The Health Consequences of Smoking

THE CHANGING CIGARETTE

a report of the Surgeon General

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Office on Smoking and Health

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THE SECRETARY OF HEALTH AND HUMAN SERVICES
WASHINGTON, D.C. 20201

The Honorable Thomas P. O'Neill, Jr.
Speaker of the House of Representatives
Washington, D. C. 20515

Dear Mr. Speaker:

I hereby submit to you the Health Consequences of Smoking-The Changing Cigarette. This report is in response to two Congressional requirements. The Public Health Cigarette Smoking Act of 1969 calls upon this Department to issue annual reports on the health consequences of smoking and to submit legislative recommendations. Section 403 of the Health Services and Centers Amendments of 1978 asks for a "study or studies of (1) the relative health risks associated with smoking cigarettes of varying levels of tar, nicotine, and carbon monoxide; and (2) the health risks associated with smoking cigarettes containing any substances commonly added to commercially manufactured cigarettes."

In preparing this report, the scientists and scientific agencies of this Department have reviewed all current scientific evidence and have concluded that the search for less hazardous cigarettes has not yielded a product which can be considered "safe." The person who changes to a cigarette with lower measured yields may reduce certain hazards of smoking, but the benefits will be small compared to the benefits of quitting entirely.

The most important conclusion of this report is that government and the private community alike must intensify their efforts to remind the public of the hazards of smoking and to assist those who do smoke to quit. We must step up our programs to persuade young people not to take up the habit in the first place.

This report also notes that we must continue to monitor the changing cigarette to insure that when new cigarette products appear they do not bring with them new hazards to health. Throughout this report the need to know about substances added to cigarettes is stated repeatedly. At present, there is no mechanism by which government or the scientific community can require disclosure of these additives, which must obviously be a first step in assessing their health effects. This needs to be corrected by voluntary action or, if necessary, by legislation.

On a number of occasions previous Secretaries of this Department have called for new and stronger health warnings, the establishment of maximum levels of "tar" and nicotine and the disclosure of more information about cigarette products. This 1981 report establishes the need to move forward on these recommendations. In particular, I believe the manufacturers should list yields of "tar", nicotine and other hazardous components on their packages and in their advertising with appropriate explanatory information on the health significance of these measurements. This would be a minimum first step in giving cigarette consumers full and adequate information about the products they are buying.

Sincerely yours,

Patricia Roberts Harris

Enclosure

PREFACE

This is the fourteenth report on the health consequences of smoking which the Public Health Service has issued since 1964 and the third to be issued during my term as Surgeon General. By Congressional directive it considers the relative health effects of cigarettes with varying levels of "tar" and nicotine and the relative health effects of cigarette additives.

At the present time, a third of all smokers, some 18 million persons, are smoking cigarettes with measured yields of less than 15 mg "tar," and this number is increasing by approximately 5 percent per year. Most of these persons have changed to lower yield cigarettes in the expectation that this will somehow reduce the hazards of their smoking. It is in the interest of these persons, and in the public interest, to know to what extent these expectations are justified.

In 1966, the Public Health Service held that "The preponderance of scientific evidence strongly suggests that the lower the tar and nicotine content of cigarette smoke, the less harmful would be the effect."

In 1979, the Public Health Service confirmed this statement, citing new evidence, but was more cautious. "In presenting information to the public," I wrote in the Preface to the 1979 Report, "three caveats are in order: consumers should be advised to consider not only levels of tar and nicotine but also (when the evidence becomes available) levels of other tobacco smoke constituents, including carbon monoxide. They should be warned that, in shifting to a less hazardous cigarette, they may in fact increase their hazard if they begin smoking more cigarettes or inhaling more deeply. And, most of all, they should be cautioned that even the lowest yield of cigarettes presents health hazards very much higher than would be encountered if they smoked no cigarettes at all, and that the single most effective way to reduce the hazards associated with smoking is to quit."

In this 1981 Report, the Public Health Service has reviewed the question again and in far greater depth than before. Overall, our judgment is unchanged from that of 1966 and 1979: smokers who are unwilling or as yet unable to quit are well advised to switch to cigarettes yielding less "tar" and nicotine, provided they do not increase their smoking or change their smoking in other ways. But our

new review raises new questions and suggests an even more cautious approach to the issue.

Here are the basic findings of this Report:

1. There is no safe cigarette and no safe level of consumption.
2. Smoking cigarettes with lower yields of "tar" and nicotine reduces the risk of lung cancer and, to some extent, improves the smoker's chance for longer life, provided there is no compensatory increase in the amount smoked. However, the benefits are minimal in comparison with giving up cigarettes entirely. The single most effective way to reduce hazards of smoking continues to be that of quitting entirely.
3. It is not clear what reductions in risk may occur in the case of diseases other than lung cancer. The evidence in the case of cardiovascular disease is too limited to warrant a conclusion, nor is there enough information on which to base a judgment in the case of chronic obstructive lung disease. In the case of smoking's effects on the fetus and newborn, there is no evidence that changing to a lower "tar" and nicotine cigarette has any effect at all on reducing risk.
4. Carbon monoxide has been impugned as a harmful constituent of cigarette smoke. There is no evidence available, however, that permits a determination of changes in the risk of diseases due to variations in carbon monoxide levels.
5. Smokers may increase the number of cigarettes they smoke and inhale more deeply when they switch to lower yield cigarettes. Compensatory behavior may negate any advantage of the lower yield product or even increase the health risk.
6. The "tar" and nicotine yields obtained by present testing methods do not correspond to the dosages that the individual smokers receive: in some cases they may seriously underestimate these dosages.
7. A final question is unresolved, whether the new cigarettes being produced today introduce new risks through their design, filtering mechanisms, tobacco ingredients, or additives. The chief concern is additives. The Public Health Service has been unable to assess the relative risks of cigarette additives because information was not available from manufacturers as to what these additives are.

In evaluating the public health significance of the finding of reduced risk of lung cancer, it is important to recognize that the largest component of excess mortality caused by smoking is cardiovascular disease deaths. There is not sufficient evidence to conclude that use of lower "tar" and nicotine cigarettes causes any reduction in this burden. The same is true of the other major diseases caused by cigarette smoking, most notably chronic obstructive lung disease and adverse effects on pregnancy.

These findings raise important questions of public policy. Some appear to be easily resolved. It should be possible to work out procedures so that cigarette manufacturers can disclose the additives they use while still protecting their legitimate interest in trade secrets; an effort to accomplish this is now underway. It should also be possible to develop better methodologies to measure smoke constituents, although no machine will ever be able to duplicate human smoking behavior exactly. And longitudinal surveys are now being carried on in an effort to monitor smoking behavior, and to help answer some of the behavioral questions raised in this Report.

Other questions pose greater difficulty. A common thread running through the sections of the Report is that too much reliance in the past has been placed on the nonselective measure of "tar" as a measure of risk to the neglect of other constituents and approaches to risk assessment. Additional epidemiologic and bioassay work is required, as is a better definition of the fundamental mechanisms of smoking-related disease. Further study is necessary to examine the addictive nature of smoking and its impact on initiation, maintenance, and cessation, especially in light of the recent statement of the National Drug Abuse Advisory Council that cigarette smoking is addictive. These questions cannot be answered quickly or without expenditure of scientific resources.

The questions raised by this Report suggest action in both the public and private sector.

In the research community, a research plan is needed to enable us to monitor the changing cigarette and to answer the many research questions put forth in this Report, with special emphasis on the issues of initiation and cessation. New measures and markers of relative toxicity are needed to supplement "tar" and nicotine. As stated, a voluntary disclosure and testing program needs to be developed with cigarette manufacturers to assess the relative health risks of cigarette additives and to protect against new hazards.

In the regulatory area, this Report suggests the need to increase the public's access to information about the product it buys. Advertisements and packages alike should display yield figures more prominently, including measures of carbon monoxide and possibly other hazardous ingredients. Marketing terms such as "low-low" and "ultra-low" need to be standardized.

In the area of public information and education, much more needs to be done both by the Government and by private health and educational agencies. The overriding objective must be to persuade young people not to take up smoking and to encourage present smokers to quit. Smokers of the lower yield cigarettes should be warned not to begin smoking more cigarettes or inhaling more deeply. Pregnant women should be cautioned that lower yield cigarettes are not an alternative to quitting.

Since 1964, when the first Public Health Service Report was issued, smoking has declined in the United States from 40.3 percent of the population to 32.5 percent. Per capita consumption of cigarettes is now at the lowest level since 1957. There is less smoking by boys than in many years, and smoking by girls has declined from the higher levels of the mid-1970s. This is a tribute to the educational efforts of our teachers, of our health professionals, and of our educational and health agencies. There is every reason to hope and believe these trends will continue.

Yet 54 million Americans continue to smoke, unwilling or unable to quit. This population is at extra risk of lung cancer, heart disease, chronic lung disease, and other diseases; it is a population with a life expectancy months and years less than the population of nonsmokers. The evidence presented in this Report shows that there is no "safe" cigarette available to these smokers, but that some cigarettes may be less hazardous than others, reducing the risks of smoking in a limited and selective fashion.

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January 12, 1981

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