CPR and linked in the same way as cases. Finally, individual information on SES, residential history, reproduction, prescribed medicine, and comorbidity has been added to each case and control. Finally, a JEM on potential carcinogens can be applied.
Results Results confirm increased risk for e.g. lung and bladder cancer among painters and for nasal cancer in wood dust exposed workers. On the other hand, farmers, gardeners and forestry workers had deficits for many cancers. Results on new significant associations will also be presented.
Conclusions These data confirms many well established associations between work and cancer, and demonstrates that many associations are not fully explained. The large number of cancers available for analysis provides the opportunity to evaluate possible occupational associations even with rare cancers.

250 LONG-TERM EFFECTS OF EXPOSURES AT OAK RIDGE NATIONAL LABORATORY

B Richardson, Wing, Keil, Wolf. *University of North Carolina, Chapel Hill, United States of America*

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We examine mortality in a cohort of workers at the Oak Ridge National Laboratory (ORNL), a US Department of Energy research and development facility. The last mortality follow-up of this epidemiologically important cohort was conducted 18 years ago and included workers hired between 1943 and 1972. Analyses of these data revealed a positive association between occupational radiation dose and all cancer mortality under a 20-year lag assumption (1.73% increase in all cancer mortality per 10 mSv, standard error = 0.86). We have expanded this cohort to include 22,834 workers hired between 1943 and 1985, and updated mortality follow-up through 2008, yielding almost three times the number deaths observed in the last mortality follow-up of an ORNL cohort. Extending follow-up of this cohort is important not just for statistical power, but also because many important questions in radiation research concern the long term effects of irradiation, particularly on malignant diseases. These workers were individually badge-monitored for external exposure to ionising radiation, allowing evaluation of the effects of protracted radiation exposures accrued at work. We compared the observed deaths to expectations based upon US mortality rates, and evaluated radiation dose-mortality associations. Findings include excess deaths due to cancer of the pleura (SMR = 12.09 95%CI: 4.44, 26.32), cancer of the bladder (SMR = 1.89 95%CI: 1.26, 2.71), and leukaemia (SMR = 1.33 95%CI: 0.87, 1.93) among hourly-paid males, and excess deaths due to cancer of the bladder (SMR = 2.20 95%CI: 1.20, 3.69) and leukaemia (SMR = 1.64 95%CI: 1.09, 2.36) among females. Further results will be presented.

Session: 5. Muscoskeletal disorders

251 DIFFERENCES IN THE DETERMINANTS OF EXTENSIVE AS COMPARED WITH MORE LIMITED MUSCULOSKELETAL PAIN

D Coggon, G Ntani, K T Palmer. *University of Southampton, Southampton, United Kingdom*

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Objectives To explore whether multi-site musculoskeletal pain differs from more localised musculoskeletal pain in its association with risk factors.
Methods As part of the CUPID study, standardised questionnaires were used to ascertain exposure to risk factors and the prevalence of pain for a day or longer during the past month at each of 10 anatomical sites. Analysis was based on 12,410 participants from 47 occupational groups (mostly nurses and office workers) in 18 countries. Associations with risk factors were assessed by Poisson regression and summarised by prevalence rate ratios (PRRs).
Results Extensive pain (i.e. at six or more of the 10 anatomical sites examined) was much more prevalent than would have been expected by chance coincidence. In comparison with limited pain (i.e. at 1–3 sites), extensive pain showed distinctive associations with demographic characteristics and a much stronger relation to somatising tendency (PRR 4.6, 95% CI 3.5–6.1 v 1.3, 95%CI 1.2–1.4) and reported heavy physical loading (PRR 5.0, 95% CI 2.8–9.2 v 1.4, 95% CI 1.2–1.6). It also varied differently between occupational groups. Thus, for example, nurses in Spain had the highest rate of limited pain (64.3%), but one of the lowest rates of extensive pain (3.5%). In contrast, the prevalence of extensive pain among office workers in Nicaragua was 14.0%, whereas that of limited pain was only 40.4%.
Conclusions Extensive musculoskeletal pain has different determinants from pain affecting fewer anatomical sites. Its prevalence varies substantially between occupations and countries, and in a different way from limited pain. In research on causes of pain at specific anatomical sites, it may be important to distinguish cases with pain only at the site of interest from those with pain also at multiple other sites.

252 DISABLING MUSCULOSKELETAL PAIN IN WORKING POPULATIONS: IS IT THE JOB THE PERSON OR THE CULTURE?

D Coggon, G Ntani, K T Palmer. *University of Southampton, Southampton, United Kingdom*

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Objectives To compare the prevalence of disabling low back pain (DLBP) and disabling wrist/hand pain (DWHP) among groups of workers carrying out similar physical activities in different cultural environments, and to explore explanations for observed differences.
Methods Standardised questionnaires were used to ascertain pain that interfered with everyday activities and exposure to possible risk factors in 12,426 participants from 47 occupational groups (mostly nurses and office workers) in 18 countries. Associations with risk factors were assessed by Poisson regression.
Results The one-month prevalence of DLBP in nurses varied between countries from 9.6% to 42.6%, and that of DWHP in office workers from 2.2% to 31.6%. Rates of disabling pain at the two anatomical sites co-varied (r = 0.76), but DLBP tended to be relatively more common in nurses and DWHP in office workers. Established risk factors such as occupational physical activities, psychosocial aspects of work and tendency to somatise were confirmed, and associations were found also with adverse health beliefs and group awareness of people outside work with musculoskeletal pain. However, after allowance for these risk factors, up to eightfold differences in prevalence remained. Systems of compensation for work-related illness, and financial