BCTOX’s Toxicology “News Surveillance” Jan – 2019

Reza Afshari*, Environmental Health Services, BC Centre for Disease Control, BC. Reza.Afshari@bccdc.ca

Public Health & Environmental Toxicology: What is BCTOX & why?

Health professionals (HP) including policymakers, health educators and researchers need to be regularly updated on environmental toxicology issues to keep up with rapidly evolving toxicology information, emerging health risks from environmental chemicals and to manage issues that are locally highlighted in the popular press and news media.

Environmental toxicology training is limited during education, and when HPs enter the field, they lack information on the responsibilities for regulation and risk communication among local, provincial and federal agencies, as well as their relations to international organizations, scholarly articles, and private sectors, including industry. All of these factors lead to avoidable confusion.

BCTOX acts as a local up-to-date resource to answer current toxicology issues. The business model of BCTOX is flexible in order to maximise its applicability. BCTOX is also still developing, and will be determining its future directions along the way.

BCTOX acts like a pendulum. It mobilises your interventions to other places where they can also be used, and also back-translates the health activities that have had a “life outside of the health system” and have made societal impacts.

While BCTOX is not official and not liable for the reported news from media, it is BC-related and full of concise information that is handpicked and fun to read. BCTOX keeps you engaged with toxicology news in BC. BCTOX is full of inspiring ideas dedicated to B.C!

Monthly major toxicological statistics

**Mortalities** In total, around 700 premature deaths could be attributed to toxic exposures in BC in May including:

- **ACUTE exposures**: [estimated]=
  - ≈ 110 due to illicit drug overdose
  - ≈ 10 due to suicides (CO, drugs and alcohol)
- **CHRONIC current and past exposures**: [estimated]=
  - ≈ 500 due to smoking and tobacco use,
  - ≈ 81 (air pollution),
  - ≈ 11 (radon)
  - ≈ 7 (asbestos)

These are equal to overall 15*10^3 population toxic exposure-induced deaths in March alone, including 2.4*10^2 acute and 13*10^2 chronic toxicities (estimations are subject to assumptions and limitations, and overlaps are possible (see BCTOX 2(8): 103)).

**Morbidities** Around 2200 calls were made to BC-DPIC (estimated from August 2017)

Sola dosis facit venenum

*Only the dose makes the poison!*

Paracelsus (1493 – 1541 CE)

Dilemma of the pipelines in B.C. from a population health perspective

Since early January, a few checkpoints are blocking access to TransCanada’s $4.7-billion Coastal GasLink pipeline that is a 670-kilometre line that is meant to deliver liquefied natural gas (LNG) from Dawson Creek to a planned facility near Kitimat (Figure).^1

RCMP arrested 14 B.C. pipeline protesters. A B.C. Supreme Court injunction will allow police (or TransCanada) to remove camps and checkpoints set up by the Wet’suwet’en First Nation. Protesters would have to obey the injunction to end the blockade.^2

While economically this pipeline makes sense, First Nations populations, activists and environmentalists are concerned about the potential ancestral land, environmental effects and pollution. With regards to public health this pipeline project faces a dilemma similar to what is at stake for another pipeline in B.C; the trans mountain Kinder Morgan project. While jobs and in turn income will increase as a result of industrial development that in turn contributes to improving population health, they are at odds with related pollution and potential spills, traffic, etc. (Figure) Oil spills involve toxicological health risks for people participating in the cleanup operations and coastal inhabitants. ^2

The extent of contradictory effects is not clear, and is a matter of judgment as well as science! --- What do you think?

The majority of scientific works are focused on environmental effects of spills and to a lesser extent cultural issues. ^3 ^4 There is no study following the problem in a holistic approach deducting the beneficial effects of industrial developments from negative impacts. --- What do you think? To what extent one direction of the effects are more important?

---


PROVINCIAL HEALTH OFFICER’S ANNUAL REPORT
released on Jan 2019

--- Toxicology Related issues

The office of the provincial health officer has released a provincial health officer’s annual report entitled “Taking the pulse of the population. An update on the health of British Columbians.”

--- B.C. is doing well in reducing diabetes and Hep C, but needs to improve on mental health and infant mortality according to Dr. Bonnie Henry, B.C.’s health officer.

ACUTE TOXICITIES

Illegal Drug Overdose Emergency

Their activities under the direction of the Joint Task Force, task groups worked on a coordinated response to the emergency included

- Expanding access to naloxone.
- Increasing access to overdose prevention and supervised consumption services.
- Increasing access to opioid agonist treatment.
- Establishing enhanced surveillance and early-warning and monitoring systems.
- Reaching and engaging those who are using drugs alone.
- Launching and maintaining a comprehensive social marketing campaign to raise awareness of issues related to the emergency.

Notes: Survey data reflect households on municipal water supplies that boiled water in the last 12 months in order to make it safe to drink. This excludes respondents who did not indicate whether they treated their water prior to consumption. See Appendix B for more information about this data source. Source: Statistics Canada, Households and the Environment Survey, 2015. Extracted from CANSIM Table 153-0123. Prepared by Population Health Surveillance and Epidemiology, BC Office of the Provincial Health Officer, BC Ministry of Health, January 2017.

(Read more)
Inside the changes to Canada's food guide,\textsuperscript{7,8}

Environmental-clinical Toxicology related issues, 01-2019

The newest version of Canada’s Food Guide was realised on Jan 23, 2019.

1. General issues

Canada’s Food Guide recommends that your plate should be divided neatly into:

- one-half vegetables and fruits,
- one-quarter whole-grain foods, and
- one-quarter assorted protein-packed foods.

This is a big change from the past. It focuses on meal planning, cooking and healthy choices:

- Planning, buying and cooking healthy food,
- Eating well plate and recipes,
- Eating on a budget,
- Food waste and the environment,

In addition, it works on

- Healthy eating at home, at school, at work, in the community, when eating out
- Life stages; Nutritional needs and healthy eating habits, children, older adults

Other Points:

- No one ever eats enough fruits and vegetables
- The majority of protein section consists of beans, nuts and pulses, although some space is occupied by chicken, beef, fish and dairy
- There is no milk or fruit juice in the newest version of the guide, which now describes water as the “beverage of choice”. --- “We’re not telling Canadians not to eat dairy products or not to eat meat products. What we are telling Canadians, however, is to look at the variety of foods that are available out there”.

History of Dietary Advice in Canada, A picture is worth a thousand words! (photos adapted from references \textsuperscript{7 and 8})

1. CANADA'S FOOD RULES
Approved by the Canadians Council on Nutrition

\begin{itemize}
\item 1944
\item 1949
\item 1977
\item 1992
\item 2007
\item 2019
\end{itemize}
The produce section does include frozen peas and carrots, as well as canned tomatoes (cheaper).

2. Toxicology related issues

2.1. Sugar substitutes

The guide stresses that sugar substitutes are not needed for healthy eating, but they can be replaced with sugar. Information can be found by reading the ingredient list that may include:

- xylitol
- lactitol
- isomalt
- mannitol
- erythritol
- saccharin
- aspartame
- sorbitol and sorbitol syrup
- maltitol and maltitol syrup
- stevia extract and steviol glycosides

2.2. Healthy eating and the environment

One should be aware that the food choice they make impacts

- Their health
- Their environment
- Buying and eating foods
- Use and disposal of foods

The impact that foods can have on the environment is influenced by the type of food, where it comes from and how it is produced, packaged, processed and transported.

2.3. Food waste

Store properly, prepare enough (to avoid leftovers) and do not shop impulsively.

2.4. Make environmentally-friendly choices

- choose plant-based foods
- carry a reusable water bottle
- use reusable grocery bags
- use reusable containers to store food and pack lunches
- look for ways to reduce food packaging in what you buy
- buy food that can be transported home in your re-fillable container
- keep perishable foods in their original packaging when you store them to extend freshness

** Some parts of this summary are pasted from the references 7 and 8.

References


