

ROYAL COLLEGE OF PHYSICIANS

COMMITTEE ON ATMOSPHERIC POLLUTION

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Possible Consequences of the Modification of the Composition of Cigarette Smoke

The Committee on Smoking, Air Pollution and Health of the Royal College of Physicians has during the past five years been engaged in the preparation of a report on the effects of air pollution on health and of a further report on smoking and health. The President was recently approached by the Secretary of the Tobacco Research Council who told him of the results of researches into the carcinogenic action of cigarette smoke condensate carried out by the Council's laboratories at Harrogate, and put to him certain questions concerning possible modifications in cigarettes which might be desirable as a result of these researches. The President called a meeting of the Committee with some additional co-opted members to consider these questions and their replies are given below.

The Committee re-affirmed the conclusion of the Royal College of Physicians Report on Smoking and Health that full protection against the hazards of smoking cigarettes could be given only by abstaining from the habit, and the following replies should not be quoted out of context with this view.

Question 1.

"Does the Committee consider that, on a balance of probabilities, the scientific evidence suggests that to reduce the tar yields of cigarettes is unlikely to be harmful to health and may well be helpful?"

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Reply

The Committee agrees that reducing the tar yields of cigarettes is unlikely to be harmful provided that:-

- (a) smokers do not smoke more of the modified cigarettes
- (b) they do not inhale the smoke more (possibly as a result of reduced irritation)
- (c) the cigarettes are not modified in any other way that might increase the hazards of smoking them.

The Committee also agrees that in view of the Tobacco Research Council's experimental work, which has confirmed the findings of many previous investigations, it seems possible that reduction of the tar yields might reduce the risk of lung cancer; but whether this would be so and how great any reduction might be could be shown only by carefully controlled observations carried out over many years. The Committee's reservations on this matter are based chiefly on two considerations:-

First, that components of the smoke other than tar may be more important in causing lung cancer than the tar itself.

Second, that other components may also contribute to the causation of and mortality from cardio-respiratory diseases (especially coronary heart disease, chronic bronchitis and emphysema) so that if the modified cigarettes were smoked in greater quantities or inhaled more deeply any reduction in cancer risk might be outweighed by increases in other risks.

Question 2.

"Does the Committee consider that nicotine in the quantities absorbed by smokers can have some helpful psychopharmacological effects?"

Reply

The Committee agrees that there is evidence of a wide range of pharmacological effects of nicotine on man, especially on the cardiovascular system. There is also subjective evidence that smoking has helpful psychological effects on those habituated to it, especially in the relief of temporary anxiety and tension. Recent experimental studies have shown possibly advantageous effects of nicotine on certain functions of the central nervous system of animals, but the Committee knows of no controlled objective demonstrations that such effects, attributable solely to the action of nicotine, result from smoking in man. In non-smokers smoking or parenteral administration of nicotine usually produces unpleasant psychological and physical effects.

Question 3

"In 1962 the U.S. Surgeon General's Advisory Committee on Smoking and

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Health, referring obviously to smokers free from cardiovascular disease, concluded (p. 75) that 'the chronic toxicity of nicotine in quantities absorbed from smoking and other forms of tobacco use is very low and probably does not represent a significant health problem.' Does the Committee agree or disagree with this conclusion?"

Reply

The Committee has noted the conclusion of the U.K. Surgeon General's Advisory Committee which, if it refers only to that proportion of the adult population who are free from cardiovascular disease (though this is not clear from the context in the report), must be of limited practical importance.

The Surgeon General's Committee based their conclusion largely on the supposition that pipe and cigar smokers with their nearly normal total morbidity and mortality rates absorb quantities of nicotine similar to those absorbed by cigarette smokers. More definite evidence than this will be required before it can be confirmed that nicotine plays no part in the increased mortality of cigarette smokers, in particular from cardiovascular disease. Since recent evidence suggests that nicotine, in the amounts absorbed from cigarette smoking, may be harmful or even dangerous to patients with heart disease, reservation concerning the safety of chronic nicotine exposure must be maintained.

Question 4

"How would the Committee view lower tar cigarettes in which nicotine was not reduced below a level that was satisfying to smokers when compared with existing cigarettes?"

Reply

The Committee was provided by the Tobacco Research Council with evidence confirming the implication in this question that habituation to smoking is probably attributable to nicotine absorption in that smokers claim less "satisfaction" from cigarettes with lower than from cigarettes with higher nicotine content. If lowering nicotine content were to increase the number of lower tar cigarettes that were smoked the risk might be increased for the reasons given in the answer to Question 1. Since, however, nicotine itself cannot be absolved from blame, especially in relation to cardiovascular disease, a reduction of both nicotine and tar might be desirable if some other means (such as an appropriate increase in price) were adopted to discourage increased consumption of the modified cigarettes.

Question 5

"Would the Committee agree that it is impossible to establish a relationship between specific irritants, in the form and concentration in which they are present in cigarette smoke, and adverse health effects?"

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Reply

The Committee consider that while the irritant effects of cigarette smoke on the bronchial mucosa and the consequent adverse effects upon health have been demonstrated, no specific component of the smoke has yet been identified as solely responsible of these undesirable effects.

In Conclusion The Committee is agreed:

First. That the only way in which the very real hazards of cigarette smoking can be avoided is by not smoking them. Reduction of the quantity smoked or of the depth of inhalation would reduce the hazard, but in practice most smokers appear unable to modify their habits in this way, and some find it less difficult to stop smoking altogether.

Second. That if the composition of cigarettes is to be changed it is of the greatest importance that research should be carried out to discover what effects upon health such alterations might have. For this reason alone information about the composition of the smoke of all marketed brands of cigarette should be made readily available.

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