

SMOKING AND HEALTH

*Summary of a Report of
The Royal College of Physicians of London
on Smoking
in relation to
Cancer of the Lung
and
Other Diseases*

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SUMMARY

Introduction

Several serious diseases, in particular lung cancer, affect smokers more often than non-smokers. Cigarette smokers have the greatest risk of dying from these diseases, and the risk is greater for the heavier smokers. The many deaths caused by these diseases present a challenge to medicine, in so far as they are due to smoking they should be preventable. This report is intended to give to doctors and others evidence on the hazards of smoking so that they may decide what should be done (*paras. 1-3*).

History of Smoking

After its introduction to Europe in the 16th century, tobacco smoking, mostly in pipes, rapidly became popular. It has always had its advocates and opponents, but only recently has scientific study produced valid evidence of its ill-effects upon health. Cigarettes have largely replaced other forms of smoking in the past seventy years, during which time tobacco consumption has steadily increased. It is still increasing. Women hardly ever smoked before 1920: since then they have smoked steadily increasing numbers of cigarettes (*Figure 1, p. 3*) (*paras. 5-6*).

Present Smoking Habits

Three-quarters of the men and half of the women in Britain smoke. Men smoke more heavily than women. Smoking is now widespread among schoolchildren, especially boys. (*Figures 2 and 3, pp. 5 and 7*) (*paras. 7-8*). Many doctors have given up smoking since the dangers of the habit have become apparent: only half of

them now smoke and less than a third smoke cigarettes (*Figures 4 and 5, pp. 9 and 11*) (*paras. 9 and 11*).

Advertising of Tobacco. There has been a steep increase in expenditure on advertisements of tobacco goods recently. Over 11 million pounds was spent on such advertisements in 1960 (*Table 1, p. 6; Figure 6, p. 13*). The increase has mostly been devoted to advertising cigarettes and many recent advertisements have been aimed at young people. It cannot, however, be assumed that advertisements are responsible for the continuing increase in tobacco consumption today (*paras. 10-11*).

Chemistry and Pharmacology of Tobacco Smoke

Tobacco smoke is complex in composition. Its most important components are: nicotine which acts on the heart, blood vessels, digestive tract, kidneys and nervous system; minute amounts of various substances which can produce cancer; and irritants which chiefly affect the bronchial tubes. The amounts of carbon monoxide and arsenic in the smoke are probably too small to be harmful (*paras. 12-22*).

Smoking and Cancer of the Lung

There has been a great increase in deaths from this disease in many countries during the past 45 years (*Figure 7, p. 15*). Some of this increase may be due to better diagnosis, but much of it is due to a real increase in incidence. Men are much more often affected than women. (*Table II, p. 14*) (*paras. 23-24*).

Surveys. Many comparisons have been made in different countries between the smoking habits of patients with lung cancer and those of patients of the same age and sex with other diseases. All have shown that more lung cancer patients are smokers, and more of them heavy smokers than are the controls. The association between smoking and lung cancer has been confirmed by prospective studies in which the smoking habits of large numbers of men have been recorded and their deaths from various diseases observed subsequently. All these studies have shown that death rates from lung cancer increase steeply with increasing consumption of cigarettes. Heavy cigarette smokers may have thirty times the death rate of non-smokers. (*Figure 8, p. 17*). They have also shown

that cigarette smokers are much more affected than pipe or cigar smokers (*Figure 9, p. 19*) and that those who had given up smoking at the start of the surveys had lower death rates than those who had continued to smoke (*Figure 10, p. 21*). Various criticisms, based on possible errors of selection and of diagnosis, which might have caused a spurious association between smoking and lung cancer in these studies, are discussed (*paras. 25-29*).

Pathology of Smokers' Lungs. Of three types of lung cancer, only the two commoner types are associated with smoking. The lungs of smokers without cancer show changes of chronic irritation, of the sort which might precede cancer, more often than the lungs of non-smokers (*paras. 30-31*).

Interpretation of the Evidence. The association of lung cancer with cigarette smoking is generally agreed to be true but various possible explanations of this association other than that of cause and effect have to be considered. These are (*para. 32*):—

- (i) that people who are going to get lung cancer have an increased desire to smoke throughout their adult lives:
- (ii) that smoking produces cancer only in the lungs of people who are in any case going to get cancer somewhere in the body, so that smoking determines only the site of the cancer:
- (iii) that lung cancer affects people who would have died of tuberculosis in former times but have now survived with lungs susceptible to cancer:
- (iv) that smokers inherit their desire to smoke and with it inherit a susceptibility to some other undiscovered agent that causes lung cancer:
- (v) that smokers are by their nature more liable to many diseases, including lung cancer, than the "self-protective" minority of non-smokers:
- (vi) that smokers tend to drink more alcohol than non-smokers so that drinking and not smoking may cause lung cancer:
- (vii) that motor car exhausts, or—
- (viii) that generalised air pollution may render the lungs of smokers more liable to cancer.

None of these explanations fits all the facts as well as the obvious one that smoking is a cause of lung cancer. There are other causes, including air pollution and substances which may be met in a few

occupations, but none of them is of such general importance as smoking (*para. 33*).

There are a few facts which may be considered to conflict with this conclusion namely:—

- (i) that lung cancer occurs in only a minority of smokers:
- (ii) that death rates from this disease are lower in some countries than would be expected from their cigarette consumption:
- (iii) that there is some conflicting evidence on the effects of inhalation of smoke:
- (iv) that no animal has yet been given lung cancer by exposure to cigarette smoke.

Conclusion. These facts are discussed (*paras. 33-40*) and none of them is found to contradict the conclusion that cigarette smoking is an important cause of lung cancer. If the habit ceased, the number of deaths caused by this disease should fall steeply in the course of time (*para. 41*).

Smoking and Other Lung Diseases

Chronic bronchitis is a common and distressing disease in Britain and causes many deaths, especially in middle aged and elderly men. Smokers, particularly cigarette smokers, are much more often affected than non-smokers (*Figure 11, p. 29*). Other agents, of which generalised air pollution is the most important, are involved and it may be that damage done to the bronchial tubes by cigarette smoke makes them more susceptible to these other agents. Many men and women who are now disabled by chronic bronchitis might have remained well had they not smoked (*paras. 42-50*).

Smoking may possibly contribute to the development of pulmonary tuberculosis, especially in the middle-aged and elderly (*paras. 51-52*).

Smoking and Diseases of the Heart and Blood Vessels

Coronary heart disease is a more frequent cause of death in smokers, particularly cigarette smokers, than in non-smokers, although the latter are also commonly affected (*Table III, p. 34*). Those who give up smoking have a reduced death rate (*Figure 12, p. 33*). Many other factors, such as mental strain, sedentary occupation and diet, may explain some of the association of this

disease with smoking, but cigarette smoking probably plays a significant part in rendering men in early middle age more liable to its serious effects. (*paras. 53-57*).

Smoking appears to play a part in causing other arterial diseases but not high blood pressure (*paras. 58-59*).

Smoking and Gastro-intestinal Diseases

Smoking affects the movements and secretion of the gut in many ways and may cause symptoms such as nausea and discomfort. It depresses appetite and may reduce weight. It does not appear to cause gastric or duodenal ulcers but interferes with their healing (*paras. 60-65*).

Cancers of the mouth, throat and gullet occur more frequently in smokers than in non-smokers (*para. 66*).

Smoking and Other Conditions

Several relatively uncommon diseases occur more often in smokers than non-smokers (*paras. 67-69*). Smokers may be more liable to accidents than non-smokers (*para. 70*). Women who smoke tend to have babies that are underweight (*para. 71*). Smoking may impair athletic performance (*para. 72*).

The Psychological Aspect of Smoking

Very little is known about why people smoke. Children tend to follow their parents' smoking habits. Intelligent children smoke less than duller children. Adults claim that smoking gives a sense of relaxation, helps them to concentrate and gives them relief when they are anxious, but these claims are difficult to test. Psychologists have suggested various unconscious motives for smoking (*paras. 73-78*).

Smokers tend to be more restless, less dependable and more neurotic than non-smokers. Cigarette smokers are more extraverted than non-smokers, pipe smokers are more introverted. That the tendency to smoke may be partly inborn is shown by studies of the smoking habits of twins (*para. 79*).

Smokers may be addicted to nicotine. They may wish to stop smoking for a variety of reasons, chiefly because of expense or fear of ill health. It appears that social factors play a bigger part in

determining smoking habits than internal drives or needs (*paras. 80-82*).

Conclusions

The benefits of smoking are almost entirely psychological and social. It may help some people to avoid obesity. There is no reason to suppose that smoking prevents neurosis (*paras. 83-85*).

Cigarette smoking is a cause of lung cancer, and bronchitis and probably contributes to the development of coronary heart disease and various other less common diseases. It delays healing of gastric and duodenal ulcers (*paras. 86-89*).

The risks of smoking to the individual are calculated from death rates in relation to smoking habits among British doctors (*Table IV, p. 44*). The chance of dying in the next ten years for a man aged 35 who is a heavy cigarette smoker is 1 in 23 whereas the risk for a non-smoker is only 1 in 90. Only 15 per cent (one in six) of men of this age who are non-smokers but 33 per cent (one in three) of heavy smokers will die before the age of 65. Not all this difference in expectation of life is attributable to smoking (*paras. 90-91*).

The number of deaths caused by diseases associated with smoking is large (*Table V, p. 47*) (*para. 92*).

The need for preventive measures. Reduction in general air pollution should reduce the risks of cigarette smoking; but it is necessary for the health of the people in Britain that any measures that are practicable and likely to produce beneficial changes in smoking habits shall be taken promptly (*paras. 93-95*).

Preventive Measures

Since it is not yet possible to identify those individuals who will be harmed by smoking, preventive measures must be generally applied (*para. 96*).

The harmful effects of cigarette smoking might be reduced by efficient filters, by using modified tobaccos, by leaving longer cigarette stubs or by changing from cigarette to pipe or cigar smoking (*paras. 97-102*).

General discouragement of smoking, particularly by young people, is necessary. More effort needs to be expended on discovering the most effective means of dissuading children from starting the smoking habit (*paras. 103-107*). There can be no doubt of our responsibility for protecting future generations from

developing the dependence on cigarette smoking that is so widespread today.

Most adults have heard of the risks of cigarette smoking but remain unconvinced. Doctors, who see the consequences of the habit, have reduced their cigarette consumption. Some evidence of concern by the Government is needed to convince the public. The Government have so far only asked local health authorities to carry out health education in respect of smoking, but little seems to have been achieved. The Central Council for Health Education and Local Authorities spent less than £5,000 on anti-smoking education in 1956-60, while the Tobacco Manufacturers spent £38,000,000 on advertising their goods during this period (*paras. 108-111*).

Possible Action by the Government

Decisive steps should be taken by the Government to curb the present rising consumption of tobacco, and especially of cigarettes. This action could be taken along the following lines (*paras. 112-119*):—

- (i) more education of the public and especially school-children concerning the hazards of smoking:
- (ii) more effective restrictions on the sale of tobacco to children:
- (iii) restriction of tobacco advertising:
- (iv) wider restriction of smoking in public places:
- (v) an increase of tax on cigarettes, perhaps with adjustment of the tax on pipe and cigar tobaccos:
- (vi) informing purchasers of the tar and nicotine content of the smoke of cigarettes:
- (vii) investigating the value of anti-smoking clinics to help those who find difficulty in giving up smoking.

Doctors and Their Patients

There are good medical grounds for advising patients with bronchitis, peptic ulcer or arterial diseases to stop smoking. Even a smoker's cough may be an indication that the habit should be given up. Doctors are better able to help their patients to stop smoking if they do not smoke themselves. They have a special responsibility for public education about the dangers of smoking (*paras. 120-121*).

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