time windows revealed a modestly elevated risk at the highest 3 exposure quintiles for exposures that occurred >15 years since first exposure; HR=1.28 (95% CI 0.90–1.82), HR=1.27 (95% CI 0.93–1.73), and HR=1.27 (95% CI 0.91–1.77), respectively; p-trend = 0.13.

Conclusions Exposures to endotoxin with long-term, relatively intense exposures were at most weakly associated with lung cancer risk in this cohort. The findings do not support a protective effect of endotoxin, but are suggestive of possible lung cancer promotion with increasing time since first exposure.

0353 CANCER RISK ASSESSMENT IN PEOPLE HIGHLY EXPOSED TO PCBS AND PCDFS BASED ON SERUM CONCENTRATIONS 15–24 YEARS AFTER EXPOSURE

[1,2]Leon Guo, [2,3]Shih-Che Hsu, [3]Gen-Shuh Wang. [1]Environmental and Occupational Medicine, National Taiwan University College of Medicine (NTU) and NTU Hospital, Taipei, Taiwan; [2]Institute of Occupational Medicine and Industrial Hygiene, College of Public Health, National Taiwan University, Taipei, Taiwan; [3]Institute of Environmental Health, College of Public Health, National Taiwan University, Taipei, Taiwan

Objectives Risk associated with dioxin-like chemicals (DLCs) can be estimated using cancer slope factor (SF) derived from epidemiology data, and lifetime average daily dose (LADD). However, for shorter term exposure, such analysis has not been done. We propose a method to estimate cancer risk using internal exposure dose.

Method In 1979, approximately 2000 people in central Taiwan accidentally consumed rice oil contaminated by dioxin-like chemicals polychlorinated biphenyls (PCBs)- and dibenzofurans (PCDFs). Blood samples were collected between 1994 and 2003. Serum toxic equivalency (TEQ) was back-extrapolated to the time at the beginning of the exposure by using half-life of 8.7 years. The LADD of the background population was estimated by serum level, and the excess cancer risk of the background population was estimated by multiplying LADD by the cancer SF. Thereafter, the LADD and excess cancer risk of the Yucheng population was estimated correspondingly by the ratio of serum TEQ area under curve (AUC) between the exposed and the background population.

Results The average serum concentration of 245 exposed people in 1994–2003 and the estimated serum concentration in 1979 were 424 (SD=334) and 1602 (SD=1135) pg-TEQ/g-lipid, respectively. The estimated LADD of DLCs in background population was 2.18 pg-TEQ/kg-body weight/day, and the lifetime excess cancer risk caused by background exposure to DLCs is 3.4×10^{-4}. The average value of exposed people's serum TEQ AUC and the risk (i.e., 5.7×10^{-3}) are 16.8 times higher than those of the background population.

Conclusions Based on this method, individual risk can be estimated when serum concentration of DLCs are available.

0354 NON-FATAL AGRICULTURAL INJURIES: SURVEILLANCES IN THE MIDWESTERN UNITED STATES

[1,2]Lina Lander, [1,2]Ketki Patel, [1,3]Dana Loomis, [1]Shinobu Watanabe-Galloway, [1]Gleb Haynatzki, [1]Rosa Gofin, [1,2]Rohan Jadhav, [1,2]Risto Rautiainen. [1]University of Nebraska Medical Center, Omaha, Nebraska, USA; [2]Central States Center for Agricultural Safety and Health, Omaha, Nebraska, USA; [3]International Agency for Research on Cancer, Lyon, France

Objectives The objective was to estimate the agriculture injury rate in in the United States. The Bureau of Labour Statistics conducts Census of Fatal Occupational Injuries and Survey of Occupational Injuries and Illness but it excludes workplaces with 10 or fewer employees or self-owned farm operations and may underestimate the agricultural injury rate.

Method The Central States Centre of Agricultural Safety and Health partnered with National Agriculture Statistics Service to annually administer agricultural injury survey. In 2012, 6953 surveys were administered to a stratified random sample of 2007 Census of agriculture respondents in seven Midwestern States. The survey included questions on demographics, type, location and source of injury, body part injured, lost work time, and cost. The data were linked to Census of agriculture for farm level attributes. Univariate and multivariate logistic regressions were used to evaluate factors associated with adult operator injuries.

Results The cumulative incidence was 60.6 injuries per 1000 farm operators. Injury incidence was significantly higher in part-time compared to full-time farmers (79.3 vs 42.6 per 1000, p < 0.0001); farm size 1000 or more acres compared to 180–999 and 1–179 acres (91.6 vs. 60.5 and 45.4 per 1000, p = 0.002); at least one livestock compared to none (77.1 vs. 44.3 per 1000, p = 0.0004); and having a tractor with 100 or more horsepower (71.8 per 1000, p = 0.006).

Conclusions There were substantial differences in injury incidence by individual and farm attributes. These results may be used to develop targeted interventions to reduce agricultural injuries in the Midwestern United States.

0355 JOB EXPOSURES, HEALTH BEHAVIOURS, AND WORK-RELATED INJURIES AMONG YOUNG CONSTRUCTION WORKERS IN THE UNITED STATES: A 12-YEAR FOLLOW-UP STUDY

Xiuwen Sue Dong, Xuanwen Wang, Julie Largay. CPWR – the Center for Construction Research and Training, Silver Spring, MD, USA

Objectives Young construction workers are at increased risk for occupational injuries. This study aimed to identify factors associated with work-related injuries within this worker group in order to provide insight for injury interventions.

Method Data from nine waves (1988–2000) of the National Longitudinal Survey of Youth, 1979 cohort (NLSY79, N=12 686), were studied. Construction workers included those who worked in the construction industry for at least one wave. Job exposures were measured by frequency and types of physical efforts, number of waves worked in blue-collar jobs, and hours worked per week. Health behaviours were composed of body mass index, and dose of tobacco, alcohol, marijuana, and cocaine use. Multivariate logistic regression was employed to estimate the association between selected factors and work-related injuries after controlling for possible confounders.

Results During the 12-year follow-up period, 47% of the construction cohort experienced work-related injuries compared to 29% for their non-construction counterparts. The logistic regression results indicated that both job exposures and personal behaviours were associated with work-related injuries: blue-collar occupations (OR =4.24, 95% CI: 2.54–7.07); physical efforts (OR = 1.72, 95% CI: 1.20–2.48); worked over 50 h per week (OR = 1.91, 95% CI: 1.11–3.28); rotating/split shift (OR=2.99, 95% CI: 1.25–7.16); obesity (OR = 1.58, 95% CI: