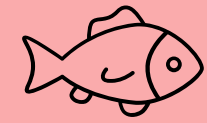




# Supporting Primary Providers on Mercury Screening for at Risk Populations



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- Ethics approval was obtained from Confederation College's REB # 0113.
- The researchers have no conflicts to disclose.

## Background

- Elevated mercury levels during pregnancy have detrimental effects on the fetus (Bonyata, 2018; Ramirez et al., 2000)
- Suggestions on the need for information regarding potential exposures to mercury and surveying different demographics for fish consumption (Canadian Government, 2007)
- Canadian government found alarmingly high mercury levels in Indigenous populations in a biomonitoring initiative (Stuart et al., 2011)
- Mercury levels in fish vary between lakes and species (Bhavsar et al., 2011)
- Populations thinking of pregnancy should be tested for mercury due to the increase in mercury in fish such as tuna but there has been no follow-up (Greger, 2012)

## Study

- The objective of this descriptive study was to determine :
  - a. how often primary care providers and midwives are screening for high mercury levels
  - b. their current knowledge level on The Guide to Eating Fish Ontario
  - c. what (if any) resources would be beneficial to their learning in regards to assisting them in such screening and to support the clinicians/bring awareness to the implications high mercury levels have pregnant and breastfeeding individuals (the developing fetus/baby)
- 28 participants
- Recruited via virtual poster
- Consent was gathered when participants commenced the survey
- Survey via Qualtrics platform that analyzed data

## Limitations & Recommendations

- Grassy Narrows article - Released during data collection period and exposed information relating mercury exposures to attempted suicide in children and youth (DeFlaviis, 2023)
- Participants needed to have access to the flier to participate
- Attrition - 1 participant dropped out and one other participant provided some information

- Survey larger populations of primary care providers
- Including naturopaths in future studies
- Screening or testing of at-risk populations
- Screening pathway for healthcare professionals
- Standardized testing
- Incorporating mercury and fish intake into the standardized perinatal screening form
- Education
- Expanding the scope of Midwives

## Clinical Significance

- Long-term exposure to mercury can damage the liver and kidneys (Fournier, Karachiwalla, & Shah, 2021).
- Canadian Indigenous populations have more risk factors to developing chronic kidney disease (Komenda et al., 2016)
- The damaging effects on kidneys caused by mercury exposure can further contribute to kidney problems within the Canadian populations.
- Many rural communities specifically Northern areas, rely heavily on fish as a source of nutrition (Fournier, Karachiwalla, & Shah, 2021).
- High mercury levels can also affect the neurological system including memory loss and neuromuscular alterations (Taylor et al., 2016).
- Mercury can cross the placenta and if the mother has high levels, the fetal levels become even higher than the mothers (Taylor et al., 2016).
- When fetuses are exposed to mercury, it has been associated with microcephaly, blindness and other physical disabilities (Taylor et al., 2016).

## Results

### What barriers (if any) are there to discussing fish consumption with your patients?

- Did not come up in conversation with patients (66.67%)
- Language (4.17%)
- Does not appear to be worth discussing (8.33%)
- Other (20.83%)
  - Have not seen guidelines
  - Lack of trust in existing data
  - Lack of knowledge and relevancy

### What barriers (if any) prevent you from ordering blood work for mercury levels on your patients?

- Unsure of when to order mercury levels on patients (50.0%)
- Unsure of how to interpret mercury levels on patients (23.68%)
- Lack of resources available to draw blood (2.63%)
- Other (23.68%)
  - Not within their scope
  - Lack of recommendations to do so

### How familiar are you to your local fish consumption guidelines?

No data to display

### How often are you asking your patients about their fish consumption?

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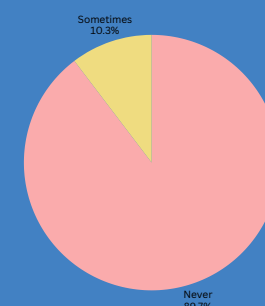
### How often are you asking your pregnant patients about their fish consumption?

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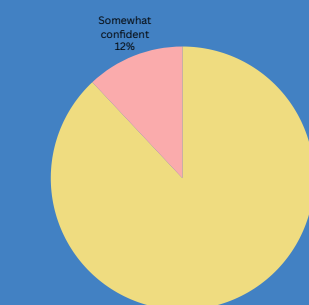
### How often are you asking your breastfeeding patients about their fish consumption?

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### How often are you ordering mercury levels in your perinatal patients?



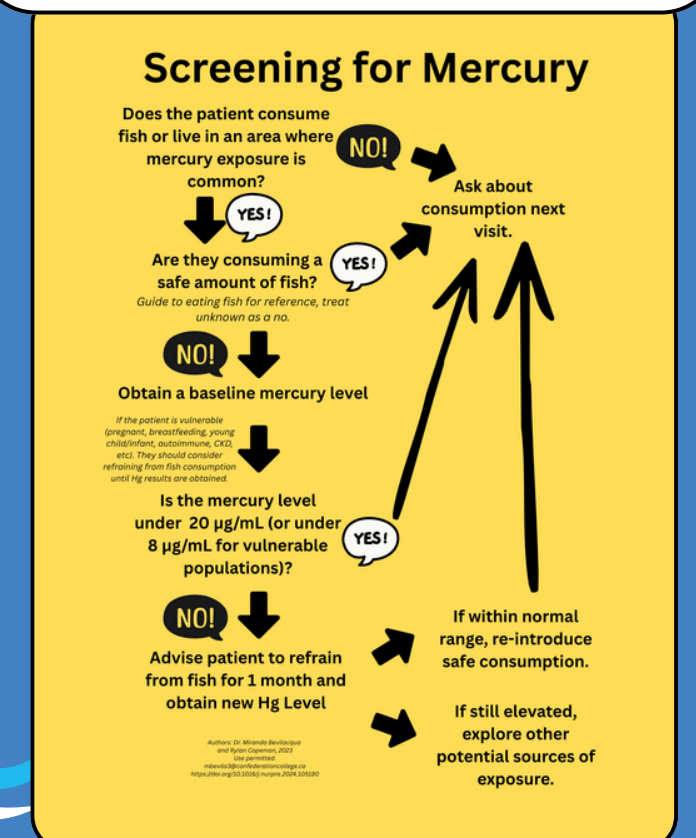
### How confident are you at interpreting and addressing elevated mercury levels in your patients?



### What type of education and/or tools/resources regarding elevated mercury levels and screening material would be beneficial to you in your current role?

- Inservice (CME) - 21.05%
- Lunch and learn - 22.81%
- Flyer/handout - 17.54%
- Screening pathway - 33.33%
- Other - 5.26%
  - Guidelines or Webinar
  - Medical directive to order blood work

## Screening Pathway



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