



# Artificial Water Fluoridation & Infant Health Risks

**Heather Gingerich, MSc**

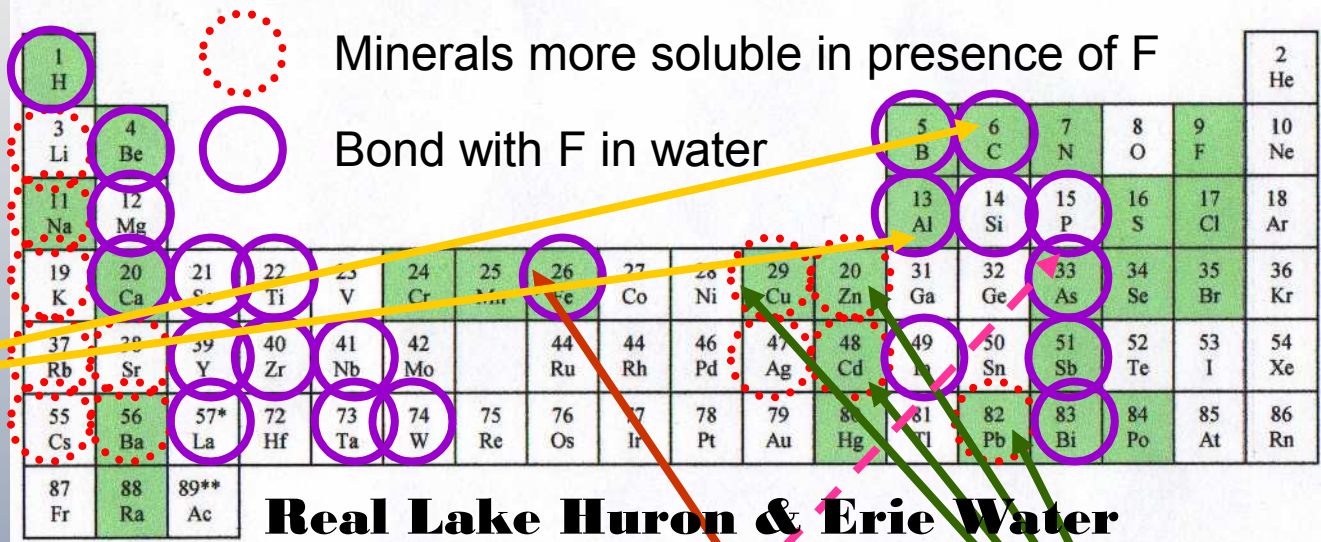
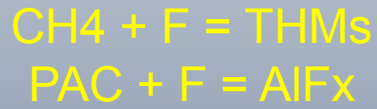
PhD student University of Guelph

Director (Canada) International  
Medical Geology Association

On-Call Scientist American Association  
for the Advancement of Science



Combines with aluminum & carbon molecules to form toxic compounds



Municipal & Residential

"Hides" arsenic, uranium, rare earth elements from detection by Ion Specific Electrode



Corrodes pipes & fixtures made of copper, zinc, lead, cadmium



Oxidizes iron pipes



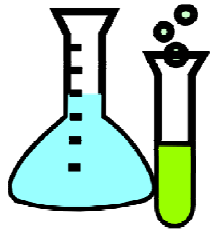
*If you're not monitoring at the residential tap, you're gambling with the Periodic Table.*

# Water Fluoridation Increases Toxic Elements in Municipal Water

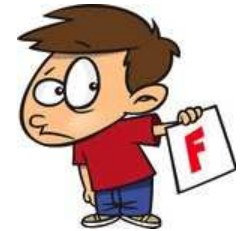
mg/L or ppm	Infant Humans Adequate Intake	Protection Aquatic Species	Ontario Drinking Water Standards	MOE MISA
<b>Fluoride*</b>	<b>0.0128</b>	<b>0.12</b>	<b>1.50</b>	<b>10.0</b>
<b>Lead*</b>	<b>None</b>	<b>0.001</b>	<b>0.010</b>	<b>2.0</b>
<b>Cadmium*</b>	<b>None</b>	<b>0.000017</b>	<b>0.005</b>	<b>0.7</b>
<b>Arsenic*</b>	<b>ND</b>	<b>0.005</b>	<b>0.010</b>	<b>1.0</b>
<b>Uranium &amp; Decay Prod.</b>	<b>None</b>	<b>NA</b>	<b>0.02 (as U)</b>	<b>NA</b>

- 1. Added from municipal and industrial sources**
- 2. Infrastructure corrosion products of AWF**
- 3. Contaminants in HFSA**

**\*Both contaminant of HSFA + corrosion product**

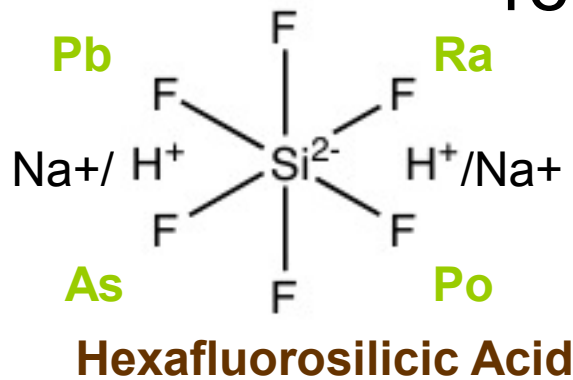


# Guilty By Dissociation



Those who claim that contaminants in fluorosilicates (ex. arsenic, lead & uranium decay products like radium, polonium, radon) are not a health concern because of the “100% dissociation in water” argument would **FAIL** high-school Chemistry.

In **real water**, they become free ions or **charged complexes** with little or no reduction in overall toxicity.



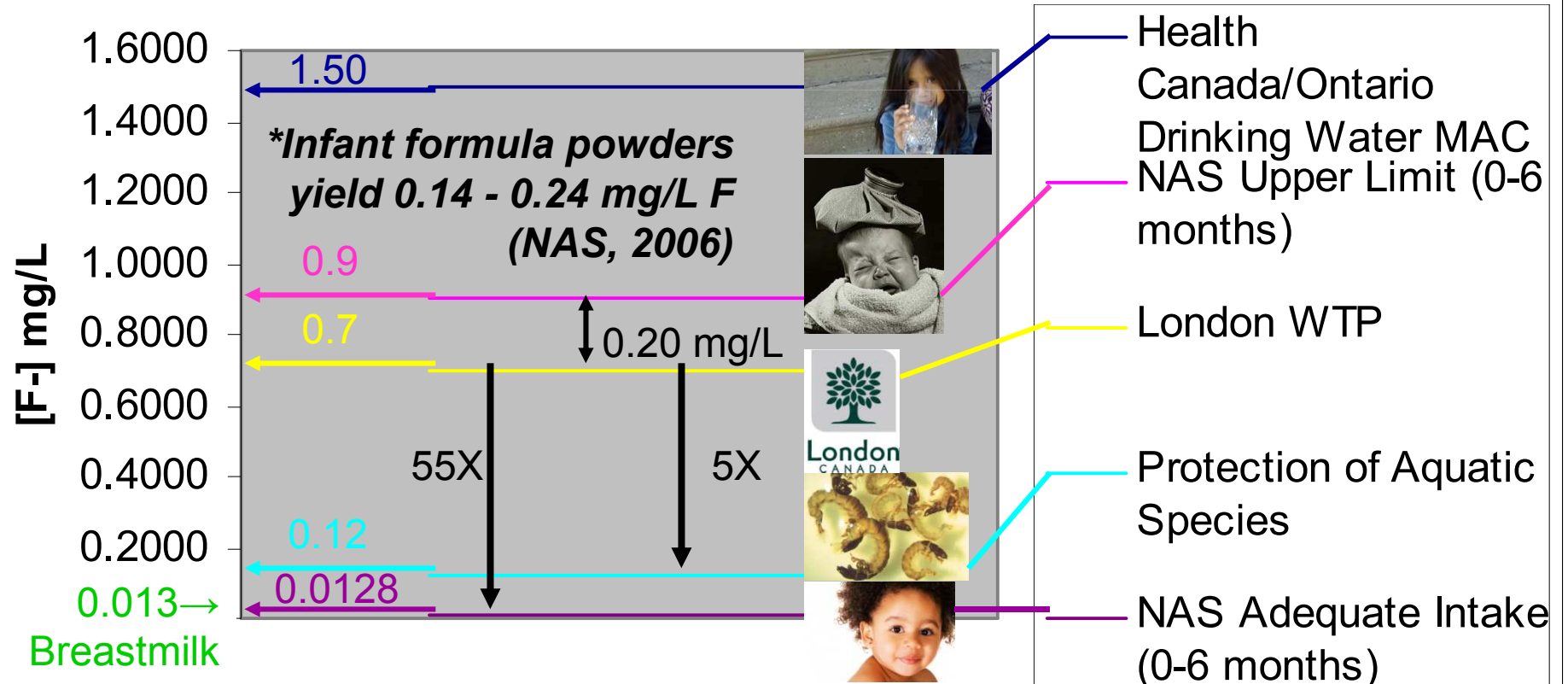
**Water with Dissolved Ions & Complexes**

The US EPA admitted to Congress in 2001 that “We cannot confirm with any degree of certainty that HFSA dissociates in municipal water supplies”.

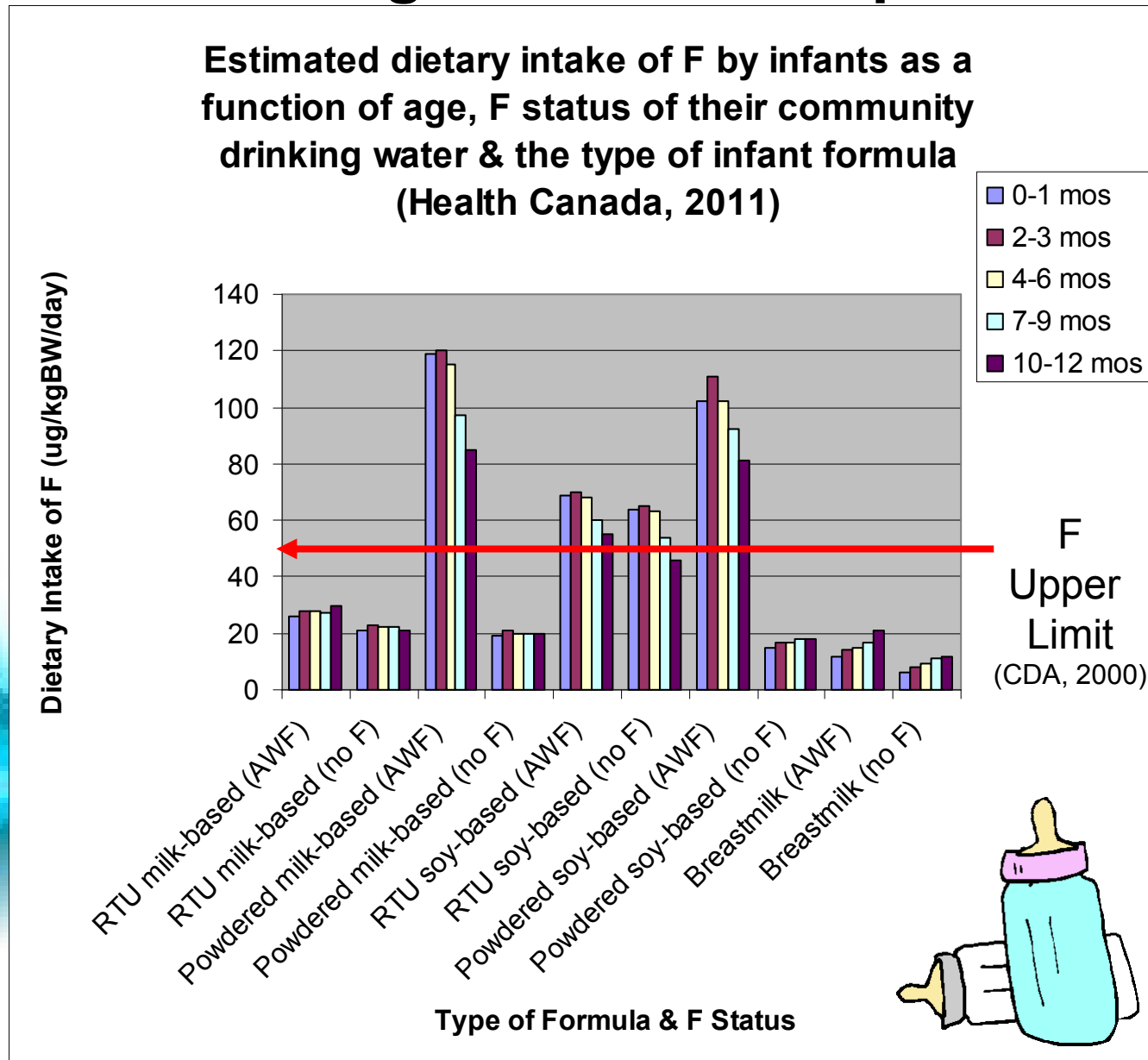
# National Academy of Science Dietary Reference Intakes for F – far beyond Adequate, approaching Upper Limit

## Fluoride Ion Concentration In Water vs Selected Standards & Guidelines

*“Fluoride should not be added to infant formula.” Codex Alimentarius (1981)*

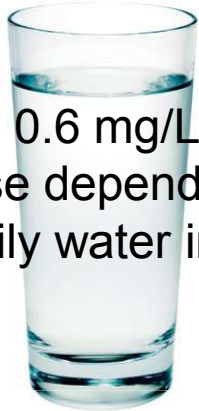


# Powdered milk- and soy-based formulas overdose infants with F during critical developmental stages



# We are now exposed to 5 times more F than in 1971

Dermal absorption  
"sparkly" phlogopite  
90,000 mg/kg F



0.6 mg/L F

Dose dependent on  
daily water intake

1,200 mg/kg F



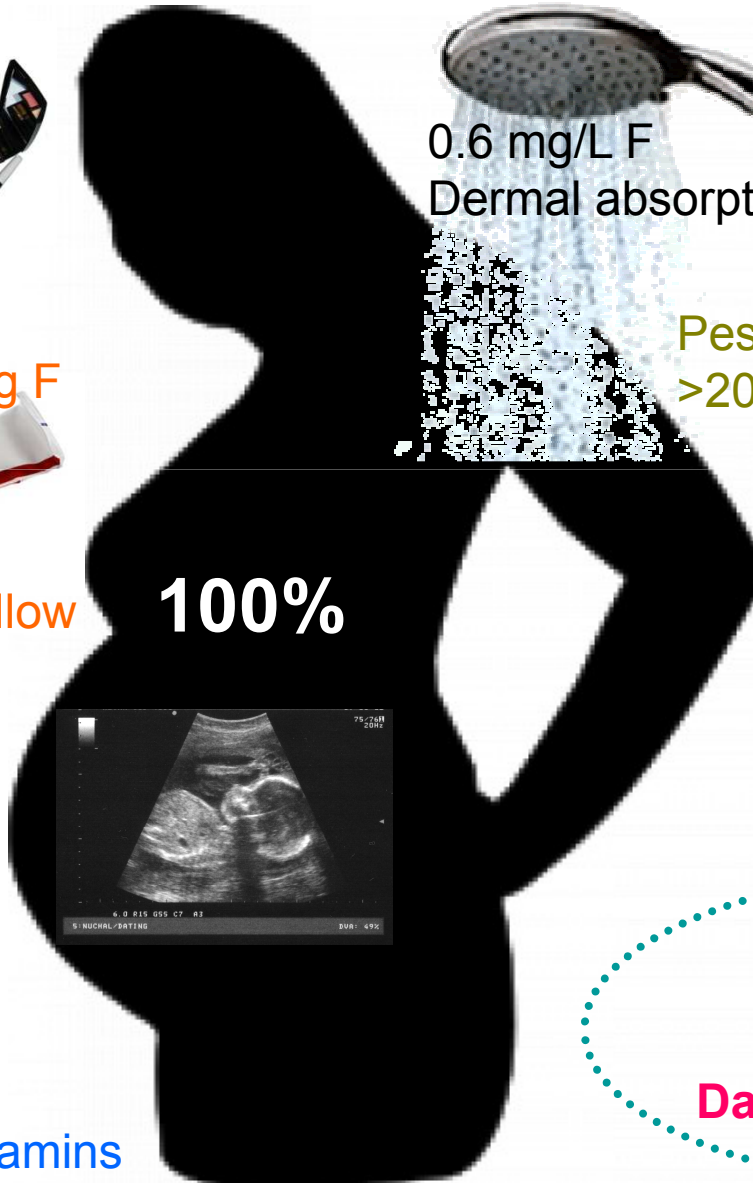
Do not swallow

30,000-170,000 mg/kg F

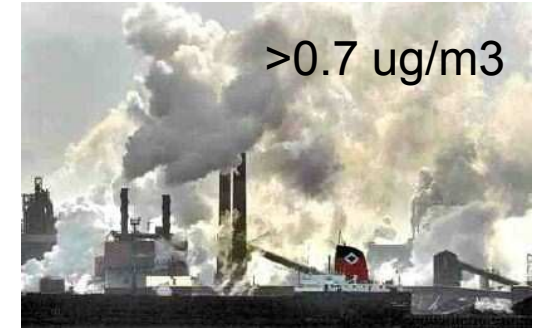


No F *listed* in prenatal vitamins

## F than in 1971



0.6 mg/L F  
Dermal absorption



>0.7 ug/m<sup>3</sup>

Pesticides, fertilizers, fumigants  
>20% F-agricultural chemicals



Organic food >6 mg/kg F  
Soil >2000 mg/kg F



Daily Toxic F Intake = 0.7 mg  
from ALL SOURCES

# “Minorities” at risk of fluoride over-exposure

(National Research Council 1977/2006 - US Agency for Toxic Substances & Disease Registry 1993, US Environmental Protection Agency)

- Pregnant and lactating mothers, fetuses, young children
- Hypersensitive to fluoride [~1-5% of population]
- Elderly (over 65) [~12% of population] i.e. Baby Boomers
- Diabetics [~5-10% of population]
- Cardiovascular Disease [~5% of population]
- Renal Disease [~5% of population]
- Diets with essential vitamin and mineral insufficiencies such as:
  - calcium, magnesium [27-44% of the population]
  - iodine [~38% of world's population]
- Thyroid insufficiency [~5-10% of the population]  
**Between 98% - 129% of population not including ethnic minorities, pregnant & lactating mothers, unborn & newborn children.**

**Obvious in 3<sup>rd</sup> Generation due to cumulative DNA damage.**





*Cancer*



*Fractures*



*Conductive  
Hearing Loss*



*Learning & Developmental  
Disorders*

# ***Dental Fluorosis = F Toxicity***

*Infant & Childhood  
Obesity*

*Preterm Labour*

