

What's next?

2023: Child and youth (3-19) five-year follow-up to the 2017-18 baseline sample collection.

2028: Adult and child (3-79) ten-year follow-up to the 2017-18 baseline sample collection.

Continue to follow-up with participants with higher measured metal concentrations (arsenic, cadmium, and lead) including re-testing, collection of additional information and providing personalized tips to lower exposures.

Questions? Contact us!

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For more information, visit our website: ykhemp.ca



HEALTH EFFECTS
MONITORING PROGRAM

2017-2018 Arsenic Baseline Results

Yellowknife General Population

What?

YKHEMP is a study testing the populations in Yellowknife, Ndilo, and Dettah for levels of arsenic and other metals of concern.

Why?

To find out if local residents are exposed to higher levels of arsenic and other metals compared to other Canadians and to investigate the long-term relationships between arsenic and health outcomes.

Who participated?

YK Randomly Selected



217
Children



673
Adults

890 Total

YK Volunteers



191
Children



685
Adults

876 Total

All*



506
Children



1531
Adults

2037 Total

*Also includes Yellowknives Dene (225) and North Slave Métis (46) participants

February 2023

Key Findings & Observations



URINE

- Used to measure **3-5 days** of past arsenic exposure.
- Most children and adults tested have total arsenic levels **similar** to the average Canadian.

TOENAILS



- Used to measure **2-12 months** of past arsenic exposure.
- Results show that some children have **higher** levels of arsenic compared to adults.
- Children are likely exposed through **external sources** like dust, soil, or sediment.

Due to historical mining activities, there is a higher amount of arsenic in the environment around Yellowknife compared to other parts of the NWT and Canada. However, the levels around Yellowknife are still much lower (up to 100 times) than in places where people are at risk for cancer and other arsenic-related illnesses.

Although YKHEMP observed higher levels of arsenic in children, we found no evidence that anyone's health was at risk with the arsenic levels we are seeing in the Yellowknife area.

HEALTH



- We **asked permission** from participants to review their previous 5 years of medical records.
- At present, **we did not find** that arsenic levels were related to any identified health outcomes.
- The rate of **skin cancer was higher** in the Yellowknife population compared to NWT and national data.
- The rate of **heart conditions and hypertension was lower**, compared to NWT and national data.

Looking forward: Following participants in coming years will provide us with more definitive information.

GENETICS



- We collected saliva from participants to look at **specific genes** related to how the body processes arsenic.
- Because of their genetics, some participants were **less efficient** than others in the study at processing arsenic.

Looking forward: This information is useful for understanding the risk of arsenic exposure for the population.

What's next?

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HEALTH EFFECTS
MONITORING PROGRAM

2017-2018 Arsenic Baseline Results

Yellowknives Dene First Nation

What?

YKHEMP is a study testing the populations in Yellowknife, Ndilq, and Dettah for levels of arsenic and other metals of concern.

Why?

To find out if local residents are exposed to higher levels of arsenic and other metals compared to other Canadians and to investigate the long-term relationships between arsenic and health outcomes.

Who participated?

YKDFN



87

Children



138

Adults

225 Total

All*



506

Children



1531

Adults

2037 Total

*Also includes Yellowknife General Pop. (1766) and North Slave Métis (46) participants

February 2023

Key Findings & Observations



URINE

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Although YKHEMP observed higher levels of arsenic in children, we found no evidence that anyone's health was at risk with the arsenic levels we are seeing in the Yellowknife area.

HEALTH



- We **asked permission** from participants to review their previous 5 years of medical records.
- At present, **we did not find** that arsenic levels were related to any identified health outcomes.
- YKDFN members had **higher rates of skin conditions and diabetes** reported in their medical files, compared to the Yellowknife general population.
- YKDFN members had **lower rates of cancer** compared to the Yellowknife general population.

Looking forward: Following participants in coming years will provide us with more definitive information.

GENETICS



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For more information, visit our website: ykhemp.ca



HEALTH EFFECTS
MONITORING PROGRAM

2017-2018 Arsenic Baseline Results

North Slave Métis Alliance

What?

YKHEMP is a study testing the populations in Yellowknife, Ndilo, and Dettah for levels of arsenic and other metals of concern.

Why?

To find out if local residents are exposed to higher levels of arsenic and other metals compared to other Canadians and to investigate the long-term relationships between arsenic and health effects.

Who participated?

NSMA



11

Children



35

Adults

46 Total

All*



506

Children



1531

Adults

2037 Total

*Also includes Yellowknife General Pop. (1766) and Yellowknives Dene (225) participants

February 2023

Key Findings & Observations



URINE

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Looking forward: Following participants in coming years will provide us with more definitive information.

GENETICS



- We collected saliva from participants to look at **specific genes** related to how the body processes arsenic.
- The **NSMA participant population was too small** to analyse the population genetics.
- Because of their genetics, some participants were **less efficient** than others in the study at processing arsenic.

Looking forward: This information is useful for understanding the risk of arsenic exposure for the population.