Objectives We aimed to build upon these findings and elucidate the underlying potential causal agents.
Methods We applied the ALOHA+ job-exposure matrix (JEM) based on ISCO-88 codes in which exposure to 12 selected agents was rated as 0 (no exposure), 1 (low), and 2 (high). Agents highly correlated (>85%) were combined. COPD was spirometrically-defined as forced expiratory volume in 1 s (FEV1)/forced vital capacity (FVC) < lower limit of normal (LLN). We calculated semi-quantitative cumulative exposure (CE) estimates for each agent by multiplying duration of exposure and squared intensity. Prevalence ratios (PR) and 95% confidence intervals (CI) for COPD were estimated using robust Poisson regression adjusted for centre, sex, age, smoking, and co-exposure to the other JEM agents. Only associations confirmed among never-smokers and never-asthmatics were considered reliable.
Results Out of 116,375 participants with complete job-histories, 94,514 had acceptable/repeatable spirometry data and smoking information and were included in the analysis. Pesticides exposure showed increased COPD risks (PR=1.00, 95% CI 0.85–1.17 for low CE, PR=1.32, 95% CI 1.12–1.56 for high CE; P-trend=0.004), that were confirmed among never-smokers (P-trend=0.005) and never-asthmatics (P-trend=0.001). Results remained unchanged when never-exposed to any of the JEM agents were used as reference category.
Conclusion Focussed preventive strategies in workers exposed to pesticides are warranted to prevent the associated occupational COPD burden.

0-71 OCCUPATIONAL INHALANT EXPOSURES AND LONGITUDINAL LUNG FUNCTION DECLINE

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Background Airborne exposures at the workplace are believed to be associated with lung function decline. However, results from longitudinal studies are conflicting.
Methods Participants from two general population-based cohorts, the Copenhagen City Heart Study and the Copenhagen General Population Study, with at least two lung function measurements were followed for an average of 9 years, range 3–27 years. Occupational exposure was assigned to each year of follow-up between two lung function measurements by a job exposure matrix. Associations between mean occupational exposure per year and mean annual decline in forced expiratory volume in 1 second (FEV1) were investigated using linear mixed effects models according to cohort and time period (1976–1990 and 2003–2015). We adjusted for sex, height, weight, education, baseline FEV1, and pack-years of smoking per year during follow-up.
Results A total of 16,144 individuals were included (mean age 48 years and 43% male). Occupational exposure to mineral dusts, biological dusts, gases & fumes, and a composite category were not associated with FEV1 decline in analyses with dichotomized exposure. In analyses with an indexed measure of exposure, gases & fumes were associated with a FEV1 change of -5.8 mL/unit/year (95% confidence interval:-10.8; -2.3) during 1976–1990, but not during 2001–2015.
Conclusion In two cohorts from the Danish general population, occupational exposure to dusts, gases, and fumes was not associated with excess lung function decline in recent years but might have been of importance decades ago.

0-133 STYRENE ASSOCIATED RESPIRATORY OUTCOMES AMONG REINFORCED PLASTIC INDUSTRY WORKERS.

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Introduction Fibreglass reinforcement industry employees are exposed to both fibreglass and the agents used in the reinforcing process. Adverse respiratory outcomes have been associated with fibreglass resins and agents in the reinforced plastic workplace.
Objectives The aim of this study was to determine the exposure-related adverse respiratory outcomes among employees in the reinforced plastic workplace.
Methods A cross-sectional study was conducted in the fibreglass reinforcement industry based in KwaZulu-Natal, South Africa. Personal monitoring of styrene and spirometry were conducted. Total cumulative exposure was calculated for each participant's lifetime of employment in the company. The 254 employees were interviewed by completing a detailed questionnaire based on respiratory health and occupational exposures. Lung function tests were conducted for all employees according to South African Thoracic Society (SATS) standards.
Results The geometric mean of styrene exposure level for the General Laminating Department was 48.2 mg/m3 (95% CI 36.3–64.1 mg/m3) and the Fitting Department was 20.7 mg/m3 (95% CI: 15.6–27.5 mg/m3. The total styrene cumulative exposure odds ratios for chronic cough, phlegm, wheezing and breathlessness in the high exposure category was 3.1 (95% CI 1.1- 8.6), 5.3 (95% CI 1.7- 16.6), 3.3 (95% CI 1.2- 9.1) and 5.5 (95% CI 1.15–26.4), respectively. The cumulative exposure associated reduction, adjusted for smoking and doctor-diagnosed TB, in FEV1/FVC ratio, percent predicted FEV1 and FVC was 0.01, 0.04% and 0.05%, respectively.
Conclusion Styrene exposure increases the risk of respiratory symptoms and is associated with reduced lung function.

0-266 CHRONIC RESPIRATORY DISEASE IN THE ONTARIO MINING INDUSTRY

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Introduction Mining involves many exposures associated with increased respiratory disease risk, including crystalline silica, diesel engine exhaust, arsenic, nickel, and other metal compounds.
Objectives To investigate the risk of non-malignant respiratory disease (NMRD) in a cohort of Ontario mixed-ore miners.
Methods The Ontario Mining Master File (MMF) contains 90,000 work histories collected during mandatory annual medical exams from 1928 to 1988. Record linkages with provincial hospital and outpatient databases (1999–2017) were performed to ascertain respiratory disease incidence. Incidence