



**Title:** Source and health risk of urinary neonicotinoids in Tibetan pregnant women

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### **Abstract:**

High altitude could influence the level of exposure to neonicotinoids, but relevant data remain limited for people living in Tibet. We investigated 476 Tibetan pregnant women from Lhasa of Tibet, China in 2021 and measured eight neonicotinoids and four metabolites in urine. Food consumption was investigated by a food frequency questionnaire. Health risk was assessed by using hazard quotient (HQ) and hazard index (HI) based on acceptable daily dose or chronic reference dose. Neonicotinoids and metabolites were overall detected in 56.5% of urine samples with a median concentration being 0.73  $\mu\text{g/g}$  creatinine. Four neonicotinoids or metabolites were detected in more than 10% of urine samples, including N-desmethyl-acetamiprid (47.5%), clothianidin (15.5%), thiamethoxam (16.0%), and imidacloprid (10.5%). Annual household income, family smoking, and prepregnancy body mass index were associated with the detection frequencies of neonicotinoids. Pregnant women with a higher consumption frequency of wheat, rice, fresh vegetable, fresh fruit, beef and mutton, fresh milk, yoghurt, candy and chocolate, or carbonated drinks had a higher detection frequency of neonicotinoids. Both HQ and HI were less than one. There was an evident exposure to neonicotinoids in Tibetan pregnant women with both plant- and animal-derived food items as exposure sources, but a low health risk was found based on current safety thresholds.

### **Biography:**

Yuanping Wang, PhD candidate, School of Public Health, Fudan University, focuses on the effects and mechanisms of new pollutants such as antibiotics, neonicotinoid insecticides, triclosan and triclocarban on human health, has published 10 papers in both Chinese and English as first author or co-first author, including 6 SCI English papers published in the Journal of Hazardous Materials, Environment International, Environmental Pollution and Chemosphere.