

Abstracts

and any disease were 10.4%, 2.5%, 8.5%, 1.5%, and 1.3%, respectively. Occupational injury was found as a significant factor for developing psychiatric disorders within one year after the target injury.

Conclusion The incidence rate of developing any psychiatric disorders was higher in patients after occupational injury than those after non-occupational injury and any medical condition. Further investigations are warranted to identify risk factors for psychiatric disorders following occupational injuries.

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304 LUNG CANCER RISK AMONG HAIRDRESSERS - A POOLED ANALYSIS OF CASE-CONTROL STUDIES CONDUCTED BETWEEN 1985 AND 2010

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Objectives Increased risk of lung cancer has been observed among hairdressers mostly in studies that did not adjust for smoking as a confounder; the objective of the present study was to evaluate this in the SYNERGY project while adjusting for smoking.

Methods SYNERGY consists of 16 pooled case-control studies conducted in Europe, Canada, China and New Zealand between 1985 and 2010. Lifetime occupational and smoking information was collected through interviews from 19,369 cases of lung cancer and 23,674 matched populations or hospital controls. Hairdressers were identified using the ISCO codes 5-70.20 (women's hairdresser) and 5-70.30 (men's hairdresser/barber). Odds ratios (ORs) and 95% confidence intervals (95% CI) of lung cancer risk were estimated using unconditional logistic regression.

Results Overall, 170 cases and 167 controls ever worked as hairdresser or barber. The ORs for lung cancer in male hairdressers/barbers were 1.04 (95% CI: 0.79, 1.37) before adjustment for smoking and 0.91 (95% CI: 0.66, 1.25) after, and did not change markedly with regard to the time of employment. The ORs in women were 1.65 (95% CI: 1.16, 2.35) before adjustment for smoking and 1.12 (95% CI: 0.75, 1.68) after; although women employed before 1954 experienced an increased lung cancer risk also after adjustment for smoking (OR 2.66, 95% CI: 1.09, 6.47). Smoking habits differed in female hairdressers vs. non-hairdressers, while there was no significant difference in smoking habits between male hairdressers/barbers and non-hairdressers/barbers.

Conclusion Our results suggest that most findings of increased lung cancer risk among hairdressers are likely due to smoking behaviour among this occupational group and not directly related to occupational exposure.

305 ENGINE EXHAUST EXPOSURE AND LUNG CANCER RISK IN FARMING

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Objectives Farmers have lower lung cancer rates than the general population, due to lower rates of smoking and possibly exposure to endotoxins. Farmers do, however, have exposure to potential lung carcinogens such as diesel exhaust from the operation of diesel-powered equipment. Using data from the Agricultural Health Study (AHS), a US-based prospective cohort study, we evaluated the risk of incident lung cancer from enrollment (1993-1997) to 2008 in relation to farm equipment use. Methods. Information on farm equipment use was obtained by self-report at study enrollment. There were 233 lung cancers among male farmers and 133 among spouses. Relative risks (RR) were estimated using Poisson regression controlling for lifestyle (including smoking) and agricultural factors. Analyses were stratified by exposure to other agricultural exposures and histological subtypes. Results. Overall, there was no significant association between any type of farm equipment and lung cancer risk but we observed a nonsignificant effect of daily driving diesel tractors for adenocarcinomas (RR = 1.95, 95% CI:0.92-4.10). A significant interaction between driving diesel tractors and exposure to animals was also observed for this subtype in farmers (nonexposed to animals: RR = 5.75, 95% CI:2.17-15.28, exposed: RR = 0.94, 95% CI:0.34-2.57, p-interaction = 0.04). A similar effect modification for driving diesel tractors was observed in spouses for lung cancer overall (nonexposed to animals: RR(≥monthly vs less than monthly) = 2.25, 95% CI:1.15-4.43, exposed: RR = 0.42, 95% CI:0.15-1.20, p-interaction = 0.01). Although the interaction was nonsignificant for adenocarcinomas in spouses (p = 0.37), the magnitude of risk was similar (nonexposed to animals: RR = 2.77, 95% CI: 1.05-7.31). Conclusion. These findings suggest that use of diesel-powered farm equipment may increase lung cancer risk in people working in agricultural settings among those not exposed to animals, exposure that has been previously inversely related to lung cancer risk, possibly due to endotoxins. Further efforts are needed to refine the exposure assessment for diesel exhaust fumes in low and chronically exposed populations.

306 LUNG CANCER AND CLEANING-RELATED EXPOSURES: RESULTS FROM TWO CASE-CONTROL STUDIES

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Objectives To evaluate the association between lung cancer and cleaning-related exposures.

Methods Two case-control studies conducted in Montreal to explore occupational associations with cancer included 2016 lung cancer cases and 2001 population controls. Occupational exposure to several agents was assessed using a combination of subject-reported job history and expert assessment. Participants also provided information on personal characteristics such as smoking and medical history. Using multivariate logistic regression analyses, we evaluated the associations between lung cancer and employment in 12 cleaning-related occupations, and exposure to eight chemicals related to cleaning products. For the most recent study, we analysed the effect of cleaning agents on lung cancer risk separately for asthmatics and non-asthmatics.