

A Twin Study of the Influence of Smoking on Morbidity and Mortality

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The Danish Twin Register, which comprises all twins born in Denmark between 1870 and 1920, has been used for studies of selected problems in the field of epidemiology and public health. This report gives a survey of the preliminary results of an investigation of this type, which intends to amplify the present knowledge about the possible harmful effects of smoking on health, by taking advantage of a twin material which makes it possible to keep the genetic factors under control.

A series of 762 MZ and same-sexed DZ twin pairs, which had their smoking habits mapped in 1959, has been followed continuously, and the mortality which has occurred in this group has been analysed in relation to tobacco consumption. Neither MZ nor DZ pairs showed any tendency to increased mortality in the heavier smoking cotwins. When the material was subdivided according to cause of death, no conspicuous exception from the general pattern was found, but the subgroups were relatively small.

The distribution of selected diseases and symptoms, mainly of the cardiovascular and respiratory systems, was studied in this and a second series, followed since 1966, with a total of 1584 pairs.

Fatal coronary occlusions and nonfatal occlusions, diagnosed in hospitals, showed only a slight and nonsignificant tendency to be associated with higher tobacco consumption, and in MZ pairs where only one cotwin had had an occlusion, he was equally often the heavier smoking as the light or nonsmoking one. Angina pectoris was significantly more frequent in cotwins with higher consumption of tobacco than in those with lower or no consumption. A similar significant association was observed with respect to chronic bronchitis. Intermittent claudication of the lower extremities showed the same pattern, but the differences between heavier and lighter smokers were less marked and did not reach the level of statistical significance. Symptoms of peptic ulcer were more often reported by the cotwins having the higher tobacco consumption.

The follow-up of these series will be continued and provide a broader foundation for an evaluation of the influence of smoking on morbidity and mortality in genet-

ically similar individuals. The present preliminary figures seem to support the assumption that tobacco consumption is associated with angina pectoris and chronic bronchitis, whereas they do not permit any conclusions regarding the other disorders and symptoms.

The detailed results will be published later.

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