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## Metal concentrations in breast milk of Fuzhou nursing mothers associates with dietary and lifestyle factors

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Metal intake greatly influences physiological development during infancy. For infants, breast milk is the major route of metal exposure. The metal status of their nursing mothers is affected by lifestyle and nutritional factors. However, the relationship between these factors and breast milk metal concentration is largely unknown. The present study provided food frequency questionnaires to be completed by 113 nursing mothers from Fujian Provincial Hospital. Their breast milk samples were analysed for the metal concentrations using inductively coupled plasma mass spectrometry (ICP-MS). Based on the outcome of the questionnaires and ICP-MS results, a total of 94 samples were deemed valid for further data analyses. Results showed, the levels of breast milk lead (Pb) and iron (Fe) were outside the reference range from authoritative data. Correlation analyses found Pb levels were negatively associated with dietary fibre intake. Additionally, Fe levels were negatively associated with alcohol and dairy consumption. In terms of Zn levels, it was positively associated with tea and vitamin B1 intake. Zn was also negatively associated with seafood consumption. The study concluded dietary factors to associate with metal levels within breast milk. Recommendations were made to increase consumption of dietary fibre, tea and foods rich in vitamin B1 for gestational and postpartum women. Conversely, alcohol consumption continues to be discouraged for this population. Furthermore, careful considerations need to be taken for levels of dairy and seafood intake to minimize metal metabolism disruptions. Infant metal exposure requires critical attention and this needs to be initiated through the diet and lifestyle of their nursing mothers.

### Biography

Rongxian Xu has 30 years research experience in Human Nutrition field. She finished her Bachelor's degree in the School of Public Health, Shanghai Medical University, China in 1984; and received Master's degree in Nutrition and Food Hygiene, Harbin Medical University in 1994. Till date, she has published over 80 peer reviewed journal articles in Human Nutrition field. She is a Senior Member of China Nutrition Society since 1992. She has many overseas visiting experiences like visiting Curtin University, West Australia, Ulster University, North Ireland, and University of Auckland. She is a Member of Nutrition Society of New Zealand since 22 December, 2014.

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