



Michigan Department of Health and Human Services (MDHHS)

Jordan Bailey, PhD

The Role of MDHHS

- Determine if chemicals in the environment may cause harm to health
- Provide recommendations
- Provide technical support to the local health department
- Outreach to public, healthcare, others

PFAS Chemicals

- Health problems are not immediate
 - You would not *feel sick*
- If you drink high levels of PFAS chemicals over time you could be more likely to develop some health problems in the future

Associated Health Issues: PFOS and PFOA

High-dose exposures in people are linked to:

- Higher cholesterol
- Thyroid disease (PFOA)
- Ulcerative colitis (PFOA)
- Testicular and kidney cancer (PFOA)
- Changes to the immune system
- High blood pressure during pregnancy (PFOA)
- Other

High-dose studies In laboratory animals have shown:

- Exposure during pregnancy
 - Changed bones in the paw
 - Lowered pup birth weight
 - Sooner puberty in male pups
- Immune system problems
- Changes in liver and kidney weight

Environmental Protection Agency's "Health Advisory" Level

- Based on reference doses (RfD) calculated from developmental toxicity study in rats
- Lifetime Health Advisory
 - PFOA + PFOS = 70 ppt (ng/L)
 - Short-term and long-term exposure
- Protects unborn baby and others against cancer and noncancer health issues

6,000,000* ppt
(1,000,000 ng/kg/day)



Rodent to human
conversion



98,000 ppt
(5,300 ng/kg/day)



Human
protections



350 ppt
(20 ng/kg/day)



Accounting for
other exposures
in the
environment



70 ppt
(ng/L)

Lowest dose that causes
an effect in rat pups

Human equivalent
dose

Dose that is safe in the most vulnerable
people (like developing babies)

Lifetime Health Advisory
for PFOA in drinking water

Illustrating the concept behind a Lifetime Health Advisory: Perfluorooctanoic acid (PFOA)

* Exact numbers have been generalized for illustration
ppt = Parts per trillion

As a precaution

- All residents had less than 70 ppt PFOS+PFOA

These residents are offered a filter because we do not yet know if the amount of PFOS+PFOA in their water will change in the near future

A temporary protective measure

The Health Department's Recommendations

- Groundwater at the landfill was >70 ppt

and

- The groundwater plume is still being identified

**Anyone with detected PFAS in well-water is offered a filter
while the investigation is underway**

What you can do

Reduce your exposure to PFAS from all sources:

- Use a filter if it is recommended
- Follow MI's Eat Safe Fish guidelines
- Read consumer product labels and avoid using those with PFAS

- outdoor clothing
- carpets
- cleaning products
- cosmetics
- leather goods
- ski waxes

“perfluoro...” “polyfluoro...”
“polyperfluoro...”



Thank you