

# Kidney damage in 12 percent of Chinese children exposed to melamine-contaminated dairy products

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While the majority of children who were affected by consuming toxic melamine-contaminated products in China recovered, kidney abnormalities remained in 12% of the affected children, according to an article in *CMAJ (Canadian Medical Association Journal)*.

In 2008, melamine-contaminated [dairy products](#) from the Sanlu Dairy Company resulted in a large outbreak of serious kidney damage in Chinese children. Melamine, commonly used in the chemical industry, was intentionally added to milk to boost its protein content. Of the 69 affected batches of product, 11 were [baby formula](#).

Chinese authorities announced the outbreak on September 12, 2008 and initiated product recalls, programs to screen and treat affected children and other emergency responses. More than 50 000 children have been hospitalized and six have died due to [kidney damage](#). Although melamine-related disease in humans has been recognized, the full effects of melamine remain unknown.

"The subjects were from a naturally living population with probably the highest melamine exposure worldwide, and thus the estimated prevalence represented the risk of renal damage in a population following heavy exposure to melamine," write Dr. Jian-meng Liu, Peking University Institute of Reproductive and Child Health and coauthors.

The study area included 8 towns in Yuanshi County of Shijiazhuang City, where the dairy company is located and its products are distributed. The research study conducted ultrasounds on 7933 children whose mothers lived in the study area who were under 3 years old as of September 2008.

Among the children who were screened some had evidence of [kidney stones](#) and swelling but most of them were asymptomatic. The majority of the affected children recovered from [melamine](#) toxic effects over time without specific treatment. However, kidney abnormalities remained in 12% of affected children indicating a need for further follow-up. "Our results indicate the need for further follow-up of the affected children to evaluate possible long-term impact on children's health, including renal function," conclude the authors.

In a related commentary, Dr. Jin-Ling Tang, School of Public Health and Primary Care, The Chinese University of Hong Kong, writes that the formula for Sanlu Infant Milk and its related technology was awarded a prestigious Chinese science and technology award about 8 months before the recall was announced. The incident highlights some of the barriers to conducting high quality research in China, which include the way researchers are evaluated and rewarded; how research funding is allocated; the negative image of Chinese research following isolated but publicized episodes of deceit; the limited language skills of researchers; researchers' salary compared to other professions and occupations in the country and even medical education.

"It is difficult to assess the importance and reliability of a piece of research soon after his completion," Dr. Tang writes. "Giving away prizes too quickly may result in mistakes, as in the case of Sanlu infant milk."

He points out that it is important for Chinese researchers to compete and

contribute internationally by publishing in peer-reviewed international journals.

He concludes that "although China now publishes as many scientific papers each year as the United States, Chinese scientists are under-represented at the highest level of scientific publication. This can change once these barriers are tackled."

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