

First Nations Food, Nutrition and Environment Study Results from Manitoba 2010

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The information and opinions expressed in this presentation are those of the authors/researchers and do not necessarily reflect the official views of Health Canada.



Why this study?

- There remains a gap in knowledge at the national and regional levels on <u>nutritional composition and the</u> <u>environmental safety</u> of foods consumed by First Nations peoples living on reserve lands south of 60th parallel across Canada.
- There is a lack of knowledge on the baseline levels of <u>environmental pollutants</u> in the traditional foods across Canada.
- There remains a gap in knowledge on the <u>total diet</u> of First Nations across Canada.



Assembly of First Nations

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ANNUAL GENERAL ASSEMBLY July 10, 11, & 12, 2007, Halifax, NS



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Resolution no. 30 / 2007

| SUBJECT: | First Nations Food Safety Research Study | |
|--------------|--|--|
| MOVED BY: | Chief Isadore Day, Serpent River First Nation, ON | |
| SECONDED BY: | Doug Kelly, Proxy Kwaw-Kwaw-Apilt First Nation, BC | |
| DECISION: | Carried by consensus. | |

WHEREAS:

- A. Many First Nations Peoples continue to rely heavily on their traditional food systems for their socio-cultural, economic, physical and spiritual well-being; and
- B. First Nations traditional food systems are being threatened by environmental contaminants; and
- C. There is a growing concern among First Nations people regarding the presence of environmental contaminants, including heavy metals, in their traditional foods and the health implications of consuming such foods; and
- D. The AFN has recently completed a review of literature on this subject (2006-2007 Fiscal) and has determined that a research gap exists on the full health implications of consuming traditional foods which have been exposed to environmental contaminants; and
- E. The AFN has partnered with the University of British Columbia, the University of Montreal, FNIHB - Health Canada, and the Public Health Agency of Canada to collaborate, as full partners, on a research study related to traditional food safety and First Nations health; and

Certified copy of a resolution adopted on the 12th day of July, 2007 in Halifax, NS.

Pfill Fontaine,⁷National Chief Head Office/Siège Social Territory of Akwesaane, RRM3, Comwell Island, Criterio K8H 5R7 Telaphone: (\$13) 932-0419 Pas: (\$13) 932-0415 Territore de Akwesaane, RRM3, Ile de Comwell (Ontario) K8H 5R7 Téléphone: (\$13) 932-0410 Télépopleur; (\$13) 932-0415 First Nations Food, Nutrition and Environment Study

Resolution no. 30 at the AFN Annual General Assembly - July 12, 2007

Halifax, NS



This study was led by

- **Dr. Laurie Chan**, Toxicologist and Professor, University of Northern BC .
- Dr. Olivier Receveur, Nutritionist and Professor, Université de Montréal.
- Dr. Donald Sharp, Assembly of First Nations.
- Dr. Malek Batal, Nutritionist and Professor, University of Ottawa.
- Participating First Nations in Manitoba.
- With contributions from: Dr. Constantine Tikhonov and Dr. Harold Schwartz



What was the study about?

- What kinds of traditional and market foods are people eating?
- How well are people eating?
- What level of contaminants are in traditional foods?
- What level of mercury are people exposed to?
- What amount of trace metals and pharmaceuticals are in the water?
- Is traditional food safe to eat?



First Nations First Nations Food, Nutrition and Environment Study





Partnership and Community Participation

- Participating communities are involved at all stages of the project.
- CIHR guidelines are followed.
- Data are confidential.
- First Nations own and possess their data.



Approach

- Methodology workshop.
- Community visits and negotiation of a Research Agreement.
- Hiring and training of research assistants in communities.
- Collecting seasonal traditional food samples.
- Interviews, hair and drinking water collection.
- Data and sample analyses.
- Result reporting and communications.
- Data return and data training workshop.
- Release of the Regional Report.



Timeframe

- Approximately 100 communities from 2008-2018.
- ~8 12 communities per year.
- Systematic Random Sampling by region and ecozone.





FNFNES Sampling Framework





9 Manitoba communities in 5 Ecozones participated in the study in 2010



Who participated

- 19 years or older.
- Able to provide written consent.
- Self-identifies as a First Nations person living on reserve.
- 477 women and 229 men from 706 households in 9 communities.
- Average age:
 - > 42 years old (women).
 - > 41 years old (men).



Nutrition and Lifestyle



How well are people eating?

 Food guide servings compared to Canada's Food Guide (CFG)⁴ recommendations (n=706)

| | | Manitoba First Nations current intake | Canada's Food Guide Recommendations |
|----------------------|--------|---|--|
| Food Group | Gender | Food Guide Servings per day | |
| Vagatablas & Eruita | men | 5.0 | 7 - 10 |
| vegelables & Fluits | women | 4.3 | 7 - 8 |
| Moat & Altornativos | men | 3.9 | 3 |
| Meal & Allemalives | women | 2.9 | 2 |
| Grain Producto | men | 6.1 | 7 - 8 |
| Grain Flouucis | women | 4.9 | 6 - 7 |
| Milk 8. Altornativos | men | 1.0 | 2 - 3 |
| WIIK & AILEI HALIVES | women | 0.8 | 2 - 3 |

The Top 5 Most Eaten Traditional Foods

| | Traditional Food | Percentage of adults who consumed | Average Days eaten per year |
|--------|------------------|--------------------------------------|--------------------------------|
| New Me | Moose meat | 73% | 12 |
| | Walleye | 74% | 11 |
| | Deer | 41% | 7 |
| | Blueberries | 48% | 6 |
| R | Ducks | 44% | 5 |

What did we learn about diet quality?

- In terms of overall nutrient intake for Manitoba First Nations, there are:
- Higher than recommended intakes of fat and sodium (salt)
- Adequate intakes for iron, vitamin B12, riboflavin, niacin, thiamine, zinc and phosphorous



What did we learn about diet quality?

- Several *vitamins and minerals* along with *fibre* seem to be consumed in **low amounts including:**
- Vitamin A, vitamin D, calcium and magnesium
- Vitamin C among men and smokers of both sexes
- Folate for women and men over 51
- Vitamin B6 for women over 51



Health and intakes of fat and sodium

- **High intakes of fat** are linked to obesity and *saturated fat* is particularly associated with heart disease.
- **High intakes of sodium** has been linked to high blood pressure, which can also lead to heart disease.
- People with diabetes are 2-3 times more likely to develop heart disease than those without.



Suggestions for Dietary Change

- Choose foods from the Milk and Alternatives group (yogurt, cheese, fortified soy/rice beverage or milk) more often. Include 1-2 more food servings daily to improve vitamin D and calcium intakes.
- Choose vegetables and fruit more often. Include an additional 2-3 servings of vegetables and fruit to increase intakes of vitamin A, vitamin C and fibre.
- Eat more whole grains. Include 1 more serving from the Grain Products food group to increase intakes of folate and fibre.

Suggestions for dietary change

Main sources of fat and sodium

- #1 source of fat: potato chips
- #1 source of saturated fat: cold cuts and sausages
- #1 source of salt (sodium): canned soups

Reducing intake of foods high in fat and salt (sodium) are key steps to promoting better health.



Traditional Food and diet quality

| On days when Traditional Food is eaten | On days when only market food is eaten | |
|--|---|--|
| The intake of many nutrients is higher including: Protein Zinc Iron Vitamin D Vitamin B₁₂ Vitamin B₆ | Intake of saturated fat is higher Intake of sodium is higher | |



Traditional Food Harvesting and Gardening





Barriers to Traditional Food Use

- 40% of Manitoba First Nation adults worried that Traditional Food would run out before they could get more
- 66% of Manitoba First Nations participants said that they would like to eat Traditional Food more often
- Main barriers are:
 - Lack of harvesting equipment and/or transportation
 - Lack of a hunter in the household
 - Lack of time



Other Factors Affecting Access to Traditional Food Use



Food Security

"...when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life."

- UN Food and Agriculture Organization



Many Manitoba First Nations households are food insecure



38% of Manitoba First Nations households experience food insecurity

- **35%** worried that their food would run out before they could buy more.
- **32%** said that food they bought didn't last and there wasn't any money to buy more.
- **11%** cut the size of their meals or skipped meals.
- 8% were hungry but did not eat because they couldn't afford enough food.





73% of northern Manitoba First Nations households are food insecure

The price of groceries in northern communities was over double the cost in Winnipeg area stores.

Northern Communities





Food insecurity and income



Overweight and obesity are a common problem



Diabetes is a major health issue





Smoking is a common problem



Environmental Health



Climate Change

 54% of participants noticed significant climate change in their traditional territories in the last ten years.



Trace Metals in Drinking Water

- Tap water samples were taken in 141 houses:A first draw sample to measure the level of metals in the pipes
 - □A flushed sample to measure the trace metals from the water source and treatment plant.



Only 1 out of 311 water samples collected contained lead above the maximum acceptable guideline. However, retesting showed results below the guideline. Other trace metals found were within the acceptable range of the Guidelines for Canadian Drinking Water Quality.

It is recommended to flush the water in the tap once in the morning before consuming.



- FNFNES measured over 40 pharmaceutical and Personal Care Product (PPCPs) metabolites used for human health, veterinary purposes and aquaculture in three surface water sites in each community.
- Pharmaceuticals were detected at 8 sites



- Caffeine (stimulant) was the second most prevalent pharmaceutical detected. FNFNES found it in 4 communities. Caffeine is a component of the most highly prescribed pharmaceuticals in Manitoba First Nations.
- *Carbamazepine* (anticonvulsant and mood stabilizer) was detected in one community. It is also a potential endocrine disrupting chemical.
- Cotinine (a metabolite of nicotine) was detected in two communities.



- 17a-Ethinylestradiol (oral contraceptive) was detected in 1 community at a swimming site. It is an endocrine disrupting chemical.
- Metformin (oral anti-diabetic medication), was detected in 5 communities and nine of the 36 sites sampled throughout the province.
 - Metformin was one of the top five of prescribed medications in 2009
- Sulfamethoxazole (antibiotic) was detected in 1 community. It is a potential endocrine disrupting chemical

Overall, the levels of pharmaceuticals found in the surface water pose no risk to human health.



Sampling of traditional foods for contaminants

A total of 651 food samples representing 83 different types of traditional food were collected

Contaminants measured include:

- pesticide residues;
- polychlorinated biphenyls (PCBs);
- Dioxins and furans;
- Trace elements and heavy metals;
- PBDEs (flame retardants);
- PFCs (non-stick coatings); and,
- PAHs (often from incomplete burning).



Contaminants in Traditional Food Samples

 Levels of contaminants are within levels that are typically found in this region and should pose no health risk to the consumer.

Overall:

Traditional Food is safe to eat and healthy for you.

- Lead (most likely from the use of lead containing ammunition) can contaminate game meat such as rabbit, duck, deer.
 - Use lead-free ammunition for hunting to avoid exposure to lead which is particularly hazardous to children and the developing fetus.

Mercury in Hair



Only 8 out of the 236 hair samples collected had levels of mercury that were slightly above Health Canada's guideline normal acceptable range. Letters were sent to these participants with suggestions on how to reduce their exposure to mercury.

- This finding indicates the need for further monitoring and further risk communication especially with high consumers of predatory fish.
- Overall, mercury body burden is below the established Health Canada mercury guidelines.

Key Results

- Diet quality is overall inadequate but is improved when traditional food is consumed.
- High rates of overweight, obesity, smoking and diabetes are major issues.
- Food insecurity is of major concern in all communities.
- Water quality, as indicated by the trace metals levels, is overall satisfactory, but close monitoring is warranted as water sources and water treatment vary greatly.



Key Results

- Mercury exposure as indicated by hair mercury concentrations, as well as dietary estimate, is not a health concern.
- Lead (most likely from the use of lead containing ammunition) can contaminate game meat such as rabbit, duck, deer.
 - Use lead-free ammunition for hunting to avoid exposure to lead which is particularly hazardous to children and the developing fetus.
- Overall, chemical contamination of traditional food does not warrant any health concern, but it is important to have the data derived from this study for future monitoring of trends and changes.

Please visit our website at <u>www.fnfnes.ca</u> Or find us on Facebook!



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