTICS</b> <sup>[5]</sup> - 25:9, 108:18, 130:17,</p>	<p>130:22, 164:18</p> <p><b>STAYS</b> <sup>[1]</sup> - 181:17</p> <p><b>STEERING</b> <sup>[1]</sup> - 8:7</p> <p><b>STENOGRAPHIC</b> <sup>[1]</sup> - 5:11</p> <p><b>STENOTYPE</b> <sup>[1]</sup> - 1:24</p> <p><b>STENOTYPE-COMPUTER</b> <sup>[1]</sup> - 1:24</p> <p><b>STEP</b> <sup>[6]</sup> - 33:6, 54:13, 60:20, 132:22, 177:1, 201:21</p> <p><b>STEPHEN</b> <sup>[1]</sup> - 2:3</p> <p><b>STEPPED</b> <sup>[2]</sup> - 128:5, 128:18</p> <p><b>STEPS</b> <sup>[1]</sup> - 131:25</p> <p><b>STILL</b> <sup>[11]</sup> - 32:24, 34:15, 85:6, 88:16, 108:13, 131:13, 154:16, 160:5, 161:2, 184:3, 202:11</p> <p><b>STIPULATED</b> <sup>[1]</sup> - 132:5</p> <p><b>STOCKL</b> <sup>[2]</sup> - 113:12, 113:20</p> <p><b>STOP</b> <sup>[8]</sup> - 4:23, 95:3, 139:5, 139:23, 140:16, 143:24, 166:18, 199:8</p> <p><b>STOPPED</b> <sup>[1]</sup> - 140:15</p> <p><b>STORIES</b> <sup>[1]</sup> - 178:11</p> <p><b>STORY</b> <sup>[4]</sup> - 152:6, 162:13, 189:4, 197:4</p> <p><b>STRAIGHT</b> <sup>[2]</sup> - 80:12, 181:17</p> <p><b>STRATEGIES</b> <sup>[1]</sup> - 178:13</p> <p><b>STRATEGY</b> <sup>[1]</sup> - 178:12</p> <p><b>STREAM</b> <sup>[1]</sup> - 93:9</p> <p><b>STREET</b> <sup>[5]</sup> - 1:21, 2:4, 2:8, 3:3, 22:9</p> <p><b>STREETS</b> <sup>[1]</sup> - 2:17</p> <p><b>STRENGTHENED</b> <sup>[1]</sup> - 145:23</p> <p><b>STRICKEN</b> <sup>[1]</sup> - 128:22</p> <p><b>STRICT</b> <sup>[1]</sup> - 17:3</p> <p><b>STROKE</b> <sup>[1]</sup> - 58:12</p> <p><b>STRONG</b> <sup>[4]</sup> - 139:9, 166:14, 176:17, 186:21</p> <p><b>STRONGEST</b> <sup>[2]</sup> - 183:15, 183:22</p> <p><b>STUDIED</b> <sup>[4]</sup> - 18:24, 77:2, 105:8, 122:17</p> <p><b>STUDIES</b> <sup>[200]</sup> - 12:23, 12:24, 18:24,</p>	<p>18:25, 23:19, 23:23, 24:1, 24:18, 26:5, 26:12, 29:23, 30:23, 34:4, 35:21, 35:23, 35:25, 36:7, 36:15, 36:23, 37:2, 37:24, 41:9, 42:12, 61:13, 61:14, 63:17, 64:4, 66:12, 66:14, 67:20, 68:12, 68:16, 68:20, 69:17, 70:3, 70:5, 70:20, 70:23, 70:25, 71:17, 71:18, 71:21, 72:11, 72:14, 72:18, 72:22, 72:25, 73:1, 73:11, 73:20, 78:1, 79:20, 79:22, 81:8, 81:9, 81:21, 84:6, 88:23, 89:19, 91:5, 91:6, 91:16, 91:18, 92:6, 92:21, 92:24, 93:1, 93:14, 93:25, 94:1, 94:2, 94:13, 94:19, 94:20, 94:21, 98:7, 98:16, 98:17, 98:24, 99:7, 99:14, 99:15, 99:20, 100:20, 102:24, 102:25, 107:10, 107:11, 107:17, 107:18, 107:20, 107:21, 108:3, 109:2, 109:15, 110:11, 110:15, 111:20, 112:13, 112:14, 112:21, 112:22, 112:25, 113:16, 113:18, 113:22, 113:24, 114:1, 114:4, 114:13, 115:12, 115:14, 115:24, 116:3, 116:8, 116:12, 119:9, 119:18, 119:23, 120:3, 120:7, 128:25, 129:6, 133:14, 133:18, 134:25, 135:9, 135:13, 135:14, 135:20, 135:22, 135:24, 136:1, 136:3, 138:4, 138:8, 138:18, 140:5, 140:17, 141:8, 141:11, 141:25, 142:1, 142:24, 143:13, 147:18, 153:1, 153:5, 153:6, 153:14, 154:8, 154:12, 154:15, 160:12, 161:25, 162:21, 163:6, 163:7, 163:23, 164:5, 164:9,</p>	<p>165:15, 166:3, 171:1, 172:10, 175:7, 175:8, 176:20, 177:25, 178:3, 178:7, 178:8, 179:2, 179:3, 184:16, 186:13, 194:17, 194:22, 194:24, 195:1, 196:3, 196:12, 196:14, 197:1, 197:2, 199:16, 199:19, 199:21, 200:3, 200:4, 200:24, 200:25, 202:20, 202:22, 203:24</p> <p><b>STUDY</b> <sup>[164]</sup> - 26:15, 26:17, 27:18, 30:15, 30:16, 30:17, 32:12, 32:14, 35:22, 65:17, 65:18, 66:23, 69:7, 69:11, 73:18, 75:16, 75:23, 77:11, 77:15, 78:4, 78:21, 79:6, 79:11, 80:10, 80:17, 80:24, 81:23, 83:5, 83:13, 83:16, 84:25, 85:3, 85:18, 85:19, 85:24, 86:3, 86:19, 87:1, 87:13, 87:23, 87:24, 88:15, 89:5, 91:13, 91:20, 92:11, 92:17, 92:22, 93:1, 93:18, 94:5, 98:14, 98:19, 99:3, 99:8, 99:23, 100:17, 100:18, 100:25, 101:11, 104:21, 105:8, 105:18, 106:21, 106:22, 110:15, 110:19, 110:21, 110:22, 113:6, 114:21, 114:22, 115:1, 115:7, 115:9, 115:11, 115:18, 116:18, 116:19, 116:24, 117:6, 117:7, 117:8, 117:9, 117:17, 118:6, 118:7, 118:11, 118:12, 118:14, 118:16, 118:18, 123:23, 125:10, 129:3, 129:4, 133:2, 133:20, 133:22, 133:23, 133:25, 134:1, 134:2, 134:3, 134:5, 134:9, 134:20, 134:23, 135:19, 135:20, 137:11, 137:21, 139:8, 140:16, 142:7, 143:19, 143:23,</p>
--	---	---	--	--

<p>144:19, 153:10, 158:14, 159:9, 161:14, 161:17, 161:18, 162:14, 162:15, 163:8, 163:15, 164:6, 165:11, 170:13, 172:21, 175:5, 177:22, 180:21, 181:13, 184:24, 186:8, 186:25, 187:1, 187:8, 188:2, 188:9, 188:12, 188:23, 196:24, 197:7, 197:16, 200:7, 202:15, 202:16, 202:25</p> <p><b>STUDY'S</b> [1] - 36:17</p> <p><b>STUDYING</b> [1] - 17:1</p> <p><b>STUFF</b> [4] - 7:15, 39:16, 158:11, 183:21</p> <p><b>SUB</b> [3] - 140:7, 140:14, 146:13</p> <p><b>SUB-END</b> [1] - 140:7</p> <p><b>SUBGROUP</b> [4] - 146:4, 146:12, 146:16, 193:18</p> <p><b>SUBJECT</b> [4] - 47:15, 72:18, 112:23, 123:5</p> <p><b>SUBJECTIVE</b> [3] - 17:13, 17:18, 21:8</p> <p><b>SUBJECTS</b> [2] - 94:20, 98:14</p> <p><b>SUBMITTED</b> [5] - 28:7, 51:4, 162:13, 201:8, 203:7</p> <p><b>SUBPAR</b> [1] - 80:11</p> <p><b>SUBSEQUENT</b> [1] - 47:24</p> <p><b>SUBSET</b> [2] - 17:24, 82:11</p> <p><b>SUBSTANCE</b> [1] - 125:11</p> <p><b>SUBSTANTIAL</b> [3] - 179:11, 191:21, 191:25</p> <p><b>SUBSTANTIALLY</b> [1] - 176:7</p> <p><b>SUBSTANTIATE</b> [1] - 81:24</p> <p><b>SUBSTITUTE</b> [4] - 60:15, 70:22, 97:8, 97:23</p> <p><b>SUFFICIENT</b> [15] - 13:7, 14:24, 15:2, 15:6, 28:18, 29:24, 30:2, 43:13, 43:25, 45:14, 57:12, 57:22, 125:2, 130:10, 198:6</p>	<p><b>SUGAR</b> [4] - 83:15, 83:16, 83:21, 87:14</p> <p><b>SUGGEST</b> [1] - 56:25</p> <p><b>SUGGESTED</b> [1] - 183:3</p> <p><b>SUGGESTING</b> [1] - 70:11</p> <p><b>SUGGESTION</b> [2] - 56:15, 58:3</p> <p><b>SUGGESTIONS</b> [1] - 12:22</p> <p><b>SUGGESTS</b> [3] - 57:4, 68:24, 158:21</p> <p><b>SUITABLE</b> [1] - 84:23</p> <p><b>SUITE</b> [2] - 2:9, 2:13</p> <p><b>SUITED</b> [2] - 13:20, 59:4</p> <p><b>SULFONYLUREA</b> [3] - 84:9, 159:12, 165:18</p> <p><b>SUM</b> [1] - 67:25</p> <p><b>SUMMER</b> [1] - 27:6</p> <p><b>SUMMERTIME</b> [1] - 27:5</p> <p><b>SUPERIOR</b> [3] - 54:17, 72:10, 182:25</p> <p><b>SUPERVISED</b> [1] - 77:17</p> <p><b>SUPPLEMENTAL</b> [1] - 203:8</p> <p><b>SUPPORT</b> [16] - 13:4, 43:25, 75:6, 98:9, 109:10, 110:5, 116:14, 120:4, 127:21, 139:20, 141:6, 142:24, 147:12, 152:2, 164:10, 172:20</p> <p><b>SUPPORTED</b> [3] - 140:6, 159:2, 177:5</p> <p><b>SUPPORTING</b> [7] - 15:10, 79:24, 125:9, 140:23, 141:18, 144:22, 148:19</p> <p><b>SUPPORTIVE</b> [2] - 144:17, 145:15</p> <p><b>SUPPORTS</b> [2] - 110:9, 150:14</p> <p><b>SUPREME</b> [3] - 13:14, 54:5, 55:12</p> <p><b>SURPRISED</b> [1] - 103:22</p> <p><b>SURPRISING</b> [4] - 33:4, 122:19, 177:16, 197:21</p> <p><b>SURROGATE</b> [5] - 63:15, 63:24, 66:12, 66:15, 151:21</p>	<p><b>SURVEILLANCE</b> [2] - 151:1, 151:8</p> <p><b>SURVIVE</b> [1] - 80:19</p> <p><b>SUSCEPTIBLE</b> [1] - 72:9</p> <p><b>SUSPICIOUS</b> [1] - 91:24</p> <p><b>SUZANNE</b> [4] - 1:19, 8:3, 8:6, 206:6</p> <p><b>SWIRSKY</b> [15] - 28:17, 28:22, 29:20, 30:7, 39:19, 42:1, 44:5, 45:10, 50:5, 51:11, 59:20, 66:22, 70:15, 90:4, 109:10</p> <p><b>SWORN</b> [1] - 28:20</p> <p><b>SYMPTOMS</b> [3] - 17:13, 17:18, 85:4</p> <p><b>SYNDROME</b> [1] - 76:22</p> <p><b>SYSTEM</b> [2] - 5:14, 118:8</p> <p><b>SYSTEMIC</b> [2] - 83:8, 185:16</p>	<p>33:9</p> <p><b>TELEPHONE</b> [1] - 10:23</p> <p><b>TEMPORALITY</b> [2] - 191:5, 191:7</p> <p><b>TEN</b> [5] - 24:11, 25:7, 25:13, 107:21</p> <p><b>TENACIOUS</b> [1] - 157:10</p> <p><b>TEND</b> [2] - 176:21, 198:25</p> <p><b>TENS</b> [1] - 76:14</p> <p><b>TERM</b> [17] - 17:8, 17:10, 17:22, 76:15, 76:16, 77:8, 78:14, 79:20, 86:25, 87:8, 88:2, 88:11, 142:12, 145:10, 159:22, 160:6, 163:13</p> <p><b>TERMS</b> [5] - 15:22, 28:11, 28:14, 65:4, 197:8</p> <p><b>TEST</b> [2] - 27:21, 99:22</p> <p><b>TESTIFIED</b> [8] - 28:17, 55:25, 91:21, 109:25, 112:18, 112:19, 163:18, 176:10</p> <p><b>TESTIFY</b> [3] - 110:10, 121:1, 205:1</p> <p><b>TESTIFYING</b> [1] - 40:5</p> <p><b>TESTIMONY</b> [17] - 14:8, 19:20, 22:23, 28:10, 28:20, 33:12, 37:15, 38:10, 50:5, 50:9, 50:11, 51:18, 94:14, 114:8, 120:2, 124:23, 125:11</p> <p><b>TESTING</b> [2] - 13:5, 155:23</p> <p><b>TESTS</b> [2] - 13:7, 64:4</p> <p><b>TEXT</b> [2] - 27:14, 61:23</p> <p><b>TEXTBOOK</b> [2] - 121:5, 121:14</p> <p><b>THEATER</b> [1] - 128:13</p> <p><b>THEME</b> [1] - 197:6</p> <p><b>THEMSELVES</b> [9] - 8:9, 66:14, 69:9, 108:14, 113:17, 158:8, 160:19, 160:20, 164:5</p> <p><b>THEORETICAL</b> [2] - 43:5, 49:21</p> <p><b>THEORY</b> [5] - 61:20, 64:6, 70:21, 71:1,</p>	<p>180:18</p> <p><b>THERAPY</b> [7] - 75:18, 100:9, 110:17, 147:3, 172:14, 177:7, 178:20</p> <p><b>THERE</b> [222] - 6:3, 7:7, 9:25, 10:15, 10:16, 10:21, 11:21, 15:6, 15:22, 16:18, 17:10, 21:13, 21:23, 22:10, 24:15, 25:23, 25:24, 26:4, 26:8, 26:19, 26:23, 27:6, 28:2, 28:3, 28:4, 28:18, 29:5, 29:17, 30:3, 30:6, 30:8, 31:7, 32:11, 34:2, 34:4, 34:10, 34:23, 34:25, 35:4, 35:12, 36:2, 37:20, 38:6, 38:8, 41:7, 43:4, 43:11, 45:14, 49:19, 56:2, 56:7, 56:13, 56:15, 58:1, 61:19, 63:22, 63:25, 65:22, 66:7, 66:8, 66:10, 67:5, 67:12, 68:5, 68:7, 68:16, 68:25, 69:1, 69:11, 69:13, 69:20, 70:23, 71:2, 71:20, 72:12, 72:25, 73:4, 73:5, 73:6, 73:19, 73:21, 73:24, 74:7, 74:21, 74:24, 75:4, 75:10, 75:25, 78:16, 80:23, 81:1, 81:9, 81:11, 81:14, 83:1, 85:9, 86:7, 86:13, 86:17, 86:18, 87:24, 87:25, 88:10, 91:5, 97:5, 98:2, 98:8, 99:9, 99:18, 100:5, 101:21, 101:24, 102:14, 102:25, 103:16, 103:18, 104:3, 105:12, 107:7, 108:20, 111:3, 113:21, 113:25, 114:3, 114:6, 114:13, 115:12, 119:6, 119:24, 122:12, 123:19, 123:24, 124:4, 124:6, 125:3, 125:12, 126:1, 127:12, 129:6, 129:25, 130:1, 133:1, 133:15, 134:13, 135:12, 135:19, 135:24, 136:3, 137:6, 137:9, 139:16, 139:23, 140:4,</p>
<b>T</b>				
<p><b>T-Z-O-U-L-A-K-I</b> [1] - 117:6</p> <p><b>TABLE</b> [2] - 111:4</p> <p><b>TABULATED</b> [1] - 16:1</p> <p><b>TAKING</b> [20] - 24:12, 48:8, 49:3, 68:9, 76:3, 87:10, 87:13, 92:14, 136:5, 170:7, 171:7, 171:9, 171:24, 172:2, 176:4, 181:5, 182:8, 183:18, 183:21</p> <p><b>TALKS</b> [2] - 185:14, 190:9</p> <p><b>TAMAR</b> [3] - 2:20, 8:18, 10:9</p> <p><b>TANK</b> [1] - 131:15</p> <p><b>TAPE</b> [5] - 116:15, 116:16, 119:4, 182:15, 183:11</p> <p><b>TAPES</b> [1] - 201:24</p> <p><b>TAPING</b> [1] - 5:12</p> <p><b>TASK</b> [2] - 42:2, 141:2</p> <p><b>TAUGHT</b> [1] - 103:8</p> <p><b>TB</b> [1] - 39:16</p> <p><b>TEACH</b> [1] - 169:25</p> <p><b>TEACHES</b> [1] - 130:21</p> <p><b>TECHNIQUE</b> [1] - 103:8</p> <p><b>TECHNIQUES</b> [1] -</p>				

<p>143:19, 143:24, 144:4, 144:5, 144:14, 146:12, 150:5, 150:12, 150:16, 150:21, 155:11, 156:11, 157:17, 157:22, 160:24, 161:5, 161:6, 161:9, 161:13, 161:16, 161:22, 162:8, 163:2, 164:15, 165:4, 167:17, 167:20, 169:22, 170:3, 170:17, 171:2, 171:5, 171:8, 174:1, 175:6, 175:7, 176:1, 176:22, 176:23, 178:25, 179:2, 181:3, 188:6, 188:11, 189:24, 190:18, 190:23, 191:20, 193:19, 194:9, 195:2, 195:6, 196:23, 199:17, 199:20, 199:23, 200:4, 202:14, 202:17, 204:12</p> <p><b>THERE'S</b> [7] - 25:20, 27:25, 73:2, 76:2, 111:3, 111:7, 164:14</p> <p><b>THEREAFTER</b> [1] - 95:8</p> <p><b>THEREFORE</b> [5] - 21:2, 28:21, 133:6, 158:12, 159:9</p> <p><b>THEY'RE</b> [4] - 47:9, 58:2, 143:5, 190:23</p> <p><b>THINKING</b> [1] - 39:11</p> <p><b>THINKS</b> [3] - 91:24, 157:9, 204:22</p> <p><b>THIRD</b> [3] - 81:3, 161:11, 171:4</p> <p><b>THOMAS</b> [3] - 2:2, 2:3, 2:12</p> <p><b>THOROUGH</b> [1] - 158:17</p> <p><b>THOROUGHLY</b> [1] - 192:18</p> <p><b>THOUGHTS</b> [2] - 127:10, 127:14</p> <p><b>THOUSANDS</b> [2] - 76:13, 76:14</p> <p><b>THREE</b> [26] - 22:17, 24:11, 24:14, 25:7, 25:14, 32:11, 56:24, 57:16, 66:23, 67:24, 110:7, 112:25, 131:25, 159:22, 160:6, 167:7, 171:1, 171:3, 175:23, 177:9,</p>	<p>178:11, 184:16, 198:2, 200:4, 204:20</p> <p><b>THRESHOLD</b> [1] - 47:15</p> <p><b>THROUGHOUT</b> [3] - 36:25, 165:20, 181:18</p> <p><b>TIAN</b> [1] - 129:3</p> <p><b>TIER</b> [1] - 35:21</p> <p><b>TINY</b> [1] - 105:15</p> <p><b>TITLE</b> [1] - 189:17</p> <p><b>TODAY</b> [21] - 4:11, 5:3, 7:10, 11:7, 11:20, 12:15, 14:10, 36:24, 54:23, 73:20, 78:8, 81:17, 96:7, 96:16, 108:18, 130:6, 133:16, 139:13, 147:14, 155:10</p> <p><b>TODAY'S</b> [1] - 7:4</p> <p><b>TOGETHER</b> [7] - 17:18, 20:12, 27:9, 79:22, 98:19, 132:17, 174:6</p> <p><b>TOLERABLE</b> [1] - 42:23</p> <p><b>TOM</b> [1] - 8:12</p> <p><b>TOMORROW</b> [5] - 5:3, 95:14, 95:15, 148:17, 179:24</p> <p><b>TOMORROW'S</b> [1] - 204:8</p> <p><b>TON</b> [1] - 111:1</p> <p><b>TOOK</b> [11] - 87:10, 87:14, 87:15, 87:16, 103:7, 105:24, 135:25, 167:9, 172:13, 175:5, 203:4</p> <p><b>TOOLS</b> [1] - 72:9</p> <p><b>TOP</b> [16] - 24:13, 35:24, 36:21, 61:2, 67:16, 72:13, 72:16, 73:3, 75:4, 104:19, 112:9, 134:24, 174:11, 182:1, 183:25, 187:12</p> <p><b>TOPICS</b> [2] - 15:25, 16:2</p> <p><b>TORCETRAPIB</b> [1] - 62:3</p> <p><b>TOTAL</b> [3] - 67:25, 183:4, 190:17</p> <p><b>TOTALITY</b> [13] - 29:8, 29:12, 38:8, 67:24, 110:9, 111:8, 111:13, 111:16, 111:21, 119:13, 119:16, 140:17</p> <p><b>TOTALLY</b> [6] - 52:16, 70:21, 89:11, 101:16, 102:12,</p>	<p>200:10</p> <p><b>TOUCH</b> [3] - 155:10, 156:19, 194:17</p> <p><b>TOUTED</b> [1] - 89:5</p> <p><b>TOWARDS</b> [3] - 13:25, 157:21</p> <p><b>TRACKED</b> [1] - 77:9</p> <p><b>TRAINING</b> [1] - 147:7</p> <p><b>TRAINS</b> [1] - 199:6</p> <p><b>TRANSCRIPT</b> [4] - 1:25, 5:12, 5:16, 206:2</p> <p><b>TRANSCRIPTION</b> [2] - 1:25, 5:15</p> <p><b>TRANSLATE</b> [3] - 62:22, 63:3, 66:3</p> <p><b>TREAT</b> [7] - 15:1, 17:1, 40:8, 42:11, 42:16, 52:1, 53:20</p> <p><b>TREATED</b> [5] - 84:4, 161:8, 161:10, 172:2, 172:25</p> <p><b>TREATING</b> [6] - 13:17, 17:4, 41:16, 42:9, 42:20, 44:4</p> <p><b>TREATISE</b> [2] - 121:6, 121:9</p> <p><b>TREATMENT</b> [6] - 29:12, 84:5, 152:9, 153:23, 172:17, 188:24</p> <p><b>TREATMENTS</b> [1] - 58:1</p> <p><b>TREATS</b> [2] - 51:25, 53:19</p> <p><b>TRENCHES</b> [1] - 40:8</p> <p><b>TREND</b> [5] - 34:13, 115:24, 141:5, 141:18</p> <p><b>TRENDING</b> [3] - 120:8, 120:10, 120:12</p> <p><b>TRENDS</b> [4] - 34:13, 142:10, 145:15, 202:5</p> <p><b>TRIAL</b> [94] - 30:16, 36:20, 68:24, 69:12, 72:23, 73:6, 73:7, 74:11, 74:13, 75:8, 76:1, 76:8, 77:5, 77:6, 77:19, 77:25, 78:2, 78:9, 78:10, 80:2, 80:3, 81:13, 82:2, 82:7, 83:4, 83:9, 85:1, 85:22, 86:22, 88:17, 89:9, 91:12, 93:6, 93:8, 98:13, 99:22, 100:11, 101:3, 104:24, 109:7, 109:21, 110:1, 113:7, 113:12, 121:1, 123:20, 131:10,</p>	<p>133:11, 133:21, 134:3, 134:6, 134:11, 136:8, 136:22, 138:6, 149:6, 154:20, 157:3, 157:8, 157:11, 157:15, 157:23, 157:24, 158:4, 158:8, 158:25, 160:15, 161:15, 161:19, 162:5, 162:7, 162:10, 162:12, 163:9, 167:21, 167:24, 171:12, 172:9, 172:11, 172:13, 172:19, 173:11, 173:19, 175:21, 176:3, 177:5, 177:7, 177:8, 177:10, 196:20, 197:15, 197:19, 197:23</p> <p><b>TRIALS</b> [116] - 8:4, 11:23, 28:24, 34:3, 34:5, 34:11, 35:3, 35:15, 35:17, 35:18, 35:20, 35:24, 36:2, 65:13, 65:15, 68:8, 69:22, 69:24, 70:10, 71:5, 71:24, 72:1, 72:4, 72:8, 72:16, 73:4, 73:5, 73:22, 73:25, 74:4, 74:8, 74:22, 74:25, 75:4, 76:13, 76:16, 76:18, 76:19, 76:20, 77:5, 78:1, 80:21, 81:1, 83:12, 84:22, 88:11, 88:15, 88:25, 89:1, 89:2, 89:11, 89:18, 92:4, 93:16, 93:21, 94:23, 98:17, 98:18, 100:14, 100:16, 109:5, 109:7, 109:12, 109:20, 109:22, 112:3, 112:5, 112:10, 112:20, 119:21, 127:21, 131:8, 133:13, 135:7, 135:17, 135:19, 136:18, 137:16, 138:12, 138:13, 138:15, 144:13, 144:14, 144:16, 144:17, 145:10, 145:15, 146:1, 148:20, 153:11, 154:5, 155:15, 156:9, 156:15, 159:19, 159:22, 160:7, 160:19, 163:21, 163:22, 166:1, 166:2, 166:5, 166:15,</p>	<p>176:22, 177:2, 177:3, 177:4, 190:8, 191:7, 193:6, 193:7, 193:10</p> <p><b>TRIED</b> [1] - 115:1</p> <p><b>TRIES</b> [1] - 22:8</p> <p><b>TRIGLYCERIDE</b> [1] - 190:4</p> <p><b>TRIGLYCERIDES</b> [1] - 197:9</p> <p><b>TRUCKS</b> [8] - 177:14, 181:5, 181:20, 182:8, 183:17, 183:20, 183:21</p> <p><b>TRUE</b> [13] - 25:22, 85:10, 87:7, 92:16, 116:6, 116:10, 130:15, 145:5, 162:1, 164:21, 179:3, 180:20, 196:1</p> <p><b>TRULY</b> [1] - 87:16</p> <p><b>TRUMP</b> [1] - 80:21</p> <p><b>TRUST</b> [1] - 159:4</p> <p><b>TRUTH</b> [1] - 159:4</p> <p><b>TRY</b> [11] - 29:11, 32:3, 34:10, 95:16, 112:12, 155:7, 170:21, 170:25, 173:17, 184:21, 187:24</p> <p><b>TRYGLYCERIDES</b> [2] - 23:5, 24:1</p> <p><b>TRYING</b> [7] - 16:11, 101:10, 164:5, 170:23, 184:3, 187:15, 195:5</p> <p><b>TUBERCULOSIS</b> [1] - 165:1</p> <p><b>TURN</b> [7] - 13:3, 64:21, 71:18, 72:10, 139:12, 141:4, 141:16</p> <p><b>TURNE</b> [1] - 5:11</p> <p><b>TURNING</b> [2] - 26:21, 65:6</p> <p><b>TURNS</b> [2] - 64:9, 133:4</p> <p><b>TWEAK</b> [1] - 101:19</p> <p><b>TWICE</b> [1] - 171:7</p> <p><b>TWO</b> [47] - 2:17, 9:9, 16:18, 16:21, 27:3, 27:8, 33:8, 54:15, 55:20, 56:23, 60:4, 67:23, 73:8, 73:13, 79:19, 86:23, 88:6, 107:9, 107:10, 110:4, 113:25, 123:24, 132:16, 140:4, 140:16, 144:25, 146:18, 150:20, 152:9, 157:22,</p>
--	--	---	--	--

<p>161:20, 161:22, 162:7, 165:24, 171:6, 178:10, 181:14, 181:15, 181:16, 182:3, 197:14, 199:20, 199:24, 200:1, 200:2, 202:20 <b>TYPE</b> [17] - 14:9, 21:19, 41:2, 42:25, 58:9, 60:4, 71:13, 86:23, 89:21, 100:25, 101:17, 138:19, 152:9, 158:11, 160:8, 160:18, 160:20 <b>TYPES</b> [9] - 30:24, 71:20, 73:1, 133:15, 150:4, 153:1, 160:2, 164:4, 166:5 <b>TZOULAKI</b> [2] - 117:6, 117:7</p>	<p><b>UNDER</b> [18] - 16:8, 19:21, 31:25, 42:5, 53:11, 54:4, 54:5, 55:11, 58:13, 111:5, 114:20, 120:18, 124:23, 130:7, 132:3, 147:5, 172:17, 197:8 <b>UNDERESTIMATE</b> <b>D</b> [1] - 163:23 <b>UNDERGONE</b> [1] - 83:3 <b>UNDERLYING</b> [1] - 106:13 <b>UNDERREPORTIN</b> <b>G</b> [1] - 163:2 <b>UNDERREPORTS</b> [1] - 153:15 <b>UNDERSTOOD</b> [1] - 145:16 <b>UNDERWAY</b> [1] - 79:20 <b>UNDISPUTED</b> [1] - 78:24 <b>UNENDING</b> [1] - 89:10 <b>UNEQUIVOCALLY</b> [1] - 175:8 <b>UNETHICAL</b> [3] - 29:9, 29:14, 172:21 <b>UNEXPOSED</b> [1] - 137:5 <b>UNFORTUNATELY</b> [3] - 5:4, 43:20, 96:23 <b>UNGER</b> [6] - 81:22, 82:16, 82:17, 82:25, 157:9 <b>UNGER'S</b> [1] - 159:1 <b>UNIFORMLY</b> [3] - 41:24, 51:10, 68:19 <b>UNIQUE</b> [2] - 151:10, 152:13 <b>UNITED</b> [3] - 1:1, 13:14, 166:3 <b>UNIVERSITY</b> [1] - 134:16 <b>UNLESS</b> [3] - 111:16, 162:18, 198:17 <b>UNRELIABLE</b> [8] - 21:2, 33:12, 54:3, 54:25, 61:1, 61:4, 71:14, 89:24 <b>UNRESTRICTED</b> [1] - 177:5 <b>UNSTABLE</b> [1] - 17:16 <b>UNTESTED</b> [3] - 52:1, 53:20, 70:19 <b>UP</b> [86] - 7:13, 7:16, 8:2, 10:14, 10:15,</p>	<p>15:15, 16:20, 29:17, 30:12, 32:25, 36:4, 37:4, 38:13, 50:17, 52:18, 53:5, 57:9, 61:14, 64:1, 77:9, 84:14, 89:6, 89:7, 102:6, 103:1, 103:21, 106:1, 106:4, 108:11, 127:4, 133:19, 146:10, 146:12, 149:2, 152:16, 155:11, 155:17, 155:21, 156:14, 157:17, 161:13, 163:10, 164:23, 171:11, 172:11, 174:25, 175:1, 175:3, 175:13, 176:5, 176:21, 178:15, 179:17, 179:19, 180:2, 180:3, 180:4, 180:5, 180:19, 181:14, 181:15, 181:17, 182:5, 184:11, 188:16, 190:16, 192:25, 193:7, 193:10, 196:20, 196:21, 196:25, 199:9, 199:11, 200:4, 200:21, 201:20, 202:13, 202:22, 204:10, 205:8 <b>UPDATE</b> [1] - 21:25 <b>UPLOAD</b> [1] - 5:17 <b>UPSIDE</b> [2] - 64:10, 65:21 <b>URGES</b> [1] - 57:19 <b>USEFUL</b> [2] - 51:25, 53:19 <b>USES</b> [6] - 87:8, 131:13, 132:23, 160:21, 162:2, 169:17 <b>UTILITY</b> [1] - 58:20 <b>UTILIZE</b> [1] - 159:7 <b>UTILIZED</b> [2] - 139:9, 146:1 <b>UTILIZING</b> [1] - 28:19 <b>UTMOST</b> [1] - 167:16</p>	<p><b>VALUE</b> [4] - 14:1, 73:3, 80:17, 176:24 <b>VALUES</b> [4] - 102:25, 157:20, 170:14, 188:24 <b>VANISHED</b> [1] - 158:11 <b>VARIATION</b> [1] - 41:10 <b>VARIOUS</b> [8] - 41:9, 67:13, 110:21, 114:4, 166:4, 166:5, 166:6 <b>VARY</b> [1] - 116:8 <b>VENTRICULAR</b> [1] - 17:15 <b>VERSION</b> [2] - 129:18, 156:8 <b>VERSUS</b> [10] - 55:13, 64:2, 85:19, 87:17, 87:18, 133:7, 136:4, 139:7, 146:19, 163:3 <b>VERTICAL</b> [2] - 179:25 <b>VIA</b> [3] - 65:25, 68:23, 71:1 <b>VICTORY</b> [8] - 70:3, 177:4, 177:5, 177:15, 177:18, 178:2, 178:3, 202:16 <b>VIDEO</b> [62] - 5:3, 18:21, 19:9, 24:20, 24:22, 26:10, 28:22, 29:1, 29:16, 38:20, 39:6, 39:9, 39:18, 40:1, 40:18, 44:6, 44:7, 45:8, 46:6, 46:20, 47:5, 48:3, 48:18, 50:3, 56:19, 57:7, 64:14, 64:15, 69:10, 70:14, 72:24, 73:15, 77:23, 78:7, 85:15, 86:15, 90:5, 91:1, 101:10, 110:13, 111:11, 115:16, 115:19, 141:22, 142:15, 149:8, 150:2, 150:11, 150:19, 163:19, 164:2, 166:11, 166:16, 168:14, 168:23, 176:11, 176:15, 191:19, 192:1, 192:10, 195:17, 195:25 <b>VIEW</b> [3] - 166:12, 193:5, 195:16 <b>VIGOROUSLY</b> [1] - 12:2 <b>VIOLATIONS</b> [1] - 83:5</p>	<p><b>VISIT</b> [1] - 127:24 <b>VISITED</b> [1] - 147:19 <b>VITAL</b> [1] - 161:7 <b>VOICE</b> [1] - 10:5 <b>VOTE</b> [10] - 56:12, 56:13, 56:14, 56:18, 56:22, 56:24, 57:8, 129:19, 152:1 <b>VOTED</b> [5] - 56:11, 57:2, 57:10, 57:11, 57:14 <b>VOTES</b> [1] - 56:2 <b>VULNERABLE</b> [2] - 89:20, 113:6</p>
<b>U</b>				<b>W</b>
<p><b>U.S</b> [3] - 13:16, 137:14, 197:7 <b>UK</b> [2] - 129:22, 129:24 <b>UK'S</b> [1] - 129:17 <b>ULTIMATELY</b> [2] - 61:18, 67:9 <b>UNACCEPTABLE</b> [1] - 153:25 <b>UNACCOUNTED</b> [2] - 91:3, 91:4 <b>UNACCOUNTED- FOR</b> [2] - 91:3, 91:4 <b>UNADJUDICATED</b> [4] - 92:15, 100:20, 106:20, 107:6 <b>UNANIMOUS</b> [1] - 129:19 <b>UNANIMOUSLY</b> [1] - 129:16 <b>UNASSIGNED</b> [1] - 5:25 <b>UNBIASED</b> [1] - 164:7 <b>UNBLINDED</b> [4] - 79:7, 82:11, 82:12, 91:8 <b>UNBLINDING</b> [3] - 79:8, 80:13, 80:16 <b>UNCAPABLE</b> [1] - 41:2 <b>UNCLEAR</b> [1] - 58:7 <b>UNCOVERED</b> [1] - 32:16 <b>UNCOVERING</b> [1] - 105:2</p>	<p><b>UNDER</b> [18] - 16:8, 19:21, 31:25, 42:5, 53:11, 54:4, 54:5, 55:11, 58:13, 111:5, 114:20, 120:18, 124:23, 130:7, 132:3, 147:5, 172:17, 197:8 <b>UNDERESTIMATE</b> <b>D</b> [1] - 163:23 <b>UNDERGONE</b> [1] - 83:3 <b>UNDERLYING</b> [1] - 106:13 <b>UNDERREPORTIN</b> <b>G</b> [1] - 163:2 <b>UNDERREPORTS</b> [1] - 153:15 <b>UNDERSTOOD</b> [1] - 145:16 <b>UNDERWAY</b> [1] - 79:20 <b>UNDISPUTED</b> [1] - 78:24 <b>UNENDING</b> [1] - 89:10 <b>UNEQUIVOCALLY</b> [1] - 175:8 <b>UNETHICAL</b> [3] - 29:9, 29:14, 172:21 <b>UNEXPOSED</b> [1] - 137:5 <b>UNFORTUNATELY</b> [3] - 5:4, 43:20, 96:23 <b>UNGER</b> [6] - 81:22, 82:16, 82:17, 82:25, 157:9 <b>UNGER'S</b> [1] - 159:1 <b>UNIFORMLY</b> [3] - 41:24, 51:10, 68:19 <b>UNIQUE</b> [2] - 151:10, 152:13 <b>UNITED</b> [3] - 1:1, 13:14, 166:3 <b>UNIVERSITY</b> [1] - 134:16 <b>UNLESS</b> [3] - 111:16, 162:18, 198:17 <b>UNRELIABLE</b> [8] - 21:2, 33:12, 54:3, 54:25, 61:1, 61:4, 71:14, 89:24 <b>UNRESTRICTED</b> [1] - 177:5 <b>UNSTABLE</b> [1] - 17:16 <b>UNTESTED</b> [3] - 52:1, 53:20, 70:19 <b>UP</b> [86] - 7:13, 7:16, 8:2, 10:14, 10:15,</p>	<p><b>UPDATE</b> [1] - 21:25 <b>UPLOAD</b> [1] - 5:17 <b>UPSIDE</b> [2] - 64:10, 65:21 <b>URGES</b> [1] - 57:19 <b>USEFUL</b> [2] - 51:25, 53:19 <b>USES</b> [6] - 87:8, 131:13, 132:23, 160:21, 162:2, 169:17 <b>UTILITY</b> [1] - 58:20 <b>UTILIZE</b> [1] - 159:7 <b>UTILIZED</b> [2] - 139:9, 146:1 <b>UTILIZING</b> [1] - 28:19 <b>UTMOST</b> [1] - 167:16</p>	<p><b>VALUE</b> [4] - 14:1, 73:3, 80:17, 176:24 <b>VALUES</b> [4] - 102:25, 157:20, 170:14, 188:24 <b>VANISHED</b> [1] - 158:11 <b>VARIATION</b> [1] - 41:10 <b>VARIOUS</b> [8] - 41:9, 67:13, 110:21, 114:4, 166:4, 166:5, 166:6 <b>VARY</b> [1] - 116:8 <b>VENTRICULAR</b> [1] - 17:15 <b>VERSION</b> [2] - 129:18, 156:8 <b>VERSUS</b> [10] - 55:13, 64:2, 85:19, 87:17, 87:18, 133:7, 136:4, 139:7, 146:19, 163:3 <b>VERTICAL</b> [2] - 179:25 <b>VIA</b> [3] - 65:25, 68:23, 71:1 <b>VICTORY</b> [8] - 70:3, 177:4, 177:5, 177:15, 177:18, 178:2, 178:3, 202:16 <b>VIDEO</b> [62] - 5:3, 18:21, 19:9, 24:20, 24:22, 26:10, 28:22, 29:1, 29:16, 38:20, 39:6, 39:9, 39:18, 40:1, 40:18, 44:6, 44:7, 45:8, 46:6, 46:20, 47:5, 48:3, 48:18, 50:3, 56:19, 57:7, 64:14, 64:15, 69:10, 70:14, 72:24, 73:15, 77:23, 78:7, 85:15, 86:15, 90:5, 91:1, 101:10, 110:13, 111:11, 115:16, 115:19, 141:22, 142:15, 149:8, 150:2, 150:11, 150:19, 163:19, 164:2, 166:11, 166:16, 168:14, 168:23, 176:11, 176:15, 191:19, 192:1, 192:10, 195:17, 195:25 <b>VIEW</b> [3] - 166:12, 193:5, 195:16 <b>VIGOROUSLY</b> [1] - 12:2 <b>VIOLATIONS</b> [1] - 83:5</p>	<p><b>WAD</b> [1] - 87:2 <b>WAGSTAFF</b> [1] - 2:12 <b>WAIT</b> [2] - 42:12, 79:10 <b>WAITING</b> [1] - 16:16 <b>WAKE</b> [1] - 193:3 <b>WALKER</b> [1] - 117:17 <b>WALKING</b> [1] - 147:10 <b>WANTS</b> [1] - 202:19 <b>WARNED</b> [1] - 179:20 <b>WARRANT</b> [1] - 57:22 <b>WARRANTED</b> [1] - 113:8 <b>WASHINGTON</b> [1] - 134:16 <b>WASTE</b> [2] - 53:25, 126:2 <b>WASTING</b> [1] - 23:14 <b>WATCHDOGS</b> [1] - 152:15 <b>WAYS</b> [3] - 73:12, 154:1, 200:2 <b>WBC</b> [1] - 188:11 <b>WEAK</b> [2] - 66:21, 101:23 <b>WEB</b> [1] - 18:2 <b>WEBSITE</b> [4] - 107:1, 139:13, 139:14 <b>WEBSTER</b> [1] - 2:4 <b>WEDNESDAY</b> [3] - 5:4, 204:18, 204:24 <b>WEEK</b> [6] - 51:14, 181:14, 181:15, 197:14, 204:15 <b>WEEKEND</b> [1] - 9:17 <b>WEEKS</b> [2] - 172:15, 181:18</p>

<p><b>WEIGHT</b> [7] - 18:24, 19:2, 19:3, 142:5, 198:8, 200:15</p> <p><b>WELCOMING</b> [1] - 7:9</p> <p><b>WELDING</b> [1] - 147:16</p> <p><b>WELL-CONDUCTED</b> [1] - 133:10</p> <p><b>WELL-DESIGNED</b> [1] - 133:10</p> <p><b>WELL-KNOWN</b> [3] - 144:25, 175:8, 191:3</p> <p><b>WELL-RECOGNIZED</b> [1] - 191:4</p> <p><b>WESTERN</b> [1] - 13:2</p> <p><b>WHATSOEVER</b> [2] - 70:23, 124:19</p> <p><b>WHITE</b> [3] - 1:19, 8:3, 206:6</p> <p><b>WHOLE</b> [7] - 21:7, 67:12, 68:17, 71:22, 107:8, 142:8</p> <p><b>WHOLLY</b> [4] - 35:21, 68:19, 112:6, 120:13</p> <p><b>WIDE</b> [1] - 18:3</p> <p><b>WILLIAM</b> [1] - 6:5</p> <p><b>WILLING</b> [4] - 50:18, 62:25, 63:1, 92:8</p> <p><b>WIN</b> [3] - 177:25, 196:15, 197:25</p> <p><b>WINKELMEYER</b> [1] - 118:18</p> <p><b>WISDOM</b> [1] - 14:7</p> <p><b>WISH</b> [1] - 148:16</p> <p><b>WITHDRAW</b> [3] - 58:11, 129:18, 129:20</p> <p><b>WITHDRAWING</b> [3] - 151:5, 201:4, 201:5</p> <p><b>WITHDRAWN</b> [1] - 129:25</p> <p><b>WITHDREW</b> [1] - 10:16</p> <p><b>WITNESS</b> [8] - 10:20, 14:22, 14:23, 75:19, 75:23, 76:10, 93:10, 168:20</p> <p><b>WITNESSES</b> [6] - 10:14, 11:9, 15:9, 19:17, 19:20, 125:8</p> <p><b>WOLSKI</b> [1] - 81:25</p> <p><b>WONDERED</b> [1] - 96:2</p> <p><b>WONDERING</b> [1] - 74:18</p> <p><b>WORD</b> [6] - 31:15, 56:1, 56:4, 56:24, 97:6, 111:15</p>	<p><b>WORDING</b> [1] - 57:14</p> <p><b>WORDS</b> [6] - 16:22, 77:21, 122:15, 149:9, 185:11, 186:22</p> <p><b>WORKS</b> [3] - 9:16, 61:11, 150:25</p> <p><b>WORLD</b> [14] - 29:14, 29:18, 121:21, 122:1, 122:5, 128:11, 131:6, 165:24, 166:8, 179:20, 181:9, 181:10, 191:11, 195:19</p> <p><b>WORLDWIDE</b> [1] - 31:20</p> <p><b>WORRIED</b> [1] - 115:4</p> <p><b>WORRY</b> [2] - 178:14, 180:18</p> <p><b>WORSE</b> [2] - 100:20, 146:15</p> <p><b>WORST</b> [1] - 80:12</p> <p><b>WORTH</b> [3] - 53:22, 65:14, 99:19</p> <p><b>WOW</b> [1] - 95:12</p> <p><b>WRITE</b> [2] - 58:20, 127:4</p> <p><b>WRITES</b> [1] - 170:8</p> <p><b>WRITING</b> [3] - 41:1, 57:5, 202:6</p> <p><b>WRITTEN</b> [8] - 44:10, 79:17, 103:9, 117:13, 127:13, 127:15, 131:2, 182:11</p> <p><b>WROTE</b> [10] - 28:9, 45:19, 79:25, 113:2, 113:10, 113:20, 114:25, 118:4, 172:18</p>	<p>38:19, 54:7</p> <p style="text-align: center;"><b>Z</b></p> <p><b>ZERO</b> [3] - 157:21, 181:15, 187:10</p> <p><b>ZETIA</b> [1] - 62:13</p> <p><b>ZONIES</b> [41] - 2:7, 8:13, 8:14, 126:9, 126:22, 127:3, 127:6, 128:9, 128:12, 136:12, 136:15, 142:16, 148:4, 150:3, 150:20, 152:24, 164:3, 166:23, 167:4, 167:5, 167:6, 168:24, 172:8, 173:1, 173:6, 173:10, 173:15, 174:5, 174:8, 176:16, 183:12, 192:2, 192:18, 196:1, 199:13, 200:18, 201:7, 201:15, 201:18, 203:10, 205:5</p>
	<b>Y</b>	
	<p><b>YEAR</b> [3] - 7:3, 151:8, 194:11</p> <p><b>YEARS</b> [14] - 8:4, 56:24, 76:15, 77:9, 81:5, 99:4, 131:12, 159:6, 164:25, 167:24, 170:7, 170:8, 175:9, 176:17</p> <p><b>YELLOW</b> [3] - 144:3, 144:6, 144:20</p> <p><b>YELLOWs</b> [1] - 146:8</p> <p><b>YESTERDAY</b> [3] - 10:17, 139:14</p> <p><b>YOUNG</b> [2] - 6:2, 76:25</p> <p><b>YOURSELF</b> [2] -</p>	