

Who We Are

This study is led by:

Dr. Malek Batal, University of Ottawa,
Dr. Laurie Chan, University of Ottawa,
Dr. William David, Assembly of First Nations

With contributions from:

Dr. Harold Schwartz, Health Canada



First Nations Food, Nutrition and Environment Study (FNFNES)

Hair Sampling For Mercury Exposure Component

FOR MORE INFORMATION, PLEASE CONTACT:

Lynn Barwin, National Coordinator

Phone: (613) 562-5800 x7214

Email: fnfnes@uottawa.ca

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www.fnfnes.ca

The FNFNES aims to collect information from 100 First Nation communities across Canada. One of the five components of the study is the **Hair Sampling Component**.

The objective of this component is to estimate the amount of mercury present in First Nations people to ensure that there is no danger of mercury toxicity.

Why test for mercury?



Testing for mercury is important because it is known that in water bodies where there are high levels of mercury, the mercury can build up in some species of fish. In these areas, people who eat large amounts of fish increase their exposure to mercury. Young women planning on having children and pregnant women should be particularly careful as the developing fetus is susceptible to the potential adverse health effects of mercury.

Where does mercury come from?

Mercury exists naturally in rocks, soil, and water. However, industrial activities result in increased concentrations of mercury in the environment, which is taken up by fish and shellfish. Once in the food chain, mercury can be passed on to persons who regularly consume these fish. Larger and older predatory fish tend to have higher concentrations of mercury.



Why sample hair?

When you eat food containing mercury, it is absorbed in the body where it is stored. However, exposure can be measured by testing blood or hair. Since hair is easier to obtain, FNFNES will use hair samples to measure exposure.



How will hair be collected?

A Community Research Assistant will collect a small sample of hair from the back of your head close to the scalp - no thicker than the width of a pencil. The sample will then be stapled to a plastic bag, labelled and sent to the National Coordinator who will assign a new number before it is sent to the Health Canada laboratory for analysis. Only the Community Research Assistant and the analyst will handle the hair samples.

Please note, your participation in this component is voluntary and your name will be kept confidential.



What will happen to the hair samples?



The hair sample you provide will be heated to a gaseous form in a machine that can only perform mercury analysis. In this way the amount of mercury in the hair can be determined. Any unused hair samples will be returned to the participating individual. No other information will be tested for and absolutely no hair will be kept.

How will the study ensure that personal information will remain confidential?

Participants who provide samples will remain anonymous, except to the Study Researcher at the University of Ottawa (UofO) who will ensure that the data are protected. Once the test results are reported back to the participant, the sample identification for that participating individual will be destroyed. No one at the laboratory will be able to determine the participant's identity or from which community the sample is from.



How will we know our results?

Each participant will receive his/her results in a sealed envelope along with an explanation of the data. Suggestions for follow-up action will only be provided if the results are high. A summary of all data resulting from this study (without names) will be provided to each participating community after the survey is completed.

What will be done if high levels of mercury are found in a person's hair?



If the results indicate that the levels of mercury are above what is considered normal, the researcher will inform the participant directly on how to reduce exposure. The researcher will work with the community health worker to provide nutrition advice aimed at reducing exposure.