males and 1.37 (95%-IC: 1.26–1.48) in females, while radon related RRs were not statically significant. Adjusting for socio-demographic factors, the RRs by occupation decreased by 16% and 4% on average in men and women, and by 4% and 6% when adjusting for smoking, but remained statistically significant.

Conclusions The results suggest the presence of occupational exposures to lung carcinogens in addition to non-occupational factors. Longer follow-up and analysis by histological types of lung cancer are needed to improve the estimates of occupational lung cancer.

O-303 THE ROLE OF OCCUPATIONAL EXPOSURES IN LUNG CANCER RISK AMONG WOMEN: PRELIMINARY RESULTS FROM A POOLED CASE-CONTROL STUDY OF LUNG CANCER

¹Mengting Xu, Vikki Ho, Jack Siemiatycki. ¹University of Montreal, Canada

10.1136/OEM-2021-EPI.76

Introduction Lung cancer is the most common cause of cancer death among women. However, little is known regarding occupational risk factors for lung cancer in women.

Objective To investigate possible associations between selected occupational agents and lung cancer risk among women.

Methods We pooled data from ten case-control studies of lung cancer with detailed lifetime occupational and smoking history. The current analysis was restricted to working women, including 3040 cases and 4186 controls. To assess occupational exposure, we used the Canadian Job-Exposure Matrix (CANJEM). Linking participants' jobs to the CANJEM allows the estimation of probability, and frequency of exposure to a list of 258 agents. This analysis was restricted to 36 most prevalent occupational agents in our sample of women. The association between lung cancer risk and lifetime ever exposure, duration of exposure, and cumulative exposure for each agent was estimated in separate logistic regression models, adjusted for smoking and other selected covariates.

Results Most agents we examined were not associated with lung cancer. We observed an increased risk of lung cancer among women occupationally exposed to cooking fumes for over 10 years (OR(95%CI)=1.73(1.09–2.82)). Statistically significant decreased risks of lung cancer were observed among women exposed to various textile fibres, especially among long-duration workers. The results regarding the various textile agents have not been mutually controlled yet. When restricting to never smokers, increased risks of lung cancer were observed among women exposed to metallic dust, isopropanol, and aliphatic alcohols, with OR point estimates for ever exposure ranging from 1.5 to 1.7.

Conclusion Our preliminary results indicate that occupational exposure to cooking fumes is associated with an increased lung cancer risk in women, while exposures to various textile fibres seem to be associated with a decreased lung cancer risk.

O-321 EXPLORATION OF OCCUPATIONS AS RISK FACTORS FOR LUNG CANCER IN MULTIPLE EXPOSURE HIERARCHICAL AND PENALIZATION MODELS

¹Calvin Ge, Susan Peters, Ann Olsson, Joachim Schuz, Hans Kromhout, Kurt Straif, Roel Vermeulen, Thomas Brüning, Lützen Portengen. ¹Utrecht University, Netherlands

10.1136/OEM-2021-EPI.77

Introduction We used hierarchical and penalization models to explore occupational risks associated with lung cancer while accounting for exposures to multiple known carcinogenic exposures.

Methods We pooled lung cancer case-control study subjects from 14 European and Canadian studies. Associations between employment in 1,506 five-digit ISCO-68 occupations and lung cancer were screened using Bayesian hierarchical and lasso penalized regressions accounting for age, smoking, sex, study, and fully quantitative exposures to six known occupational lung carcinogens: asbestos, chromium, diesel engine exhaust, nickel, PAHs, and silica. False positive findings in the penalization model were controlled using stability selection with specified family-wise error rates. Lung cancer odds ratios for selected occupations were calculated using unconditional logistic regression model with identical covariates.

Results Our study included 16,901 cases and 20,965 controls. Jobs selected by the hierarchical and penalization models were similar. Occupations with positive associations with lung cancer after controlling for the known carcinogens included building painters (OR: 1.40; 95 CI: 1.17, 1.67), carpenters (OR: 1.77; 95 CI: 1.36, 2.33), and paviours (OR: 3.91; 95 CI: 1.75, 9.61).

Conclusion We demonstrated viable agnostic approaches in identifying employment risk factors for lung cancer. Future work involves investigations of factors that contribute to the observed elevated cancer risks.

O-335 OCCUPATIONAL PHYSICAL ACTIVITY AND LUNG CANCER RISK AMONG FOUR COHORTS OF THE CANADIAN PARTNERSHIP FOR TOMORROW'S HEALTH PROJECT

¹Romain Pasquet, Yun Zhu, Emmanuelle Batisse, Jérôme Lavoué, Marie-Elise Parent, Jack Siemiatycki, Anita Koushik, Vikki Ho. ¹Centre de recherche du Centre hospitalier de l'Université de Montréal (CRCHUM), Canada

10.1136/OEM-2021-EPI.78

Introduction Recreational physical activity (PA) has been associated with reduced lung cancer risk. Occupational-related PA may be one of the most important sources of PA, but the few studies that have examined the occupational PA-lung cancer relationship have produced inconsistent result.

Objective To investigate the association between occupational PA and lung cancer risk.

Methods A case-cohort study was nested among four cohorts of the Canadian Partnership for Tomorrow's Health Project. Through linkage of each cohort to their respective provincial cancer registry, 453 incident lung cancer cases diagnosed between 2009 and 2016 were identified; a random sub-cohort of 2,435 participants was sampled at baseline. Data on the longest-held job and risk factors were gathered via a harmonized questionnaire. Using a database generated by our team on the energy expenditures associated with almost 3,600 job titles, metabolic equivalent of tasks (METs) were assigned to the longest-held job of each participant. In total, 335 cases (139 men; 196 women) and 2,320 sub-cohort members (879 men; 1,441 women) with assignable job codes and MET values were included in this analysis. Multivariable logistic regression models, with normal or robust variance estimators, were used to estimate study-specific odds ratios (ORs) and 95% confidence intervals (CIs) for the relationship between occupational PA (categorized in tertiles) and lung cancer risk, while