Objectives To report updated results on long-term nightshift work and breast cancer risk in Hong Kong women.  

Method This ongoing case-control study involves three hospitals in Hong Kong. By 31/03/2013, we’ve consecutively recruited 443 newly diagnosed breast cancer cases and 335 age-matched controls from the hospital that the cases came from, with a response rate of 90%. We expect to collect 1000 cases and 1000 controls by 31/12/2013. We obtained each participant’s lifetime occupational history and shift work, exposure to light-at-night and other important risk factors including family cancer history. We performed unconditional logistic regression analyses to calculate odds ratio (OR) after adjusting for potential confounders.

Results The age at diagnosis (interval) between cases and controls is comparable (55.1 ± 11.9 vs. 54.2 ± 14.6 years). More cases than controls were non-parity and non-breast feeding, but gave birth slightly later. A significantly elevated (adjusted OR=1.90, 95% CI: 1.24–2.89) breast cancer risk was observed in never employed women. Among those ever employed, 19.8% of breast cancers had ever worked at nightshift at least once per month for ≥1 year and it was 21.7% for the controls. Further analyses revealed that nightshift work for ≥15 years resulted in an adjusted OR of 1.55 (95% CI: 0.76–3.14) but power is limited. There is no excess breast cancer risk for women with nightshift work for <15 years.

Conclusions This ongoing study provides supportive evidence on a positive association between long-term nightshift work and breast cancer risk. [Research Grants Council (Project no.: 474811) and Direct Grant (Project no.: 2041788), shelly@cuhk.edu.hk].

Objectives Examination of pathways between dermal and airborne manganese exposure and skin sensitivity.

Method Our study is a cross-sectional study using occupational health and safety data from a Swedish electrolytic manganese production facility. Dermal and airborne manganese exposure were measured in 100 workers over a 6-month period. Skin sensitivity was assessed using the dermal reactivity test (DRT) and the dermal sensitivity test (DST), which both measure skin irritation.

Results The mixed model described 57 and 59% of total variance, respectively. The total variance explained by the mixed model for dermal and airborne manganese was 0.51 and 0.48%, respectively. In both models, activity and substance emission potential, surface contamination, dilution, and personal behaviour were significant predictors of air concentrations (p ≤ 0.05); and surface contamination and air concentrations were significant predictors of dermal loading on cotton gloves (p ≤ 0.05). However, work shift and personal behaviour were predictive of dermal loading in the SEM (p ≤ 0.03), but not in the mixed model. In addition, the SEM reported a parameter estimate for air concentration as a predictor of dermal loading that was an order of magnitude higher than in the mixed model.

Conclusions Although SEM requires relatively large sample sizes, it is useful for modelling multiple, correlated dependent variables. In addition, full-information maximum likelihood (FIML) methods can be used in SEM to include missing predictor variable data. Although we found both models to be useful, SEM has the potential to illustrate indirect pathways of outcome variables.