

they work in the market, term of working and smoking habit influenced to plum bum level in the blood, but the most influence based on logistic regression is how long they work ($p=0.033$). Conclusion We conclude that plum bum level in air and blood is higher in market seller in the areas with many vehicles and how long they work contribute the most.

SP-140

Skin Lead Contamination of Family Members of Boat-Caulkers in Southern Thailand

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Wooden-boat building and repair involves the use of powdered lead oxide (Pb_3O_4 , or red lead) as one of the materials used in caulking. This study compared skin lead contamination of family members of boat-caulkers and control homes. It also examined the relationship of family member skin lead with floor lead loading and with dust lead content. Floor lead loading and dust lead content were measured in 67 caulkers' houses and 46 neighbourhood houses with no known lead exposure. In each selected household, wipe specimens of hand lead and foot lead were obtained from one selected family member. Hand lead loading and foot lead loading were significantly higher in family members of caulkers than controls (median 73.4 vs. 32.7 $\mu g m^{-2}$; $p=0.002$ and 84.9 vs 43.4 $\mu g m^{-2}$; $p=0.002$, respectively). This pattern mirrored floor lead loading and dust lead content, which were also higher in caulkers' than in control houses (median 121.2 vs. 43.5 $\mu g m^{-2}$; $p<0.001$, respectively). Multiple linear regression modelling revealed floor lead loading to be a better predictor than dust lead content for hand lead loading in all age groups and for foot lead loading in adult family members. In conclusion, skin lead levels are elevated in family members living in a lead-exposed worker's house and are correlated with the levels of household lead contamination.

SP-141

Comparison between Resident Handling and Workers' Health from Long Term Care Facilities in Central Taiwan

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Objectives: One of the major occupational injuries in LTC facility is the frequent heavy handling and repositioning of residents that exceed the handling

capacity of most nurses, nursing aides and orderlies. The purpose of this study is to identify the physically demanding duty for resident handling and movement, and to assess the self-reported occupational injuries among the workers as well as to explore their associations.

Methods: A cross-sectional questionnaire survey was conducted for nurse aides with participants of 204 (response rate 69.7%) from 7 LTC facilities in central Taiwan. The measurement tool contains 4 issues including personal information, resident handling and movement works, physical demanding works and self-reported health.

Results: It was found that transferring residents from chair to bed or bed to chair is the most physically demanding duties for resident handling. The most experience of self-reported injuries is the pain in the neck and shoulder. It is interesting to found that worker's injuries are correlated with the personal characteristics of age, education, number of resident care per day, license the self-reported health status. The most self-reported health problem is found in the item of headache, which includes the variables of age, education, heavy objects movement other than resident handling, license and work shift.

Conclusion: It has demonstrated that the physical demanding works are correlated with the self-reported health status. It has advocated for replacing resident handling and properly releasing workload of nurse aides in order to prevent their injuries.

SP-142

The Relationship between Neighborhood Petrol Station Density and Fetal Cord Blood Manganese in Taiwan

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Methylcyclopentadienyl manganese tricarbonyl (MMT) is widely used as substitute for lead containing anti-knocking additives in gasoline. This study was set to investigate the relationship between the concentration of manganese in cord blood and the density of petrol stations in the neighborhood as a surrogate of traffic density.

Materials and methods: In total, 1526 newborns were sampled by stratum from April, 2004 to July, 2005. Questionnaires were completed by mothers after delivery, which included demographic characteristics, medical history, and living environment. Cord blood samples were collected at birth and analyzed by inductively coupled plasma mass spectrometry. We used petrol station count (PSC) within 3 km buffer zone of the newborns' residence as surrogate for exposure to MMT-containing gasoline, based on 1343 geocoded addresses using the ArcView geographic information system. We correlated cord blood manganese and lead