

Cadmium Exposure Linked To Cancer Deaths in US Adults

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Cadmium is a heavy metal known to be carcinogenic in animals. In humans, occupational cadmium exposure has been linked to lung cancer; yet until now, relatively little was known about the long-term risk of cadmium exposure in the general population and for specific organs.

Dr. Scott Adams, Public Health Sciences Division, recently examined the association between cadmium exposure and cancer mortality using data from the Third National Health and Nutrition Examination Survey (NHANES III), a representative sample of the US adult population linked to national death records.

Cadmium exposure was estimated by measuring cadmium concentration in urine samples from 15,673 men and women, corrected for hydration status. Each two-fold increase in urinary cadmium concentration was associated with a 26% increased risk of death from cancer among men, and a 21% increased risk of cancer death for women. The top quarter of men with the highest urinary cadmium concentrations were particularly at risk with a 70% increased risk of death from cancer compared to all other men. The top quarter of women had a 34% increased risk.

Among men, it appears the excess cancer risk associated with cadmium exposure is due to a significantly increased risk of death from lung cancer, pancreatic cancer and non-Hodgkin lymphoma, in both smokers and never-smokers. Although the associations were generally weaker in women, significantly increased risk of lung cancer, leukemia, ovarian and uterine cancers was observed.

The most likely sources of cadmium exposure for the general population come from agricultural practices and industrial releases that result in soil contamination and cadmium accumulation in crops such as leafy green vegetables, grains, legumes and tobacco, as well as the contamination of consumer goods. Further research into the mechanisms linking cadmium exposure and cancer will help clarify the contribution of environmental cadmium exposure as a cause of excess cancer deaths in the population.

[Adams SV, Passarelli MN, Newcomb PA](#). 2011. Cadmium exposure and cancer mortality in the Third National Health and Nutrition Examination Survey cohort. *Occupational and Environmental Medicine*, Epub ahead of print, doi: 10.1136/oemed-2011-100111.



Cereal crops, leafy greens and root vegetables can accumulate cadmium. Source: www.omafra.gov.on.ca