LETTER

A comparison of occupational and non-occupational exposure to diesel exhausts and its consequences for studying health effects

Diesel exhausts are common both in occupational and non-occupational settings. They are considered as a cause of lung cancer, and International Agency for Research on Cancer (IARC) recently upgraded the evidence from probable to sufficient (http://www.iarc.fr). However, the opinions about the health effects are not consistent. A recent review concluded that the published studies lack consistency.\(^1\) A pooled analysis of case-control studies and a study of miners were interpreted as consistent with an increased risk but questioned the occupational contribution of 29% in drivers (figure 1).

These are the occupational contributions of diesel exhausts during a year in which the worker is occupationally active. If the life-time cumulative exposure would be estimated, the occupational contribution would decrease considerably. \(^2\) The recent US study of miners found an average concentration of 128 \(\mu g/m^3\) elementary carbon in underground workers while the concentration for surface worker was only 1.7 \(\mu g/m^3\). \(^3\) However, if the lung cancer risk at the age of 70 is proportional to the life-time cumulative risk, the occupational contribution would be just about 50% for a worker who had worked 5 years underground in the mine and 70% if he had worked underground for 10 years.

We conclude that occupational studies of the risk with diesel exhausts would considerably underestimate the risk if they do not consider the non-occupational exposure. This especially concerns studies of modestly exposed groups like drivers in non-confined spaces.

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