
IS16. OCCUPATIONAL CARCINOGENS IN EUROPE: PAST AND PRESENT EXPOSURES IN RELATION TO LUNG CANCER RISK

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Lung cancer is the most common occupational cancer and it has been estimated that around 15% of lung cancer among men and 5% in women are due to occupational exposures.

In the SYNERGY project, we have pooled data from fourteen case-control studies conducted between 1985 and 2010 in Europe and Canada, including 16,901 lung cancer cases and 20,965 controls with detailed information on tobacco habits and lifetime occupations. A quantitative job-exposure-matrix (SYN-JEM) was developed to estimate job-, time period-, and region-specific exposure levels for asbestos, respirable crystalline silica (RCS), chromium, nickel, and benzo (a) pyrene. Exposure levels were calculated for each subject by linking SYN-JEM with individual occupational histories.

The lung cancer risks were estimated for the single carcinogens and in association with smoking. The detailed smoking information allowed a precise adjustment for smoking, and the large dataset enabled us to estimate the risks also in relevant subgroups like never smokers. Overall, we observed a dose-dependent increase of the lung cancer risk for all carcinogens that was more pronounced for squamous cell carcinoma and small cell lung cancer than for adenocarcinoma of the lung.

Exposure trends in Europe have overall been decreasing in the past 50 years. This phenomenon is the result of long-term investments in occupational health and safety, i.e. training, surveillance, research, and improved technology. In light of the last years economic crisis around the world it is important to ensure that these positive trends continue and spread to all countries in order to improve occupational health worldwide.

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