

Overview of Human Health in the Great Lakes Basin

Christopher T. De Rosa
*Agency for Toxic Substances
and Disease Registry*



Persistent Toxic Substances (PTS) in the Great Lakes Basin

- **Organochlorine Compounds**

- Polychlorinated biphenyls (PCBs)
- Hexachlorobenzene (HCB)
- DDT and its metabolites
- Dioxins (2,3,7,8-TCDD)
- Mirex
- Dieldrin
- Toxaphene
- Furans

- **Heavy Metals**

- Alkylated lead
- Methylmercury

- **Polycyclic Aromatic Hydrocarbons**

- Benzo[a]pyrene

Exposure

- Epidemiological studies document exposure of individuals to bioaccumulative pollutants of concern
 - => Persistent toxic substances (PTS)

Chemical Contamination in Fish Tissue

- Levels of some contaminants in Great Lakes fish are above the advisory limits set by state and federal governments.
- 100% of the Great Lakes waters and their connecting waters are under a fish consumption advisory.

At Risk Populations

- Males/females of reproductive age
- Pregnant women
- Fetus/infant/child
- Native Americans
- Sport anglers
- Elderly
- Immuno-compromised



Health Effects

- Neurobehavioral and developmental deficits in newborns
- Disturbances in reproductive function
- Motor and cognitive deficits in adults

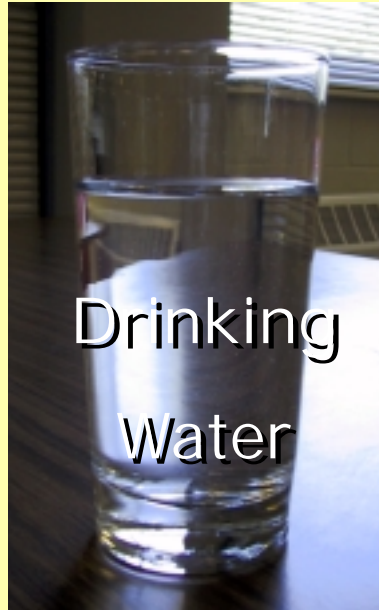
Emerging Issues for Human Health

- Air deposition of toxic substances
- Endocrine disruption
- Transgenerational effects
- Pharmaceuticals and other contaminants in water

Future Priority Needs for Human Health

- Monitoring and surveillance data
- More collaborative research efforts between the U.S. and Canada
- Binational database of human health information

Indicators for Human Health



Drinking
Water



Swimming Advisories



Fish
Consumption
Advisories

