

CANCER AND ISCHAEMIC HEART DISEASE FOLLOWING OCCUPATIONAL EXPOSURE TO COMBUSTION PRODUCTS.

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This study was set up to investigate the hypothesis that combustion products have damaging effects that manifest themselves as cancer or atherosclerotic disease. The information obtained in the study concerned the contribution to cancer and ischaemic heart disease mortality brought about by the occupational exposure to which chimney sweeps are typically exposed. The study was performed as a five-year follow-up of chimney sweeps, compared with employed males. 12 cancer deaths were observed versus 5.28 expected ($p = 0.0006$). Five cases versus 1.61 expected were due to lung cancer ($p = 0.02$) whereas seven cases versus 3.67 expected were due to non-pulmonary cancer (0.06). The excess cancer mortality was seen in the age classes 50-64 years. 12 deaths were due to ischaemic heart disease versus an expectancy of 5.42 deaths ($p = 0.007$). Mortality rates for cancer and ischaemic heart disease displayed almost similar age-dependency.

The study data strengthen the evidence that exposure to combustion products precipitate the processes leading to cancer or arteriosclerosis. The exposure thereby reduces the time until occurrence of cancer and arteriosclerotic disease

STUDIES OF CARCINOGENESIS USING CULTURED HUMAN TISSUES AND CELLS. C.C.Harris, H.Autrup, J.F.Lechner, J.C.Willey, A.J.Saladino and B.F.Trump¹. Laboratory of Human Carcinogenesis, National Cancer Institute, Bethesda, MD., USA; ¹Department of Pathology, University of Maryland, Baltimore, MD., USA.

The recent advances in the culture of human tissues and cells using in vitro models has provided cancer researchers with the opportunity to study many of the critical events in carcinogenesis directly in tissues and cells from humans and experimental animals. These comparative, interspecies studies are revealing potentially important similarities and differences in the responses to carcinogens, cocarcinogens and tumour promoters.

BIOLOGICAL MONITORING OF OCCUPATIONAL EXPOSURE TO POLYCYCLIC AROMATIC HYDROCARBONS (PAH) IN AN ALUMINIUM PLANT. AA.Haugen, G.Becher and A.Bjørseth. Department of Toxicology, National Institute of Public Health, Oslo, Norway and Central Institute for Industrial Research, Oslo 3, Norway.

The high concentration of airborne PAH in aluminium plants suggests that workers exposed to such airborne particulate PAH might be at an increased risk for cancer. Epidemiological studies have established that aluminium plant workers only have a slightly increased risk of developing respiratory cancer. In order to better evaluate the hazards connected with PAH-exposure we analyzed the amount of airborne PAH in the workplace by capillary gas chromatography in urine samples from workers and office employees by a recently developed method based on reduction of PAH metabolites to the parent PAH compound (Cancer Lett. 17, 301-311, 1982), and sister chromatide exchanges (SCEs) in peripheral lymphocytes.

Total amount of PAH varied from 52 to 268 $\mu\text{g}/\text{m}^3$ with a mean of 126 $\mu\text{g}/\text{m}^3$. PAH levels in urine from the control group were significantly higher for smokers compared to the values for non-smokers. No significant difference in PAH levels were found in urine from exposed smokers and non-smokers. SCEs analyses were carried out on peripheral lymphocytes from the same workers. As compared with the matched controls there was no significant increase in SCEs from exposed workers as compared with controls. Smokers in both groups had a significantly higher SCE rate than non-smokers.