cancers (ERR Sv-1= 6.26; 95%CI: 2.86, 10.83). Additionally, we observed positive associations for several site specific lymphatic and hematopoietic cancer types, as well as lung cancer. In some instances, we observed modification by time since exposure and age at exposure.

Conclusions This analysis confirms the association between low dose, low dose-rate radiation and leukemias, and strengthens the evidence base supporting the radiogenic nature of some solid cancers. The extended follow-up, individual dosimetry, and precise estimates provided by this large pooled analysis can better inform current radiological protection models.

Respiratory effects/Diseases

**O-118** RETROSPECTIVE EXPOSURE ASSESSMENT AND MiRNA IN THE EXHALED BREATH CONDENSATE IN MONITORING PAST EXPOSURE TO ASBESTOS

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Introduction Currently, the health surveillance of past exposure to asbestos conveys scarce hope of improving life expectancy and quality. To uplift the screening capability, we validated our retrospective exposure assessment techniques and explored the feasibility of using the miRNA profile in the exhaled breath condensate (EBC) as a biomarker.

Material and Methods We first classified lung fibrosis in the chest HRCT scans of 115 workers formerly exposed to asbestos and retrospectively estimated their exposure. We also assessed past exposure to asbestos and its correlation with the fibre count in the autopic lung of 24 subjects who died from asbestos-related diseases. Finally, we used an NGS platform to detect miRNAs previously linked to lung cancer and pleural mesothelioma in the EBC of six subjects with no history of past exposure to respiratory hazards.

Results The risk of lung fibrosis increased linearly with time-weighted average (TWA, p = 0.0045) and cumulative exposure to asbestos (p = 0.009). An estimated cumulative exposure ≥10 fibre/ml-year conveyed an almost 11-fold (95% CI 1.54–75.7) excess risk of lung fibrosis. Cumulative exposure to asbestos correlated well with the fibre count in the autopic lung (p < 0.0001).

There was a good agreement between the miRNA detection rate in the EBC and plasma samples. The Spearman’s correlation between EBC and plasma miRNA counts was significant in 5/6 subjects (p = 0.001 – <0.001). The miRNA profile was consistent among the six participants.

Conclusions Retrospective exposure estimates can reliably reflect past exposure to asbestos. Parenchymal lung alterations show up in relation to estimates of past asbestos exposure much lower than previously thought. EBC sampling is a non-invasive, easily repeatable method to monitor the miRNA profile. It might be profitably used to detect early treatable effects even in subjects with low-level exposure to asbestos.

Semi-plenary symposium

**O-120** WHAT ORIGINATES SO DIFFERENT INTERPRETATIONS OF THE RESULTS OF STUDIES ON GLYPHOSATE AND NON-HODGKIN’S LYMPHOMA?

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Introduction The overall epidemiological evidence on the risk of non Hodgkin’s Lymphoma and occupational exposure to glyphosate has led to opposite interpretations. This presentation will discuss the reasons for such inconsistent opinions.

Material and Methods We conducted a new meta-analysis of the original case-control studies and compared its results with five other meta-analyses, and three pooled analyses.

Results Four meta-analyses and two pooled analyses of case-control studies concluded for an association between the risk of NHL and ever exposure to glyphosate. Those reaching opposite conclusions were two and one, respectively. Associations were stronger between specific NHL subtypes and prolonged/lagged exposure. In the Agricultural Study, the risk of a few NHL subtypes, but not NHL overall, tended to increase by intensity weighted lifetime days of exposure to glyphosate lagged 20 years. In the meta-analysis of the original case-control studies, including the recently published InterLymph study and a new Italian case-control study, the random estimate for ever-exposure to NHL was 1.4 (95% CI 1.08–1.81), based on six studies, and that for follicular lymphoma was 1.6 (95% CI 1.08–2.44), based on three studies, with no significant heterogeneity detect across studies. Risk of follicular lymphoma increased with exposure lagged 10 years, but not by the duration of exposure, in the InterLymph study, and by intensity, frequency, and probability but not duration of exposure in the new Italian case-control study.

Conclusions The dilution of the potentially associated B-cell lymphoma subtypes within the generic NHL definition, and the difficulty in isolating the few severely exposed to glyphosate from the large ever-exposed category, might account for the few NHL subtypes, but not NHL overall, tended to increase by intensity weighted lifetime days of exposure to glyphosate lagged 20 years. In the meta-analysis of the original case-control studies, including the recently published InterLymph study and a new Italian case-control study, the random estimate for ever-exposure to NHL was 1.4 (95% CI 1.08–1.81), based on six studies, and that for follicular lymphoma was 1.6 (95% CI 1.08–2.44), based on three studies, with no significant heterogeneity detect across studies. Risk of follicular lymphoma increased with exposure lagged 10 years, but not by the duration of exposure, in the InterLymph study, and by intensity, frequency, and probability but not duration of exposure in the new Italian case-control study.

COVID 19

**O-122** PUBLIC TRANSPORT WORKERS AND COVID-19 RISK: A COHORT STUDY IN ITALY

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Introduction Public transport workers have never stopped working during the COVID-19 pandemic. Despite the high