

Objectives The aim was to examine cancer incidence among Norwegian firefighters in sites with established associations to known carcinogenic occupational exposures. This included sites within the respiratory, urinary, and lympho-haematopoietic systems, as well as the skin and all sites combined.

Methods A newly established historical cohort of 3881 Norwegian firefighters who worked within the period 1950–2018 was linked to the Cancer Registry of Norway for incident cancers occurring in the period 1960–2018. We calculated standardized incidence ratios (SIR) with rates for the national male population as reference, and stratified SIR analyses by period of first employment, duration of employment, and time since first employment.

Results Elevated risk was seen for all sites combined (SIR 1.15, 95% confidence interval 1.07–1.23). Elevated risk of urinary tract cancer was observed among firefighters who began working before 1950, and with observation ≥ 40 years since first employment. With ≥ 40 years since first employment, risks of mesothelioma and laryngeal cancer were also elevated.

Conclusions Our patterns of increased incidence in cancer sites somewhat differs from observations in other studies, which may reflect that firefighting is a complex exposure that differs between countries, and that exposures have likely changed alongside changing fire contents, firefighting techniques, and equipment. However, our observed associations between firefighting and urinary tract cancer, laryngeal cancer, and mesothelioma have been observed in some studies previously, and may be related to carcinogenic occupational exposures. Differences in risk by period of employment potentially reflect improved quality and use of personal protective equipment, while stratification by time since first employment suggests that some cancers may have yet to develop among more recently employed firefighters.

0-392 EARLY DETECTION OF PROSTATE CANCER IN FIREFIGHTERS – A REGISTER-BASED STUDY OF PROGNOSTIC FACTORS AND SURVIVAL

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Introduction Meta-analyses have shown firefighters to have increased prostate cancer (PCa) incidence compared to the general population. Firefighters are exposed to many occupational carcinogens, but no chemical agent is considered an established risk factor for PCa. Increased diagnostic intensity through regular health check-ups has been suggested as an explanation for increased PCa risk among firefighters.

Objectives To examine age at diagnosis, prognostic factors and survival of PCa in Norwegian firefighters and three other occupations undergoing occupational health check-ups, and comparing with PCa cases in the general population.

Methods All PCa cases diagnosed 1960–2017 were extracted from the Cancer Registry of Norway. Firefighters, military employees, pilots and police officers were identified through occupational data from Statistics Norway. Age at diagnosis, clinical stage, prostate-specific antigen (PSA), Gleason score, performance status and overall and PCa-specific survival in

cases in these occupations were compared with cases in the general population.

Results Firefighters were significantly younger at PCa diagnosis than cases in the general population in the periods 1960–1993 (mean difference 2.1 years) and 2007–2017 (mean difference 4.3 years). At diagnosis, firefighters had significantly lower PSA values, Gleason scores and performance status scores than the general population. Firefighters diagnosed 2007–2017 had lower risk of all-cause death compared to the general population (crude hazard ratio (HR) 0.71 (0.53–0.95)). No difference was found after adjusting for age at diagnosis (HR 1.03 (0.77–1.37)). Cases in the other three occupations generally also had lower age at diagnosis, better prognostic factors and better crude overall survival than cases in the general population.

Conclusion Younger age and better prognostic factors at PCa diagnosis among firefighters and other occupations with requirements for health check-ups compared with cases in the general population may indicate an increased diagnostic intensity, likely contributing to elevated PCa incidence in such occupations.

Cardiovascular

0-110 OCCUPATION AND INCIDENT STROKE IN A U.S. GENERAL POPULATION COHORT 45 YEARS OF AGE OR OLDER (REGARDS STUDY)

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Objective To identify occupational groups with greater risk of stroke within a cohort of older adults in the United States.

Methods Participants with occupational history data were selected from the REasons for Geographic and Racial Differences in Stroke (REGARDS) study (n=17,333) - a population-based prospective cohort of black and white men and women aged ≥ 45 years enrolled between 2003 and 2007. Self-reported occupational data were collected between 2011 and 2013. Participants were contacted every 6 months by telephone for self- or proxy-reported strokes later adjudicated by medical records through October 2018. Analyses focused on participants with a coded occupation who were employed in their longest held job prior to enrollment (n=15,016). Modified Poisson regression analyses were performed to estimate the relative risk (RR) for each two-digit Standard Occupational Classification (SOC) (2010 version) compared to all other occupation groups combined to highlight occupation groups at greatest risk of stroke.

Results We observed 735 strokes (5%) during 15 years of follow-up. Results showed that participants employed in ‘food preparation and serving’ (22 cases; 8%), ‘sales’ (69 cases; 7%), and ‘production’ occupations (80 cases; 6%) experienced a greater occurrence of stroke, compared with all other occupational groups combined. These associations were robust to adjustment for Framingham stroke risk score (that includes age, sex, smoking status), race, region, and BMI with adjusted RRs 1.5 (95% CI, 1.0, 2.3), 1.4 (95% CI, 1.1, 1.7) and 1.2 (95% CI, 1.0, 1.5), respectively. Findings may be biased by

incomplete job histories, crudeness of exposure assessment, latent confounding, and survivor effect.

Conclusions We found evidence of an association between three two-digit occupation groups and incident stroke. We will better contextualize these results by refining the exposure assessment by examining associations with more detailed three-digit occupation groups, include all jobs held prior to enrollment, and incorporate employment duration.

O-140 OCCUPATIONAL NOISE EXPOSURE AND METABOLIC SYNDROME

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Objective Metabolic syndrome, a major risk factor for cardiovascular disease and diabetes, is recognized as an important health problem. Both environmental and occupational noise exposure has been related to increased risk of cardiovascular disease. We examined if metabolic syndrome was associated to occupational noise exposure.

Methods Associations between quantitative measures of occupational noise exposure and metabolic syndrome were analysed with logistic regression in 411 industrial- and 154 finance and service workers selected as a random sample from 12 industries between 2009 and 2010. We used anthropometric measures and biomarkers to define metabolic syndrome as abdominal obesity and the presence of ≥ 2 of the following conditions: high blood pressure, high triglycerides, low HDL cholesterol and high HbA1c.

Results A total of 167 workers were classified with metabolic syndrome. After adjustment for potential confounders, prevalence ratios for metabolic syndrome comparing the highest to the lowest noise exposure quartiles were 2.04 (95% CI: 1.03–4.03) for cumulative occupational noise exposure. In stratified analyses, the association diminished for industrial workers and increased for finance and service workers.

Conclusion These cross-sectional findings suggest cumulative occupational noise exposure may contribute to cardiometabolic health, but results need to be confirmed with prospective data.

O-144 RISK OF MYOCARDIAL INFARCTION AMONG PIGEON BREEDERS EXPOSED TO ORGANIC DUST

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Introduction Anthropogenic airborne particulate matter is associated with ischemic heart disease, while little is known about particles from organic dust.

Objective Pigeon breeders are exposed to high levels of organic dust in the pigeon lofts, and the objective of this study is to investigate the association with myocardial infarction.

Methods We followed 6,256 male pigeon breeders and their 1:30 individually matched referents from 1980 or first year of

membership in the Danish Racing Pigeon Association if later, until end of study in 2013. Referents were matched on sex and year of birth and randomly drawn from the general Danish population. Information on hospital-based diagnoses, emigration, death and confounders were obtained by record linkage with Danish national registers. Subjects with a diagnosis of myocardial infarction, or chronic ischemic heart disease prior to start of follow-up were excluded. Stratified Cox regression analyses estimated the hazard ratios (HR) of myocardial infarction, adjusted for occupation and place of residence (urban/rural) at start of follow-up.

Results The incidence rate of myocardial infarction was 507 (per 100,000 person-years) among pigeon breeders and 445 among the referents. The crude hazard ratio was 1.16 (95% CI, 1.06–1.26), similar after adjusting for possible confounding variables; 1.12 (95% CI, 1.03–1.23).

Conclusion In this study we found an increased risk of myocardial infarction among male pigeon breeders. The excess risk is suggested to be explained by exposure to organic dust, pointing to organic dust being a part of ischemic heart disease aetiology. We partly adjusted for lifestyle factors, but the lack of individual information on ex. smoking and dietary factors is a clear limitation. Thus, findings must be interpreted with caution even if adjustment by occupation and place of residence may have reduced such potential confounding. Future research with more detailed information on organic dust exposure and lifestyle factors is warranted.

O-190 THE OCCUPATIONAL DISTRIBUTION OF METS PREVALENCE AND INCIDENCE DIFFERS BY SEX AND IS NOT EXPLAINED BY AGE AND HEALTH BEHAVIOR: RESULTS FROM 75,000 DUTCH WORKERS FROM 40 OCCUPATIONAL GROUPS

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Objective This study examines the association between 40 occupational groups and baseline prevalence and incidence of metabolic syndrome (MetS), separately for male and female workers, and whether age and health behaviors can explain the association.

Methods Data from 74,857 Lifelines Cohort and Biobank Study participants were used to regress occupational group membership, coded by Statistics Netherlands, on the prevalence and incidence of MetS using Logistic and Cox-regression analyses. MetS diagnosis was based on physical examinations, blood analysis, and recorded medication use. Information on age, smoking status, physical activity, diet and alcohol consumption was acquired using questionnaires.

Results MetS prevalence was 17.5% for males and 10.6% for females. In the fully adjusted models, three occupational groups were associated with increased MetS prevalence in both sexes. Three additional occupational groups were associated with MetS among men, nine among women. Strongest associations were found for male ‘hospitality, retail and other service managers’ (odds ratio (OR): 1.65; 95% confidence interval (CI): 1.03–2.65) and female ‘stationary plant and machine operators’ (OR: 3.44; 95% CI: 1.57–4.54). During a median 3.8-year follow-up, MetS incidence was 7.8% for