

Abstract OTTO (Liljanen):

Experimental investigations with native cigarette smoke and the gas-phase of cigarette smoke on mice.

The experimental conditions of exposure to native smoke in a closed system are shown in a 5 minute movie. Mice in groups of 40 animals were exposed in a chamber to a vacuum of 650 mm Hg, the vacuum being replaced by cigarette smoke in the rhythm of a 2-second puff every 58th second from 12 cigarettes at once. After an exposure of 40 to 50 minutes the animals had to be removed as protracted exposure resulted in a fatal CO-intoxication with a level of 40% or more of CO-hemoglobin. The effect of a 2 years' treatment in the way described are an increase in the spontaneous tumor rate from 3% to at least 20% and, in animals treated for over a year, an increased rate of proliferation of the epithelium especially the smaller bronchi. The experiments were repeated with a paperlike filter between the cigarettes and the chamber. The gas-phase of the smoke was thus eliminated and the results compared to the gas phase of the smoke alone. No significant differences were observed, nor were there any effects on the tumor rate. These experiments lead to the conclusion that the tumor-promoting factors reside in the particulate phase of the smoke.

The experiments with a 2-year exposure (up to 2 year) demonstrates the significant reducing activity of cigarette smoke.

As a side effect of the passive exposure of animals in a closed system to the CO-content, the experiments were repeated with the aerosol generated with green tea and tobacco condensate using as a passive exposure. The results up to date are that the particulate phase is equally toxic for the clearing system of the respiratory system.

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