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THE CIGARETTE CONTROVERSY

Eight Questions and Answers

THE TOBACCO INSTITUTE

The facts and statements in this document are presented by The Tobacco Institute in the belief that the many controversial questions concerning smoking and health must ultimately be resolved by scientific research and knowledge -- and that full, free, and informed public discussion is essential.

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PREFACE

For many adults, cigarette smoking is one of life's pleasures.

Does it cause illness -- even death? No one knows.

The great preponderance of the evidence is purely statistical. Many respected scientists find that cigarette smoking has not been established as a cause of human disease.

Many others believe that it has been. The controversy concerns millions of persons -- smokers and nonsmokers. This document presents some relevant facts.

Until colonization of the Americas, tobacco was unknown to the rest of the world. A short time later, in the first half of the 17th Century, King James I of England called the use of tobacco "a custom loathsome to the eye, hateful the the nose, harmful to the brain, dangerous to the lungs."

At about the same time, one Dr. Roger Marbecke, in a work entitled "A Defence of Tobacco", recommended smoking in moderation as beneficial.

The controversy had begun.

It continued, little changed, until recent years. Amid rising longevity, rapidly spreading use of the internal combustion engine, growing urbanization, a quickening pace of life and a reported increase in lung cancer, there has been a steadily mounting barrage of charges against smoking.

In 1964, a panel of advisers to the United States Surgeon General agreed that cigarette smoking was a cause of lung cancer.

They further declared smoking to be a cause of cancer of the larynx and chronic bronchitis. They suspected it of causing heart disease.

In 1965 the U.S. Congress said "cigarette smoking may be hazardous to your health."

From these developments have come many warnings: "Don't smoke." "Stop smoking." A concerned public needs the truth about smoking and health. This requires that both sides of the controversy must be known. Statistics are not enough. Why, if smoking does cause disease, has it not been proved how this occurs?

Why, if smoking does cause disease, has no ingredient as found in smoke been identified as the causative factor?

The type of malignancy for which smoking is most often blamed is "epidermoid" lung cancer. Have researchers ever produced this in animals with cigarette smoke? No. Countless attempts have failed.

Why do so many more men than women get lung cancer? No one knows. If cigarette smoking is indeed the hazard it is said to be, the roughly six-to-one difference is most perplexing.

Why is it that lung cancer often does not occur in those parts of the lung which are exposed to the most smoke? No one knows.

Do smokers get lung cancer at an earlier age than nonsmokers? Apparently not. Lung cancer occurs most often around age 60 -- no matter how long or how much a person has smoked, or whether he has smoked at all.

Do statistics prove that cigarette smoking is a cause of lung cancer, heart disease, emphysema, bronchitis, and other diseases? It is a cardinal principle that statistics alone cannot prove the cause of any disease.

Has any new evidence that actually convicts cigarettes been reported in recent years? No. Interestingly, some of the most suggestive new evidence has implicated factors other than cigarettes. The role of emotional stress in disease, for instance.

Does smoking cause disease? That question is still an open one.

I DOES SCIENTIFIC EVIDENCE REALLY ESTABLISH A CASE AGAINST CIGARETTES?

No research demonstrates that any ingredient as found in cigarette smoke causes cancer or cardiovascular, respiratory or other illnesses in humans. No research has demonstrated any physiological process through which cigarette smoke results in illness.

As far as lung cancer is concerned, researchers have reasoned that if it is caused by cigarette smoking, then as smoking increased, it should have increased proportionately in all areas of the body exposed to smoke.

It has been found that this is not the case. There has been no increase of cancer to correspond with the increase in smoking in all parts of the respiratory system, including the mouth,[1] nose and larynx.[2] In the lung, cancer often does not occur in those areas which are exposed to the most smoke.[3]

Much weight has been given, also, to so-called "changes" in the lungs of smokers. But such "changes" also occur in the trachea[4] where cancer is a relative rarity.[5] Further, studies have shown that the same "changes" are found in both smokers and non-smokers.[6] They are found even in children.[7] And no one has ever demonstrated that these "changes" actually do lead to cancer.[8]

One medical authority summed up, in a statement to the U.S. Senate: "There is no valid experimental evidence confirming the smoking-lung cancer theory."

Thus, the anti-smoking charges rest almost entirely on statistical associations, providing the critics of cigarettes with a "guilt by association" basis for their claim that cigarettes do indeed cause disease.

II WHAT ARE SOME OF THE MAJOR FALLACIES IN THE STATISTICAL CASE AGAINST CIGARETTES?

The statistical association between smoking and disease continued to be a major and widely reported subject following the 1964 appearance of the U.S. Surgeon General's Advisory Committee Report, "Smoking and Health."

Less publicized are the continuing objections of qualified experts -- doctors, scientists, statisticians -- who find the statistical case less than convincing.

In fact, they find major fallacies in the statistical case against cigarettes. Consider the following:

1. Nonsmokers and Illness

Nonsmokers suffer from the same heart and lung diseases as smokers. As a matter of fact, these diseases existed long before cigarettes became popular.[10, 11] Therefore, smoking obviously is not the cause, and may well not be even a cause of such diseases.

2. The Disease-Rate Question

Authorities differ over how much of the reported increases in diseases associated with smoking is apparent, and how much is real.

For example, some suggest that the reported increase in lung cancer incidence is due in great part to improved diagnosis.[12] Many earlier cases were undoubtedly identified as "consumption", "pneumonia" or "lung abscess".[13] Now lung cancer is more accurately diagnosed -- due to the use of X-rays, bronchoscopes and other new diagnostic techniques.[14]

As to heart ailments, an English expert has concluded that there may have been no increased incidence of coronary heart disease in recent years, and that there is no good evidence of an increased incidence of coronary thrombosis. He suggests that changes in disease descriptions, the age mix of the population and postmortem techniques are among reasons why reported disease rates show increases.[15]

3. The "Dose-Response" Mystery

The cigarette charges appear contrary to a recognized "dose-response" concept: If cigarettes do cause cancer, then the earlier a person starts to smoke and the more he smokes, the sooner he would be expected to get lung cancer.

Yet while people are smoking earlier and more heavily with each generation, the peak age for lung cancer remains about the same,[16] at around 60. If anything, this peak age may now be moving upward.[17]

4. The Sex Puzzle

Equally puzzling in the statistical findings is the gap between lung cancer rates in men and women.

Forty years ago, relatively few women smoked cigarettes. If smoking causes cancer, one would expect that as more women took up smoking, their lung-cancer rate would approach that of men. But the gap between male and female lung-cancer death rates has actually widened -- and the reason has yet to be adequately explained.

A 1968 report to Congress by the U.S. Public Health Service showed that in 1950 the lung cancer fatality rate among men exceeded the female rate by 4.7 to one; and that by 1965 the difference was 6.1 to one.[18]

5. The Geographic Puzzle

If smoking caused lung cancer, it would be reasonable to expect more of the disease in countries where more cigarettes are smoked per capita. But consider these examples:

A. Although people in Great Britain smoke fewer cigarettes per person than Americans, the incidence of lung cancer in Britain is <u>twice as high</u>.

B. Per capita cigarette smoking in the Netherlands is also less than it is in the U.S., yet lung cancer death rates are about <u>one-third higher</u> than here.

C. Australians smoke almost as many cigarettes as do the British, yet have less than one-half the incidence of lung cancer.[19, 20]

6. The Statistics Are Spread Too Thin

Statistics have been used to link cigarette smoking with nearly two dozen diseases, including lung cancer, heart disease, bronchitis, emphysema, cirrhosis of the liver -- nearly every ailment that afflicts the human body.[21]

As one noted medical statistician has observed, "The idea that cigarette smoking causes all these many deaths from all these many causes does indeed seem seriously questionable. There is not any scientifically known pharmacologic or physical explanation for so widespread and multifarious an effect".[22]

III ARE THERE OTHER PUZZLING CONFUSIONS IN THE STATISTICAL CASE?

The smoking and health figures are a mine of contradictions and paradoxes. As survey after survey appears, the list of confusions mounts. Everywhere there are questions which need answers -- otherwise the statistical patterns dissolve. And the questions have no answers.

Here is a sampling of the contradictions in the reports used to indict smoking:

1. A 1967 U.S. government health survey reported that people who smoked ten cigarettes or less a day had a better overall record than nonsmokers.[23]
2. The same U.S. government survey also reported that the incidence of heart conditions and hypertension in women smokers was only about half that in women who never smoked.[24]
3. Heart disease, in another report, was less frequent among ex-smokers than among non-smokers.[25]

Even the Surgeon General's Advisory Committee conceded that the seven major studies it had considered in writing its 1964 report were not designed to represent the U.S. population.

Said the report: "Any answer to the question 'to what general populations of men can the results be applied?', must involve an element of unverifiable judgment."[26] But this candor disappeared in subsequent official reports on smoking and health, even though some of the same studies were used to expand allegations about smoking and higher death rates.

In a British study that greatly stimulated the cigarette controversy, smokers who inhaled were found to have a lower incidence of lung cancer than

those who did not inhale.

This led Sir Ronald Fisher, geneticist and world-famous statistician, to comment:

"Should not these workers have let the world know, not only that they had discovered the cause of lung cancer (cigarettes), but also that they had discovered the means of its prevention (inhaling cigarette smoke)?"[27]

Take another aspect of this remarkable "inhalation puzzle."

One compound often singled out as particularly suspect is benzpyrene.[28] The Surgeon General's Advisory Committee reported the isolation of nearly ten times as much benzpyrene from pipe smoke as from cigarette smoke.[29] Yet the same report showed that pipe smokers who inhale have death rates apparently no different from nonsmokers.[30]

To add to the confusion, the same statistics showed a higher mortality rate for former pipe smokers than for present pipe smokers.[31]

IV WHAT HAPPENS TO THE RESEARCH THAT DOES NOT CONDEMN CIGARETTES?

It is minimized. Overlooked. Or -- flatly ignored by the anti-smoking interests.

The truth remains: A great deal of research does not support the ritually repeated charges against smoking. In fact, much research suggests some vastly different conclusions. Some examples:

1. From an analysis of hundreds of autopsies conducted at the New York Veterans Administration Hospital: No significant relationship was found between cigarette smoking and heart disease.[32]
2. From lung cancer research published in West Germany in 1964, covering 26,000 autopsy records dating back to the early 1900's, plus 1,229 current cases: No significant relationship was found between cigarette smoking and lung cancer.[33]
3. From a 1964 study examining 1,000 cases of lung cancer at Mercy Hospital in Pittsburgh, Pennsylvania: Approximately half (474) of these lung cancer patients did not smoke.[34]

These and other research studies further explain why many of the nation's most highly qualified doctors have taken strong positions against the unsupported condemnation of smoking and have urged additional study. These doctors, it should be noted, are not for cigarettes -- they simply do not believe that the case has been proved against cigarettes.

The disagreement of these doctors is a matter of Congressional record. The following statements are drawn from hearings before the U.S. Senate:

"(T)he conclusions are unwarranted...there is no valid experimental evidence confirming the smoking-lung cancer theory."[35]

"(T)he evidence linking heart attacks with cigarette smoking is far from conclusive and...such a relationship should not be presented to the public as an established fact."[36]

"(T)he presumed link between cigarette smoking and chronic bronchitis and emphysema is only a theory proposed on the basis of data which are, to say the least, meager and inconclusive."[37]

"(T)here is a large volume of good scientific evidence which tends to refute the premise that cigarette smoking is causally related to cancer of the lung."[38]

"(A)n apparent statistical association has spotlighted a convenient though probably innocent suspect."[39]

These statements, of course, are not to be understood as a commitment <u>for</u> cigarettes; they are intended to represent the little-publicized current of medical judgment that finds the case <u>against</u> cigarettes far from proved.

It will be valuable to note four facts before we go on.

First, as we have seen, the anti-smoking side of the controversy has not been completely successful in its effort to win scientific acceptance of its charges.

Second, there <u>is</u> awareness that not all research condemns smoking.

Third, much of the statistical research now used to condemn smoking is flawed, contradictory, and vulnerable to challenge.

Fourth, experimental research has not substantiated the charges against smoking.

Those facts, together, may help explain why some critics of smoking have reacted by adopting particularly aggressive positions -- reaching for the most dramatic and "sweeping" of statistical claims. Reaching, it often appears, well beyond statistical fact.

Let us turn, next, to what is perhaps the most striking illustration of this.

V THE MOST MISLEADING STATISTIC ON CIGARETTES: HOW WAS IT ARRIVED AT?

The misleading claim that "300,000 excess deaths a year" are caused by cigarettes -- a factual figure? No. It is actually quite speculative. Where it comes from is worth retracing.

The Surgeon General's Advisory Committee Report did not offer any such figure. It said that any such figure "cannot be accurately estimated."[40]

The assistant Surgeon General, who was also the Committee's Vice-Chairman, told the press at the time:

"The Committee considered the possibility of trying to make such calculations, but it involves making so many assumptions that the Committee felt that it should not attempt this, that it might be as misleading as it was informing."[41]

Yet, on the first anniversary of the report, on January 11, 1965, an ex-advertising man attacked cigarettes for causing 125,000 to 300,000 deaths a year.[42] He was at the time chairman of an organization called the National Interagency Council on Smoking and Health.

Soon, a government official was saying in a speech that smoking was responsible for <u>at least</u> 125,000 premature deaths a year.

His source, he said, was the advertising man.[43]

In a hearing before the U.S. Congress, the advertising man was asked where <u>he</u> got his figures. His reply: From the government![44]

So, the ball was shot back to the government man, who then counted up 138,000 <u>deaths</u> -- 32,500 from lung cancer, 80,000 from coronary disease, 16,500 from bronchitis and emphysema, and 8,000 from cancer of the oral cavity, esophagus, larynx and bladder.[45]

To achieve this figure, the government official had <u>arbitrarily</u> included several diseases which were <u>not claimed</u> even by the Surgeon General's Advisory

Committee Report to be causally related to smoking.

Later, the then U.S. Surgeon General undertook to explain the 300,000 figure. He did this by:

1. Taking as his basis the unsupported explanation of 138,000 deaths.
2. Adding to it another unsupported 102,000 deaths -- "from diseases where the relationship to cigarette smoking, while not so obvious, is nevertheless clearly indicated."
3. Adding to this another unsupported but "reasonable estimate" of 60,000 excess deaths for women, who had not been included in the earlier estimates.[46]

In the public press, this game of statistical volleyball -- which was utterly without factual support -- was never exposed. But 300,000 is simple, rounded, and a very large statistic. It is easy to remember, easy to quote -- and meaningless.

Publicity-oriented statistics like the notorious 300,000 figure can be worse than meaningless. They can confirm prejudice and close the mind -- and even deter further needed research, as medical observers have warned.

VI HAVE YOU BEEN MISLEAD BY "SCIENTIFIC SURVEYS" ABOUT CIGARETTES?

A statistical survey is only as good as its sources of information.

Take one of the most widely heralded pieces of statistical research ever done for the government -- a report called "Cigarette Smoking and Health Characteristics."

Three years in the making, this report reflected detailed interviews in about 42,000 American households, probing the smoking habits and medical histories of some 134,000 Americans.[47]

You would suppose that the information in this study, which was made public in 1967, came first-hand from smokers themselves. It should have. Much of it, indeed, should have come from the smokers' doctors.

Data on the smoking habits and health record of three out of five men in the survey who had ever smoked did not even come from the men themselves.[48]

And none of it came from their doctors.

The information came from someone who happened to answer the door when the interviewer called.

Picture, for example, a ring of the doorbell. A 19-year-old greets the interviewer.[49] Her parents are away, she is interested -- and one of America's most ambitious "medical studies" is under way.

Does your father have any ailments, conditions, or problems with his health? Does he smoke? During the period when he was smoking the most, how many cigarettes a day did he usually smoke?[50] (Could she know? Could even her father remember precisely?)

Our teenager is now in the midst of a detailed five-page questionnaire. Against the chance she might overlook an ailment, the interviewer is armed with a list of 28 "conditions" relevant to his task. These are read out, in turn, and the willing teenager remembers -- or makes her diagnosis.

The list starts with asthma and tuberculosis. It ends with chronic skin trouble, rupture, and prostate trouble. And it includes varicose veins, rheumatism, goiter, "any allergy", mental illness, chronic nervous trouble, kidney stones, and hemorrhoids.[51]

The smoker himself might have had a hard time making such compliceted diagnoses. Even his doctor might not have the facts.

Regardless, the on-the-spot diagnostic data was recorded. Then assembled, tabulated, and given the weight of laboratory findings -- to two decimal places.

Publicity releases were drafted, distributed to the press, and the nation received its latest reports of "research" on smoking and health.

Along with a misunderstanding: that this poll was indeed scientific research -- and that it offered authoritative medical fact.

It would have been hard to miss the headlines and news stories. The publicists' work was well done.

In another instance, in 1966 a government official said, in a widely publicized speech, that many "studies" published since the 1964 Surgeon General's Advisory Committee Report "further confirm the Committee's conclusions" on smoking and health.[52] To back his contention, the government furnished a bibliography of some 2,000 items.

But what were those "studies"?

Most of them, it turned out, were not studies supporting the government official's statement. Included were:

1. Letters to magazine or newspaper editors.
2. Articles of opinion -- including items in "Good Housekeeping",[53,54] "The Saturday Evening Post",[55-59] and "Playboy",[60] all written by laymen, one of whom was poet-humorist Ogden Nash explaining why he was continuing to smoke.[61]

3. Papers already included in the 1964 report.

4. Studies published long before the 1964 report.

   Two of the listed publications, in fact, dated back to the 1800's.

5. References to anti-cigarette campaigns.

As for the other papers, most repeated earlier findings and many actually conflicted with the anti-smoking premise -- showing no association between smoking and lung cancer or between smoking and heart disease.

VII ARE SMOKERS A "DIFFERENT KIND OF PEOPLE"?

Eminent doctors and scientists increasingly suggest this may be so.

Authorities point out that there are patterns of behavior and background which differ between smokers and nonsmokers, when considered as groups. (It may be that some smokers are also different from other smokers -- different enough to affect reported disease patterns for the whole group of smokers.) Here are some reported findings:

Smokers generally are more communicative. They are more creative than nonsmokers -- more energetic,[62] more volatile.[63]

They drink more black coffee and liquor.[64] They marry more often.[65] They prefer spicy or salty foods in preference to blander diets.[66] They participate in more sports.[67] They change jobs more often,[68] evidencing, perhaps, what one researcher has described as the smokers' search "for aims and purposes."[69]

As children, they were more independent.[70] As adults, they are more outgoing -- living, so to speak, more in "overdrive."[71]

They differ in family background as well. They are more likely to have parents with heart disease and hypertension.[72]

A "different kind of people", it appears -- with smoking being one more difference in a comprehensive pattern of differences. Many authorities are convinced that here is a consideration with a real and possibly critical bearing on the smoking-health controversy.

And, as such, it is one of a growing number of considerations which are unsettling attempts to find in smoking a cause of ill health.

Why are the differences important? People who smoke apparently tend to differ quite importantly from people who do not -- in their heredity, in constitutional makeup, in patterns of life, in the more demanding pressures under

which they have chosen to live.

Are they the kind of people who, expectably, would have higher illness rates than nonsmokers -- because of the kind of people they happen to be?

The Role of Heredity

Evidence of the role heredity may play comes from Sweden. In that country, researchers studied sets of twins -- one twin a smoker, the other a nonsmoker.

Comparisons between smoking and nonsmoking twins showed no difference in the relative health of their heart and circulatory systems.

Heredity appeared to be the decisive factor in the health of the heart.[73]

The Role of Emotional Stress

Cancer researchers have noted the mounting evidence that emotional and psychological factors may be of crucial importance in an individual's susceptibility to disease.

"Data gathered here and abroad," "The New York Times" summed up recently, "support the view that the way a person handles certain emotional stresses may be a determining factor in whether he develops cancer."[74]

As research data accumulates, more and more factors are under suspicion as contributors to the illnesses for which smoking is commonly blamed.

The possible role of air pollution is being more closely studied.[75] Virus research is being broadened.[76] Certain occupational hazards[77] and stresses[78] are suspected. Enzymes may play a role.[79]

Obviously, much more work must be done.

Too little is yet known about the psychological, physical and genetic differences between people who smoke and people who do not.

More data are needed about the incredible number of variables that can modify or even control a person's predisposition to disease.

More research is needed on the ways in which all factors develop, combine

and interact -- differently in each individual, leading to illness in some cases, but not in others.

As one leading medical specialist cautioned, in his testimony before the U.S. Senate:

"The continuing need for honest research in seeking the answer to this unsolved problem cannot be sidestepped merely because an apparent statistical association has spotlighted a convenient though probably innocent suspect."[80]

The problem is not a simple one. Too many factors are involved. And until their roles and their relationships are understood, no one can be sure about the role of smoking.

Only further research can provide the answers.

VIII WHAT ARE THE TOBACCO PEOPLE DOING ABOUT SMOKING AND HEALTH?

A great deal. Far more, in fact, than most people realize.

The tobacco industry has not publicized the research it has been supporting with respect to the smoking-health controversy. Outside the medical and scientific communities, the work is little known.

The tobacco industry is funding more scientific research into the problems than any other source, governmental or private.[81]

From the beginning, the industry's policy has been to work -- as dispassionately as possible -- toward a conclusive, scientific understanding of the actual facts, whatever these facts turn out to be.

The American Medical Association, both a close observer of and participant in the cigarette controversy, has emphasized that although epidemiological and correlational studies have associated smoking with a number of diseases -- including cancer, coronary disease and emphysema -- their actual causes remain obscure. Only further research, AMA believes, will serve to clarify the picture.

In 1964, the AMA House of Delegates adopted as official policy the statement that there is "a significant relationship between cigarette smoking and the incidence of lung cancer and certain other diseases, and cigarette smoking is a serious health hazard."[82]

AMA then authorized its Education and Research Foundation to begin a long-range scientific study of tobacco and health. Since then, tobacco companies in the U.S. have pledged $18 million in support of the project -- no strings attached -- over a ten-year period. The money is spent as the Foundation sees fit.[83]

In the summer of 1968, the Foundation gave its first formal report covering the work to date of 104 investigators or teams in 50 institutions in the U.S. and five other countries. Referring to the supported research, the report

stated:

"(T)he problems related to establishing any kind of cause and effect relationship between tobacco use and health are far more complex than had been supposed...

"It is evident that we have a long hard road to travel and that this will be done slowly. Many years may be required to gather sufficient experimental facts and data to clear what is at best a muddied picture."[84]

Providing tobacco company funds for AMA research is only part of the story.

Together, as an industry, cigarette makers have committed unrestricted funds to the multiplying projects of The Council for Tobacco Research-USA.

The Council alone has awarded millions in grants to some 300 scientists at more than 150 hospitals, universities and research organizations. A Scientific Advisory Board determines these grants. It is composed of distinguished, independent scientists affiliated with leading academic, research and governmental institutions. CTR support includes full freedom to perform research and publish results, with no strings attached. And, to date, nearly 600 scientific papers reporting the research have been published by grant recipients.[85]

Yet, as all of these investigators recognize -- and as many other scientists and doctors are aware -- the work is nowhere near an end.

The research commitments of industry, government and voluntary agencies grow steadily larger. Necessarily, if the smoking-health controversy is ever to be resolved.

And it must be.

In the only way possible: by the facts.

Suspicion and unconfirmed accusation are so much easier than knowledge.

But they are unworthy substitutes.

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