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## Smoking and Lung Cancer: Recent Evidence and a Discussion of Some Questions<sup>1</sup>

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### Summary

This report reviews some of the more recent epidemiologic and experimental findings on the relationship of tobacco smoking to lung cancer, and discusses some criticisms directed against the conclusion that tobacco smoking, especially cigarettes, has a causal role in the increase in bronchogenic carcinoma. The magnitude of the excess lung-cancer risk among cigarette smokers is so great that the results can not be interpreted as arising from an indirect association of cigarette smoking with some other agent or characteristic, since this hypothetical agent would have to be at least as strongly associated with lung cancer as cigarette use; no such agent has been found or suggested. The consistency of all the epidemiologic and experimental evidence also supports the conclusion of a causal relationship with cigarette smoking, while there are serious inconsistencies in reconciling the evidence with other hypotheses which have been advanced. Unquestionably there are areas where more research is necessary, and, of course, no single cause accounts for all lung cancer. The information already available, however, is sufficient for planning and activating public health measures.—J. Nat. Cancer Inst. 22:173-203, 1959.

In 1957 a Study Group (75), appointed by the National Cancer Institute, the National Heart Institute, the American Cancer Society, and the American Heart Association, examined the scientific evidence on the effects of tobacco smoking on health and arrived at the following conclusion:

"The sum total of scientific evidence establishes beyond reasonable doubt that cigarette smoking is a causative factor in the rapidly increasing incidence of human epidermoid carcinoma of the lung."

Concurrently, a report from the Medical Research Council (57) of Great Britain appeared which also drew the inference of a causal relation-

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