calendar period of employment, and attained age at risk. Poisson regression was used to model the risk (RR) of incident leukemia at increasing levels of cumulative gamma radiation exposure, adjusting for calendar period and attained age.

**Results**
Between 1969 and 2005, 116 incident cases of leukemia were identified. On average, these miners were employed for 4.4 years with a mean cumulative dose of 5.25 millisieverts (mSv). With exposure lagged by 2 years, preliminary analyses showed that when compared to the referent group (0 mSv), those with >30 mSv of cumulative gamma dose had a non-statistically significant increase in the risk of leukemia diagnosis (RR=2.04, 95% CI: 0.93, 4.51) with increasing, linear trend (p=0.08).

**Conclusions**
Although our results did not show a statistically significant relationship between gamma radiation and leukemia incidence, it is likely due to low statistically power. Future work may include pooling the Ontario Uranium Miners cohort with other similar cohorts to better quantify the potentially associated risks.

**References**


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**Abstracts**

**O68.4 LARYNGEAL CANCER RISKS IN WORKERS EXPOSED TO LUNG CARCINOGENS: EXPOSURE-EFFECT ANALYSES USING A QUANTITATIVE JOB EXPOSURE MATRIX**

**Aim**
The aim of the study was to calculate standardized incidence ratios (SIRs) adjusted for alcohol and tobacco by occupation, and to compare to the unadjusted SIRs.

**Material and methods**
The study is based on the Nordic Occupational Cancer (NOCCA) database. We used confirmatory factor analysis models where the unobserved pattern of alcohol and tobacco consumption were considered a latent common factor, and the potential occupational variation on each cancer type latent specific factors. Results were used to compute adjusted expected numbers of cancer from the reference rates and to calculate adjusted SIRs for the relevant cancer sites for each occupation.

**Results**
Changes of risk estimates from significantly high to significantly low and vice versa were seen. Among Nordic farmers, unadjusted SIRs for cancer of the mouth and oesophagus were 0.56 (95% confidence interval [CI] 0.51–0.61) and 0.67 (CI 0.63–0.70), respectively. After adjustment, estimates changed to 1.10 (CI 1.01–1.21) and 1.16 (CI 1.10–1.22). Unadjusted SIR for pharynx cancer among wood workers was 0.83 (CI 0.75–0.91), adjusted SIR was 1.14 (CI 1.03–1.25). For larynx cancer, results in the opposite direction were seen: unadjusted SIR for economically inactive was 1.38 (CI 1.31–1.46) while the adjusted SIR was 0.91 (CI 0.86–0.96).

**Conclusion**
Adjustment for the latent indicators of alcohol and tobacco consumption changed risk estimates for several occupations, and may guide in the identification of true risk factors and preventive strategies.

**O68.5 VARIATION IN NORDIC WORK-RELATED CANCER RISKS AFTER ADJUSTMENT FOR ALCOHOL AND TOBACCO**

**Aim**
The aim of the study was to calculate standardized incidence ratios (SIRs) adjusted for alcohol and tobacco by occupation, and to compare to the unadjusted SIRs.

**Material and methods**
The study is based on the Nordic Occupational Cancer (NOCCA) database. We used confirmatory factor analysis models where the unobserved pattern of alcohol and tobacco consumption were considered a latent common factor, and the potential occupational variation on each cancer type latent specific factors. Results were used to compute adjusted expected numbers of cancer from the reference rates and to calculate adjusted SIRs for the relevant cancer sites for each occupation.

**Results**
Changes of risk estimates from significantly high to significantly low and vice versa were seen. Among Nordic farmers, unadjusted SIRs for cancer of the mouth and oesophagus were 0.56 (95% confidence interval [CI] 0.51–0.61) and 0.67 (CI 0.63–0.70), respectively. After adjustment, estimates changed to 1.10 (CI 1.01–1.21) and 1.16 (CI 1.10–1.22). Unadjusted SIR for pharynx cancer among wood workers was 0.83 (CI 0.75–0.91), adjusted SIR was 1.14 (CI 1.03–1.25). For larynx cancer, results in the opposite direction were seen: unadjusted SIR for economically inactive was 1.38 (CI 1.31–1.46) while the adjusted SIR was 0.91 (CI 0.86–0.96).

**Conclusion**
Adjustment for the latent indicators of alcohol and tobacco consumption changed risk estimates for several occupations, and may guide in the identification of true risk factors and preventive strategies.

**O68.6 OCCUPATIONAL RADIATION EXPOSURE AND THE RISK OF CANCER AND CARDIOVASCULAR DISEASES AMONG MEDICAL RADIATION WORKERS**

**Aim**
Medical radiation workers occupy the largest group of radiation workers and the numbers are rapidly increasing. Understanding the impact of radiation exposure on cancer and cardiovascular disease is crucial for the radiation workforce and the public. This study aimed to investigate the association between occupational radiation exposure and the risk of cancer and cardiovascular disease among medical radiation workers.

**Methods**
A retrospective cohort study was conducted using the Radiation Exposure and Health Outcomes database, which included information on occupational radiation exposure and health outcomes from medical radiation workers. Exposure was measured as the cumulative radiation dose received over the course of employment. Cancer outcomes were assessed using cancer registry data, and cardiovascular disease outcomes were assessed using administrative health records. Cox proportional hazards regression models were used to estimate the hazard ratios for cancer and cardiovascular disease outcomes associated with occupational radiation exposure, adjusting for potential confounders such as age, gender, and smoking status.

**Results**
Increased risk of cancer was observed among medical radiation workers, with a hazard ratio of 1.20 (95% CI: 1.05–1.37) for all cancer sites combined, and a hazard ratio of 1.32 (95% CI: 1.10–1.60) for lung cancer specifically. For cardiovascular disease, increased risk was not observed, with a hazard ratio of 1.06 (95% CI: 0.91–1.24) for all cardiovascular disease outcomes combined.

**Conclusion**
Occupational radiation exposure is associated with an increased risk of cancer among medical radiation workers, particularly for lung cancer. Future research should focus on identifying mechanisms by which radiation exposure may increase cancer risk and developing strategies to mitigate these risks.