



Lead, Cadmium and Mercury Exposure in New York City Adults: Results from the New York City Health and Nutrition Examination Survey, 2004

Lead, cadmium and mercury are metals that can be harmful to human health. In 2004, the New York City (NYC) Department of Health and Mental Hygiene conducted a study, called NYC HANES, that measured exposure to these metals in the blood of adult New Yorkers.

NYC HANES

How was the study conducted?

The New York City Health and Nutrition Examination Survey (NYC HANES) was conducted in 2004. NYC HANES collected important health information through an interview and short examination on a random sample of adult New Yorkers. As part of the study we measured lead, cadmium and mercury in blood samples from 1,811 New Yorkers that were representative of the entire adult population of New York City.

What did the study find?

We found that exposures are not the same for everybody. Older people had the highest blood lead levels, people who smoked had the highest cadmium levels, and people who consumed fish frequently had the highest mercury levels.

Asian New Yorkers had the highest blood concentrations of lead, cadmium and mercury compared to other racial and ethnic groups. Foreign-born Chinese New Yorkers, in particular, had higher mercury levels than the highest category of fish consumers, higher lead levels than the oldest New Yorkers, and higher cadmium levels than current smokers.

How do these results compare to the United States overall?

Cadmium and lead levels in adult New Yorkers are similar to those of people in the United States overall. But mercury levels were more than three times higher than national levels. We estimate that nearly one quarter of adult New Yorkers and nearly half of Asian New Yorkers have blood mercury levels at or above the New York State reportable level.

Cadmium and Lead Findings

How can exposure to cadmium and lead be reduced?

Stopping smoking is the surest way to reduce cadmium exposure. Because lead can harm the developing nervous system, pregnant or nursing mothers and young children should take particular care to avoid exposure. Adults may be exposed to lead on jobs where lead-based metal or paint is handled or when doing home renovations. Workers should use protective measures to minimize these exposures. Some pottery, health remedies and cosmetic products imported from other countries have been found to contain high levels of lead.

Mercury Findings

Why are mercury levels higher in New Yorkers?

The more fish the study's participants reported eating, the higher their mercury level. People who ate fish five or more times each week have nearly four times the average mercury level of people who ate no fish. The more often people ate fish, the higher the level of mercury in their blood. People with higher incomes had higher mercury levels. Mercury levels in NYC may be higher because New Yorkers may eat more fish, on average, or because New Yorkers tend to eat fish that are higher in mercury. Asian New Yorkers reported eating more fish, on average, than other groups, and that may explain why their mercury levels were higher.

Are fish safe to eat?

Many people eat fish and shellfish as part of a healthy diet. Fish is high in protein, low in calories and rich in nutrients. But fish may also contain some mercury, and some fish contain much more than others. Most adults who eat fish very frequently experience no ill effects. But mercury can be harmful to the developing nervous system of a fetus or a young child. This is why it is especially important that women who might become pregnant, women who are pregnant, nursing mothers and young children avoid fish that are high in mercury.

Which fish should be avoided by pregnant or nursing women and young children?

The Department of Health advises that women who are pregnant or nursing, and young children avoid eating Chilean sea bass, grouper, mackerel (king and Spanish), marlin, orange roughy, shark, swordfish, tilefish and tuna (fresh steaks and sushi). These fish have been found to have levels of mercury that are too high for pregnant women, nursing mothers and young children. We have produced a brochure entitled *Eat Fish, Choose Wisely* that provides clear guidance on which fish are safe to eat, and which should be avoided. The brochure is available at <http://nyc.gov/health>, or by calling 311, and is available in English, Chinese and Spanish.

What else is NYC doing about elevated mercury levels?

In addition to public education on mercury in fish, DOHMH is testing fish in several markets to learn more about mercury levels in fish that have not adequately tested before. We have also alerted physicians to counsel patients who are or may be pregnant about their fish consumption, and to offer the brochure as basic advice during pregnancy and breastfeeding. The Department of Health continues to evaluate other sources of mercury exposure. Mercury has recently been found in several illegally imported products, including skin lightening creams and medicines. More information about these products is available at <http://nyc.gov/health>.