

PUBLIC HEALTH ADVISORY

Limit consumption of Moose Organs from the southern Mackenzie Mountains in the Dehcho, due to high cadmium levels

February 9, 2009 – The Chief Medical Health Officer has issued a notice recommending that people limit the quantity of liver and kidneys eaten from mountain moose harvested in the southern Mackenzie Mountains within the Dehcho region. Moose harvested in the Mackenzie and Liard valleys have lower levels of cadmium, and the recommended guidelines for consumption are higher than for moose harvested from the southern Mackenzie Mountains.

Moose liver and kidney organs collected from the southern Mackenzie Mountains, the Mackenzie and Liard Valleys, were tested as part of a wildlife monitoring program, and some animals were found to have elevated levels of cadmium.

There was a significant difference in cadmium levels between the moose sampled in the valleys and those collected from the mountains. The mountain moose had on average a concentration of 222.5 ug/g of cadmium in their kidneys and values were between 1.3 and 11.5 ug/g in the livers. In contrast, the valley moose had on average 26.8 ug/g of cadmium in their kidneys and values between 0.05 and 9.4 ug/g in the livers.

The Recommended Maximum Weekly Intakes (RMWI) were provided based on the Provisional Tolerable Weekly Intake (PTWI) of 7 ug/kg bw/week

The RMWI for the kidney and liver of valley moose is 16 and 154 g/week, respectively. This amounts to consumption of approximately **one serving of valley moose kidney every two months, or one serving of valley moose liver per week.**

As indicated, the mountain moose have much higher cadmium levels. The RMWI for consumption of kidney and liver from these animals is approximately 2 and 14 g/week, respectively. This would amount to a recommendation that **only one serving of mountain moose liver every three months** could be consumed. It is recommended **that no kidneys from these animals be consumed**, due to the significantly higher cadmium levels.

Levels of cadmium in the meat of both valley and mountain moose are very low, and moose meat remains a very healthy food choice.

For More Information:

Contact your local health care provider or call



Office of the Chief Medical Health Officer

Background:

Cadmium is a naturally occurring soft metal found in small quantities in the substrate (soil, rock). It can also occur in air and water. It is primarily used in rechargeable batteries. Cadmium can be absorbed by plants predominantly from the surrounding substrate, and, over a period of time, cadmium can build up in animals like moose that eat the plants. Since cadmium is a metal, it does not break down and can accumulate over time. Older moose will normally have higher levels of cadmium in their organs than younger moose. A major source of exposure to cadmium for northerners is from tobacco smoke since up to 50% of cadmium inhaled through cigarette smoke can be absorbed. A minor source of cadmium to northerners is through eating kidney and liver from moose, caribou and certain marine mammals, although there is only 5% absorption through the ingested route.

This heavy metal is not easily excreted and can accumulate in the liver, kidney and muscles. High cadmium levels over a period of time may lead to possible kidney disease. Other potential long-term effects are lung damage and fragile bones. The most effective lifestyle change you can make to reduce the levels of cadmium in your body is to eliminate your exposure to cigarette smoke and then to eat a balanced diet that includes iron and calcium rich foods.

For the general world population, average daily cadmium intake, from all sources, is in the range of 10-25 µg/day and has decreased steadily over the past 20 years. Smoking doubles the average daily intake. The tolerable daily cadmium intake established by the World Health Organization (WHO) is 60 µg/day for adult women and 70 µg/day for adult men.

For more information, contact:

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