

1 SUPERIOR COURT OF THE STATE OF CALIFORNIA
2 FOR THE COUNTY OF LOS ANGELES
3 DEPARTMENT 308 HON. CHARLES MC COY, JUDGE
4 RICHARD BOEKEN,)
5 PLAINTIFF,)
6)
) CASE NO. BC226593
7 VS.)
)
8 PHILIP MORRIS,)
 INCORPORATED, A)
9 CORPORATION; INTERNATIONAL)
 HOUSE OF PANCAKES)
10 INCORPORATED, A)
 CORPORATION.)
11)
) DEFENDANTS.
12 _____)

13 REPORTER'S DAILY TRANSCRIPT OF PROCEEDINGS
14 FRIDAY, APRIL 6TH, 2001
15 APPEARANCES:
16 (FOR PLAINTIFF) LAW OFFICES OF
 MICHAEL J. PIUZE
17 11755 WILSHIRE BLVD.
 SUITE 1170
18 LOS ANGELES, CA 90025
19 (FOR DEFENDANTS) ARNOLD & PORTER
 BY: MAURICE A. LEITER
20 JOHN CARLTON
 777 S. FIGUEROA ST.
21 44TH FLOOR
 LOS ANGELES, CA 90017
22
23 LISA C. RIDLEY
24 OFFICIAL REPORTER
 600 S. COMMONWEALTH AVE.
25 ROOM 308
 LOS ANGELES, CA 90005
26 VOLUME 12A OF
27 PAGES 1864 THROUGH 1966
28

1 LOS ANGELES, CALIFORNIA; FRIDAY, APRIL 6TH, 2001

2 9:00 A. M

3 DEPARTMENT 308 HON. CHARLES MC COY, JUDGE

4

5

6 (THE FOLLOWING PROCEEDINGS
7 WERE HELD IN OPEN COURT OUT
8 OF THE PRESENCE OF THE JURY:)

9

10 THE COURT: WE ARE ON THE RECORD.

11 MR. LEITER: GOOD MORNING, YOUR HONOR.

12 WE ARE GOING TO BEGIN BY FINISHING UP THE READING
13 BY DR. UYDESS' TESTIMONY. THERE WAS JUST ONE
14 QUESTION IN A POSSIBLE REDIRECT BY THE PLAINTIFF
15 THAT WE HAVE A DISPUTE ABOUT, AND IF I MAY JUST
16 APPROACH WITH THE TRANSCRIPT, PAGE 96, THE QUESTION
17 HIGHLIGHTED IN YELLOW WHICH WE BELIEVE SHOULD BE
18 EXCLUDED CONSISTENT WITH YOUR HONOR'S EARLIER
19 ORDER.

20 MR. PIUZE: AND THE PORTION THAT HAS
21 ACTUALLY BEEN READ TO THE JURY ALREADY AND NOT
22 EXCLUDED, HE TALKED ABOUT THE REASON THAT HE
23 DECIDED TO LEAVE WAS FLYING BACK ON THE CORPORATE
24 PLANE FROM WHITE PLANES, NEW YORK WITH SCIENTISTS
25 FROM CRAFT AND GENERAL FOODS OR SOME OTHER PLACE
26 AND HE REALIZED ON THAT PLANE TRIP IT WAS THE WRONG
27 PLACE BECAUSE THE PRIME MOTIVATION WAS JUST THAT,
28 MARKET SHARE AND MONEY. I KNOW WHAT THE COURT

1 RULED. THE COURT DID, THEY HADN'T ASKED THAT THE
2 OTHER PART BE EXCLUDED. IT'S ALREADY BEEN READ TO
3 THE JURY. IT'S SOMETHING ALREADY IN PLAY.

4 THE COURT: ALL RIGHT, BUT ONCE IS
5 ENOUGH. IF IT TURNS OUT -- OF COURSE, I HAVEN'T
6 LISTENED TO THE REST OF THE CROSS-EXAMINATION. IF
7 IT TURNS OUT THAT THERE'S A MAJOR ATTACK ON THE
8 WITNESS BECAUSE OF BITTERNESS OVER FIRING OR
9 SOMETHING LIKE THAT WHERE -- I MIGHT ALLOW IT.

10 MR. PIUZE: I DON'T BELIEVE THAT'S THE
11 CASE.

12 MR. LEITER: I DON'T BELIEVE SO, EITHER.

13 MR. PIUZE: CAN I SEE THAT FOR A SECOND,
14 SEE IF THERE'S A WAY OF SALVAGING HIS ANSWER.

15 THIS WOULD BE -- THIS WOULD BE MY
16 PROPOSAL, THAT RATHER THAN USE THAT, IT WOULD JUST
17 BE THIS (INDICATING), THE ANSWER BEING "NICOTINE."

18 MR. LEITER: SAME ISSUE, YOUR HONOR, HE
19 DOESN'T HAVE ANY EXPERTISE ON MARKET SHARE AND
20 WHAT'S IMPORTANT TO MAINTAIN MARKET SHARE.

21 THE COURT: NO.

22 THAT'S NOT TO SAY THAT THAT CAN'T
23 BE AN ISSUE IN THIS CASE BUT IT IS GOING DO HAVE TO
24 TAKE MORE THAN THIS PARTICULAR PERSON TO PUT IT IN
25 ISSUE.

26 /// /// ///

27 /// /// ///

28 /// /// ///

1 (THE FOLLOWING PROCEEDINGS
2 WERE HELD IN OPEN COURT IN
3 THE PRESENCE OF THE JURY.)

4
5 THE COURT: GOOD MORNING, LADIES AND
6 GENTLEMEN. THE JURY IS WITH US. COUNSEL IS
7 PRESENT AS WELL.

8 MY COUNSEL TELL ME WE HAVE ALMOST
9 EXACTLY 20 MINUTES LEFT WITH MR. UYDESS, REMEMBER,
10 WE WERE LISTENING TO YESTERDAY.

11 AFTER THAT'S OVER, WE ARE GOING TO
12 TAKE ABOUT A FIVE-MINUTE BREAK TO SET UP FOR THE
13 NEXT WITNESS WHO WILL BE A LIVE WITNESS.

14 ALL RIGHT?

15 GOOD.

16 COUNSEL, PLEASE.

17 MR. LEITER: THANK YOU, YOUR HONOR.

18 GOOD MORNING, LADIES AND GENTLEMEN.

19 WE ARE PICKING UP WITH THE
20 CROSS-EXAMINATION OF DR. UYDESS, TALKING ABOUT THE
21 NOD PROJECT?

22 MR. GOLDSTEIN: WE ARE ON PAGE 38.

23 "Q SURE, SURE. AND IF
24 IT WASN'T CONTROLLABLE, AND I WANT TO
25 TALK A LITTLE BIT TO YOU ABOUT WHAT
26 CONTROLLABLE MEANT. IF IT WASN'T
27 CONTROLLABLE THEN YOU COULDN'T USE IT
28 IN THE COMMERCIAL APPLICATION; RIGHT?

1 "A RIGHT. AND THAT' S
2 EXACTLY WHAT WE HAD TO PROVE IN THE
3 LABORATORY, BEFORE ANYONE WOULD ALLOW
4 US TO DO ANYTHING ELSE, WITH THE
5 PROCESS.

6 "Q AND IN FACT, YOU GOT
7 TO THE POINT NOT ONLY WHERE YOU PROVED
8 IT IN THE LABORATORY, WHERE YOU GOT IT
9 GOING, BUT YOU BUILT A PILOT PLANT FOR
10 IT; RIGHT?

11 "A YES.

12 "Q OKAY. AND A PILOT
13 PLANT, JUST SO THE JURY KNOWS, A PILOT
14 PLANT IS JUST LIKE A -- WHAT WOULD YOU
15 CALL IT, A MINI --

16 "A SMALL FACTORY.

17 "Q A SMALL, LIKE A
18 MINIATURE FACTORY.

19 "A SMALL, NOT THE SIZE
20 OF THE ROOM, BUT IT IS NOT THE SIDE OF
21 THE WHOLE PRODUCTION CENTER.

22 "Q RIGHT. IT COST A
23 LOT OF -- A LOT OF TIME AND MONEY TO
24 MAKE BUT IT IS NOT THE WHOLE
25 PRODUCTION THING.

26 "A RIGHT.

27 "Q AND IN FACT, A LOT
28 OF TIME AND MONEY WAS BEING SPENT ON

1 THIS PROCESS; CORRECT?

2 "A IT WAS VERY
3 IMPORTANT TO THE COMPANY.

4 "Q RIGHT, VERY
5 IMPORTANT TO THE COMPANY.

6 "NOW, SOME OF THE THINGS
7 THAT HAVE TO BE CONTROLLED, WHEN YOU
8 ARE USING THESE MICROBIAL AGENTS, ARE
9 THE TEMPERATURE AT WHICH THE BACTERIA
10 ARE HELD. WOULD THAT BE ONE?

11 "A YES.

12 "Q AND THE TIME, THE
13 TIME COMPONENTS OF HOLDING IT, AND
14 OCCASIONALLY IN THE LABORATORY, YOU
15 WOULD RUN INTO PROBLEMS, WOULD YOU
16 NOT, AND I AM NOT SUGGESTING THAT YOU
17 DIDN'T GET PAST THEM, BUT YOU WOULD
18 RUN INTO PROBLEMS THAT THE -- THE
19 LITTLE --

20 "A GUYS.

21 "Q -- PAC MEN, THE
22 LITTLE PAC MEN OR BUGS, THEY WOULD
23 START EATING THE NITRATES AND THEY
24 WOULD STOP --

25 "A AND IN THE
26 DEVELOPMENT OF ANY NEW PROCESS, YOU
27 ALWAYS ARE TRYING TO WORK OUT PROBLEMS
28 THAT COME UP WHILE YOU ARE TRYING TO

1 FINALIZE THAT PROCESS AND DEVELOP IT,
2 YES.

3 "Q WHEN THAT HAPPENS,
4 SOMETIMES YOU WOULD WIND UP WITH A
5 BUILD UP OF NITRITES; RIGHT?

6 "A SOMETIMES, YES.

7 "Q AND OF COURSE,
8 THAT'S THE LAST THING YOU WANTED TO
9 HAVE HAPPEN, WAS FOR NITRITES TO
10 BUILD-UP?

11 "A ABSOLUTELY.

12 "Q OKAY.

13 "Q SO YOU HAD A NUMBER
14 OF YEARS OF EXPERIMENTATION AND YOU
15 GOT TO THE POINT WHERE YOU WERE IN THE
16 PILOT PLANT WITH IT, AND YOU WOULD GET
17 SOME VERY LOW NITROGEN COMPOUNDS;
18 RIGHT?

19 "IN OTHER WORDS, YOU WOULD
20 GET IT WORKING, YOU WOULD GET THAT
21 THING WORKING IN THE PILOT PLANT, YOU
22 KNOW, WHERE THE SYSTEM WAS, TO USE
23 YOUR WORD, I THOUGHT IT WAS A GOOD
24 WORD, CASCADING THE WAY YOU WANT IT
25 TO.

26 "A YES. THE PROCESS IN
27 THE LABORATORY, BEFORE IT WENT TO THE
28 PILOT PLANT, WHEN IT WAS SCALED UP IN

1 THESE FERMENTER VESSELS, ABOUT THIS
2 BIG, MANY OF THEM, RAN FOR MONTHS AND
3 TYPICALLY THE TARGET WAS ZERO NITRATE,
4 ZERO NITRITE. EVERYTHING GONE TO GAS.
5 AND THERE WAS ZERO, AS FAR AS WE COULD
6 MEASURE.

7 "Q OKAY, BUT WHILE YOU
8 WERE IN THE LABORATORY, YOU WOULD
9 OCCASIONALLY HAVE PROBLEMS WITH THIS,
10 WHAT I CALL THE START -- THE START-UP
11 AND STOPPING AND YOU CAN'T HAVE THAT
12 IN COMMERCIAL APPLICATION; RIGHT?

13 "A UNTIL WE COULD LEARN
14 TO CONTROL THAT BETTER IN THE
15 BEGINNING, YES.

16 "Q NOW, WERE THERE
17 ALSO, AM I RIGHT, DOCTOR, THERE WERE
18 ALSO PROBLEMS, THERE WAS AN ODOR
19 PROBLEM WITH SOME BATCHES OF THE, OF
20 WHAT I WILL CALL THE S. E. L. ?

21 "A UH-HUH

22 "Q THE STRONGLY
23 EXTRACTED LIQUOR THAT THE MICROBE
24 WOULD BE IN, YOU WOULD HAVE SOME ODOR
25 PROBLEMS WITH THAT, ISN'T THAT RIGHT?

26 "A YES, OCCASIONALLY.

27 "Q AND THE COMPANY
28 WORKED WITH ITS FLAVOR PERSON, THAT IS

1 HOWARD SPEILBERG?

2 "A THE CHIEF FLAVOR
3 CHEMIST OF THE CORPORATION WORLDWIDE,
4 HOWARD SPEILBERG.

5 "Q ALL RIGHT. AND THE
6 FACT THAT HOWARD SPEILBERG WAS BROUGHT
7 IN TO TRY TO DEAL WITH THE ODOR
8 PROBLEM ALSO SHOWED HOW IMPORTANT --

9 "A HE WASN'T BROUGHT IN
10 TO DEAL WITH THE ODOR PROBLEM HE WAS
11 A NATURAL PART OF THE TEAM THAT WAS
12 OVER SEEING THE DEVELOPMENT OF THE
13 PROCESS.

14 "Q OKAY. BUT ODOR WAS
15 A PROBLEM AND ONE WAY TO DEAL WITH
16 ODOR IS TO USE FLAVORS; RIGHT?

17 "A POSSIBLY, OR TO
18 DEVELOP THE PROCESS BETTER SO YOU
19 DON'T --

20 "Q DON'T HAVE THE
21 ODORS?

22 "A -- DON'T HAVE THAT
23 PROBLEM VERY FREQUENTLY, WHICH IS ONE
24 OF THE THINGS WE DID DO.

25 "Q NOW, THE ODOR, PART
26 OF THE ODOR THAT WAS ASSOCIATED WITH
27 THE USE OF THIS BACTERIA WAS THE SMELL
28 OF, LIKE, RANCID BUTTER AND FECAL

1 MATTER; RIGHT?

2 "A WELL, MOST PEOPLE
3 IDENTIFIED IT LIKE SMELLY SOCKS, GYM
4 SOCKS.

5 "Q I DON'T KNOW WHICH
6 IS WORSE.

7 "A I DON'T KNOW EITHER.

8 "Q BUT IT WAS NOT A
9 PLEASANT ODOR; RIGHT?

10 "A IT COULD BE A FAIRLY
11 STRONG, KIND OF OLD LOCKER ROOM
12 ATHLETIC SOCK KIND OF SMELL THAT WAS
13 IDENTIFIABLE IN CERTAIN KINDS OF
14 ORGANIC ACIDS THAT CAN BE MADE.

15 "Q AND THINGS LIKE
16 ODOR, THEY ARE CONSIDERED PART OF WHAT
17 WE WOULD CALL SUBJECTIVES; RIGHT?

18 "A OH, YES. PRODUCT
19 ACCEPTABILITY CAN BE DEPENDENT UPON
20 SOMETHING LIKE THAT, WHICH, AGAIN, WE
21 WERE VERY AWARE OF DURING THIS WHOLE
22 PROJECT. "

23 MR. LEITER: SKIP TO PAGE 79.

24 ARE YOU WITH ME?

25 "Q NOW LET'S TO GO
26 DR. GULLOTTA.

27 "THE IDEA OF TESTING SMOKE
28 FOR A BRAIN WAIVER RESPONSE, THE USE

1 OF ELECTROPHYSIOLOGY FOR THIS PURPOSE,
2 THAT WAS -- THAT WAS -- THE GENERAL
3 CONCEPT WAS WELL-KNOWN BY THE
4 SCIENTIFIC COMMUNITY BEFORE
5 DR. GULLOTTA STARTED DOING HIS WORK,
6 RIGHT?

7 "A AS BRIGHT AS FRANK
8 IS AND TALENTED, HE DIDN'T INVENT THIS
9 WHOLE AREA, NO.

10 "Q ALL RIGHT. AND I
11 DIDN'T MEAN TO SUGGEST THAT HE DID.

12 "BUT I AM SURE YOU WOULD
13 EXPECT THAT DR. GULLOTTA WOULD USE THE
14 PRIOR WORK IN THE LITERATURE ON
15 TESTING SMOKE FOR BRAIN WAIVE
16 RESPONSES AS A BASIS FOR GOING FORWARD
17 WITH HIS WORK; RIGHT?

18 "A YOU ALWAYS WANTED TO
19 KNOW WHAT'S IN THE LITERATURE WHEN YOU
20 START A PIECE OF WORK.

21 "Q OKAY, GOOD. AND YOU
22 ARE AWARE THAT THERE WAS PUBLISHED
23 LITERATURE ON THIS WHOLE SUBJECT OF
24 BRAIN WAIVE RESPONSE TO SMOKE BACK AT
25 THE TIME DR. GULLOTTA DOING HIS WORK?

26 "A GENERALLY, THERE WAS
27 SOME. AGAIN, IT HASN'T -- IT WASN'T
28 MY PARTICULAR FIELD, BUT, YES.

1 "Q IN FACT, THERE WAS A
2 WHOLE -- THERE WAS A WHOLE PUBLISHED
3 INTERNATIONAL SYMPOSIUM ON THE E. E. G.
4 EFFECTS OF NICOTINE BACK IN 1978,
5 WASN' T THERE -- WEREN' T THERE?

6 "A OH, I DON' T KNOW

7 "Q YOU WEREN' T AWARE OF
8 THAT?

9 "A THERE WAS -- IN
10 1978? THAT' S NICE. THAT' S GOOD.

11 "Q YOU WERE NOT AWARE
12 OF THAT AT ALL?

13 "A NO. FRANK MAY HAVE
14 MENTIONED THAT TO ME AND IT MAY HAVE
15 BEEN ON HIS DESK BUT, AGAIN, NO. THIS
16 IS 20 YEARS AGO, YES.

17 "Q WHEN DR. GULLOTTA
18 WAS DOING HIS WORK, YOU WERE, DID YOU
19 SAY YOU WERE NEXT DOOR TO HIM OR DID I
20 GET THAT MIXED UP, IT WAS SOMEBODY
21 ELSE?

22 "A NO. I WAS, AT THAT
23 TIME, JUST BEFORE.

24 "Q WHERE WERE YOU IN
25 RELATION TO HIM?

26 "A I WAS ON THE THIRD
27 FLOOR NEXT TO BEHAVIOR RESEARCH WHERE
28 HE STARTED. BUT SOMETIME, AND I DON' T

1 REMEMBER WHEN, WHEN CAROLINE LEVY, WHO
2 WAS AT ONE TIME IN THAT GROUP AND
3 MOVED AND WENT TO NEW YORK, THERE WAS
4 SOME REORGANIZATION OF SPACE AND THERE
5 WERE PEOPLE IN R&D MOVING AROUND LIKE
6 YOU DO, YOU MOVE AROUND OFFICES, WOUND
7 UP ON THE FOURTH FLOOR BECAUSE THEY
8 WANTED HIM TO HAVE A TOTALLY SEPARATE
9 LABORATORY FOR HIS WORK SO THEY BUILT
10 THAT LABORATORY ON THE FOURTH FLOOR
11 RATHER THAN IN WITH THE REST OF THE
12 STUFF ON THE THIRD FLOOR, WHICH IS
13 WHERE DR. DENOBLE WAS AND BILL DUNN
14 AND OTHERS.

15 "Q AND I THINK YOU SAID
16 THIS MORNING THAT DR. GULLOTTA, IN
17 DOING HIS TESTS, WAS TESTING FOR
18 NICOTINE RESPONSE IN THE BRAIN AND HE
19 WAS ALSO TESTING FOR FLAVOR RESPONSE
20 IN THE BRAIN; RIGHT?

21 "A YES.

22 "Q OKAY. SO, FOR
23 EXAMPLE, HE WOULD TAKE A VANILLIN
24 COMPOUND, WHICH WAS A FLAVORANT AND
25 WOULD TEST TO SEE WHETHER PEOPLE HAD A
26 BRAIN WAVE RESPONSE TO VANILLA IN HIS
27 WORK; RIGHT?

28 "A YES, THEY WANTED AN

1 OBJECTIVE, TECHNICAL MEASUREMENT,
2 SCIENTIFIC MEASUREMENT THAT THEY COULD
3 CORRELATE TO SOMETHING SAYING, YES, I
4 LIKE IT MORE THAN THE THING I HAD
5 BEFORE. AND IF THEY PUT A LITTLE MORE
6 VANILLIN, I THINK IT'S CALLED --

7 "Q VANILLIN IS HOW YOU
8 PRONOUNCE IT?

9 "A VANILLIN IS THE
10 CHEMICAL. IT'S VANILLA.

11 "Q IT'S VANILLA?

12 "A THEY WOULD DO IT
13 THAT WAY SO THEY WOULD HAVE A
14 MEASUREMENT, NOT JUST WHAT SOMEONE
15 SAID: HOW MUCH DO YOU LIKE IT? A
16 LITTLE BIT MORE.

17 "THEY HAD A MEASUREMENT THEY
18 COULD GO BACK TO.

19 "Q THEY WERE TRYING TO
20 OBJECTIFY IT?

21 "A YES.

22 "Q THERE HAD BEEN
23 PUBLISHED LITERATURE ON, FOR EXAMPLE,
24 BRAIN WAVE RESPONSE TO WHAT YOU GET IN
25 A CUP OF COFFEE FROM CAFFEINE; RIGHT?

26 "A OH, A LOT OF THINGS.

27 "Q OKAY.

28 "A SURE.

1 "Q AND HE WAS LOOKING
2 AT THINGS LIKE CITRUS SMELL AND
3 VANILLA AND NICOTINE AND OTHER THINGS?

4 "A MENTHOL.

5 "Q RIGHT, HE WAS DOING
6 IT ALL, RIGHT, OKAY.

7 "NOW, AND HE WAS ACTUALLY
8 ABLE, AS I UNDERSTAND YOUR TESTIMONY,
9 TO MEASURE BRAIN WAVE RESPONSES FOR
10 DIFFERENT FLAVORS AND SPELLS; RIGHT?

11 "A HE WAS ABLE TO
12 MEASURE A RESPONSE HAVING TO DO WITH A
13 NERVE IN THE TONGUE OR THE MOUTH OR
14 THE THROAT BEING STIMULATED BY
15 SOMETHING LIKE THAT, AMONG OTHER
16 THINGS THAT HE WAS LOOKING AT, LIKE
17 NICOTINE, YES.

18 "Q AND THE
19 INTERPRETATION OF A FLAVOR OCCURS IN
20 THE BRAIN, SO YOU WOULD EXPECT TO GET
21 AN E. E. G. RESPONSE; CORRECT?

22 "A EVERYTHING WE DO IS
23 INTERPRETED IN THE BRAIN.

24 "Q OKAY. AND YOU
25 BELIEVED, YOU BELIEVED THAT IT WAS
26 APPROPRIATE OR NOT INAPPROPRIATE FOR
27 DR. GULLOTTA TO BE DOING HIS WORK,
28 DIDN' T YOU?

1 "A OH, YES, IT WAS,
2 AGAIN, EXCELLENT WORK. FRANK TOOK
3 WHAT WAS KNOWN IN THE LITERATURE AND
4 THIS IS, AGAIN, SOMETHING THAT PHILIP
5 MORRIS DID FREQUENTLY, AND ONE OF THE
6 THINGS I ADMRED ABOUT THE COMPANY,
7 ONE OF THE THINGS THAT DISAPPOINTED ME
8 ULTIMATELY, WHY I LEFT, HAD THE
9 CAPABILITY TO TAKE WHAT WAS OUT THERE,
10 A TECHNOLOGY THAT WAS AT THE FOREFRONT
11 OF ITS FIELD AT THE DAY, BRING IT
12 IN-HOUSE, AND MAKE A MASSIVE STEP-UP
13 IN A YEAR, BECAUSE THEY HAD THE
14 HORSEPOWER TO DO IT, THE TALENTED
15 STAFF, THE MDNEY, THE FACILITIES.

16 "AND OVER A SHORT PERIOD OF
17 TIME, THEY WOULD TAKE WHAT THE REST OF
18 THE WORLD DID AND WTHOUT THE REST OF
19 THE WORLD KNOWING ABOUT IT, WOULD ALL
20 OF A SUDDEN GO, SWOOP, LIKE THIS AND
21 DO WORK THAT NO ONE ELSE IN THE WORLD,
22 THAT I KNEW, COULD DO.

23 "Q AND IN FACT, THEY
24 HAD, I THINK YOU SAID, I BELIEVE IT
25 WAS YOU WHO SAID THEY HAD 600 PEOPLE
26 DOING RESEARCH AND DEVELOPMENT WORK OF
27 VARIOUS KINDS?

28 "A WHEN I FIRST GOT

1 THERE AROUND 600, 650. IT VARIED A
2 LITTLE BIT.

3 "YES, THEY HAD, NOT JUST IN
4 R&D, THEY HAD, I DON'T KNOW WHAT THE
5 NUMBER OF PEOPLE IN RICHMOND WAS, THEY
6 HAD A LOT OF TALENTED PEOPLE AT PHILIP
7 MORRIS.

8 "Q AND THOSE TALENTED
9 PEOPLE WORKED ON LOTS OF DIFFERENT
10 PROJECTS, LIKE SOME OF THE ONES YOU
11 MENTIONED THIS MORNING, EXPANDED
12 TOBACCO?

13 "A YES.

14 "Q RIGHT? AND
15 FILTRATION?

16 "A YES.

17 "Q VENTILATION OF
18 FILTERS. AND NODS.

19 "A YES.

20 "Q ALL KINDS OF
21 PROJECTS THAT WERE PART OF THE
22 RESEARCH AND DEVELOPMENT EFFORTS AT
23 PHILIP MORRIS.

24 "A YES.

25 "Q AND ONE OF THE
26 THINGS THAT YOU MENTIONED, BY THE WAY,
27 WAS RECONSTITUTED LEAF TOBACCO. YOU
28 TALKED ABOUT THAT FOR JUST, JUST A

1 SMATTERING THIS MORNING. AND I JUST
2 WANT TO CLEAR UP ONE THING ABOUT THAT.

3 "YOU ARE NOT AWARE, ARE YOU,
4 DOCTOR, OF ANY NICOTINE BEING USED IN
5 THE RECONSTITUTED TOBACCO
6 MANUFACTURING PROCESS, OTHER THAN THE
7 NICOTINE THAT COMES FROM THE TOBACCO
8 ITSELF THAT WAS USED IN THE PROCESS?

9 "A THAT IS CORRECT.
10 THE ONLY NICOTINE THAT WAS RESIDENT,
11 AS FAR AS I KNOW, OR WOULD EXPECT AT
12 PHILIP MORRIS -- I MEAN, I REMEMBER
13 THAT REPORT BACK A NUMBER OF YEARS AGO
14 WHERE THE SPIKING OF NICOTINE OUT OF A
15 BOTTLE, I MEAN, PHILIP MORRIS WOULD
16 NEVER DO THAT, AS FAR AS I KNOW

17 "YES, WHATEVER WAS IN THE
18 LEAVES THAT GETS SWITCHED OUT IN THIS
19 LIQUID EXTRACT AND CONCENTRATED --

20 "Q YES.

21 "A -- WAS WHAT WAS PUT
22 BACK, THE AMOUNT, DEPENDING ON HOW
23 THEY RECOMBINED ALL THIS STUFF.

24 "SO THEY HAD CONTROL OVER
25 HOW MUCH THEY PUT BACK INTO THE
26 SHEETS. SO WITHIN THAT CONTEXT, YES.

27 "Q SO WITHIN THAT
28 CONTEXT, WHAT YOU ARE SAYING IS THEY

1 DIDN' T ADD EXTRANEOUS NICOTINE?

2 "A NO. IT WAS THE
3 NICOTINE THAT WAS ORIGINALLY RESIDENT,
4 WHATEVER LEAF PRODUCTS THEY WERE
5 EXTRACTING.

6 "Q AS FAR AS YOU KNOW,
7 THESE ALLEGATIONS OF SPIKING ARE NOT
8 TRUE?

9 "A YES, ABSOLUTELY.
10 AND IT WAS NOTHING I WOULD HAVE EVER
11 EXPECTED A COMPANY LIKE PHILIP MORRIS
12 TO EVER THINK OF, LET ALONE DO.

13 "Q OKAY. AND YOU ARE
14 NOT AWARE OF PHILIP MORRIS EVER USING
15 RECONSTITUTED LEAF TO ADJUST NICOTINE
16 UPWARDS IN ANY COMMERCIAL PRODUCT THAT
17 IS ACTUALLY USED?

18 "A WELL, I AM NOT SURE
19 WHAT YOU MEAN BY 'UPWARDS.' IT WAS MY
20 UNDERSTANDING THAT SHEET COULD BE USED
21 AND WAS, ON OCCASION, USED TO OBTAIN A
22 CERTAIN TARGETED LEVEL OF NICOTINE IN
23 THE FINAL PRODUCT. AND THAT WAS PART
24 OF THE EFFICACY OF THAT PROCESS. THAT
25 WAS PART OF THE USE OF THE PROCESS.

26 "IT'S NOT JUST A FILLER,
27 JUST A SPACE FILLER BUT A WAY TO
28 INTRODUCE WHAT YOU WANTED TO INTRODUCE

1 TO THE PRODUCT.

2 "Q OKAY. BUT MY
3 QUESTION TO YOU, DOCTOR, IS WHETHER
4 YOU ARE AWARE OF WHETHER PHILIP MORRIS
5 EVER ACTUALLY, IN A COMMERCIAL
6 PRODUCT, WITH A SPECIFIC COMMERCIAL
7 PRODUCT, WHETHER IT EVER ADJUSTED
8 NICOTINE IN SOME WAY BY ADDING
9 NICOTINE TO MAKE IT HIGHER?

10 "YOU' RE NOT AWARE OF THAT,
11 ARE YOU?

12 "A AGAIN, I AM NOT SURE
13 HOW YOU ARE USING THE WORD 'HIGHER,' I
14 MEAN, IF YOU LOOK AT THE AMOUNT OF
15 NICOTINE THAT WAS RESIDENT ON THE
16 SHEET AT ANY ONE POINT IN TIME, IT
17 COULD BE VARIED BY THE WAY YOU HANDLE
18 THE PROCESS.

19 "I MEAN, THERE WERE TIMES
20 WHERE IT COULD BE AT THE LOWER LEVEL
21 AND THERE WERE TIMES WHERE IT COULD BE
22 AT A HIGHER LEVEL.

23 "WHETHER THE COMPANY USED
24 THAT PROCESS TO INTENTIONALLY ALWAYS
25 MAKE SURE THAT SHEET -- THAT THE SHEET
26 HAD A MASSIVELY HIGH NICOTINE LEVEL TO
27 PUT INTO THE PRODUCT, I DON'T KNOW IF
28 THAT EVER OCCURRED.

1 "Q OKAY. WELL, LET ME
2 SEE IF -- BECAUSE I AM CONCERNED THAT
3 WHERE WE MAY BE CONFUSED A LITTLE BIT
4 HERE, I JUST WANT TO SHOW YOU A PAGE
5 FROM YOUR DEPOSITION AND MAKE SURE WE
6 ARE TALKING ABOUT THE SAME THING.
7 OKAY?

8 "A OKAY.

9 "Q SO WE WILL TAKE A
10 MINUTE, DOCTOR. I AM GOING TO HAND IT
11 TO YOU.

12 "A THAT'S FINE. THIS
13 IS THE DEPOSITION OF --

14 "Q YES. YES. IN THIS
15 CASE.

16 "A OKAY.

17 "Q OKAY?

18 "A YESTERDAY?

19 "Q RIGHT. THIS IS A
20 VERY TIMELY DEPOSITION. THIS IS A
21 DEPOSITION THAT TOOK PLACE YESTERDAY.

22 "AND THE QUESTION MAINLY --
23 IT WAS CONFUSING. BUT THE QUESTION
24 THAT WAS ASKED WAS, THIS IS ON PAGE
25 44, DOCTOR.

26 "A OKAY.

27 "Q I AM ASKING WHETHER
28 YOU ARE AWARE OF WHETHER PHILIP MORRIS

1 EVER USED R. L. --

2 "A EXCUSE ME. WHERE ON
3 THE PAGE? WHERE DO I LOOK?

4 "Q I THINK IT IS AT THE
5 BOTTOM, BUT LET ME TAKE A LOOK.

6 "A OKAY, DOWN HERE,
7 LINE 23?

8 "Q RIGHT. AND THE
9 QUESTION IS, I AM ASKING WHETHER YOU
10 ARE AWARE OF WHETHER PHILIP MORRIS
11 EVER USED R. L. , THAT'S RECONSTITUTED
12 LEAF; RIGHT, TO ADJUST NICOTINE
13 UPWARD, NOT WHETHER IT COULD BE DONE,
14 WHETHER IT WAS DONE?

15 "AND YOU ANSWERED: NOT WITH
16 REGARDS TO A SPECIFIC PRODUCT IN WHICH
17 THAT WAS DONE.

18 "NOW, IS THAT ESSENTIALLY --
19 YOU ARE NOT AWARE OF ANY SPECIFIC
20 PRODUCT IN WHICH --

21 "A RIGHT, WHICH IS KIND
22 OF WHAT I SAID.

23 "Q RIGHT.

24 "A I AM NOT AWARE OF
25 WHETHER PHILIP MORRIS EVER LOADED UP
26 THE SHEET WITH A TREMENDOUS AMOUNT OF
27 NICOTINE AND INTRODUCED IT INTO A
28 MARKETING PRODUCT, MARKETABLE PRODUCT.

1 "I MEAN, THEY WOULDN' T HAVE
2 DONE THAT FOR A LOT OF REASONS, BUT,
3 NO.

4 "Q OKAY. YOU MENTIONED
5 THE WORD 'RATOONING' " IN CONNECTION
6 WITH RATOONING, R-A-T -- JUST HOLD IT
7 UP THERE. JUST PUT IT UP ON THE
8 JUDGE' S DESK.

9 "AND I THINK YOU EXPLAINED
10 THAT RATOONING IS WHERE YOU CUT OFF
11 THE LEAF BEFORE IT IS FULLY GROWN, YOU
12 CUT OFF THE PLANT?

13 "A YOU CUT THE PLANT
14 OFF FAIRLY CLOSE TO THE GROUND, MAYBE
15 JUST ABOVE THE BOTTOM FEW LEAVES.

16 "Q OKAY. AND I JUST
17 HAD A QUESTION FOR YOU ON RATOONING.

18 "NOW, AM I RIGHT, DOCTOR,
19 JUST SO WE CAN GET BY THIS AREA, YOU
20 DON' T KNOW WHETHER ANY LEAVES PRODUCED
21 THROUGH RATOONING EVER GOT INTO
22 PRODUCTION IN ANY COMMERCIAL CIGARETTE
23 AT PHILIP MORRIS?

24 "A NO, I DON' T. I WAS
25 ONLY AWARE OF IT DURING THE RESEARCH
26 PHASE OF THOSE PROJECTS.

27 "Q AND THE RESEARCH
28 PHASES, THEY WERE SIMPLY LOOKING AT

1 VARIOUS ASPECTS OF WHAT HAPPENS WHEN
2 YOU RATOON TOBACCO; RIGHT?

3 "A THEY WERE DOING
4 FIELD EXPERIMENTS TO LOOK AT A NUMBER
5 OF CRITERIA, ONE OF WHICH WAS NICOTINE
6 PRODUCTION IN THE NEW LEAVES THAT GREW
7 UP AFTER.

8 "Q SURE. BECAUSE WHEN
9 YOU CUT THEM OFF LIKE THAT, A LOT OF
10 THINGS CHANGE. SUGAR CAN CHANGE;
11 RIGHT?

12 "A OH, A NUMBER OF
13 THINGS CAN CHANGE.

14 "Q RIGHT, SO --

15 "A THEY WERE LOOKING AT
16 A LOT OF THINGS.

17 "Q THEY WERE LOOKING AT
18 EVERYTHING THAT CHANGES WHEN YOU DO
19 THAT?

20 "A I AM NOT SURE IT WAS
21 EVERYTHING, BUT THEY HAD CERTAIN
22 TARGETED COMPONENTS, SUGARS, CERTAIN
23 WAX, FLAVORANTS AND NICOTINE WAS HIGH
24 ON THE LIST.

25 "Q AND THAT WAS IN AN
26 EXPERIMENTAL PHASE, AND AS FAR AS YOU
27 KNOW, NEVER USED IN COMMERCIAL
28 PROCESS?

1 "A AS FAR AS I KNOW, IT
2 WAS JUST BEING EXPLORED FOR
3 POSSIBILITIES. "

4 MR. LEITER: YOUR HONOR, I BELIEVE THAT
5 COMPLETES THE READING OF THE CROSS-EXAMINATION.

6 THE COURT: VERY WELL.

7 MR. GOLDSTEIN: PAGE?

8 MR. PIUZE: 95.

9 "Q YOU WERE ASKED ABOUT
10 SOME DOCUMENTS, ONE DOCUMENT, THE
11 FIRST ONE THAT MR. HEIM DISCUSSED WITH
12 YOU WAS THIS DOCUMENT DATED JULY 23,
13 '80, FROM DENOBLE, DUNN, OSDENE AND
14 RYAN TO DR. SELIGMAN.

15 THE BOTTOM-LINE CONCLUSION
16 OF THIS DOCUMENT IS THAT NICOTINE IS A
17 REINFORCER BUT IT IS NOT ADDICTIVE;
18 RIGHT?

19 "A THAT'S WHAT'S STATED
20 HERE.

21 "Q IS THIS DOCUMENT
22 CONSISTENT WITH ATTITUDE AND
23 DISCUSSIONS OF SCIENTISTS ON THE
24 SUBJECT OF ADDICTION DURING YOUR 11
25 YEARS WITH PHILIP MORRIS OR IS IT
26 INCONSISTENT WITH WHAT YOU HEARD?

27 "A I AM SORRY, WOULD
28 YOU REPEAT THAT ONE TIME.

1 "Q YES.

2 "I AM ASKING YOU IF THIS
3 DOCUMENT, WHICH SAYS NICOTINE IS NOT
4 ADDICTIVE, IS MERELY A REINFORCER, IS
5 CONSISTENT WITH WHAT SCIENTISTS WERE
6 SAYING IN YOUR PRESENCE, IN YOUR
7 DISCUSSIONS WITH THEM, IN MEETINGS YOU
8 ATTENDED DURING YOUR 11 YEARS AT
9 PHILIP MORRIS?

10 "A NO. NOT TOTALLY,
11 NO. "

12 MR. PIUZE: MAY I PLEASE GO TO 97 AND
13 START AT 3.

14 "Q DID THE NOD PROJECT,
15 FAIL?

16 "A NO. AS FAR AS I
17 KNOW, IT WAS TECHNICALLY SUCCESSFUL,
18 MAY HAVE NEEDED A FEW THINGS. THEY
19 COULD HAVE IMPROVED IT EVEN FURTHER.
20 BUT AS FAR AS WHAT I WAS TOLD BY MY
21 MANAGEMENT, OUTSIDE CONTRACTORS WHO
22 WERE EXPERTS, OTHER PEOPLE AT PHILIP
23 MORRIS, CHIEF ENGINEERS, IT WAS
24 SUCCESSFUL.

25 "Q I BELIEVE YOU
26 MENTIONED SOMETHING ABOUT THE R&D
27 HEADQUARTERS IN SWITZERLAND.

28 "NOW, WAS INBIFO IN GERMANY

1 ALSO CONSIDERED TO BE R&D HEADQUARTERS
2 OR WAS THAT SOMETHING ELSE?

3 "A THAT WAS TOTALLY
4 DIFFERENT.

5 "Q NOW, THE LETTER THAT
6 MR. HEIM REFERRED TO FROM DR. HELMUT
7 GAISCH DATED SEPTEMBER 12, '83,
8 DR. GAISCH WAS STILL WITH THE R&D
9 SECTION IN NEUCHATEL, SWITZERLAND; IS
10 THAT CORRECT?

11 "A YES.

12 "Q WAS THERE, WAS THERE
13 A VALID, BASED ON EVERYTHING THAT YOU
14 LEARNED DURING YOUR TENURE AT PHILIP
15 MORRIS, WAS THERE A VALID SCIENTIFIC
16 REASON FOR KILLING THE NOD PROJECT?

17 "A NOT THAT I WAS AWARE
18 OF

19 "Q WAS THERE A VALID,
20 SCIENTIFIC REASON FOR KILLING
21 DR. GULLOTTA'S RESEARCH OR SENDING IT
22 TO EUROPE?

23 "A SCIENTIFIC REASON?

24 "Q YES.

25 "A NOT THAT I WAS AWARE
26 OF.

27 "Q AND WAS THERE A
28 VALID SCIENTIFIC REASON FOR KILLING

1 DR. DENOBLE' S RESEARCH?

2 "A NO, NOT THAT I WAS
3 AWARE OF.

4 "Q NOW, TOWARD THE END
5 OF MR. HEIM S QUESTIONS, YOU WERE
6 HAVING A DISCUSSION ABOUT THE GENERAL
7 LEVEL OF SCIENCE AT PHILIP MORRIS IN
8 TERMS OF THE QUALIFICATIONS OF THE
9 SCIENTISTS WHICH YOU SAID WAS VERY
10 HIGH. AND THEY MADE ADVANCES AND THEN
11 YOU SAID, QUOTE, WHERE THEY MADE THESE
12 ADVANCES, QUOTE, WITHOUT THE REST OF
13 THE WORLD KNOWING ABOUT IT, END QUOTE.
14 WHAT DID YOU MEAN BY THAT?

15 "A WHEN PHILIP MORRIS
16 DECIDED TO UTILIZE THE CURRENT
17 TECHNOLOGY AND EXPLORE IT FOR POSSIBLE
18 USE INSIDE, IT WANTED TO ELEVATE,
19 RAISE THE LEVEL OF SCIENCE AND QUALITY
20 ASSOCIATED WITH THAT SO IT COULD HAVE
21 A CORPORATE ADVANTAGE. AND SOMETIMES
22 WE' D USE THAT WORK TO DEVELOP NEW AND
23 NOVEL INFORMATION WHICH IT DIDN' T
24 PARTICULARLY WANT ANYONE ELSE TO KNOW
25 ABOUT. SO IT KEPT IT --

26 "Q KEPT IT SECRET?

27 "A KEPT IT SECRET,
28 YES. "

1 MR. PIUZE: AND EVERYONE WILL BE HAPPY TO
2 KNOW, THAT'S THE END OF THAT READING, YOUR HONOR.

3 THE COURT: LADIES AND GENTLEMEN, WE ARE
4 GOING TO TAKE FIVE MINUTES. JUST GO OUT AND TAKE A
5 HALLWAY BREAK. AND SET UP IN HERE FOR THE NEXT
6 WITNESS AND WE WILL GET STARTED AGAIN.

7 THANK YOU VERY MUCH.

8
9 (THE FOLLOWING PROCEEDINGS
10 WERE HELD IN OPEN COURT OUT
11 OF THE PRESENCE OF THE JURY:)

12
13 MR. LEITER: YOUR HONOR, ONE VERY QUICK
14 PROBLEM, ONE OF THE DOCUMENTS THAT MR. PIUZE WANTS
15 TO USE WITH THE NEXT WITNESS, WE HAVE NO OBJECTION
16 TO ALL THE DOCUMENT EXCEPT WE WERE JUST TOLD FOR
17 THE FIRST TIME THAT THERE IS A LAST PAGE WHICH THEY
18 BELIEVE IS PART OF THE DOCUMENT.

19 WE HAVE NO IDEA WHETHER IT'S PART
20 OF THE DOCUMENT OR NOT.

21 WE DON'T WANT THEM TO OFFER THE
22 DOCUMENT WITH THE LAST PAGE, UNTIL WE HAVE AN
23 OPPORTUNITY TO CONFIRM THAT IT'S PART OF THE
24 DOCUMENT.

25 THE COURT: ALL RIGHT. HOLD OFF ON THAT
26 AND I WILL GIVE YOU A FAIR OPPORTUNITY TO DO THAT.

27 IS HE GOING TO BE WITH US OVER THE
28 AFTERNOON?

1 MR. PIUZE: PROBABLY NOT, BUT THAT PAGE
2 IS NEVER GOING TO BE SHOWN, MENTIONED OR IN ANY WAY
3 MENTIONED.

4 MR. LEITER: BUT HE WANTS TO PUT IT INTO
5 EVIDENCE.

6 MR. PIUZE: THAT'S NOT TRUE.

7 THE COURT: DON'T MOVE IT INTO EVIDENCE
8 AT THIS POINT IN TIME.

9 MR. PIUZE: EXACTLY.

10 THE COURT: I WILL TAKE CARE OF IT LATER.
11 BRING THE JURY IN, PLEASE.

12
13 (THE FOLLOWING PROCEEDINGS
14 WERE HELD IN OPEN COURT IN
15 THE PRESENCE OF THE JURY.)

16

17 THE COURT: THANK YOU.

18 OUR JURY PANEL IS WITH US. COUNSEL
19 ARE PRESENT AS WELL.

20 NEXT WITNESS, PLEASE.

21 MR. PIUZE: DR. NEAL BENOwitz IS THE NEXT
22 WITNESS FOR THE PLAINTIFF.

23

24

25 NEAL BENOwitz M D. ,
26 CALLED AS A WITNESS BY THE PLAINTIFF, WAS SWORN
27 AND TESTIFIED AS FOLLOWS:

28 THE CLERK: YOU DO SOLEMNLY STATE THE

1 TESTIMONY YOU MAY GIVE IN THE CAUSE NOW PENDING
2 BEFORE THIS COURT, SHALL BE THE TRUTH, THE WHOLE
3 TRUTH AND NOTHING BUT THE TRUTH, SO HELP YOU GOD.

4 THE WITNESS: YES, I DO.

5 THE CLERK: THANK YOU.

6 THE COURT: PLEASE STATE YOUR NAME FOR
7 THE RECORD.

8 THE WITNESS: NEAL BENOWITZ.

9 THE CLERK: SPELL YOUR LAST NAME, SIR.

10 THE WITNESS: B-E-N-O-W-I-T-Z.

11

12 DIRECT EXAMINATION

13

14 BY MR. PIUZE:

15 Q. SO YOUR NAME IS BENOWITZ?

16 GOOD MORNING.

17 A. GOOD MORNING.

18 Q. YOU ARE A MEDICAL DOCTOR?

19 A. YES.

20 Q. ARE YOU EMPLOYED?

21 A. YES.

22 Q. WHO IS YOUR BOSS?

23 A. I AM AN EMPLOYEE OF THE U. C.

24 SAN FRANCISCO, UNIVERSITY OF CALIFORNIA,

25 SAN FRANCISCO. I WORK AT THE SAN FRANCISCO GENERAL

26 HOSPITAL, WHICH IS A TEACHING HOSPITAL OF U. C.

27 SAN FRANCISCO.

28 Q. ARE YOU EMPLOYED BY THE REGENTS OF

1 THE UNIVERSITY OF CALIFORNIA?

2 A. YES.

3 Q. ARE YOU A MEDICAL PROFESSOR?

4 A. YES.

5 Q. HOW LONG HAVE YOU BEEN A MEDICAL
6 PROFESSOR?

7 A. I HAVE BEEN ON THE U. C. FACULTY
8 SINCE 1974. I STARTED AS AN ASSISTANT PROFESSOR.
9 I HAVE BEEN A FULL PROFESSOR PROBABLY FOR THE LAST
10 15 YEARS IN MEDICINE, PSYCHIATRY AND
11 BIOPHARMACEUTICAL SCIENCES.

12 Q. SO YOU ARE A FULL PROFESSOR IN
13 THREE DIFFERENT AREAS?

14 A. YES.

15 Q. DO YOU KNOW SOMETHING ABOUT
16 NICOTINE?

17 A. YES. MOST OF MY RESEARCH OVER THE
18 PAST 25 YEARS HAS RELATED TO STUDYING THE EFFECTS
19 OF NICOTINE ON PEOPLE, STUDYING NICOTINE ADDICTION,
20 STUDYING HOW NICOTINE INFLUENCES SMOKING BEHAVIOR,
21 STUDYING THE EFFECTS OF NICOTINE AND SMOKING ON THE
22 HEART AND OTHER ILLNESSES RELATED TO SMOKING.

23 Q. WE READ SOME TESTIMONY HERE FROM A
24 WITNESS THE JURY NEVER SAW AND ONE OF THE TERMS
25 THAT WAS USED IN THE TESTIMONY WAS C. V. DO YOU
26 KNOW WHAT A C. V. IS?

27 A. YES.

28 Q. WHAT'S A C. V. ?

1 A. IT'S A CURRICULUM VITAE WHICH IS A
2 SUMMARY OF ONE'S EDUCATION AND TRAINING, ONE'S
3 ACTIVITIES, LECTURES, CONFERENCES, AWARDS,
4 CONSULTATIONS, PUBLICATIONS, BOOK CHAPTERS, ET
5 CETERA.

6 Q. SO FOR SOME OF US NOT IN THE
7 ACADEMIC WORLD OR -- FOR SOME OF US, SAYING
8 "RESUME" MIGHT BE A SHORTHAND FOR SAYING "C. V. "

9 A. IT'S THE SAME.

10 Q. THE SAME.

11 NOW, WE HAVE ALSO HEARD, I THINK
12 MAYBE FROM A COUPLE LIVE WITNESSES THAT HAVE BEEN
13 HERE, AT LEAST ONE, AND WE HAVE HEARD FROM SOME OF
14 THIS TESTIMONY THAT'S BEEN READ, THE TERM "PEER
15 REVIEW "

16 DO YOU KNOW WHAT THAT MEANS,
17 OBVIOUSLY?

18 A. YES.

19 Q. PLEASE EXPLAIN TO THE JURY.

20 A. WELL, WHEN ONE PUBLISHES RESEARCH,
21 ONE WRITES AN ARTICLE TALKING ABOUT WHY ONE DID THE
22 RESEARCH, THE METHODS AND WHAT THEY FOUND OR WHAT
23 IT MEANS. AND WHEN YOU SUBMIT THAT TO A JOURNAL
24 FOR PUBLICATION, IT GETS SENT OUT TO OTHER
25 RESEARCHERS, OTHER SCIENTISTS, USUALLY TWO OR
26 THREE. AND THEY ARE PEER REVIEWERS. AND THEY
27 REVIEW THE PAPER AND THEY DECIDE IF THE WORK IS
28 VALID, IF IT'S IMPORTANT, IF IT SHOULD BE

1 PUBLISHED.

2 AND SO THAT'S A PEER REVIEW PROCESS
3 THAT MAINTAINS THE QUALITY OF THE RESEARCH THAT IS
4 PUBLISHED.

5 Q. SO JUST AS AN EXAMPLE, IF A
6 SCIENTIST WANTED TO WRITE SOMETHING FOR SOME
7 NON-PEER REVIEWED JOURNAL, SOMETHING THAT WASN'T
8 PEER REVIEWED, AND THE SCIENTIST SENT IT IN TO A
9 PUBLISHER SOMEPLACE, IT MIGHT GET PUBLISHED AND IT
10 MIGHT BE BADLY FLAWED WORK?

11 A. YES.

12 Q. IN THE PEER REVIEW PROCESS, BEFORE
13 THE SCIENTIST CAN PUBLISH SOMETHING, HE'S GOT A
14 BUNCH, HE OR SHE HAS A BUNCH OF HIS OR HER
15 COLLEAGUES LOOKING OVER THEIR SHOULDER SAYING,
16 WELL, MAYBE YOU WANT TO CHANGE THIS COMA OR MAYBE
17 THIS ISN'T EXACTLY RIGHT OR MAYBE YOU WANT TO JUMP
18 OVER THESE HURDLES BEFORE YOU GET THIS PUBLISHED SO
19 IT IS A REALLY EXCELLENT WORK?

20 A. IT'S NOT SO MUCH COMAS. IT REALLY
21 HAS TO DO WITH WAS THE RESEARCH DESIGNED PROPERLY,
22 ARE THE CONCLUSIONS VALID, IS THE INTERPRETATION
23 THE APPROPRIATE INTERPRETATION.

24 Q. ON THE ISSUE OF NICOTINE AND ON THE
25 ISSUE OF ADDICTION TO NICOTINE, HAVE YOU PUBLISHED?

26 A. YES.

27 Q. DO YOU WANT TO GIVE THE JURY JUST A
28 ROUND NUMBER OF HOW MANY TIMES YOU PUBLISHED ON

1 THAT SUBJECT?

2 A. WELL, I HAVEN'T COUNTED THAT, BUT I
3 HAVE PUBLISHED 350 PAPERS THAT INCLUDE RESEARCH
4 PAPERS, REVIEW ARTICLES, ET CETERA. THE VAST
5 MAJORITY OF THAT INVOLVES NICOTINE SMOKING. NOT
6 ALL, BUT PROBABLY TWO-THIRDS OR THREE-QUARTERS OF
7 IT.

8 Q. HAS TO DO WITH --

9 A. NICOTINE OR TOBACCO RELATED ISSUES.

10 Q. HOW DID YOU FIRST GET INVOLVED IN
11 NICOTINE OR TOBACCO RELATED ISSUES, PLEASE?

12 A. WELL, MY BASIC TRAINING IS INTERNAL
13 MEDICINE. I WAS INTERESTED IN THE SPECIALTY OF
14 CLINICAL PHARMACOLOGY, WHICH IS THE SPECIALTY OF
15 MEDICINE THAT DEALS WITH THE EFFECTS OF DRUGS ON
16 PEOPLE, DRUG DEVELOPMENT, NEW DRUGS, AS WELL AS
17 DRUGS OF ABUSE AND DRUG OVERDOSES, THE WHOLE GAMUT.

18 IN MY TRAINING, I WAS STUDYING
19 MOSTLY DRUGS THAT EFFECT THE HEART AND BLOOD
20 VESSELS AND CIRCULATION.

21 ONE OF THE FIRST JOBS THAT I HAD
22 WHEN I FINISHED WAS TO STUDY MARIJUANA, THE EFFECT
23 OF MARIJUANA ON THE HEART.

24 MY PRACTICE IS MOSTLY CARDIOLOGY,
25 CARDIOVASCULAR DISEASE. AND AFTER A FEW YEARS OF
26 STUDYING MARIJUANA, I DECIDED THAT THE REAL HEALTH
27 ISSUES FOR SMOKED DRUGS WERE NOT MARIJUANA, THE
28 REAL HEALTH ISSUE, BECAUSE THAT WAS AND STILL IS

1 THE MAJOR PREVENTABLE CAUSE OF HEART DISEASE, SO IN
2 ABOUT 1975, I SHIFTED MY RESEARCH AND I DECIDED I
3 WOULD TRY TO UNDERSTAND NICOTINE.

4 NOW, AT THAT TIME, THERE WAS VERY
5 LITTLE RESEARCH DONE ON WHAT NICOTINE DID TO THE
6 BODY.

7 AND SO WE SYSTEMATICALLY GAVE
8 PEOPLE SMALL DOSES OF NICOTINE, STUDIED HOW THE
9 BODY WOULD HANDLE IT, STUDY WHAT HAPPENED, STUDY
10 HOW CONTROLLED SMOKING BEHAVIOR, AND I HAVE BEEN
11 DOING RESEARCH ON THAT FOR THE LAST 25 YEARS, ON
12 THE QUESTION OF NICOTINE AND IT'S IMPORTANCE.

13 Q. OKAY.

14 NOW, BACK TO THE CONCEPT OF PEER
15 REVIEW DO SCIENTISTS OR JOURNALS WHERE SCIENTISTS
16 WANT TO PUBLISH COME TO YOU AND SAY, DR. BENOWITZ,
17 WILL YOU BE ONE OF OUR REVIEWERS FOR THIS PAPER TO
18 MAKE SURE THAT THE RESEARCH WAS SET UP OKAY?

19 A. YES, VERY OFTEN.

20 Q. JUST GIVE --

21 A. PROBABLY ONCE A WEEK.

22 Q. ONCE A WEEK. OKAY.

23 A. I CAN'T HANDLE THEM ALL.

24 Q. HOW MANY DIFFERENT KINDS OF
25 SCIENTIFIC JOURNALS HAVE YOU ACTED AS A PEER
26 REVIEWER FOR?

27 A. I HAVE NOT COUNTED THEM BUT
28 PROBABLY 50 OR 60.

1 Q. HOW MANY TIMES DO YOU THINK YOU
2 HAVE BEEN -- I AM NOT TALKING ABOUT YOUR ARTICLES
3 NOW, YOU HAVE TOLD US TWO-THIRDS OR THREE-QUARTERS
4 OF 350 ARTICLES HAVE TO DO WITH NICOTINE AND
5 TOBACCO, TALKING ABOUT OTHER PEOPLE'S, HOW MANY
6 TIMES DO YOU THINK YOU HAVE BEEN A PEER REVIEWER
7 FOR OTHER'S ARTICLES, SCIENTIFIC WORKS ON TOBACCO,
8 NICOTINE AND ADDICTION, PLEASE?

9 A. SEVERAL HUNDREDS.

10 Q. HAVE YOU BEEN INVOLVED WITH THE
11 SURGEON GENERAL OF THE UNITED STATES OF AMERICA AS
12 FAR AS TOBACCO AND NICOTINE RELATED ACTIONS?

13 A. YES.

14 Q. EXPLAIN.

15 A. WELL, THE SURGEON GENERAL, EVERY
16 YEAR OR SO, PUTS OUT A REPORT TO CONGRESS AND TO
17 THE COUNTRY ON ASPECTS OF SMOKING AND HEALTH. THIS
18 STARTED WITH THE 1964 FIRST SURGEON GENERAL'S
19 REPORT THAT LINKED SMOKING WITH LUNG CANCER.

20 I HAVE BEEN INVOLVED WITH PROBABLY
21 FIVE OR SIX REPORTS.

22 THE WAY THESE WORK IS THAT
23 SCIENTISTS ARE ASKED TO ACCUMULATE THE CURRENT
24 STATE OF KNOWLEDGE AND TO PREPARE A SUMMARY
25 DOCUMENT WHICH IS THEN REVIEWED BY OTHER SCIENTISTS
26 AND ULTIMATELY REVIEWED BY AND PRESENTED BY THE
27 SURGEON GENERAL TO CONGRESS.

28 I HAVE BEEN INVOLVED IN WRITING

1 SECTIONS OF THE SURGEON GENERAL'S REPORTS ON
2 PASSIVE SMOKING, SMOKING IN WOMEN, SMOKING AND
3 YOUTH, ETHNIC DIFFERENCES IN CIGARETTE SMOKING.
4 THE ONE I WAS MOST INVOLVED IN,
5 HOWEVER, WAS THE 1988 SURGEON GENERAL'S REPORT ON
6 NICOTINE ADDICTION WHERE I WAS ONE OF THE
7 SCIENTIFIC EDITORS. THERE WERE FOUR EDITORS WHO
8 BASICALLY WERE RESPONSIBLE FOR PUTTING TOGETHER THE
9 ENTIRE DOCUMENT. AND SO I SERVED IN THAT CAPACITY.

10 Q. OKAY. SO THE 1988 SURGEON
11 GENERAL'S REPORT ON SMOKING AND ADDICTION, YOU WERE
12 ONE OF THE FOUR SCIENTIFIC EDITORS OF THE WORK?

13 A. YES.

14 Q. DID YOU WRITE SOME OF IT YOURSELF?

15 A. A LOT OF IT.

16 Q. HAVE YOU BEEN INVOLVED WITH VARIOUS
17 SUCCEEDING SURGEONS GENERAL AS ONE HAS COME AND
18 GONE AND THE NEXT ONE HAS COME AND GONE AND THE
19 NEXT ONE HAS COME AND GONE ON THE ISSUE OF SMOKING
20 AND NICOTINE AND HEALTH?

21 A. YES. AS I SAID, I WROTE THE
22 ADDICTION SECTIONS FOR THE REPORTS ON YOUTH
23 SMOKING, ETHNIC DIFFERENCES AND SMOKING AND WOMEN.
24 THOSE WILL BE THREE REPORTS SINCE THE '88 REPORT.

25 Q. OKAY, SO WERE DIFFERENT SURGEONS
26 GENERAL?

27 A. I DON'T REMEMBER WHICH -- IF THEY
28 WERE ALL DIFFERENT SURGEONS GENERAL. BUT THERE

1 WERE A NUMBER OF TIMES.

2 Q. HAVE YOU CONSULTED WITH OTHER
3 BRANCHES OF THE UNITED STATES GOVERNMENT IN REGARD
4 TO SMOKING TOBACCO AND NICOTINE AND ADDICTION,
5 PLEASE.

6 A. YES.

7 Q. EXPLAIN.

8 A. I HAVE WORKED WITH THE
9 ENVIRONMENTAL PROTECTION AGENCY ON THEIR ASSESSMENT
10 OF THE RISKS OF PASSIVE SMOKING. I HAVE WORKED
11 WITH THE OCCUPATIONAL SAFETY HEALTH ADMINISTRATION
12 WHEN THEY WERE DEALING WITH THE QUESTION OF
13 WORKPLACE REGULATION OF SMOKING. AND I WAS ONE OF
14 THEIR EXPERTS TALKING ABOUT HOW MUCH PEOPLE ARE
15 EXPOSED.

16 I WORKED WITH THE FOOD AND DRUG
17 ADMINISTRATION WHEN THEY CONSIDERED WHETHER
18 NICOTINE SHOULD BE CALLED A DRUG AND WHETHER IT
19 SHOULD BE REGULATED.

20 AND I HAVE ALSO WORKED WITH THE
21 FEDERAL TRADE COMMISSION IN SOME OF THE HEARINGS
22 ABOUT TESTING METHODS FOR CIGARETTES.

23 AND FINALLY, I HAVE WORKED FOR THE
24 NATIONAL INSTITUTES OF HEALTH ON A GRANT STUDY
25 SECTION. THE N. I. H. , AS IT IS CALLED, IS THE
26 AGENCY THAT PROVIDES RESEARCH GRANTS TO SCIENTISTS
27 TO DO MEDICAL RESEARCH. AND THEY GRANT REVIEW
28 PANELS. SCIENTISTS ARE ASKED TO SERVE FOR FOUR

1 YEARS AND TO REVIEW GRANT APPLICATIONS FROM OTHER
2 SCIENTISTS.

3 SO I SERVED ON THAT COMMITTEE FOR
4 FOUR YEARS.

5 Q. OKAY, THANKS.

6 I AM NOT GOING TO HIT ON ALL OF
7 YOUR QUALIFICATION ALL AT ONCE. I AM GOING TO TALK
8 JUST A LITTLE BIT MORE ABOUT THEM AND TALK ABOUT
9 SOME SUBJECT MATTER AND THEN LATER ON RETURN TO
10 YOUR QUALIFICATIONS.

11 WHO'S DAVID KESSLER?

12 A. HE WAS THE FOOD AND DRUG
13 ADMINISTRATION COMMISSIONER AT THE TIME THAT
14 NICOTINE WAS JUDGED TO BE A DRUG AND WHEN THE
15 F. D. A. DECIDED THAT NICOTINE SHOULD BE REGULATED AS
16 A DRUG.

17 Q. DID YOU --

18 MR. CARLTON: OBJECTION, RELEVANCE.

19 THE COURT: I AM GOING TO ALLOW YOU TO
20 PROCEED. FOUNDATION AT THIS TIME, THOUGH, PLEASE.

21 MR. PIUZE: YES.

22 THE COURT: FOUNDATION FOR YOUR
23 QUESTIONS.

24 Q BY MR. PIUZE: WHAT I AM
25 INTERESTED IN IS, DID YOU BRIEF DR. KESSLER IN
26 REGARD TO THESE ISSUES?

27 A. YES. I WAS ONE OF THE PEOPLE WHO
28 DID THAT. HE NEEDED BACKGROUND TO UNDERSTAND WHAT

1 NICOTINE DID AND HOW IT REGULATED SMOKING AND
2 NICOTINE CONTENT OF CIGARETTES. AND I HAD DONE
3 RESEARCH IN ALL THESE AREAS SO I DID BRIEF
4 DR. KESSLER AND HIS STAFF.

5 THE COURT: GOING TO THE ISSUE OF
6 QUALIFICATIONS. PROCEED.

7 MR. PIUZE: RIGHT. AND THAT'S ALL I AM
8 TRYING TO GET AT.

9 THE COURT: DON'T ARGUE, JUST PROCEED.

10 MR. PIUZE: OKAY, THANK YOU.

11 Q BY MR. PIUZE: WHEN DR. KESSLER,
12 THE HEAD OF THE F. D. A. , NEEDED SOME INFORMATION
13 REGARDING NICOTINE, TOBACCO, THE ADDICTIVE
14 PROPERTIES OF NICOTINE, ONE OF THE PEOPLE HE CAME
15 AND ASKED, PLEASE TELL ME ABOUT IT, WAS THAT YOU?

16 A. YES.

17 Q. YOU ARE A PRACTICING DOCTOR?

18 A. YES.

19 Q. UNDER WHAT CIRCUMSTANCES DO YOU SEE
20 PATIENTS, PLEASE.

21 A. WELL, I AM A PHYSICIAN WHO IS FULLY
22 EMPLOYED BY A MEDICAL SCHOOL. SO I SPEND ABOUT A
23 THIRD OF MY TIME ON PATIENT CARE.

24 THAT INCLUDES ONE-HALF DAY A WEEK
25 WHEN I SEE PATIENTS IN THE CARDIOLOGY CLINIC. SO
26 IT'S GENERAL HEART DISEASE.

27 TWO MONTHS OF THE YEAR I AM ONE OF
28 THE PHYSICIANS RESPONSIBLE FOR THE MEDICINE BOARDS,

1 SO I WORK WITH A TEAM OF INTERNS AND RESIDENTS AND
2 MEDICAL STUDENTS TO TAKE CARE OF PATIENTS ON THE
3 UNIT.

4 ONE MONTH IS GENERAL MEDICINE, ONE
5 MONTH IS CARDIOVASCULAR DISEASE.

6 AND THEN PART OF MY CLINICAL
7 PHARMACOLOGY DIVISION IS THE POISON CENTER. AND I
8 SPEND SIX WEEKS AS A CONSULTING PHYSICIAN FOR THE
9 POISON CENTER. SO THAT TOTALS UP ABOUT A THIRD OF
10 MY TIME ALL TOGETHER.

11 Q. WHETHER YOU TAKE CARE OF HEART
12 PATIENTS, AS A CARDIOLOGIST, IS SMOKING SOMETIMES
13 AN ISSUE?

14 A. WHENEVER SOMEONE SMOKES IT IS AN
15 ISSUE BECAUSE SMOKING IS A MAJOR CAUSE OF HEART
16 DISEASE.

17 IF SOMEONE HAS CORONARY DISEASE, IT
18 INCREASES THEIR RISK OF DYING SUDDENLY FOUR-FOLD.
19 IT INCREASES THE RISK OF HAVING A HEART ATTACK
20 TWO-FOLD. AND EVERY PATIENT THAT I SEE WHO SMOKES,
21 I TRY TO GET THEM TO STOP.

22 Q. WHEN YOU SEE A PATIENT -- LET ME
23 START THIS DIFFERENTLY.

24 BEFORE A PATIENT GETS TO SEE YOU,
25 HAS THIS PATIENT NECESSARILY GONE THROUGH A COUPLE
26 OTHER LAYERS OF DOCTORS ALREADY?

27 A. GENERALLY, THEY HAVE TO BE REFERRED
28 TO THE CARDIOLOGY CLINIC, OR IF SOMEONE I HAVE SEEN

1 IN A HOSPITAL ALREADY, I REFER THEM TO FOLLOW THEM
2 AT THE CLINIC.

3 Q. SO WHEN A PATIENT, A CARDIOLOGY
4 PATIENT GETS TO SEE YOU, TYPICALLY, DOES THAT MEAN
5 THAT THAT PARTICULAR PERSON HAS SOMETHING FAIRLY
6 SERIOUSLY WRONG WITH THEIR HEART?

7 A. YES.

8 Q. NOW, IN THESE PATIENTS WHO SEE YOU,
9 WHO HAVE GOT SOMETHING FAIRLY SERIOUSLY WRONG WITH
10 THEIR HEART AND YOU FIND OUT THEY ARE SMOKING AND
11 YOU, THE PROFESSOR COMES IN AND SAYS, STOP SMOKING,
12 BECAUSE IF YOU DON'T, YOU GOT A FOUR-FOLD INCREASE
13 OF DEATH AND A TWO-FOLD INCREASE IN HEART ATTACK,
14 THEY STOP; RIGHT?

15 A. NO. I WISH THEY DID.

16 MOST OF THE PATIENTS THAT I SEE
17 HAVE ALREADY BEEN TOLD MANY TIMES TO STOP SMOKING.

18 MOST OF THEM SAY THEY WOULD LIKE TO
19 STOP SMOKING AND THEY HAVE TRIED TO STOP SMOKING
20 BUT THEY HAVE NOT BEEN ABLE TO FOR A VARIETY OF
21 REASONS.

22 AND I TRY TO SPEND TIME TO TRY TO
23 FIGURE OUT WHY, WHAT HAS HAPPENED BEFORE WHEN THEY
24 TRIED TO QUIT SMOKING.

25 I ASK THEM IF THEY WOULD LIKE TO
26 TRY AGAIN. I OFFER THEM HELP WITH EITHER
27 COUNSELING OR MEDICATION OR BOTH. AND I TELL THEM
28 THAT IT'S COMMON HISTORY THAT SMOKERS TRY AND FAIL

1 TO QUIT SMOKING MANY TIMES, BUT EVENTUALLY MOST
2 PEOPLE DO SUCCEED.

3 AND I SAY, JUST TRY AGAIN AND I
4 WILL HELP YOU AND EVENTUALLY YOU WILL SUCCEED.

5 THAT'S MY APPROACH AND HOPEFULLY
6 THEY WILL SUCCEED. SOME DO AND SOME DON'T.

7 Q. SO YOUR APPROACH SOMETIMES SUCCEEDS
8 AND SOMETIMES DOESN'T SUCCEED?

9 A. YES.

10 Q. IS NICOTINE ADDICTIVE?

11 A. ABSOLUTELY.

12 Q. IS THIS SOMETHING YOU JUST FOUND
13 OUT IN THE YEAR 2001?

14 A. NO. THE FACT THAT NICOTINE IS
15 ADDICTIVE HAS BEEN KNOWN FOR MANY YEARS.

16 I THINK WHAT WE HAVE LEARNED IN THE
17 LAST 20 YEARS IS HOW IT IS ADDICTIVE AND WHY IT IS
18 ADDICTIVE.

19 THE FACT THAT IT IS ADDICTIVE AS
20 BEEN KNOWN FOR A LONG TIME.

21 Q. WHY IS IT ADDICTIVE?

22 A. WELL, LET ME JUST START BY TALKING
23 ABOUT WHAT IS NICOTINE.

24 Q. OKAY.

25 A. IT'S A CHEMICAL THAT'S FOUND MOSTLY
26 IN TOBACCO. SIGNIFICANT AMOUNTS, OBVIOUSLY IN
27 TOBACCO.

28 IT'S A CHEMICAL THAT HAS A

1 STRUCTURE THAT'S LIKE A BODY HORMONE,
2 ACETYLCHOLINE.

3 Q. STOP.

4 A. IT'S CALLED ACETYLCHOLINE AND IT'S
5 IMPORTANT HERE MORE THAN IN THE BODY BECAUSE THIS
6 IS RESPONSIBLE FOR NERVE COMMUNICATION.

7 ONE NERVE TALKS TO ANOTHER. IT
8 SIGNALS BY RELEASE OF THIS HORMONE. I COULD CALL
9 IT A. C. H., MAYBE THAT WOULD BE EASIER.

10 Q. A. C. H., WHERE IS THAT IN THE BODY?

11 A. IT'S THROUGHOUT THE NERVOUS SYSTEM
12 IN VERY HIGH CONCENTRATION IN THE BRAIN.

13 A. C. H. WORKS BY BINDING TO WHAT'S
14 CALLED A RECEPTOR. A RECEPTOR IS A PROTEIN THAT
15 BEHAVES LIKE A LOCK AND KEY MECHANISM SO THE KEY
16 WOULD BE THE HORMONE OR A. C. H. THAT ATTACHES TO
17 THE RECEPTOR AND THEN ACTIVATES THE RECEPTOR.

18 AND THEN THE RECEPTOR DOES
19 SOMETHING, CAUSES AN EFFECT IN THE BRAIN THAT
20 ACTUALLY CAUSES RELEASE OF OTHER HORMONES THAT
21 EFFECT MOOD AND BEHAVIOR.

22 Q. LET ME STOP YOU FOR A SECOND.

23 A. C. H. ALLOWS THE RECEPTORS TO
24 WORK?

25 A. RIGHT. THAT'S THE KEY THAT OPENS
26 UP THE LOCK. THE RECEPTOR IS THE LOCK.

27 Q. DEFINE 'RECEPTOR.'

28 A. OKAY. WELL, A RECEPTOR IS A

1 PROTEIN THAT HAS GOT A PART OF ITS STRUCTURE IS TO
2 ALLOW HORMONES OR CHEMICALS TO ATTACH TO IT.

3 THERE ARE -- IT'S SHAPED IN SUCH A
4 WAY, SORT OF LIKE A LOCK SO A KEY FITS IN. AND IT
5 IS JUST THE RIGHT SHAPE. AND IN THESE RECEPTORS,
6 THESE ARE A. C. H. RECEPTORS THAT ARE JUST THE RIGHT
7 SHAPE TO FIT INTO THIS KEYHOLE.

8 Q. SO WHAT HAPPENS WHEN THE KEY FITS
9 INTO THE KEYHOLE?

10 A. WELL, IT ACTIVATES THE RECEPTOR,
11 ACTUALLY, CAUSES A CHANGE IN THE SHAPE OF THE
12 RECEPTOR, ACTIVATES A NERVE TO FIRE AND THEN THAT
13 NERVE, IN TURN, RELEASES OTHER HORMONES THAT HAVE
14 EFFECTS ON BEHAVIOR AND THINKING AND MOOD.

15 SO, ANYWAY, GETTING BACK TO WHAT I
16 WAS SAYING BEFORE, NICOTINE, IS SHAPED LIKE A. C. H.
17 IT'S NOT NORMALLY IN THE BODY. BUT IF A PERSON
18 TAKES IN NICOTINE, IT ATTACHES TO THE SAME
19 RECEPTORS THAT ARE MEANT FOR A. C. H. SO IT'S A WAY
20 FOR YOU TO SORT OF TAKE, IN A DRUG FORM, A DRUG
21 THAT STIMULATES RECEPTORS THAT ARE MEANT FOR A BODY
22 HORMONE.

23 SO YOU TAKE NICOTINE AND YOU
24 ACTIVATE THE RECEPTORS JUST AS IF YOUR BRAIN WAS
25 RELEASING A. C. H.

26 Q. SO NICOTINE IS LIKE A DUPLICATE KEY
27 FOR A. C. H. ?

28 A. RIGHT.

1 Q. AND NICOTINE, THEREFORE,
2 ARTIFICIALLY DOES WHAT YOUR BRAIN CAN DO UNDER
3 NORMAL CIRCUMSTANCES?

4 A. RIGHT.

5 BUT IT DOES IT IN LARGER AMOUNTS
6 BECAUSE YOU CAN ACTIVATE THESE RECEPTORS MORE WITH
7 NICOTINE THAN THE BRAIN WOULD NORMALLY DO IT WITH
8 A. C. H. AND YOU CAN DO IT AT DIFFERENT TIMES. YOU
9 CAN DO IT AT TIMES WHEN A. C. H. LEVELS MIGHT BE LOW
10 BUT YOU CAN TAKE A CIGARETTE AND DELIVER THE
11 RECEPTORS.

12 SO YOU CAN SORT OF TAKE OVER A
13 NORMAL BODY FUNCTION WITH THE DRUG.

14 Q. SO LET ME STOP YOU THERE, AGAIN.
15 BECAUSE I KNOW YOU HAVE TALKED
16 ABOUT THIS LOTS OF TIMES, BUT THIS IS THE FIRST
17 TIME THAT WE ARE HEARING IT.

18 INSIDE OF A PERSON'S BODY, THE BODY
19 IS REGULATED, YOU KNOW, TO BE A NORMAL KIND OF
20 REGULAR BODY, UNDER CONTROL, REGULATED BODY.
21 THERE'S A CERTAIN AMOUNT OF A. C. H. WHICH IS THERE,
22 AND EVERY ONCE IN AWHILE, WHENEVER THE BODY TELLS
23 IT TO, IT DOES ITS OPEN THE LOCK THING, AND IT HAS
24 THE RESULTS THAT ARE NECESSARY TO KEEP THE BODY IN
25 TUNE.

26 IS THAT RIGHT SO FAR?

27 A. YES.

28 Q. WHEN SOMEONE TAKES NICOTINE INTO

1 THEIR BODY, THE AMOUNT OF NICOTINE THE PERSON CAN
2 TAKE INTO THE BODY CAN BE WAY MORE, CAN MIMIC WAY
3 MORE A. C. H. THAN THE BODY USUALLY NEEDS AND SO THE
4 THING EITHER GETS UNLOCKED AND THE DOOR OPENED
5 WIDER OR THE DOOR OPENED MORE FREQUENTLY OR BOTH.

6 IS THAT A ROUGH ANALOGY SO FAR?

7 A. YES.

8 Q. ONE MORE THING BEFORE WE GO ON.

9 IF NICOTINE COMES FROM TOBACCO
10 SMOKE, THE PERSON SMOKING, WHETHER HE OR SHE KNOWS
11 IT OR NOT, THIS PERSON CAN DETERMINE HOW MUCH OF
12 THIS DUPLICATE A. C. H. HE OR SHE IS GOING TO PUT IN
13 THE BODY BY HOW MUCH HE OR SHE IS SMOKING, HOW MUCH
14 HE OR SHE INHALES, STUFF LIKE THAT?

15 MR. CARLTON: OBJECTION, LEADING.

16 THE COURT: IT WAS LEADING.

17 MR. PIUZE: WITH AN EXPERT, I DON'T KNOW
18 HOW MUCH LEEWAY YOU WANT.

19 THE COURT: I WILL ALLOW IT. JUST AS
20 LONG AS IT'S NOT TOO --

21 THE WITNESS: LET ME JUST --

22 THE COURT: IS WHAT HE SAID ACCURATE?

23 THE WITNESS: YES.

24 Q BY MR. PIUZE: NOW THAT I HAVE
25 SAID MY NON-DOCTOR PIECE, GO AHEAD, PLEASE, AS A
26 DOCTOR, TELL US WHY IT WASN'T COMPLETELY ACCURATE?

27 A. WELL, I WAS GOING TO EXPLAIN THE
28 WHOLE ISSUE OF NICOTINE DELIVERY FROM A CIGARETTE,

1 JUST IN TERMS OF WHAT IS NICOTINE, THE REASON WHY
2 NICOTINE IS IN A PLANT IS THOUGHT TO BE BECAUSE IT
3 IS A NATURAL INSECTICIDE. IT KILLS BUGS. AND IT
4 DOES IT BECAUSE IT WORKS ON THE BUG'S BRAIN
5 RECEPTORS THE SAME WAY IT WORKS ON PEOPLE. BUT THE
6 INSPECT'S RECEPTORS OR BRAINS ARE MORE SENSITIVE.

7 BUT NICOTINE IS WELL-KNOWN AS AN
8 INSECTICIDE. IT IS SOLD IN STORES AS BLACK FLAG
9 40 -- YOU CAN BUY IT -- OR BLACK LEAF 40, AND USE
10 IT TO SPRAY ON ROSES. THAT'S AT HIGHER
11 CONCENTRATIONS.

12 PEOPLE CAN USE IT WITHOUT GETTING
13 SICK, IN PART, BECAUSE OF THE CIGARETTE. WHEN YOU
14 SMOKE A CIGARETTE, WHEN YOU HEAT UP A CIGARETTE,
15 YOU BOIL OFF NICOTINE.

16 NICOTINE THEN BOILS OFF AND THEN
17 COMBINES WITH OTHER THINGS THAT ARE IN THE
18 CIGARETTE TO FORM DROPLETS WHICH CONTAIN TAR, WATER
19 AND NICOTINE.

20 AND THOSE DROPLETS ARE WHAT'S
21 CALLED AEROSOL, A BUNCH OF DROPLETS THAT ARE IN
22 GAS, WHICH IS CARBON MONOXIDE AND OTHER GASES.

23 YOU BREATHE NICOTINE -- YOU BREATHE
24 THE GAS IN. IT GOES TO YOUR LUNGS, VERY RAPIDLY
25 GETS ABSORBED. AND SO WITHIN 10 OR 15 SECONDS OF
26 TAKING A PUFF, NICOTINE GETS TO YOUR BRAIN BECAUSE
27 IT GOES RIGHT, LUNGS, HEART, BRAIN.

28 ONE OF THE THINGS ABOUT SMOKING IS

1 THAT BECAUSE IT GOES RIGHT TO YOUR BRAIN AND IT'S
2 IN A SHORT PERIOD OF TIME, YOU CAN GET VERY HIGH
3 CONCENTRATIONS, CONCENTRATIONS THAT IF YOU TRY TO
4 EAT NICOTINE, WOULD POISON YOU. BUT BY SMOKING
5 THEM, YOU CAN GET VERY HIGH CONCENTRATIONS IN A
6 SHORT TIME TO THE BRAIN.

7 OTHER THINGS THAT ARE IMPORTANT,
8 ONE IS AS YOU MENTIONED BEFORE, ON A PUFF TO PUFF
9 BASIS, BECAUSE YOU GET AN EFFECT IN 10 OR 15
10 SECONDS, YOU CAN WHAT'S CALLED TITRATE, YOU CAN
11 ADJUST THE DOSE TO GET JUST THE DOSE THAT YOU WANT.

12 SECOND THING IS THAT BECAUSE YOU DO
13 SOMETHING, YOU TAKE A PUFF AND YOU GET THE EFFECT
14 IN 10 OR 15 SECONDS. THERE IS A LOT OF WHAT'S
15 CALLED SCIENTIFICALLY IMMEDIATE REINFORCEMENT.
16 THAT MEANS YOU DO SOMETHING AND YOU GET
17 CONSEQUENCES RIGHT AWAY.

18 AND, OF COURSE, IT'S A GOOD
19 CONSEQUENCE FOR MOST SMOKERS, THEY LIKE WHAT IT
20 DOES.

21 AND THAT COMBINATION OF DOING
22 SOMETHING AND GETTING IMMEDIATE REINFORCEMENT IS
23 WELL-KNOWN TO BE A SITUATION THAT MOST ENCOURAGES
24 ADDICTION.

25 IT IS MOST ADDICTING DRUGS, YOU
26 TAKE SOMETHING, YOU GET AN EFFECT RIGHT AWAY, THE
27 BODY CONNECTS IT RIGHT AWAY AND THAT'S THE MOST
28 COMMON SITUATION FOR ADDICTION.

1 SO WE KNOW THAT CIGARETTES ARE THE
2 MOST ADDICTING WAY TO TAKE NICOTINE, JUST LIKE
3 SMOKING CRACK COCAINE IS THE MOST ADDICTING WAY THE
4 USE COCAINE. BECAUSE IF YOU SMOKE COCAINE, COCAINE
5 GETS THERE IN HIGHER CONCENTRATIONS, FASTER, AND
6 YOU CAN CONTROL THE DOSE A LITTLE BIT.

7 Q. AS OPPOSED TO, LET'S STOP THERE FOR
8 A SECOND, USING CRACK AS OPPOSED TO WHAT, SNORTING
9 COCAINE?

10 A. SNORTING, YEAH, SNORTING COCAINE OR
11 YOU COULD EVEN SWALLOW COCAINE AND YOU CAN GET AN
12 EFFECT. BUT IT IS MUCH SLOWER ONSET. YOU CAN'T
13 CONTROL THE DOSE, SO IT'S NOT WIDELY USED THAT WAY.

14 BUT SMOKING COCAINE IS MUCH MORE
15 ADDICTIVE THAN SNORTING COCAINE.

16 Q. AND IS IT MUCH MORE ADDICTIVE
17 BECAUSE, FROM THE TIME THE PERSON DOES SOMETHING TO
18 THE TIME OF THE HIT, THE HIGH, THE REACTION, IT'S
19 QUICKER?

20 A. IT'S QUICKER AND YOU CAN JUST
21 TITRATE HOW MUCH EFFECT YOU WANT.

22 Q. NOW, YOU HAVE SAID THAT TWICE BUT
23 WHEN YOU SAY YOU CAN TITRATE THE EFFECTS YOU WANT,
24 THAT ISN'T EXACTLY IN THE KIND OF TERMS WE USE
25 EVERY DAY.

26 PLEASE SAY THAT DIFFERENTLY.

27 A. WELL, IF YOU HAVE, SAY, THERE'S A
28 CERTAIN AMOUNT OF NICOTINE THAT MAKES YOU FEEL

1 GREAT OR HELPS YOU CONCENTRATE DOING YOUR JOB OR
2 HELPS YOU DEAL WITH STRESS, WHATEVER YOU ARE TRYING
3 TO SMOKE FOR, I WILL TALK ABOUT THAT IN A FEW
4 MINUTES, THAT MAY REQUIRE A CERTAIN AMOUNT OF
5 NICOTINE IN YOUR BRAIN TO DO THAT.

6 BUT AFTER EACH PUFF YOUR BRAIN CAN
7 REGISTER HOW MUCH NICOTINE YOU GOT THERE.

8 AND THE NEXT PUFF YOU CAN TAKE A
9 BIGGER PUFF OR A SMALLER PUFF, THIS IS AUTOMATIC,
10 YOUR BODY JUST DOES IT UNCONSCIOUSLY, TO GET THE
11 AMOUNT OF NICOTINE. AND THEN YOU CAN SMOKE A
12 CIGARETTE DEEPLY, YOU CAN SMOKE IT NOT SO DEEPLY.
13 YOU CAN PUT IT OUT SOONER OR LATER.

14 BY DOING ALL THOSE THINGS, YOU CAN
15 GET WHATEVER AMOUNT OF NICOTINE DOSE YOUR BRAIN
16 WANTS.

17 Q. SOMETIMES IN TODAY'S CURRENT WORLD,
18 I SEE WORKERS GOING OUTSIDE OF A BUILDING, IT
19 DOESN'T HAVE TO BE A WORKER, IT COULD BE A JUROR OR
20 IT COULD BE ANYONE, SOMEONE GOES OUTSIDE OF A
21 BUILDING TO HAVE A PUFF OF A CIGARETTE AND I
22 SOMETIMES NOTICE THAT WHEN I GET OUTSIDE, THE FIRST
23 COUPLE OF HITS OF ONE OF THESE IS BIG ONES LIKE
24 THAT (INDICATING).

25 DOES THAT PLAY INTO WHAT YOU WERE
26 SAYING?

27 A. YEAH, THAT'S EXACTLY RIGHT.

28 WE DID RESEARCH THAT I PUBLISHED

1 SEVERAL YEARS AGO, SORT OF LIKE THAT.

2 I ASKED PEOPLE TO SMOKE FEWER
3 CIGARETTES. SO I -- PEOPLE WHO NORMALLY SMOKED 30
4 CIGARETTES A DAY, I GIVE THEM 15 TO SMOKE IN A DAY
5 OR 10 OR 5.

6 AND WHAT I FOUND IS THAT IF YOU
7 RESTRICTED SOMEONE FROM 30 DOWN TO 5, THEY TAKE IN
8 THREE TIMES AS MUCH NICOTINE IN SMOKE PER
9 CIGARETTE. SO REALLY TRYING TO GET THE MOST DOSE
10 THEY CAN TO MAINTAIN WHAT THE BODY SEES AS A DESIRE
11 LEVEL.

12 SO IF YOU CAN'T SMOKE AS OFTEN AS
13 YOU LIKE, YOU DO TAKE IN MORE WITH EACH CIGARETTE.

14 Q. THANKS.

15 NOW, WHILE WE ARE STOPPED HERE
16 MOMENTARILY. YOU HAVE TOLD US ABOUT AN EXTENSIVE
17 BACKGROUND IN TOBACCO, NICOTINE, SMOKING,
18 ADDICTION. BUT IN SOME OF THE LAST ANSWERS NOW,
19 YOU HAVE GONE AWAY FROM NICOTINE AND INTO COCAINE,
20 FOR INSTANCE.

21 A. YES.

22 Q. HOW DO YOU KNOW ABOUT STUFF LIKE
23 COCAINE PLEASE.

24 A. WELL, I HAVE DONE SOME RESEARCH ON
25 OTHER STIMULANTS, COCAINE, CAFFEINE, ON OTHER
26 DRUGS. AND I HAVE WRITTEN AND TAUGHT A LOT ABOUT
27 DRUG ADDICTION IN GENERAL. I HAVE WRITTEN MANY
28 CHAPTERS THAT TALK ABOUT ADDICTION TO DRUGS

1 BROADLY.

2 AND ONE OF THE THINGS THAT BECAME
3 CLEAR IN THE SURGEON GENERAL'S REPORT IS THAT THERE
4 ARE A LOT OF SORT OF BRAIN MECHANISMS AND
5 BEHAVIORAL MECHANISMS THAT ARE IN COMMON WITH
6 DIFFERENT DRUGS OF ABUSE.

7 SO NICOTINE AND ALCOHOL AND COCAINE
8 AND HEROIN ARE NOT THAT DIFFERENT, EXCEPT FOR
9 INTOXICATION. INTOXICATION IS DIFFERENT. PEOPLE
10 OBVIOUSLY DON'T GET LOADED FROM NICOTINE THE WAY
11 THEY DO FROM COCAINE OR ALCOHOL OR HEROIN.

12 BUT IF YOU PUT THAT ASIDE, SOME OF
13 THE OTHER BEHAVIORAL EFFECTS AND BEHAVIORAL ASPECTS
14 OF IT ARE VERY SIMILAR.

15 Q. YOU JUST USED THE TERM, A TERM
16 "DRUGS OF ABUSE. "

17 WHAT DO YOU MEAN BY THAT, PLEASE.

18 A. THESE ARE DRUGS THAT PEOPLE USE TO,
19 WHAT'S THE BEST WORD, TO CONTROL BEHAVIOR, OR TO
20 INFLUENCE MOOD OR INFLUENCE BEHAVIOR. OFTEN THE
21 DRUGS ARE USED IN EXCESS. OFTEN THE DRUGS ARE USED
22 TO PERSONAL HARM OR SOCIAL HARM

23 SO THESE ARE DRUGS THAT ARE USED IN
24 A WAY THAT IS REALLY DETRIMENTAL. I'D SAY THAT'S
25 PROBABLY THE BEST DEFINITION.

26 Q. OKAY. AND DRUGS OF ABUSE,
27 INCLUDING WHAT?

28 A. WELL, THE MAIN DRUGS OF ABUSE THAT

1 WE TALK ABOUT ARE, BESIDES NICOTINE, WOULD BE
2 ALCOHOL, HEROIN, OTHER NARCOTICS, OTHER OPIATES,
3 MARIJUANA, COCAINE, AMPHETAMINES AND OTHER
4 STIMULANTS, BARBITURATES, OTHER KINDS OF SEDATIVE
5 DRUGS, AND THINGS LIKE GLUE SNIFFING. STEROIDS CAN
6 ACTUALLY BE ABUSED.

7 I GUESS THAT'S, FOR THE MOST
8 PART -- SOME MARIJUANA. DID I SAY MARIJUANA IS
9 ALSO ABUSED?

10 Q. NICOTINE IS IN THERE?

11 A. RIGHT, NICOTINE IS IN THERE.

12 Q. WELL, LET'S GO BACK -- THANK YOU.

13 LET'S GO BACK TO WHAT WE WERE
14 TALKING ABOUT WHICH IS, I THINK YOU WERE TALKING
15 ABOUT NICOTINE?

16 A. RIGHT.

17 Q. AND WE HAD GONE THROUGH THE A. C. H.
18 AND HOW --

19 A. RIGHT. NOW WHAT A. C. H. EFFECTS DO,
20 WHAT ACTIVATING THE RECEPTOR DOES IS IT CAUSES THE
21 BRAIN TO RELEASE A NUMBER OF HORMONES. ONE HORMONE
22 THAT'S TALKED ABOUT A LOT IS DOPAMINE.

23 DOPAMINE IS TALKED ABOUT A LOT
24 BECAUSE THAT IS A HORMONE IN THE BRAIN THAT'S
25 INVOLVED WITH PLEASURE, SOMETHING FEELING GOOD OR
26 YOU FEELING GOOD OR SOME SORT OF PLEASURABLE
27 RESPONSE.

28 AND EVERY DRUG OF ABUSE RELEASES

1 DOPAMINE IN KEY PARTS OF THE BRAIN. THAT'S A
2 COMMONALITY.

3 NICOTINE ALSO CAUSES OTHER HORMONES
4 TO BE RELEASED, TO DO DIFFERENT THINGS.

5 ONE HORMONE, AS I SAID, CAUSES
6 PLEASURE. ONE HORMONE CAN CAUSE AROUSAL OF
7 STIMULATION. SOME SMOKERS SAY THE FIRST CIGARETTE
8 IN THE MORNING HELPS ME WAKE UP, LIKE COFFEE WOULD.

9 SMOKERS WILL SAY THAT HELPS ME
10 CONCENTRATE AND FOCUS AND STAY ALERT.

11 THERE ARE OTHER HORMONES THAT ARE
12 INVOLVED IN PERFORMANCE, THINKING AND PERFORMANCE
13 EFFECTS.

14 SO SOME PEOPLE SAY I CAN WORK
15 BETTER, YOU CAN CONCENTRATE BETTER WITH NICOTINE.

16 THERE ARE OTHER HORMONES THAT ARE
17 INVOLVED IN STRESS MECHANISM, SO MANY SMOKERS SAY,
18 I FEEL STRESSED, A CIGARETTE REALLY HELPS ME DEAL
19 WITH STRESS.

20 THERE ARE SOME EFFECTS THAT ARE A
21 LITTLE BIT LIKE ANTI-DEPRESSANT DRUGS. SO MANY
22 SMOKERS SAY IF I FEEL BAD, IF I FEEL DEPRESSED, I
23 HAVE A CIGARETTE, IT MAKES ME FEEL BETTER.

24 AN IMPORTANT CONCEPT, AND ALSO
25 EATING. THE EFFECTS OF NICOTINE TO REDUCE BODY
26 WEIGHT, TO LOSE APPETITE.

27 AND SOME PEOPLE SMOKE FOR BODY
28 WEIGHT CONTROL.

1 THE THING THAT SMOKERS FIND IS THAT
2 THEY USE NICOTINE TO HELP COPE WITH A LOT OF DAILY
3 STRESSES.

4 SO THEY CAN GET STIMULATION, IF
5 THEY NEED IT, THEY CAN GET RELAXATION IF THEY ARE
6 STRESSED. THEY CAN HELP LIFT THEIR MOOD. THEY CAN
7 HELP CONCENTRATE. THEY CAN HELP FOCUS. AND MANY
8 SMOKERS COME TO DEPEND ON NICOTINE TO GET THROUGH
9 DAILY LIFE STRESSES. THEY USE NICOTINE EVERY DAY
10 IN A REGULAR WAY AND WHEN THEY DON'T HAVE IT, THEY
11 FEEL QUITE LOST AND THEIR BEHAVIOR IS DISRUPTED IN
12 A SENSE.

13 SO PART ONE -- ONE-HALF OF WHAT
14 PEOPLE GET FROM SMOKING IS THESE NICOTINE EFFECTS
15 THAT THEY USE TO CONTROL MOOD AND BEHAVIOR.

16 THE OTHER THING WHICH IS VERY
17 IMPORTANT IS THAT THERE'S WHAT'S CALLED TOLERANCE
18 TO NICOTINE AND OTHER DRUGS OF ABUSE AND ACTUALLY
19 ANY DRUG THAT EFFECTS THE BRAIN.

20 TOLERANCE MEANS THAT THE BRAIN IS
21 TRYING TO NORMALIZE ITS FUNCTION. SO IF IT GETS
22 TOO MUCH STIMULATION IN THESE RECEPTORS, THE BRAIN
23 TRIES TO NORMALIZE THINGS.

24 AND WHAT HAPPENS IS THE BRAIN
25 ACTUALLY CHANGES THE NUMBER OF RECEPTORS IN THE
26 BRAIN THAT ARE MEANT TO BE A. C. H. RECEPTORS.

27 THEY ARE INCREASED IN MANY PARTS OF
28 THE BRAIN. THEY ARE DOUBLED.

1 NOW, THEY DON'T WORK THE SAME WAY.
2 BUT THE STRUCTURE OF THE BRAIN CHANGES. SO YOU CAN
3 DO SCANNING OR YOU CAN DO TESTS ON BRAINS FROM
4 SMOKERS WHO HAVE DIED AND NON-SMOKERS WHO HAVE DIED
5 AND YOU CAN MEASURE NICOTINE RECEPTORS AND IT IS
6 QUITE A DIFFERENT PATTERN AND NUMBER.

7 Q. SO SMOKERS GET MORE NICOTINE
8 RECEPTORS?

9 A. GET MORE NICOTINE RECEPTORS, THEY
10 DON'T FUNCTION THE SAME WAY. BUT THE STRUCTURE OF
11 THEIR BRAIN IS DIFFERENT THAN A SMOKER, DIFFERENT
12 THAN A NON-SMOKER.

13 Q. LET ME STOP THERE FOR A SECOND,
14 PLEASE.

15 THE FUNCTION OF A SMOKER'S BRAIN,
16 AS FAR AS NICOTINE RECEPTORS, IS DIFFERENT THAN A
17 NON-SMOKER'S, IS THIS --

18 A. THE FUNCTION AND THE STRUCTURE, THE
19 ACTUAL STRUCTURE HAS CHANGED AS WELL.

20 Q. OKAY, THE STRUCTURE?

21 A. BOTH.

22 Q. GETS CHANGED BECAUSE THE SMOKER HAS
23 HAD THIS NICOTINE OR IT WAS A DIFFERENT BRAIN
24 BEFORE THE SMOKER EVER HAD THE NICOTINE?

25 A. IT IS FROM NICOTINE. BECAUSE IN
26 ANIMALS, ONE CAN GIVE NICOTINE TO ANIMALS AND
27 INDUCE THE SAME CHANGES THAT ARE SEEN IN SMOKERS'
28 BRAINS. SO THIS IS SOMETHING THAT'S AN EFFECT OF

1 NICOTINE WITH LONG-TERM EXPOSURE.

2 Q. BEFORE YOU GO -- SORRY, BUT SO I
3 DON'T FORGET TO COME BACK, WHAT ABOUT, LET'S
4 FORGET -- LET'S NOT FORGET, BUT LET'S NOT DISCUSS
5 NON-SMOKERS. LET'S JUST STICK WITH THE SMOKERS WHO
6 HAVE DIFFERENT NICOTINE RECEPTORS.

7 WHAT ABOUT WITHIN THE GROUP OF
8 SMOKERS, DOES THAT VARY AS THE AMOUNT OF SMOKING
9 VARIES?

10 A. WELL, CERTAINLY IN ANIMALS IT DOES.
11 WE DON'T HAVE ENOUGH DATA IN HUMANS. WE DO KNOW
12 THAT HUMANS' BRAINS ARE QUITE DIFFERENT IN TERMS OF
13 THE NUMBERS OF RECEPTORS IN GENERAL.

14 SOME PEOPLE HAVE POOR RECEPTORS.
15 AND THERE ARE ALSO DIFFERENT TYPES.
16 IT IS TOO COMPLICATED TO EXPLAIN. BUT THERE ARE
17 LOTS OF DIFFERENT TYPES OF NICOTINE RECEPTORS.

18 AND THE PATTERN VARIES FROM PERSON
19 TO PERSON.

20 AND WE THINK THIS IS IMPORTANT
21 BECAUSE OF, OF VERY STRONG EVIDENCE THAT THERE ARE
22 GENETIC DIFFERENCES IN HOW LIKELY A PERSON IS TO
23 BECOME A SMOKER, TO BECOME A HIGHLY ADDICTED
24 SMOKER, TO HAVE PROBLEMS QUITTING.

25 THERE ARE A LOT OF GENETICS
26 INVOLVED WITH THAT.

27 THAT'S WHY SOME PEOPLE STOP
28 SMOKING, AND ALMOST NO MATTER WHAT THEY DO, THEY

1 CAN'T STOP.

2 OTHER PEOPLE ARE SMOKERS AND THEY
3 CAN JUST STOP AND NEVER HAVE A PROBLEM
4 UNFORTUNATELY, THERE ARE NOT MANY
5 OF THE LATTER. MOST PEOPLE DO HAVE TROUBLE
6 QUITTING. BUT WE KNOW THERE ARE BIG DIFFERENCES IN
7 BRAINS AND SUSCEPTIBILITY TO NICOTINE EFFECTS.

8 Q. SO WHEN, JUST AS AN EXAMPLE, IF I
9 LINED UP 4 PEOPLE OR 400 PEOPLE OR 4 MILLION
10 PEOPLE, IT DOESN'T MATTER UP THERE, AND SAID, WELL,
11 ONE STOPPED COLD TURKEY, JUST PUT THEM DOWN NEVER
12 HAD ANOTHER CIGARETTE, EVER, SO THAT MEANS THE
13 OTHER THREE SHOULD BE ABLE TO STOP. IS THAT RIGHT
14 OR WRONG?

15 A. IT'S ABSOLUTELY WRONG.
16 AND THIS IS ACTUALLY -- IT'S TRUE
17 FOR NICOTINE. BUT IF YOU LOOK AT OTHER DRUGS OF
18 ABUSE, IT'S THE SAME THING. THERE ARE SOME HEROIN
19 ADDICTS WHO JUST DECIDE THEY NEED TO STOP AND THEY
20 JUST STOP, THAT'S IT.

21 SAME THING FOR ALCOHOLICS, NOT
22 MANY.

23 WITH SMOKERS, IT'S THE SAME THING.
24 MANY SMOKERS SAY THEY WANT TO STOP. A FEW STOP AND
25 HAVE NO PROBLEMS. MOST HAVE DIFFICULTY. THEY CAN
26 EVENTUALLY QUIT, BUT IT TAKES FOUR OR FIVE
27 ATTEMPTS, ON AVERAGE. AND SOME CAN NEVER QUIT.
28 SOME SEEM TO TRY AND TRY AND TRY AND NEVER SEEM TO

1 MAKE IT.

2 Q. OF THE FOUR PEOPLE I HAD UP THERE,
3 LET'S TALK ABOUT THE REMAINING THREE, ONE JUST QUIT
4 COLD TURKEY AND THAT PERSON IS GONE.

5 NOW, OF THE OTHER THREE, ONE OF
6 THEM QUILTS, I DON'T KNOW, RELATIVELY EASILY, SMOKES
7 FOR, DOESN'T SMOKE THAT MUCH TO START WITH, SMOKES
8 FIVE CIGARETTES A DAY OR MAYBE A PACK A WEEK OR TWO
9 PACKS A WEEK, SOMETHING LIKE THAT, AND THE PERSON,
10 AFTER ONE ATTEMPT OR TWO ATTEMPTS STOPS AND STAYS
11 STOPPED.

12 SO USING THAT PERSON AS AN EXAMPLE
13 NOW, I AM LOOKING AT THE OTHER TWO WHO CAN'T DO
14 THAT, BECAUSE -- WELL, CAN'T THEY DO THAT OR IS IT
15 JUST THAT THEY HAVEN'T TRIED HARD ENOUGH?

16 A. NO. THEY ARE PROBABLY GOING TO BE
17 DIFFERENT.

18 THERE IS A SPECTRUM OF ADDICTION --
19 THIS IS SOMETHING THAT I HAVE STUDIED AS WELL, THAT
20 THERE ARE PEOPLE, MAYBE 15 PERCENT OF THE
21 POPULATION HAS SMOKED FIVE OR FEWER CIGARETTES AND
22 SOMETIMES DON'T EVEN SMOKE EVERY DAY. AND THOSE
23 ARE PEOPLE WHO ARE NOT HIGHLY ADDICTIVE OR NOT
24 ADDICTED AT ALL. SO THESE PEOPLE MAY TRY TO QUIT,
25 CAN QUIT WITHOUT MUCH PROBLEM, USUALLY.

26 THERE IS SOME EXCEPTIONS, BUT
27 USUALLY WHEN YOU GET TO PEOPLE WHO ARE SMOKING TEN
28 OR MORE CIGARETTES PER DAY, MOST ARE ADDICTED AND

1 MOST HAVE DIFFICULTY QUITTING.

2 Q. LET'S -- YOU SAY, OF PEOPLE WHO
3 SMOKED TEN OR MORE A DAY, MOST ARE ADDICTED AND
4 HAVE TROUBLE QUITTING.

5 WHAT IF WE BUMP UP THE NUMBER TO 20
6 A DAY, WHICH IS A PACK, OR 40 A DAY, WHICH IS TWO
7 PACKS, WHAT DO YOU HAVE TO SAY ABOUT THE PERCENTAGE
8 OF THOSE PEOPLE BEING ADDICTED?

9 A. WELL, THERE'S ROUGH CORRELATIONS.
10 IT IS NOT PERFECT. THERE IS A ROUGH CORRELATION
11 BETWEEN HOW MUCH YOU SMOKE AND HOW ADDICTED YOU
12 ARE.

13 SO WHEN YOU GET TO PEOPLE SMOKING
14 20 OR MORE CIGARETTES PER DAY, THOSE ARE GENERALLY
15 HIGHLY ADDICTED SMOKERS. AND THEY GENERALLY HAVE
16 TROUBLE QUITTING.

17 Q. SO I INTERRUPTED YOU AND I
18 DIDN'T -- I DON'T KNOW IF YOU WERE DONE OR ALMOST
19 DONE WITH WHERE YOU WERE.

20 A. NO.

21 I HAVE TALKED ABOUT ONE ASPECT.
22 SMOKING FOR SOME OF THE WHAT ARE
23 CALLED PRIMARY EFFECTS OF NICOTINE, SO THESE ARE
24 THE THINGS THAT NICOTINE MIGHT DO ON HORMONES.

25 WHEN THE BRAIN BECOMES TOLERANT,
26 THEN IT CHANGES AND GETS TO THE STATE THAT IT NEEDS
27 NICOTINE TO FUNCTION NORMALLY, NOT SUPER NORMALLY
28 BUT JUST NORMALLY.

1 AND THEN WHEN A PERSON DOESN' T
2 SMOKE CIGARETTES, THEN THERE IS A SUBNORMAL RELEASE
3 OF HORMONES, SO IT IS NOT THE NORMAL A. C. H.
4 FUNCTION ANY MORE. NOW THERE IS A DEFICIENT
5 RELEASE AND WHAT ONE SEES ARE WITHDRAWAL SYMPTOMS
6 THAT ARE THE OPPOSITE OF THE PRIMARY SYMPTOMS.

7 SO INSTEAD OF FEELING GOOD, SMOKERS
8 DON' T FEEL GOOD, THEY DON' T FEEL RIGHT, THEY FEEL
9 DEPRESSED, THEY FEEL ANXIOUS, THEY ARE OFTEN
10 IRRITABLE, OFTEN HAVE TROUBLE GETTING ALONG WITH
11 FAMILY AND CO-WORKERS, SMOKERS, WHEN THEY CAN' T
12 SMOKE, OFTEN HAVE TROUBLE CONCENTRATING ON THEIR
13 JOBS AND DOING THEIR WORK.

14 THEY OFTEN HAVE TROUBLE DEALING
15 WITH STRESS. THEY FEEL MORE STRESSED, FEEL THEY
16 CAN' T COPE WITH STRESS AS WELL.

17 HUNGER, WEIGHT GAIN IS COMMON.

18 SO THOSE ARE WITHDRAWAL SYMPTOMS OR
19 SYMPTOMS.

20 SO THAT' S THE OPPOSITE.

21 AND SMOKERS SMOKE FOR BOTH THOSE
22 THINGS. THEY SMOKE BECAUSE CIGARETTES DO SOME
23 THINGS THAT THEY LIKE AND THEY ALSO SMOKE BECAUSE
24 WHEN THEY ARE NOT SMOKING THEY FEEL BAD, AND IF
25 THEY FEEL BAD, IMMEDIATELY THEY HAVE A CIGARETTE,
26 THEY FEEL BETTER, BECAUSE THEY ARE RELIEVING THE
27 WITHDRAWAL SYMPTOMS.

28 SO IT' S A COMBINATION OF BOTH THOSE

1 THINGS THAT PLAY A ROLE IN SMOKING.

2 NOW, ONE THING WE HAVE LEARNED
3 ABOUT THE WITHDRAWAL SYMPTOMS IN RECENT YEARS IS
4 SOME OF THEM CAN PERSIST FOR MONTHS OR MAYBE EVEN
5 YEARS. ESPECIALLY THE ALTERED MOOD. MANY SMOKERS
6 SAY WHEN THEY QUIT, AND THIS IS TRUE FOR EVERY DRUG
7 ABUSER ALSO, I JUST DON'T FEEL RIGHT, THINGS ARE
8 NOT FUN TO ME ANY MORE, DON'T HAVE NORMAL ENERGY, I
9 HAVE MORE STRESS THAN NORMAL, I JUST DON'T FEEL
10 NORMAL, I AM A BIT DEPRESSED, THEY HAVE A
11 CIGARETTE. ALL OF THE SUDDEN, IT NORMALIZES.

12 THAT SYMPTOM CAN LAST FOR MONTHS.
13 AND ONE THING WHICH WE FOUND WITH EXPOSURES, WHICH
14 IS VERY DISCOURAGING FOR THE SMOKERS AND FOR US
15 TRYING TO QUIT SMOKING -- TO HELP SMOKERS, IS THAT
16 THEY CAN QUIT SOMETIMES FOR WEEKS OR EVEN MONTHS
17 AND THEN RELAPSE.

18 IF YOU LOOK AT CURVES OF SMOKERS
19 WHO TRIED TO QUIT, SAY THEY HAVE SUCCEEDED FOR A
20 WEEK. WELL, BY THREE MONTHS, 60 PERCENT OF THEM
21 WILL HAVE STARTED SMOKING AGAIN, EVEN IF THEY
22 MANAGED TO NOT SMOKE FOR SEVERAL DAYS.

23 Q. HANG ON A SECOND.

24 PLEASE, I AM NOT TRYING TO BE RUDE,
25 BUT I AM TRYING TO GET THIS IN SOME BITE-SIZED
26 CHUNKS HERE AND TO MAKE A COUPLE POINTS.

27 WHAT IF I SAID TO YOU THAT IF
28 SOMEONE STOPPED SMOKING FOR AS LITTLE AS A COUPLE

1 DAYS, AND I DON'T KNOW WHETHER IT IS TWO DAYS OR
2 THREE DAYS, BUT JUST FOR THE HECK OF IT, LET'S MAKE
3 IT SEVEN DAYS, ALL OF THE NICOTINE IN A PERSON'S
4 BODY IS GONE, AND BECAUSE ALL THE NICOTINE IN A
5 PERSON'S BODY HAD GONE, IT IS AS IF THAT PERSON
6 NEVER SMOKED, AND THE NEXT TIME THAT PERSON PICKS
7 UP A CIGARETTE, DOESN'T MATTER IF HE EVER SMOKED
8 BEFORE OR SHE EVER SMOKED BEFORE, IT'S FREE WILL,
9 IT IS A BRAND NEW BALL GAME. WE ARE STARTING ALL
10 OVER.

11 DOES THAT SOUND RIGHT TO YOU?

12 A. IT IS ABSOLUTELY WRONG.

13 FIRST, LET ME JUST SAY THAT
14 NICOTINE DOES SOME THINGS TO THE BRAIN THAT LAST A
15 LONG TIME. WE DON'T UNDERSTAND THEM

16 THERE ARE STUDIES IN RATS WHERE IF
17 YOU GIVE A RAT NICOTINE, IT HAS A CERTAIN EFFECT,
18 THEY BECOME TOLERANT TO IT. SO AFTER AWHILE THE
19 BODY GETS USED TO IT.

20 YOU CAN THEN TAKE NICOTINE AWAY
21 FROM THAT RAT FOR A YEAR, GIVE THEM NICOTINE A YEAR
22 LATER AND THE RAT IS STILL TOLERANT TO SOME
23 EFFECTS.

24 SO THEY ARE VERY LONG-STANDING
25 CHANGES. THE BRAIN OF A SMOKER IS NEVER FULLY THE
26 SAME AS A NEVER SMOKER.

27 BUT A NEVER SMOKER STARTS SMOKING,
28 IN THE BEGINNING, THEY GET SICK OFTEN, LIKE

1 NAUSEATED, THEY DON'T FEEL GOOD. IT TAKES AWHILE
2 TO BE ABLE TO TOLERATE NICOTINE.

3 A SMOKER WHO STARTS SMOKING AGAIN
4 AFTER EVEN SEVERAL YEARS OF QUITTING, CAN OFTEN
5 START AND WITHIN A FEW DAYS, CAN BE BACK UP TO A
6 PACK A DAY OR MORE.

7 SO IT'S CLEARLY DIFFERENT.

8 THE WITHDRAWAL THAT PEOPLE HAVE OR
9 THE URGE FOR CIGARETTES LASTS FOR A VERY LONG TIME.
10 PART OF IT IS WHAT'S CALLED CONDITION OR TRIGGER.

11 FOR EXAMPLE, IF YOU HAVE BEEN
12 SMOKING FOR 20 YEARS AND YOU KNOW WHEN YOU GET
13 STRESSED, A CIGARETTE HELPS YOU FIGHT STRESS, WHEN
14 YOU GET DEPRESSED, A CIGARETTE MAKES YOU FEEL
15 BETTER.

16 EVEN SIX MONTHS LATER AFTER YOU
17 QUIT, THE FIRST TIME YOU GET STRESSED YOU WILL SAY,
18 BOY, I WISH I HAD A CIGARETTE, I KNOW I WOULD FEEL
19 BETTER.

20 THAT DOESN'T GO AWAY IN TWO WEEKS.
21 THERE IS NOTHING YOU CAN DO WITH THE PRESENT
22 NICOTINE IN YOUR BODY. IT HAS TO DO WITH -- THE
23 BRAIN IN THE SMOKER HAS DIFFERENT MEMORIES,
24 DIFFERENT CONNECTIONS AND THEY ARE ALWAYS
25 VULNERABLE TO RELAPSE, BUT ESPECIALLY THE FIRST
26 YEAR.

27 SO TO GO BACK TO WHAT I WAS SAYING
28 BEFORE, EVEN IF EVERYONE HAS QUIT FOR A WEEK, BY

1 SIX MONTHS ONLY 25 PERCENT HAVE QUIT. SO 75
2 PERCENT HAVE RELAPSED AGAIN. AND BY A YEAR YOU ARE
3 PROBABLY DOWN TO 15 PERCENT WHO HAVE REALLY QUIT.

4 SO IT DOESN'T MATTER IF NICOTINE IS
5 PRESENT OR NOT. YOU ARE AT RISK TO RELAPSE FOR AS
6 LONG AS A YEAR AFTER QUITTING.

7 Q. THANKS. YOU USED A TERM SEVERAL
8 TIMES, I FORGET WHAT IT IS, BUT I WANT TO SPEND A
9 MINUTE ON IT, THE RAT THAT USED TO HAVE THE
10 NICOTINE AND HASN'T HAD THE NICOTINE FOR A YEAR,
11 AND THEN AFTER THE YEAR, GETS THE NICOTINE, WHAT
12 ABOUT THAT RAT, THE RAT --

13 A. WELL, WHAT I SAID IS, THERE ARE
14 CERTAIN EFFECTS THAT DEVELOP IN A RAT, CERTAIN
15 EFFECTS ON MOVEMENT AND BEHAVIOR. AND IF YOU GIVE
16 THEM NICOTINE SEVERAL TIMES, THE RAT GETS USED TO
17 IT.

18 THEY BECOME WHAT WE CALL TOLERANT
19 TO IT.

20 Q. TOLERANT?

21 A. AND SO THAT RAT IS DIFFERENT
22 BECAUSE IT HAS NICOTINE.

23 Q. SO THAT'S THE WORDS I WAS LOOKING
24 FOR, TOLERANT.

25 DEFINE IT, TOLERANT.

26 A. TOLERANCE MEANS THAT, AFTER YOU
27 HAVE GOT A DRUG, AFTER YOU HAVE BEEN EXPOSED TO A
28 DRUG, THE NEXT TIME YOU GET IT, YOU HAVE LESS OF AN

1 AFFECT THAN YOU HAD BEFORE.

2 A GOOD EXAMPLE OF THIS THAT MOST
3 PEOPLE KNOW IS COFFEE AND CAFFEINE. IF YOU DRINK
4 COFFEE ALL DAY LONG, YOUR BRAIN GETS TOLERANT TO IT
5 AND YOU CAN SLEEP AT NIGHT, YOU CAN DO THIS EVERY
6 DAY.

7 BUT IF YOU ARE SOMEONE WHO DOESN'T
8 DRINK COFFEE AND YOU HAVE A CUP OF COFFEE AT NIGHT,
9 THEN YOU CAN'T SLEEP THAT NIGHT BECAUSE YOUR BRAIN
10 IS NOT TOLERANT TO IT OR IF YOU ARE A PERSON WHO
11 ONLY HAS COFFEE IN THE MORNING AND THEN YOU HAVE A
12 CUP OF COFFEE BEFORE BED, YOU CAN'T SLEEP.

13 BUT SOMEONE ELSE WHO ALWAYS HAS A
14 CUP OF COFFEE BEFORE BED CAN SLEEP JUST FINE. IT
15 IS BECAUSE THE BODY ADAPTS AFTER EXPOSING IT. THE
16 SAME THING HAPPENS WITH NICOTINE.

17 Q. LET'S GO BACK TO THE RAT.

18 AFTER ONE WHOLE YEAR OF BEING AWAY
19 FROM NICOTINE -- FORGET TWO DAYS OUT OF THE BODY,
20 THREE DAYS OUT OF THE BODY, SEVEN DAYS OUT OF THE
21 BODY, WE ARE TALKING 365 DAYS OUT OF THE BODY, THIS
22 RAT IS STILL TOLERANT TO NICOTINE?

23 A. TO SOME EFFECT, YES.

24 Q. I WANT TO TALK ABOUT YOU AGAIN NOW,
25 A BIT.

26 YOU HAVE TOLD US YOU ARE A MEDICAL
27 DOCTOR, YOU ARE AN INTERNIST, YOU ARE A
28 CARDIOLOGIST, BUT EARLIER ON, YOU TOLD US YOU WERE

1 A PROFESSOR OF WHAT, PHARMACOLOGY?

2 A. NOW, WELL, INTERNAL MEDICINE, AND
3 IT IS PSYCHIATRY AND BIOPHARMACEUTICAL SCIENCES.

4 Q. BIOPHARMACEUTICAL SCIENCES?

5 A. YES.

6 Q. PLEASE TALK ABOUT, LET'S START OFF
7 WITH WHAT IS THAT, BIOPHARMACEUTICAL SCIENCES?

8 A. WELL, THIS IS A DEPARTMENT THAT'S
9 PART OF THE SCHOOL OF PHARMACY AT U. C. S. F. , WHICH
10 IS, IS VERY MUCH INVOLVED IN DRUG RELATED RESEARCH
11 AS WELL.

12 BIOPHARMACEUTICAL SCIENCES IS
13 REALLY THE SCIENCE OF DRUG DEVELOPMENT. AND THE
14 SCHOOL OF PHARMACY, THERE ARE DOCTORAL PROGRAMS, A
15 LOT OF RESEARCHERS STUDYING THE DEVELOPMENT OF NEW
16 DRUGS, HOW DRUGS WORK, THE PROPER WAY TO DOSE
17 DRUGS, ET CETERA.

18 AND BECAUSE I DO A LOT OF WORK
19 WHICH DEALS WITH DRUG DEVELOPMENT ISSUES, INCLUDING
20 NICOTINE, BECAUSE I WAS INVOLVED IN THE DEVELOPMENT
21 OF A LOT OF THE DRUGS THAT ARE USED TO HELP SMOKERS
22 TO QUIT, I AM INVOLVED IN TEACHING IT AND I AM
23 ACTUALLY VICE-CHAIRMAN OF THAT DEPARTMENT IN CHARGE
24 OF THE CLINICAL PHARMACOLOGY, THE CLINICAL RESEARCH
25 PART OF IT.

26 Q. YOU SAID PSYCHIATRY TOO. ARE YOU A
27 PSYCHIATRIST?

28 A. NO, I AM NOT A PSYCHIATRIST. MY

1 APPOINTMENT IN PSYCHIATRY IS BECAUSE MOST ADDICTION
2 MEDICINE IS HOUSED IN DEPARTMENTS OF PSYCHIATRY.
3 AND BECAUSE I DO WORK IN ADDICTION MEDICINE AND I
4 TEACH A LOT IN THAT AREA, I HAVE AN APPOINTMENT IN
5 THAT DEPARTMENT.

6 Q. SO ALTHOUGH YOU ARE NOT A
7 PSYCHIATRIST, YOU ARE A PROFESSOR OVER IN THE
8 PSYCHIATRY DEPARTMENT?

9 A. YES.

10 Q. OKAY. IS HEROIN MORE ADDICTIVE
11 THAN NICOTINE?

12 A. WELL, MOST PEOPLE WOULD THINK THAT.
13 THE ANALYSIS THAT WE CAME UP WITH IN OUR SURGEON
14 GENERAL'S REPORT WAS THAT IT IS NOT. IN FACT,
15 NICOTINE IS SIMILAR TO HEROIN AND COCAINE. THAT
16 WAS ONE OF THE CONCLUSIONS OF THE A. D. A. REPORT, IN
17 TERMS OF THE ADDICTION PROCESSES, AND THE STRENGTH
18 OF THE ADDICTION, THAT, IN FACT, NICOTINE WAS
19 SIMILAR TO HEROIN AND COCAINE.

20 NOW, I SHOULD EXPLAIN THAT, BECAUSE
21 MOST PEOPLE THINK THAT DOESN'T MAKE SENSE, IF YOU
22 ARE THINKING ABOUT THE INTOXICATION. BECAUSE
23 PEOPLE USE HEROIN AND COCAINE, THEY GET
24 INTOXICATED. THEY CAN'T FUNCTION, THEY HAVE SEVERE
25 WITHDRAWAL SYMPTOMS.

26 NICOTINE DOESN'T WORK THE SAME WAY.
27 WITH NICOTINE, YOU CAN FUNCTION, YOU CAN WORK, AND
28 THE WITHDRAWAL SYMPTOMS, WHILE THEY CAN BE VERY

1 DISRUPTIVE SO PEOPLE CAN'T FUNCTION FORMALLY, THEY
2 ARE NOT LIFE-THREATENING. YOU DON'T HAVE
3 CONVULSIONS LIKE YOU DO WITH ALCOHOL WITHDRAWAL,
4 FOR EXAMPLE.

5 BUT WHAT'S SIMILAR ABOUT IT IS THAT
6 IF YOU LOOK AT QUITTING, HOW HARD IS IT TO QUIT.
7 THE QUIT RATES ARE VERY COMPARABLE FOR THOSE THREE
8 DRUGS.

9 IF YOU DO RESEARCH, THIS HAS BEEN
10 DONE WITH PEOPLE WHO SMOKE CIGARETTES AND USE DRUGS
11 AND ALCOHOL, AND YOU ASK THEM WHICH DRUG WOULD BE
12 THE HARDEST ONE FOR YOU TO GIVE UP, MORE THAN
13 HALF -- THESE ARE HEROIN ADDICTS OR ALCOHOLICS,
14 MORE THAN HALF SAY SMOKING WOULD BE THE HARDEST
15 THING TO GIVE UP, HARDER THAN THE HEROIN, HARDER
16 THAN ALCOHOL.

17 IF YOU LOOK AT THE NUMBER OF PEOPLE
18 WHO USE DIFFERENT DRUGS AND ARE ADDICTED TO IT, FOR
19 CIGARETTES, PROBABLY 85 PERCENT OF SMOKERS HAVE
20 SOME AMOUNT OF ADDICTION. SMOKE EVERY DAY AND HAVE
21 SOME LEVEL OF ADDICTION.

22 FOR ALCOHOL, IT'S ONLY 20 PERCENT
23 OF MEN AND 4 PERCENT OF WOMEN HAVE AN ALCOHOL ABUSE
24 PROBLEM THE OTHER ONES JUST DRINK, BUT IF THEY
25 CAN'T DRINK ONE DAY, IT'S NOT A PROBLEM, THEY HAVE
26 NO ABUSIVE PROBLEMS, NO ADDICTION PROBLEM

27 HEROIN AND COCAINE, THE DATA AREN'T
28 QUITE AS CLEAR, BUT THERE IS EVIDENCE THAT AS MANY

1 AS 50 PERCENT OF PEOPLE WHO USE HEROIN USE IT ONLY
2 OCCASIONALLY. SO THEY GO TO PARTIES OR THEY CHIP
3 AND THE SAME IS TRUE FOR COCAINE.

4 SO FOR THE PERCENTAGE OF USERS, FOR
5 THESE VARIOUS DRUGS, THE NUMBER WHO USE NICOTINE
6 EVERY DAY, EVERY SINGLE DAY, IS MUCH HIGHER THAN
7 ANY OTHER DRUG.

8 SO FROM THAT PERSPECTIVE, NICOTINE
9 EVEN LOOKS MORE ADDICTIVE.

10 Q. TWO POINTS, ONE OF A SMALL SIDE
11 POINT WHICH MAY COME UP LATER.

12 YOU USED THE WORD "CHIP. "

13 I KNOW WHAT IT MEANS BUT WHAT DOES
14 IT MEAN THE WAY YOU USED IT IN THE WAY YOU USED IT?

15 A. THAT'S A WORD WHICH HAS BEEN USED
16 FOR HEROIN AND ACTUALLY HAS BEEN USED FOR
17 CIGARETTES TOO. SOMEONE WHO OCCASIONALLY USES THE
18 DRUG, IS NOT ADDICTED TO, IS NOT DEPENDENT ON, BUT
19 OCCASIONALLY USES IT.

20 AND WE USE THAT FOR PEOPLE WHO
21 SMOKE FIVE OR FEWER CIGARETTES PER DAY, WHO DON'T
22 SMOKE EVERY SINGLE DAY.

23 SO IT'S CALLED CHIPPERS, YOU KNOW,
24 A JARGON. BUT IT REALLY DEALS WITH PEOPLE WHO
25 OCCASIONALLY USE DRUGS AND DON'T SEEM TO BE
26 ADDICTED TO THE DRUG.

27 Q. AND THE SECOND POINT I STOPPED YOU
28 FOR IS THIS, WITH ALCOHOL, THE VAST MAJORITY OF

1 PEOPLE WHO USE ALCOHOL HAVE NO ADDICTION PROBLEM
2 WHATSOEVER?

3 A. CORRECT.

4 Q. AND WHAT DID YOU SAY THAT IT WAS,
5 THAT IT WAS 80 PERCENT OF MEN AND 95 PERCENT OF
6 WOMEN, SOMETHING LIKE THAT?

7 A. YES.

8 Q. HAVE NO ADDICTION PROBLEM
9 WHATSOEVER WITH ALCOHOL?

10 A. YES.

11 Q. WITH NICOTINE, IS IT BASICALLY
12 FLIPPED OVER, SO THAT, DID YOU SAY 85 PERCENT OF
13 PEOPLE HAVE SOME ADDICTION PROBLEM WITH IT?

14 A. YES.

15 Q. SO WITH ALCOHOL, 20 DO HAVE
16 ADDICTION PROBLEMS -- LET'S JUST TALK MEN, 20 DO,
17 80 DON'T, WITH NICOTINE?

18 A. RIGHT.

19 Q. WITH NICOTINE, 15 DON'T AND 85 DO?

20 A. YES.

21 Q. HAVE A PROBLEM OF SOME SORT OF
22 ADDICTION?

23 A. YES.

24 Q. OKAY, THANK YOU.

25 THE COURT: AT THIS POINT --

26 MR. PIUZE: YES.

27 THE COURT: ALL RIGHT, IT'S QUARTER TO
28 11, WE WILL TAKE A BREAK UNTIL 11 O' CLOCK.

1 AND MS. GARRETT, I DON'T KNOW WHY I
2 DIDN'T NOTICE THIS BEFORE, I SHOULD HAVE, BUT YOU
3 ARE IN A POSITION WHERE IT IS JUST VERY DIFFICULT
4 FOR YOU TO SEE. AND WHEN YOU COME BACK, WE ARE
5 GOING TO HAVE YOUR SEAT MOVED FROM WHERE YOU ARE
6 RIGHT UP HERE OVER HERE TO THE SIDE, SO THAT I
7 THINK YOU WILL BE ABLE TO SEE THIS MUCH BETTER.
8 OKAY.

9
10 (THE FOLLOWING PROCEEDINGS
11 WERE HELD IN OPEN COURT IN
12 THE PRESENCE OF THE JURY.)

13
14
15 NEAL BENOVMTZ,
16 CALLED AS A WITNESS BY THE PLAINTIFF, HAVING BEEN
17 PREVIOUSLY DULY SWORN, RESUMED THE WITNESS STAND
18 AND TESTIFIED FURTHER AS FOLLOWS:

19 THE COURT: SIR, YOU MAY BE SEATED.
20 MR. PIUZE: THANK YOU.
21 THE COURT: MR. PIUZE.

22
23 DIRECT EXAMINATION (RESUMED)

24
25 BY MR. PIUZE:
26 Q. I WANT TO SWITCH SUBJECTS SOMEWHAT.
27 BUT THIS WILL ENTAIL GOING BACKWARDS A LITTLE.
28 REMEMBER, YOU TOLD THE JURY ABOUT,

1 YOU WOULD FIND A SMOKER WHO TYPICALLY HAD, I FORGET
2 WHAT YOU SAID, MAYBE 30 CIGARETTES A DAY, THAT WAS
3 THE USUAL LEVEL, YOU CUT THE SMOKER DOWN TO 15 A
4 DAY, AND ULTIMATELY BOTTOM LINE WAS YOU FOUND OUT
5 THE SMOKER DID SOMETHING SOMEHOW WITH THE
6 CIGARETTES SO THE SMOKER WOUND UP GETTING THE SAME
7 AMOUNT OF NICOTINE OUT OF THE 15 CIGARETTES THAT HE
8 OR SHE HAD GOTTEN OUT OF 30. REMEMBER THAT?

9 A. YES.

10 Q. ARE YOU FAMILIAR WITH THE TERM
11 "COMPENSATION"?

12 A. YES.

13 Q. DOES THE TERM "COMPENSATION" FIT
14 WITH, WITH OR FIT INTO AN EXPLANATION OF HOW THAT
15 CAN BE?

16 A. YES.

17 Q. HOW? WHY, PLEASE.

18 A. WELL, TO GO BACK TO THE STORY OF
19 PEOPLE SMOKING FOR NICOTINE, PEOPLE TEND TO SMOKE
20 CIGARETTES IN THE MORNING, HAVE A BIGGER EFFECT IN
21 THE MORNING, BECOME TOLERANT TO THE EFFECTS
22 THROUGHOUT THE DAY, END UP SMOKING CIGARETTES
23 BECAUSE THEY FEEL DISCOMFORT AND WITHDRAWAL AND END
24 UP SMOKING CIGARETTES TO DEAL WITH, WITH MOOD
25 DISTURBANCES, WITH STRESS, WITH NEEDING TO BE
26 STIMULATED OR RELAXED.

27 AND WHAT IS FOUND IS THAT PEOPLE
28 TEND TO TAKE IN ABOUT THE SAME AMOUNT OF NICOTINE

1 DAY AFTER DAY.

2 SO PEOPLE'S BODIES SEEM TO NEED A
3 CERTAIN AMOUNT OF NICOTINE. IT VARIES FROM PERSON
4 TO PERSON. BUT WE THINK IT HAS TO DO WITH DEALING
5 FOR -- SMOKING FOR CERTAIN SITUATIONS AND THEN
6 TOLERANCE AND THINGS LIKE THAT.

7 RESEARCH HAS BEEN DONE SHOWING THAT
8 IF YOU TRY TO CHANGE THE AMOUNT OF NICOTINE THAT'S
9 AVAILABLE TO A SMOKER, THEY WILL CHANGE THEIR
10 BEHAVIOR TO TRY TO BRING IT BACK TO THEIR USUAL
11 LEVEL.

12 SO THE IDEA WITH THE CIGARETTE
13 PRODUCTION STUDY WAS THAT, SAY, IF PEOPLE NORMALLY
14 TAKE IN, SAY, 30 MILLIGRAMS OF NICOTINE A DAY,
15 WHICH IS WHAT PEOPLE SMOKING 30 CIGARETTES WOULD
16 TAKE, WE COULD CUT THEM DOWN TO 15 CIGARETTES AND
17 THEY WOULD BE TAKING IN ALMOST THE SAME AMOUNT OF
18 NICOTINE PER DAY. THEIR BODY SEEMS TO NEED A
19 CERTAIN AMOUNT.

20 NOW, THEY DO IT BY TAKING TWICE AS
21 MUCH PUFFS FROM EACH CIGARETTE OR BIGGER PUFFS AND
22 MORE PUFFS.

23 BUT BECAUSE THERE'S A LOT OF
24 FLEXIBILITY AND WHAT YOU CAN GET FROM A CIGARETTE,
25 YOU CAN REALLY ADJUST QUITE A BIT.

26 SO, SAY, THE NORMAL CIGARETTE GIVES
27 A SMOKER ONE MILLIGRAM OF NICOTINE, WE FOUND THAT
28 PEOPLE WHO CUT DOWN TO FIVE CIGARETTES WERE GETTING

1 THREE MILLIGRAMS PER CIGARETTE. SO THREE TIMES AS
2 MUCH BY TAKING MUCH BIGGER PUFFS AND MORE PUFFS PER
3 CIGARETTE.

4 THEY COULDN'T QUITE COMPENSATE.
5 FULL COMPENSATION MEANS THAT NO MATTER WHAT YOU
6 GET, NO MATTER HOW MANY CIGARETTES, YOU HAVE THE
7 SAME AMOUNT OF NICOTINE.

8 WELL, HERE, THEY COULDN'T FULLY
9 COMPENSATE BECAUSE YOU COULDN'T GO FROM 30 TO 5 AND
10 GET ENOUGH NICOTINE, NO MATTER WHAT YOU DO.

11 WE FOUND PRETTY SUBSTANTIAL
12 COMPENSATION SO THAT 10 CIGARETTES PER DAY PEOPLE
13 HAD ABOUT 80 PERCENT OF WHAT THEY HAD FROM 30.

14 Q. WHEN DID YOU FIND THIS OUT?

15 A. I THINK WE PUBLISHED THIS WORK IN
16 THE MID-1980'S.

17 Q. SO WE ARE TALKING 15 YEARS AGO?

18 A. YES.

19 Q. DID YOU PUBLISH IT IN SOME OBSCURE
20 OFF-SHORE JOURNAL IN --

21 A. NO. THIS WORK WAS PUBLISHED IN THE
22 "NEW ENGLAND JOURNAL OF MEDICINE" WHICH IS PROBABLY
23 THE TOP RECOGNIZED JOURNAL IN THE WORLD.

24 Q. WE HAD HEARD FROM A NUMBER WITNESS
25 WHO MIGHT HAVE HAD A SLIGHTLY BRITISH BIAS THAT THE
26 "LANCET" IN ENGLAND AND THE "NEW ENGLAND JOURNAL"
27 OF MEDICINE IN AMERICA WERE PROBABLY THE TOP
28 MEDICAL JOURNALS IN THE WORLD.

1 DOES THAT SOUND ABOUT RIGHT TO YOU?

2 A. YES.

3 Q. AND THIS WORK THAT YOU JUST
4 MENTIONED, ON COMPENSATION, WAS PUBLISHED IN THE
5 "NEW ENGLAND JOURNAL OF MEDICINE," 15 OR SO YEARS
6 AGO?

7 A. YES.

8 Q. WE HAD ANOTHER WITNESS HERE, THIS
9 DR. FARONE. YOU KNOW HIM?

10 A. YES.

11 Q. AND HE TALKED ABOUT THE ISSUE OF,
12 HE TALKED ABOUT MANY ISSUES. BUT ONE OF THE ISSUES
13 HE TALKED ABOUT WAS THE FACT THAT FROM A FULL --

14 MR. CARLTON: OBJECT TO THE
15 RECHARACTERIZATION OF THE TESTIMONY.

16 THE COURT: SUSTAINED.

17 Q BY MR. PIUZE: CAN I TRY THIS
18 HYPOTHETICALLY, YOUR HONOR?

19 THE COURT: WELL, YOU COULD NAME A TOPIC.
20 I WILL LET YOU DO THAT. JUST DON'T DESCRIBE
21 CONCLUSIONS.

22 MR. PIUZE: OKAY, THAT'S FINE.

23 Q BY MR. PIUZE: WE HAD A DISCUSSION
24 HERE, YOU WEREN'T HERE, BUT THE DISCUSSION HAD TO
25 DO WITH THE FACT THAT --

26 MR. CARLTON: SAME OBJECTION.

27 THE COURT: OVERRULED.

28 TOPIC, PLEASE.

1 Q BY MR. PIUZE: YEAH. THE TOPIC IS
2 THAT THE AMOUNT OF TAR THAT A PERSON CAN GET OUT OF
3 SORT OF A FULL TAR CIGARETTE, A REDUCED TAR
4 CIGARETTE, ULTRA REDUCED TAR CIGARETTE, STRANGELY
5 ENOUGH, TURNS OUT TO BE ABOUT THE SAME IN THE END
6 BECAUSE OF COMPENSATION.

7 ARE YOU FAMILIAR WITH THAT CONCEPT?

8 A. YES.

9 Q. IS THAT THE SAME CONCEPT THAT
10 APPLIES TO THE NICOTINE ALSO?

11 A. YES.

12 Q. HAVE YOU WRITTEN ON THE FACT THAT
13 REGARDLESS OF WHETHER SOMETHING IS CALLED A REGULAR
14 OR A LIGHT OR AN ULTRA LIGHT, THAT IN THE END, THE
15 SMOKER IS GOING TO WIND UP WITH ROUGHLY THE SAME
16 AMOUNT OF NICOTINE?

17 A. YES.

18 Q. NOW, ARE LIGHT CIGARETTES, AS
19 ADDICTIVE, GENERALLY, AS FULL STRENGTH CIGARETTES?

20 A. YES. FOR THE REASONS OF
21 COMPENSATION, OUR RESEARCH HAS SHOWN THAT SMOKERS
22 TAKE IN VIRTUALLY THE SAME AMOUNT OF NICOTINE FROM
23 A LOW YIELD CIGARETTE THAN A HIGH YIELD CIGARETTE.

24 AND IT'S BECAUSE -- THIS WAS WORK
25 WE DID EVEN BEFORE THE CIGARETTE REDUCTION STUDY.
26 WE PUBLISHED THIS IN "NEW ENGLAND JOURNAL OF
27 MEDICINE," 1983, THAT SURVEYING SMOKERS SMOKING A
28 WIDE RANGE OF BRANDS, FROM NICOTINE YIELDS OF .1

1 MLLIGRAM TO 1.6 MLLIGRAMS, THAT THEIR LEVELS OF
2 NICOTINE INTAKE WERE THE SAME, DIDN' T MATTER.

3 THEY WOULD TAKE IN THE SAME AMOUNT
4 OF NICOTINE, NO MATTER WHAT BRAND THEY WERE TAKING.

5 WE ALSO FOUND SOMETHING THAT WAS A
6 SURPRISE TO ME AT THE TIME, BUT I THINK CAN HELP
7 PEOPLE UNDERSTAND WHAT HAPPENED, LOW YIELD
8 CIGARETTES DON' T CONTAIN LESS OF ANYTHING. I THINK
9 IT CONTAINS -- LESS TAR AND NICOTINE.

10 WE MEASURED THE TOBACCO OF
11 CIGARETTES OF MANY DIFFERENT YIELDS, HIGH TO LOW
12 YIELD CIGARETTES IN 1983 AND FOUND, TO MY SURPRISE,
13 AT THE TIME, THAT THE NICOTINE IN A LOW YIELD
14 CIGARETTE IS EXACTLY THE SAME AS A HIGH YIELD
15 CIGARETTE, THE TOBACCO IS THE SAME.

16 WHAT MAKES THEM LOW YIELD HAS TO DO
17 WITH HOW THEY ARE ENGINEERED AND HOW THOSE
18 ENGINEERING CHARACTERISTICS EFFECT HOW THEY ARE
19 TESTED ON THE MACHINE.

20 BUT THERE' S THE SAME AMOUNT OF
21 TOBACCO AND THE SAME AMOUNT OF NICOTINE IN THE LOW
22 YIELD AS HIGH YIELD CIGARETTES. AND SMOKERS CAN
23 EASILY, BY SMOKING DIFFERENTLY THAN THE MACHINES,
24 GET WHATEVER NICOTINE THEY NEED.

25 AND WITH NICOTINE COMES TAR.
26 THERE' S A GOOD CORRELATION AND RELATIONSHIP BETWEEN
27 NICOTINE AND TAR.

28 SO IF YOU COMPENSATE FOR NICOTINE,

1 YOU GET JUST AS MUCH TAR AS WTHOUT.

2 Q. SO I DON'T BOTHER ASKING THE LAST
3 QUESTION BECAUSE ONCE YOU GO FROM LIGHTS TO ULTRA
4 LIGHTS, IT IS THE SAME STORY ALL OVER AGAIN?

5 A. YES. THE ONLY CIGARETTES WE FOUND
6 THAT WERE ANY DIFFERENT WERE THE VERY LOWEST BRANDS
7 OF CIGARETTES WHICH WERE THE 0.1 MILLIGRAM OR 1
8 MILLIGRAM TAR. AND JUST A COUPLE BRANDS OF THOSE
9 AND THEY COUNT FOR A VERY SMALL PERCENTAGE OF TOTAL
10 SALES.

11 WHAT WE FOUND WTH THOSE IS ABOUT A
12 30 PERCENT REDUCTION OF EXPOSURE.

13 BUT FOR EVERYTHING ELSE, THERE WAS
14 PRETTY MUCH A FLAT LINE, NO RELATIONSHIP IN THAT
15 STUDY BETWEEN YIELD AND EXPOSURE.

16 Q. OKAY. THANK YOU. HERE'S A NEW
17 SUBJECT AGAIN.

18 WHAT IS UP ON THE SCREEN HERE IS
19 DATED APRIL 14, AND WHAT'S ON THE SCREEN HERE, IS
20 FROM THE "NEW YORK TIMES" OF APRIL 14, 1994 --
21 EXCUSE ME, APRIL 15 IS THE DAY THIS WAS PUBLISHED,
22 1994.

23 AND THIS PARTICULAR STORY, THE
24 DATELINE ON THE STORY IS THE DAY BEFORE, APRIL 14,
25 1994. AND THE STORY OBVIOUSLY HAS TO DO WTH SEVEN
26 EXECUTIVES OF THE TOBACCO COMPANIES TESTIFYING
27 BEFORE CONGRESS. AS THE JURY HAS BEEN SHOWN
28 ALREADY HERE, ONE OF THE THINGS THEY SAID WAS THAT

1 CIGARETTES AREN' T ADDICTIVE.

2 SO JUST FOR OPENERS, YOU ARE
3 GENERALLY FAMILIAR WITH THAT TESTIMONY THAT
4 OCCURRED?

5 A. I AM VERY FAMILIAR WITH THAT
6 TESTIMONY.

7 Q. NOW, ON PAGE 11, I AM GOING TO
8 START AT THE BOTTOM HERE FOR OBVIOUS REASONS AND
9 THEN WORK MY WAY UP.

10 BUT ON PAGE 11 OF THE "NEW YORK
11 TIMES," THAT DAY, APRIL 15, 1994, PHILIP MORRIS
12 U. S. A. RAN A, I DON' T KNOW, IT LOOKS TO ME TO BE
13 LIKE A TWO-THIRDS PAGE AD, I HAVE SHOWED YOU THIS
14 BEFORE EARLIER TODAY?

15 A. YES.

16 Q. AND THE TWO-THIRDS PAGE AD FROM
17 APRIL 15, 1994, WAS ENTITLED:

18 "SMOKERS AND NON-SMOKERS,
19 FACTS YOU SHOULD KNOW

20 "BOTH SMOKERS AND
21 NON-SMOKERS DESERVE TO KNOW FACTS NOT
22 INNUENDO ABOUT CIGARETTES. YESTERDAY
23 PHILIP MORRIS AND OTHER U. S. TOBACCO
24 MANUFACTURERS HELPED TO SET THE RECORD
25 STRAIGHT BY SPEAKING BEFORE
26 CONGRESSIONAL COMMITTEE. FOR YOUR
27 CONSIDERATION HERE ARE HIGHLIGHTS OF
28 THE INFORMATION PRESENTED BY PHILIP

1 MORRIS IN THAT SESSION. "

2 SO I WANT TO GO TO THE FACT THAT
3 SECOND FROM THE BOTTOM THERE, AND THE ONE I AM
4 INTERESTED IN IS THE ONE ON TOP.

5 "FACT: PHILIP MORRIS DOES
6 NOT BELIEVE CIGARETTE SMOKING IS
7 ADDICTIVE. PEOPLE CAN AND DO QUIT
8 SMOKING ALL THE TIME. ACCORDING TO
9 THE 1988 SURGEON GENERAL'S REPORT,
10 THERE ARE MORE THAN 40 MILLION FORMER
11 SMOKERS IN THE UNITED STATES AND 90
12 PERCENT QUIT ON THEIR OWN WITHOUT ANY
13 OUTSIDE HELP. "

14 I WANT TO DISCUSS THOSE SENTENCES
15 WITH YOU STARTING AS FOLLOWS: PHILIP MORRIS IS
16 QUOTING THE 1988 SURGEON GENERAL'S REPORT TO
17 BOLSTER ITS VIEWS ON ADDICTION.

18 NOW, IS THE 1988 SURGEON GENERAL'S
19 REPORT THE ONE WHERE YOU WERE ONE OF FOUR
20 SCIENTIFIC EDITORS ON ADDICTION?

21 A. YES.

22 Q. DID THE 1988 SURGEON GENERAL'S
23 REPORT SAY THAT THERE ARE MORE THAN 40 MILLION
24 FORMER SMOKERS IN THE UNITED STATES?

25 A. I THINK SO. I DON'T REMEMBER THE
26 EXACT NUMBER BUT THAT'S PROBABLY CORRECT.

27 Q. WELL, IF THAT'S CORRECT, DOESN'T
28 THAT BOLSTER THE CLAIM THAT PHILIP MORRIS DOES NOT

1 BELIEVE CIGARETTE SMOKING IS ADDICTIVE?

2 A. NO. IT DOES NOT, AT ALL.

3 THE ISSUE OF ADDICTION RELATES TO A
4 PROBLEM CONTROLLING DRUG USE. IT MEANS THAT WHEN
5 YOU BECOME UNDER THE INFLUENCE OF A DRUG, THEN IT'S
6 DIFFICULT TO CHANGE THAT USE, TO STOP USE.

7 IT DOESN'T MEAN ONE CAN'T QUIT.
8 AND THIS IS TRUE FOR ALL DRUGS OF ABUSE OR ALL
9 ADDICTING DRUGS. IT MEANS THAT IT IS OFTEN QUITE
10 DISRUPTIVE TO YOUR LIFE AND DIFFICULT. WE KNOW
11 NOW, AND IT WAS KNOWN BACK IN 1988, THAT THE VAST
12 MAJORITY OF SMOKERS, 70 PERCENT OF SMOKERS, SAY
13 THAT THEY WOULD LIKE TO QUIT SMOKING, AT THIS TIME.
14 AND IT WAS TRUE BACK IN '88 AS WELL.

15 35 PERCENT OF SMOKERS SAY THEY HAVE
16 OR HAVE HAD EVIDENCE OF QUITTING FOR AT LEAST A DAY
17 EACH YEAR BECAUSE THEY WANT TO TRY TO QUIT.

18 THE PERCENT WHO SUCCESSFULLY QUIT
19 ARE ABOUT TWO AND A HALF PERCENT.

20 SO MOST SMOKERS SAY THEY WOULD LIKE
21 TO BE NON-SMOKERS. MANY TRY TO QUIT AND VERY FEW
22 SUCCEED.

23 NOW, MOST WHO WANT TO QUIT
24 ULTIMATELY DO SUCCEED BUT ON AVERAGE IT TAKES FOUR
25 TO FIVE QUIT ATTEMPTS.

26 NOW, THAT DOESN'T MEAN THAT PEOPLE
27 HAVEN'T QUIT AND THEY HAVEN'T QUIT ON THEIR OWN.
28 IT MEANS THAT IT'S A VERY DIFFICULT PROCESS, IT

1 TAKES A LONG TIME. MANY PEOPLE SMOKE FOR MUCH
2 LONGER THAN THEY WOULD LIKE TO. AND THIS CONCEPT
3 OF ADDICTION, MEANING LOSS OF CONTROL OF DRUG USE,
4 AND THESE SORT OF NUMBERS ARE THE SAME AS FOR OTHER
5 DRUGS OF ABUSE.

6 Q. WELL, LET ME STOP YOU THERE,
7 BECAUSE THAT'S WHAT I HAD INTENDED TO DO, SO LET ME
8 DO IT.

9 LET'S JUST CHANGE THESE WORDS JUST
10 TO SEE IF THIS FITS. LET'S FORGET PHILIP MORRIS
11 NOW PHILIP MORRIS IS OUT OF THIS CASE.

12 ALCOHOL IS NOT ADDICTIVE BECAUSE
13 PEOPLE HAVE GONE TO A. A. AND QUIT AND SO ALCOHOL
14 ISN'T ADDICTIVE.

15 NOW, WOULD YOU THINK THAT'S GOOD
16 LOGIC?

17 A. NO.

18 Q. HEROIN ISN'T ADDICTIVE BECAUSE
19 PEOPLE HAVE USED HEROIN AND QUIT IT AND THEREFORE,
20 HEROIN ISN'T ADDICTIVE. IS THAT BALONEY?

21 A. YES.

22 Q. LET'S GO TO THE NEXT ONE. AND THE
23 FOCUS IS, "90 PERCENT -- PHILIP MORRIS DOES NOT
24 BELIEVE CIGARETTE SMOKING IS ADDICTIVE. 90 PERCENT
25 OF PEOPLE WHO QUIT, QUIT ON THEIR OWN, WITHOUT
26 OUTSIDE HELP."

27 NOW, DO YOU HAVE SOME KNOWLEDGE
28 ABOUT OUTSIDE HELP AND EVIDENCE OF QUITTING?

1 A. YES.

2 Q. TELL THE JURY, PLEASE.

3 A. WELL, THERE ARE WHAT ARE CALLED
4 BEHAVIORAL AIDS LIKE GETTING COUNSELING OR JOINING
5 A SMOKING GROUP OR SMOKE ENDERS OR SMOKERS
6 ANONYMUS. THOSE ARE ALL BEHAVIORAL COUNSELING.

7 THEN THERE ARE MEDICATIONS,
8 NICOTINE PATCHES, NICOTINE GUM, NICOTINE NASAL
9 SPRAY. ZYBAN IS A NEW MEDICATION.

10 AND THEN THERE ARE OTHER THINGS
11 PEOPLE TRY, HYPNOSIS, ACUPUNCTURE.

12 IN FACT, THERE ARE HUNDREDS OF
13 THINGS THAT HAVE BEEN DESCRIBED OVER THE YEARS TO
14 TRY TO HELP SMOKERS QUIT WHICH, I THINK, GIVES AN
15 IDEA THAT IT IS NOT AN EASY THING. THERE WOULDN'T
16 BE SO MANY ORGANIZATIONS AND SO MANY MEDICATIONS
17 AVAILABLE TO HELP PEOPLE QUIT SMOKING IF IT WAS
18 JUST A MATTER OF MAKING UP THEIR MIND TO JUST QUIT
19 AND STOP IT.

20 MANY PEOPLE TRY DIFFERENT SORTS OF
21 THINGS BEFORE THEY CAN QUIT.

22 Q. I WANT TO PUT THE SPOTLIGHT BACK ON
23 YOU AND YOUR BACKGROUND AND QUALIFICATIONS NOW, AT
24 LEAST FOR A LITTLE WHILE.

25 HAVE YOU HAD SOME BACKGROUND AND
26 EXPERIENCE IN REGARD TO THE NICOR -- WHATEVER --
27 THE GUM OR THE PATCHES OR THE REPLACEMENT, NICOTINE
28 REPLACEMENT STUFF THAT SOME PEOPLE USE AND TRY TO

1 USE?

2 A. YES.

3 Q. EXPLAIN, PLEASE.

4 A. WELL, WE DO A LOT OF WORK STUDYING
5 EFFECTS OF NICOTINE IN PEOPLE, STUDYING THE TIME
6 COURSE, THE EFFECTS, THE ABSORPTION LEVELS IN THE
7 BODY.

8 AND WE DID MANY OF THE STUDIES THAT
9 THE FOOD AND DRUG ADMINISTRATION RELIED UPON FOR
10 DOSING GUIDELINES, FOR SAYING WHAT DOSE A PATCH
11 GIVES, FOR EXAMPLE.

12 A LOT OF IT WAS DONE IN MY
13 LABORATORY.

14 Q. IS THERE SOMETHING -- WHY CAN'T A
15 PERSON JUST USE A PATCH OR THE GUM INSTEAD OF
16 INHALING THE NICOTINE?

17 A. WELL, THIS IS REALLY AN IMPORTANT
18 POINT TO UNDERSTAND WHY SMOKING, IN PARTICULAR, IS
19 ADDICTING.

20 IT GOES BACK TO WHAT WE SAID
21 BEFORE, THAT WHEN YOU SMOKE A CIGARETTE, YOU GET A
22 RAPID ABSORPTION OF A HIGH LEVEL OF NICOTINE THAT
23 GOES TO YOUR BRAIN WITHIN SECONDS.

24 SO IF I WERE TO MAKE A GRAPH, FOR
25 EXAMPLE, I COULD SHOW VERY -- IT WOULD BE LIKE A
26 SPIKE OF NICOTINE IN THE BRAIN.

27 NICOTINE FROM PATCHES IS ABSORBED
28 OVER HOURS, VERY SLOWLY. NICOTINE FROM GUN IS

1 ABSORBED OVER 30 MINUTES. SO, AGAIN, THAT'S PRETTY
2 SLOW

3 AND THE SAME THING FROM THE
4 NICOTINE PUFFER, INHALER AND NICOTINE LOZENGES, THE
5 ABSORPTION IS SLOW AND THE EFFECTS OF NICOTINE ARE
6 MUCH DIFFERENT.

7 SO THE SMOKER DOESN'T GET THE
8 SATISFACTION OF TAKING A PUFF OF A CIGARETTE. THEY
9 DO GET RELIEF OF WITHDRAWAL SYMPTOMS. BUT A SMOKER
10 WILL SAY IT'S JUST NOT THE SAME THING BECAUSE THEY
11 ARE NOT GETTING THE SAME RAPID HIGH LEVEL DOSE
12 REINFORCEMENT.

13 Q. SO TO JUMP BACK TO AN ANALOGY -- TO
14 JUMP BACK TO AN EXAMPLE YOU GAVE, I'D LIKE TO MAKE
15 AN ANALOGY. TELL ME IF THIS IS RIGHT OR WRONG.
16 EARLIER YOU TOLD THE JURY THAT SMOKING CRACK
17 COCAINE IS MORE ADDICTIVE BECAUSE THERE'S A MORE
18 INSTANTANEOUS HIT BECAUSE YOU ARE INHALING IT OR
19 SNORTING IT OR EATING IT OR SOMETHING. AND IS THAT
20 WHAT WE ARE TALKING ABOUT AGAIN NOW, BUT BECAUSE
21 THE TOBACCO IS BEING INHALED AND GOING STRAIGHT TO
22 THE BRAIN, IT'S JUST DIFFERENT, MORE ADDICTIVE THAN
23 USING A PATCH OR CHEWING SOME GUM?

24 A. IT'S EXACTLY THE SAME ISSUE.

25 Q. SO ANYWAY, BACK TO THE NEWSPAPER ON
26 THE 15TH OF APRIL, 1994, PHILIP MORRIS SAID IT
27 DIDN'T BELIEVE SMOKING WAS -- CIGARETTE SMOKING WAS
28 ADDICTIVE AND QUOTED, SORT OF SIDEWAYS, THE SURGEON

1 GENERAL' S REPORT OF 1988.

2 MR. CARLTON: OBJECTION TO THE COMMENT.

3 THE COURT: "SIDEWAYS. "

4 MR. PIUZE: I WILL WITHDRAW THE QUESTION
5 AND I WILL DO IT DIFFERENTLY.

6 THE COURT: THANK YOU.

7 Q BY MR. PIUZE: PHILIP MORRIS TOLD
8 WHOEVER WAS READING THE "NEW YORK TIMES" ON APRIL
9 15, 1994 THAT IT DID NOT BELIEVE CIGARETTE SMOKING
10 WAS ADDICTIVE AND SEEMINGLY BASED ITS STATEMENTS,
11 IN PART, ON THE 1988 SURGEON GENERAL' S REPORT, OR
12 AT LEAST TO ME --

13 THE COURT: SIR, DO YOU AGREE WITH THAT
14 ASSESSMENT?

15 THE WITNESS: WELL, THEY CERTAINLY CITE
16 SOME DATA FROM THE REPORT. ALTHOUGH THE REPORT DID
17 NOT CONCLUDE THAT IT WAS NOT ADDICTIVE.

18 Q BY MR. PIUZE: THAT' S WHERE MY
19 QUESTION WAS GOING.

20 IF PHILIP MORRIS HAD QUOTED FROM
21 THE SURGEON GENERAL' S REPORT OF 1988 ON THE ISSUE
22 OF WHETHER OR NOT CIGARETTE SMOKING WAS ADDICTIVE,
23 IT WOULD HAVE HAD TO HAVE SAID YES.

24 A. IT WOULD HAVE SAID CIGARETTE
25 SMOKING IS ADDICTIVE. NICOTINE IS THE DRUG THAT IS
26 RESPONSIBLE FOR THAT ADDICTION.

27 Q. SO IF PHILIP MORRIS, ON APRIL 15,
28 1994, IN THE "NEW YORK TIMES, " HAD TRULY QUOTED OUT

1 OF THE SURGEON GENERAL'S REPORT ON WHETHER
2 CIGARETTE SMOKING WAS AND WHETHER NICOTINE WAS
3 ADDICTIVE, IT NECESSARILY, IF IT REALLY QUOTED OUT
4 OF THE SURGEON GENERAL'S REPORT, WOULD HAVE HAD TO
5 HAVE DISAGREED WITH ITS OWN CHIEF EXECUTIVES
6 TESTIFYING BEFORE CONGRESS THE DAY BEFORE?

7 MR. CARLTON: OBJECTION, LEADING.

8 THE COURT: ARGUMENTATIVE.

9 Q BY MR. PIUZE: I'D LIKE TO SHOW
10 YOU EXHIBIT 3.00, WHICH IS A 1972 DOCUMENT ENTITLED
11 "MOTIVES AND INCENTIVES IN CIGARETTE SMOKING."

12 AND I WILL JUST SHOW YOU THE FIRST
13 PAGE HERE, AND APOLOGIZE FOR THE QUALITY.

14 DO YOU SEE THE AUTHOR, WILLIAM
15 DUNN, JUNIOR, PHILIP MORRIS RESEARCH CENTER,
16 RICHMOND, VIRGINIA.

17 CAN YOU MAKE THAT OUT?

18 A. YES.

19 Q. YOU ARE FAMILIAR WITH THIS
20 DOCUMENT?

21 A. YES.

22 Q. THIS DOCUMENT DISCUSSES, IN PART,
23 THE SAINT MARTIN'S CONFERENCE?

24 A. YES.

25 Q. DO YOU KNOW WHAT THE SAINT MARTIN'S
26 CONFERENCE WAS?

27 A. WELL, THIS WAS A CONFERENCE ON
28 SMOKING, I THINK, BEHAVIOR RELATED ISSUES THAT

1 INVOLVED THE TOBACCO INDUSTRY AND SOME SELECTED
2 SCIENTISTS FROM MEDICAL SCHOOLS AND OTHER PLACES.

3 Q. AND DRAWING YOUR ATTENTION TO THE
4 UNDERLINED, THE HIGHLIGHTED STUFF IN YELLOW, AGAIN,
5 I WILL READ IT OUT LOUD AND THEN I WILL ASK YOU
6 ABOUT IT.

7 "AS WITH EATING AND
8 COPULATING, SO IT IS WITH SMOKING.
9 THE PHYSIOLOGICAL EFFECTS SERVES AS
10 THE PRIMARY INCENTIVE; ALL OTHER
11 INCENTIVES ARE SECONDARY. THE
12 MAJORITY OF THE CONFEREES WOULD GO
13 EVEN FURTHER AND ACCEPT THE
14 PROPOSITION THAT NICOTINE IS THE
15 ACTIVE CONSTITUENT OF CIGARETTE SMOKE.
16 WITHOUT NICOTINE, THE ARGUMENT GOES,
17 THERE WOULD BE NO SMOKING. SOME
18 STRONG EVIDENCE CAN BE MARTIALLED TO
19 SUPPORT THIS ARGUMENT.

20 "ONE, NO ONE HAS EVER BECOME
21 A CIGARETTE SMOKER BY SMOKING
22 CIGARETTES WITHOUT NICOTINE.

23 "TWO, MOST OF THE
24 PHYSIOLOGICAL RESPONSES TO INHALED
25 SMOKE HAVE BEEN SHOWN TO BE
26 NICOTINE-RELATED.

27 "THREE, DESPITE MANY LOW
28 NICOTINE BRAND ENTRIES INTO THE

1 MARKETPLACE, NONE OF THEM HAVE
2 CAPTURED A SUBSTANTIAL SEGMENT OF THE
3 MARKET. "

4 Q BY MR. PIUZE: NOW, IS THERE
5 ANYTHING THERE THAT I READ THAT'S HIGHLIGHTED FOR
6 THE JURY TO SHOW YOU WITH WHICH YOU DISAGREE OR IS
7 THAT ALL RIGHT?

8 A. NO. THIS MAKES IT VERY CLEAR THAT
9 DR. DUNN, AND I THINK THE OTHER TOBACCO SCIENTISTS,
10 UNDERSTOOD THAT PEOPLE SMOKE CIGARETTES TO GET
11 NICOTINE.

12 SO -- AND NICOTINE IS REQUIRED FOR
13 SMOKING. PEOPLE DON'T SMOKE WITHOUT IT. AND IT'S
14 THE EFFECTS OF NICOTINE THAT PEOPLE ARE SEEKING
15 WHEN THEY USE TOBACCO.

16 Q. THANK YOU.

17 I AM GOING TO FLIP THE PAGE. THIS
18 IS PAGE 5.

19 "WHY THEN IS THERE NOT A
20 MARKET FOR NICOTINE, PER SE, TO BE
21 EATEN, SUCKED, DRUNK, INJECTED,
22 INSERTED OR INHALED AS A PURE AEROSOL?
23 THE ANSWER, AND I FEEL QUITE STRONGLY
24 ABOUT THIS, IS THAT THE CIGARETTE IS,
25 IN FACT, AMONG THE MOST AWE-INSPIRING
26 EXAMPLES OF THE INGENUITY OF MAN. LET
27 ME EXPLAIN MY CONVICTION.

28 "THE CIGARETTE SHOULD BE

1 CONCEIVED NOT AS A PRODUCT BUT AS A
2 PACKAGE. THE PRODUCT IS NICOTINE.
3 THE CIGARETTE IS BUT ONE OF MANY
4 PACKAGED LAYERS. THERE IS THE CARTON
5 WHICH CONTAINS THE PACK, WHICH
6 CONTAINS THE CIGARETTE, WHICH CONTAINS
7 THE SMOKE. THE SMOKE IS THE FINAL
8 PACKAGE. THE SMOKER MUST STRIP OFF
9 ALL THESE PACKAGE LAYERS TO GET TO
10 THAT WHICH HE SEEKS. "

11 SO LET ME STOP THERE AGAIN. YOU
12 AGREE WITH ALL THAT SO FAR?

13 A. YES. THIS PART OF THE DOCUMENT IS
14 JUST RESTATING THE IDEA THAT CIGARETTES ARE DRUG
15 DELIVERY DEVICES AND THAT THIS IS THEIR
16 CHARACTERIZATION OF HOW A CIGARETTE IS A DRUG
17 DELIVERY DEVICE.

18 Q. (READING)

19 "THINK OF THE CIGARETTE PACK
20 AS A STORAGE CONTAINER FOR A DAY'S
21 SUPPLY OF NICOTINE. THINK OF THE
22 CIGARETTE AS A DISPENSER FOR A DOSE
23 UNIT OF NICOTINE. "

24 AND THAT, AGAIN, IS WHAT YOU JUST
25 FINISHED SAYING?

26 A. YES.

27 Q. SO YOU AGREE WITH THAT?

28 A. YES.

1 Q. PAGE 6.

2 "THINK OF A PUFF OF SMOKE AS
3 THE VEHICLE OF NICOTINE. SMOKE IS
4 BEYOND QUESTION THE MOST OPTIMIZED
5 VEHICLE OF NICOTINE AND THE CIGARETTE
6 THE MOST OPTIMIZED DISPENSER OF THE
7 SMOKE. "

8 SO THE SAME THING ALL OVER AGAIN?

9 A. YES.

10 Q. SO THAT'S 72.

11 LET ME SHOW YOU A DOCUMENT NUMBER

12 421. AND I WILL SHOW YOU THE FACE PAGE FIRST.

13

14 * (EXHIBIT 421, ARTICLE,
15 MARKED FOR I. D.)

16

17 Q BY MR. PIUZE: AND I DRAW YOUR
18 ATTENTION TO THE FACT THAT, (A), IT'S A PHILIP
19 MORRIS U. S. A. INTER-OFFICE MEMO; (B), THE DATE IS
20 JUNE 2, 1976.

21 AND THE NAMES HERE IS, MR. J. J.
22 MORGAN, THAT'S WHO IT IS TO; MR. AL UDOW, U-D-O-W,
23 THAT'S WHO IT IS FROM, AND THE SUBJECT OF THIS MEMO
24 IS "WHY PEOPLE START TO SMOKE. "

25 I AM GOING TO SHOW YOU PAGE 3 NOW
26 OF THE HIGHLIGHTED PARAGRAPH.

27 "FOR PERSONS WHO ARE
28 SELF-CONSCIOUS AND INSECURE, SMOKING

1 PROVIDES AN ACTIVITY AND SOMETHING TO
2 DO WITH THEIR HANDS THAT TAKES THEIR
3 MINDS OFF THEMSELVES. MANY ACCEPT THE
4 IMAGE CREATED BY CIGARETTE
5 ADVERTISEMENTS OF CIGARETTE SMOKING AS
6 A SYMBOL OF POISE, SELF-CONFIDENCE AND
7 SOCIAL SUCCESS. BUT ONCE ONE BECOMES
8 DEPENDENT UPON CIGARETTES, HABITUATION
9 OR ADDICTION ARE IMPELLING DRIVES TO
10 CONTINUE. "

11 AND I WANT TO TALK ABOUT THE WORDS
12 "DEPENDENT, " "HABITUATION" AND "ADDICTION. "

13 LET ME READ THE SENTENCE ONE MORE
14 TIME.

15 "BUT ONCE ONE BECOMES
16 DEPENDENT ON CIGARETTES, HABITUATION
17 OR ADDICTION ARE IMPELLING DRIVES TO
18 CONTINUE. "

19 Q. YOU HAVE TOLD US ABOUT ADDICTION.
20 WHAT'S HABITUATION?

21 A. WELL, THAT GETS BACK TO THE 1964
22 SURGEON GENERAL'S REPORT, THE FIRST REPORT ON
23 SMOKING AND HEALTH.

24 AT THAT TIME, THE WORLD HEALTH
25 ORGANIZATION HAD SOME DEFINITIONS FOR HABITUATION
26 AND ADDICTION.

27 TO BE ADDICTING, A DRUG HAD TO BE
28 INTOXICATING. IT HAD TO HAVE A VERY SEVERE

1 WITHDRAWAL SYNDROME AND IT HAD TO BE ASSOCIATED
2 WITH SOCIETAL INJURY, SO HARM TO SOCIETY, THINGS
3 LIKE CRIMINALITY, ET CETERA.

4 IT WAS CLEAR THEN, AS IT IS CLEAR
5 NOW, THAT PEOPLE SMOKE CIGARETTES FOR NICOTINE AND
6 THAT IT WAS EXTREMELY DIFFICULTY TO QUIT, AND THAT
7 MANY PEOPLE COULDN'T QUIT OR WENT TO EXTREME ENDS
8 TO TRY TO GET HELP TO QUIT.

9 BUT BECAUSE NICOTINE WAS NOT
10 INTOXICATING, AND WASN'T AN ANTI-SOCIAL BEHAVIOR,
11 THE SURGEON GENERAL CALLED IT AN HABITUATION.

12 NOW, WHAT HAPPENED AFTERWARDS, IN
13 THE NEXT YEAR, 1965, THE WORLD HEALTH ORGANIZATION
14 CANNED THAT DEFINITION. THEY SAID IT WASN'T
15 ACCURATE BECAUSE IT REALLY DIDN'T DESCRIBE THE TRUE
16 NATURE OF THE COMPULSION TO USE DRUGS.

17 AND THAT DEFINITION DIDN'T WORK FOR
18 DRUGS LIKE COCAINE, BECAUSE COCAINE IS IN
19 ASSOCIATION WITH A SEVERE WITHDRAWAL SYNDROME.

20 SO IN 1965, THE WORLD HEALTH
21 ORGANIZATION CAME UP WITH ANOTHER DEFINITION AND
22 GOT RID OF THE TERMS "HABITUATION" AND "ADDICTION"
23 BUT FOCUSED ON "DEPENDENCE" AS ENCOMPASSING BOTH
24 AND SAYING IT WAS MORE THAT A BEHAVIORAL PATTERN
25 SUCH THAT WHEN A GIVEN PSYCHIATRIC DRUG IS USED,
26 IT'S GIVEN SHARPLY HIGHER PRIORITIES OVER OTHER
27 BEHAVIORS THAT ONCE HAD A HIGH PRIORITY FOR THAT
28 PERSON. WHICH MEANS YOU START USING DRUGS TO THE

1 EXCLUSION OF OTHER THINGS THAT ARE IMPORTANT TO
2 YOU, YOUR HEALTH OR MONEY OR WHATEVER.

3 SO THAT WAS IN 1965. AND
4 SUBSEQUENT SURGEON GENERAL'S REPORTS FOCUS MOSTLY
5 ON DEPENDENCE.

6 IN 1988 WE DECIDED THAT DEPENDENCE
7 AND ADDICTION WERE REALLY SIMILAR AND THAT
8 ADDICTION WAS UNDERSTOOD BY MANY PEOPLE BETTER IN
9 THE SENSE OF COMPULSIVE USE OF A DRUG. AND SO WE
10 WOULD USE BOTH TERMS TOGETHER. WE WOULD SAY
11 ADDICTION, WHICH IS THE SAME AS DEPENDENCE, BUT
12 ADDICTION IMPLYING THAT ONCE YOU START USING A
13 DRUG, IT'S OFTEN VERY DIFFICULT TO QUIT.

14 Q. IN YOUR SCIENTIFIC WRITINGS, WHEN
15 YOU USE TERMS LIKE -- LET ME JUST GET THIS STRAIGHT
16 HERE, ADDICTION AND DEPENDENCE, DO YOU USE THOSE
17 TWO TERMS INTERCHANGEABLY?

18 A. YES.

19 Q. OR ARE THEY DIFFERENT?

20 A. NO. I USE THOSE TERMS
21 INTERCHANGEABLY AND MANY OTHER SCIENTISTS DO. SOME
22 SCIENTISTS DON'T LIKE ADDICTION BECAUSE THEY THINK
23 IT REMINDS PEOPLE OF ILLEGAL DRUGS AND CRIMINALITY.

24 BUT MANY SCIENTISTS DO USE IT THE
25 WAY I DO, JUST RELATING TO, BASICALLY, A LOSS OF
26 CONTROL OVER DRUG USE.

27 Q. SAME QUESTION ABOUT HABITUATION.
28 NOW, THIS WRITER USES A -- APPARENTLY USED THESE

1 TWO TERMS INTERCHANGEABLY, HABITUATION OR
2 ADDICTION.

3 AND WHEN YOU WRITE IN SCIENTIFIC
4 WRITINGS, DO YOU USE THOSE TWO TERMS
5 INTERCHANGEABLY?

6 A. HARDLY ANYONE, I CAN'T THINK OF
7 ANYONE IN RECENT TIMES WHO HAS USED "HABITUATION."
8 THAT WAS A TERM THAT WAS DEVELOPED, AS I SAID, BY
9 THE WORLD HEALTH ORGANIZATION IN 1957 AND REALLY
10 SETS UP A DISTINCTION BETWEEN THAT AND ADDICTION.
11 THAT DOESN'T MAKE PHYSIOLOGICAL SENSE. SO IT IS
12 NOT USED ANY MORE.

13 Q. HERE'S THE BOTTOM LINE TO WHERE I
14 WAS GOING. OUT OF THIS PHILIP MORRIS DOCUMENT IN
15 1976, WHERE THIS MAN SAYS "ONCE ONE BECOMES
16 DEPENDENT UPON CIGARETTES, HABITUATION OR ADDICTION
17 ARE IMPELLING DRIVES TO CONTINUE." THAT STATEMENT
18 IS TOTALLY AT ODDS WITH WHAT CAME 18 YEARS LATER
19 FROM THE CHIEF EXECUTIVE OFFICER, IS IT NOT?

20 A. YES. CERTAINLY IT IS MISLEADING
21 BECAUSE EVEN IF ONE WANTS TO ARGUE THE DEFINITIONS,
22 THAT ADDICTION MUST MEAN INTOXICATION, I THINK IT'S
23 MISLEADING TO TELL PEOPLE IT'S NOT ADDICTING.
24 BECAUSE MOST PEOPLE, WHEN THEY THINK OF ADDICTING,
25 DON'T NECESSARILY THINK OF INTOXICATING. THEY
26 THINK ADDICTING MEANS THAT'S HARD TO QUIT.

27 AND SCIENTISTS HAVE KNOWN THAT,
28 TOBACCO INDUSTRY HAS KNOWN, THE DOCUMENTS WELL

1 DOCUMENT THAT PEOPLE SMOKE FOR NICOTINE AND THEY
2 HAVE A HARD TIME QUITTING. AND THAT WAS NOT AT ALL
3 CONVEYED IN THAT ADVERTISEMENT IN 1995.

4 Q. 4?

5 A. 4, EXCUSE ME.

6 Q. OKAY. ONE MORE PAGE OUT OF THIS
7 AND I HAVE ONE MORE DOCUMENT AFTERWARD.

8 THIS IS PAGE 7:

9 "ON DEEPER PROBING, THE
10 CIRCUMSTANCES IN WHICH SMOKING OCCURS
11 MAY BE GENERALIZED AS FOLLOWS:

12 "ONE, AS A NARCOTIC,
13 TRANQUILIZER, OR SEDATIVE. SMOKERS
14 REGULARLY USE CIGARETTES AT TIMES OF
15 STRESS. "

16 IT ALMOST SOUNDS LIKE YOU WERE
17 READING OFF OF THIS IN SOME OF YOUR EARLIER
18 TESTIMONY.

19 A. YES. I THINK IT'S STRIKING BECAUSE
20 PEOPLE SOMETIMES DON'T APPRECIATE THAT NICOTINE CAN
21 BE A -- CAN BE DIFFERENT THINGS. IT CAN HAVE
22 NARCOTIC TYPE EFFECTS. IT CAN HAVE TRANQUILIZING
23 EFFECTS, SEDATION, AND IS USED IN STRESS.

24 THIS IS INFORMATION THAT HAS BEEN
25 WELL-KNOWN TO SCIENTISTS AND TO THE INDUSTRY FOR
26 MANY YEARS.

27 Q. MANY YEARS, WE ARE TALKING GOING
28 BACK, THIS IS 1976?

1 A. YES.

2 Q. AND BEFORE?

3 A. AND BEFORE.

4 Q. HERE' S A LAST DOCUMENT. THIS IS
5 1980, AND THE' S DOCUMENT NUMBER 423. 00.

6 FIRST PAGE SHOWS, IT' S PHILIP
7 MORRIS U. S. A. , IT' S 1980, IT' S TO DR. SELIGMAN FROM
8 W. L. DUNN, AND THE SUBJECT IS THE NICOTINE RECEPTOR
9 PROGRAM

10 AND I' D LIKE TO READ WHAT IS
11 HIGHLIGHTED HERE IN YELLOW AND DISCUSS IT WITH YOU
12 AGAIN.

13 "THE PSYCHOPHARMACOLOGY OF
14 NICOTINE IS A HIGHLY VEXATIOUS TOPIC.
15 IT IS WHERE THE ACTION IS FOR THOSE
16 DOING FUNDAMENTAL RESEARCH ON SMOKING,
17 AND FROM WHERE MOST LIKELY WILL COME
18 SIGNIFICANT SCIENTIFIC DEVELOPMENTS
19 PROFOUNDLY INFLUENCING THE INDUSTRY.
20 YET IT IS WHERE OUR ATTORNEYS LEAST
21 WANT US TO BE, FOR TWO REASONS. IT IS
22 IMPORTANT TO HAVE THESE TWO REASONS
23 EXPRESSED AND DISTINGUISHED FROM ONE
24 ANOTHER. THE FIRST REASON IS THE
25 OLDEST AND IS IMPLICIT IN THE LEGAL
26 STRATEGY EMPLOYED OVER THE YEARS IN
27 DEFENDING CORPORATIONS WITHIN THE
28 INDUSTRY FROM THE CLAIMS OF HEIRS AND

1 ESTATES OF DECEASED SMOKERS: WE,
2 WITHIN THE INDUSTRY -- " NOW, THIS IS
3 PART OF A QUOTE, I HAVEN' T HIGHLIGHTED
4 THE WHOLE THING. "WE, WITHIN THE
5 INDUSTRY, ARE IGNORANT OF ANY
6 RELATIONSHIP BETWEEN SMOKING AND
7 DISEASE. "

8 AND IN THE SECOND PART THAT I HAVE
9 HIGHLIGHTED.

10 "WE ARE NOW BEING ALLOWED TO
11 CONDUCT RESEARCH ON THE IMMEDIATE
12 EFFECTS OF NICOTINE BECAUSE OF THIS
13 DISTINCTION. WE CAN WORK WITH
14 BIOLOGICAL SYSTEMS IMPLANTING --
15 EXCUSE ME -- WE CAN INJECT NICOTINE IN
16 RATS AND WE CAN PERFORM THE SURGERY
17 REQUIRED FOR IMPLANTING CANNULA. BUT
18 IN DOING SO, WE ARE ENGAGING IN
19 RESEARCH ON THE PHARMACOLOGICAL ACTION
20 OF NICOTINE, WHICH BRINGS US TO THE
21 SECOND CONCERN OF OUR ATTORNEYS, THIS
22 IS A MORE RECENT CONCERN ARISING FROM
23 INCREASINGLY FAVORABLE PROSPECTS FOR
24 THE SUCCESS OF A LEGISLATIVE EFFORT TO
25 TRANSFER AUTHORITY FOR THE REGULATION
26 OF TOBACCO MANUFACTURE TO A FEDERAL
27 AGENCY, F. D. A. , KNOWN TO HAVE
28 INTERESTS AND POWERS ANTITHETICAL TO

1 THE INTERESTS OF THE INDUSTRY. ANY
2 ACTION ON OUR PART, SUCH AS RESEARCH
3 ON THE PSYCHOPHARMACOLOGY OF NICOTINE,
4 WHICH IMPLICITLY OR EXPLICITLY TREATS
5 NICOTINE AS A DRUG, COULD WELL BE
6 VIEWED AS A TACIT ACKNOWLEDGMENT THAT
7 NICOTINE IS A DRUG. "

8 DO YOU HAVE AN OPINION THAT
9 NICOTINE IS A DRUG?

10 A. YES, IT IS A DRUG.

11 Q. THERE'S A COPY OF THIS. IT'S
12 SIGNED BY MR. DUNN. THERE IS A COPY TO T. S.
13 OSDENE, T. S. O.

14 NOW, AS A RESULT OF READING THESE
15 WORDS HERE, THE TOPIC THAT I AM DISCUSSING WITH YOU
16 IS, WAY BEFORE APRIL 15, 1994, DID PHILIP MORRIS
17 KNOW NICOTINE WAS ADDICTIVE, AND DOES THIS, DOES
18 THIS DOCUMENT THAT I JUST READ TO YOU, IS IT
19 SIGNIFICANT TO YOU IN ANSWERING THAT QUESTION?

20 A. YES.

21 Q. WHY?

22 A. WELL, DR. DUNN RESTATES, WHAT I
23 HAVE TALKED ABOUT ALREADY, THAT TO UNDERSTAND
24 SMOKING, AND TO UNDERSTAND THE BUSINESS OF SELLING
25 TOBACCO, YOU HAVE TO UNDERSTAND THE PSYCHOACTIVITY
26 OF NICOTINE, WHICH IS WHAT IT DOES TO BEHAVIOR AND
27 MOOD.

28 HE EXPRESSES SOME OF THE

1 FRUSTRATION WITH DOING IT BECAUSE OF THE INDUSTRY'S
2 CONCERN THAT IF THEY DO ANY RESEARCH, THE INDUSTRY
3 CAN'T CLAIM IGNORANCE OF HARM

4 MR. CARLTON: OBJECTION, YOUR HONOR, TO A
5 STATEMENT OF INTENT.

6 THE COURT: AGREED, SUSTAINED.

7 THE WITNESS: WHAT WAS STATED WAS THAT
8 ONE OF THE RISKS OF DOING RESEARCH IS THAT WE CAN'T
9 OR OUR ATTORNEYS CAN'T --

10 MR. CARLTON: OBJECTION, YOUR HONOR, THAT
11 MISCHARACTERIZES THE DOCUMENT.

12 THE COURT: SUSTAINED.

13 Q BY MR. PIUZE: I WILL TELL YOU
14 WHAT, THE JURY -- THAT WASN'T EXACTLY WHAT I WAS
15 GOING FOR.

16 A. OKAY.

17 Q. THE JURY CAN --

18 THE COURT: JUST ANSWER HIS QUESTION.

19 Q BY MR. PIUZE: I AM GOING TO ASK A
20 BETTER QUESTION. IT'S MY FAULT.

21 A. SORRY.

22 Q. ALMOST 12:00. MY EYE'S ON THE
23 CLOCK, PROBABLY OTHERS ARE, AND I ASKED A CRUMMY
24 QUESTION.

25 THE JURY CAN READ WHAT THE WORDS
26 SAY.

27 WE ARE TALKING PSYCHOPHARMACOLOGY
28 AND ALL THIS STUFF IN HERE THAT IS YOUR FIELD, ONE

1 OF YOUR FIELDS. DOES THE USE OF THESE WORDS IN
2 HERE, IN THIS CONTEXT, TELL YOU THAT IT WAS
3 UNDERSTOOD HERE THAT NICOTINE IS ADDICTIVE?

4 MR. CARLTON: OBJECTION, YOUR HONOR.

5 THE COURT: SUSTAINED.

6 MR. PIUZE: OKAY, THEN, THAT PROBABLY --

7 THE COURT: HE CAN TESTIFY AS TO HIS
8 UNDERSTANDING OF THOSE WORDS. BUT HE CAN'T TELL US
9 WHAT SOMEBODY ELSE WHO WROTE THE DOCUMENT INTENDED.

10 MR. PIUZE: THANK YOU.

11 THE COURT: FAIR ENOUGH.

12 MR. PIUZE: LIFE LINE.

13 Q BY MR. PIUZE: WHAT IS YOUR
14 UNDERSTANDING OF THOSE WORDS?

15 A. MY UNDERSTANDING IS THAT NICOTINE
16 IS WHAT MAINTAINS SMOKING. IT'S PSYCHOACTIVE. AND
17 THAT IF -- AND IF ONE -- WELL, AND THAT DR. DUNN
18 UNDERSTOOD --

19 MR. CARLTON: OBJECTION.

20 THE COURT: SUSTAINED.

21 THE WITNESS: OR --

22 THE COURT: SIR, WE DON'T WANT YOU
23 TESTIFYING AS TO WHAT SOMEBODY ELSE UNDERSTOOD.

24 THE WITNESS: WELL, THAT NICOTINE IS A
25 DRUG, NO MATTER WHAT THE CONCERNS OF ATTORNEYS OR
26 WHATEVER, THAT NICOTINE IS A DRUG AND THAT'S WHAT
27 HE STATED.

28 MR. PIUZE: OKAY. THANK YOU.

1 YOUR HONOR, I' D LIKE TO DONATE THE
2 NEXT 13 SECONDS TO THE JURY.

3 THE COURT: WELL, ALL RIGHT. THANK YOU
4 VERY MUCH.

5 LADIES AND GENTLEMEN OF THE JURY,
6 IT' S TIME NOW TO TAKE OUR NOON BREAK.

7 WE WILL BE BACK AT 1:30 THIS
8 AFTERNOON. DON' T DISCUSS THE CASE WITH ANYONE.

9 SIR, YOU MAY STEP DOWN.

10

11 (AT 12 NOON, THE LUNCH
12 RECESS WAS TAKEN TO
13 1:30 P. M OF THE SAME DAY.)

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