the cohort (SMR 2.25, 43 observed), which however had an inverse relation to blood lead level (SMRs 11.1, 3.2, 0.9. 0.8 by increasing category). Numbers were small for other causes of interest (stomach cancer n = 23, kidney cancer n = 28, brain cancer n = 31). SMRs for stroke were low (0.59, 0.57, 0.81. 0.87) but showed a borderline significant increasing trend in Poisson regression (p = -0.08).

Conclusion: We studied a large cohort with documented lead exposure. Results are not conclusive but suggest an association between lung cancer and lead exposure. Data are limited by a lack of work history, a limited blood leads per person, and relatively short latency.

Session: 11. Neurological outcomes

A LONGLITUDINAL STUDY OF NEUROPSYCHOLOGICAL FUNCTION IN YOUNG MALE DIVERS

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Background and Objective: Exposure to compressed-air diving may affect the nervous system. The aim of the present study was to prospectively assess possible nervous system effects from diving. A further aim was to study the effect of age on neuropsychological function in healthy young men.

Methods: We obtained baseline observations of 50 young men while they were trainees at a professional diving school and retested them after six (N = 43) and twelve (N = 37) years. Average age at the first test examination was 25 years. The subjects underwent an interview focusing on education, lifestyle habits, accidents and illnesses, and they answered a neuropsychiatric questionnaire. Number of dives, years of diving and being a professional diver or not was recorded. They were tested with a comprehensive neuropsychological test battery comprising tests for problem solving, attention/working memory, speed of information processing, motor skills and reaction times.

Results: At the end of the follow-up, 16 divers reported to be professional divers (mostly working part-time as diver). Mean number of cumulated dives was 1250 among the professional divers and 400 among the non-professional divers. Diving exposure was not found to be associated with impaired neuropsychological test results during the 12 year follow-up. There was a tendency to an increase in number of self-reported neuropsychiatric symptoms among the oldest divers, but diving activity was not related to an increase in number of symptoms. This group of young men tested three times, had on average similar, and for several tests, almost identical results during this 12 year follow-up.

Conclusion: Diving exposure did not seem to be associated with impaired neuropsychological test results in this 12-year longitudinal study.
Abstracts

(OR 2.55; 95% CI 0.84 - 7.72); welders (OR 2.98; 95% CI 0.78 - 11.40); and drivers of heavy equipment (OR 1.95; 95% CI 0.66 - 5.81). Reduced risks were found for management and administration jobs (OR 0.70; 95% CI 0.49 - 0.99); other health care jobs (OR 0.44; 95% CI 0.20 - 0.99); repairers (OR 0.49; 95% CI 0.22 - 1.09); and electricians (OR 0.46; 95% CI 0.17 - 1.26).

Conclusions Increased risks for social science jobs could be related to numbers of people contacted in a day and risk of infections. Severe influenza was associated with increased risk of PD but number of people contacted was not. Elevated risks for farmers are typically attributed to pesticide exposure, however our pesticide analyses did not support this attribution. Other exposures of interest for farmers could include animal contact, influenza, head injuries, and vibration from heavy equipment, all associated with PD in our study.

282 OCCUPATIONAL EXPOSURE TO PESTICIDES AND PARKINSON DISEASE

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Objectives The objective of this study was to assess the risk of occupational exposure to pesticides on the development of Parkinson Disease.

Methods We conducted a multi-centre hospital-based case-control study in the Netherlands. All patients, diagnosed with Parkinson Disease in one of the five participating hospitals between January 2006 and December 2011 were invited to participate. Two age and sex matched controls per patient were recruited from individuals who were seen at the same department of neurology for non-neurodegenerative disorders. The participants were interviewed in a standardised telephone-interview. The questionnaire contained a complete occupational and residential history, and specific questions about potential risk and protective factors for Parkinson Disease. Among those were detailed questions about use of pesticide at work.

Results In total 444 Parkinson Disease patients and 876 controls were included in the analyses. We applied the ALOHA Job-Exposure-Matrix to assess exposure to pesticides in general and specifically to insecticides, to herbicides and to fungicides. Self-reported information allowed for a more detailed categorization of application and re-entry exposure. Preliminary analyses of the data show a slightly increased risk for Parkinson Disease for active application of herbicides and insecticides.

Conclusions Our results confirm earlier studies showing an elevated risk for Parkinson Disease after exposure to herbicides and insecticides. The final analyses will show the results of different levels of cumulative exposure resulting from application and re-entry exposure.

283 OCCUPATIONAL EXPOSURE TO MAGNETIC FIELDS AND ELECTRIC SHOCKS AND RISK OF ALS - ANALYSIS OF THE SWISS NATIONAL COHORT

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Background Previous studies have identified increased risks of amyotrophic lateral sclerosis (ALS) in electrical workers, but studies assessing risk in workers exposed to magnetic fields were ambiguous. Electric shocks have been hypothesised to be the relevant exposure, but potential risks from electric shocks have not been previously disentangled from those of magnetic fields. We aimed at analysing the association of ALS with both magnetic field exposure as well as risk of electric shocks at work.

Methods We used the Swiss National Cohort study, which is based on census information from 1990 and 2000 linked with mortality records from 2000–2008. High or medium versus low exposure to magnetic fields and risk of electric shocks was assigned to occupations using two job exposure matrices. Data of 4.7 million persons were analysed using Cox proportional hazard models and adjusted for age, sex, educational level, civil status, nationality, language region, degree of urbanity of the municipality and an area-based proxy for socioeconomic position.

Results During 2000–2008, 1313 persons with information on occupation died from ALS. Hazard ratios were around unity for persons exposed to magnetic fields or risk of electric shocks in either 1990 or 2000. In persons classified as medium or high exposed in both 1990 and 2000, a slight increase in mortality from ALS was observed for magnetic field exposures (HR 1.39, 95% CI 1.03–1.87), but less so for electric shocks (HR 1.20, 95% CI 0.88–1.65). When accounting for both exposures in the same model, magnetic fields had a similar HR (1.36, 95% CI 0.99–1.89) as before, but the HR for electric shocks was attenuated to 1.07 (95% CI 0.76–1.5).

Conclusions We observed an association of long-term exposure to extremely low frequency magnetic fields and mortality from ALS, but not of risk of electric shocks and ALS.

Session: 12. Late breaking abstracts

284 CANCER RISK AMONG TETRAFLUOROETHYLENE (TFE) SYNTHESIS AND POLYMERISATION WORKERS

D C Consommi, 2Strat, 3Symons, 4Tomenson, 5van Amelsvoort, 4Sleuwenhoek, 4Cherrie, 1Bonetti, 4Colombo, 4Farrar, 4Carugno, 4Bertazzi. Fondazione IRCCS Ca' Granda - Ospedale Maggiore Policlinico, Milan, Italy; 2International Agency for Research on Cancer, Lyon, France; 3DusitPilot Epidemiology Program, E. l. du Pont de Nemours and Company, Newark, DE, United States of America; 4Causation Ltd, Macclesfield, United Kingdom; 5University of Maastricht, CAPHRI, Maastricht, The Netherlands; 6Institute of Occupational Medicine, Edinburgh, United Kingdom; 7Solvay Specialty Polymers Italy SpA, Bollate, Italy; 8CCERT Ltd for Asahi Glass Company Chemicals Europe (AGCCE), Congleton, United Kingdom; 9DISCO, Università degli Studi di Milano, Milano, Italy

Objectives Tetrafluoroethylene (TFE), a compound used for the production of fluorinated polymers including polytetrafluoroethylene (PTFE), increases liver and kidney cancer and leukaemia incidence in rats and mice. This is the first time the cancer risk in humans is comprehensively explored in a cohort mortality study.

Methods The study included all current PTFE production sites in Europe (Germany, Italy, The Netherlands and UK) and USA (New Jersey and West Virginia). The study cohort included workers ever employed in the period 1950–2002. A job-exposure matrix (1950–2002) was developed for TFE and ammonium perfluoro-oxoanate (APFO), a chemical used in the polymerisation process. For each worker we calculated cumulative exposure to TFE and APFO. The mortality ascertainment covered the period 1950–2008. Standardised mortality ratios (SMR) and 95% confidence intervals (CI) were calculated using national mortality rates as reference.