



Michigan Department of Health and Human Services (MDHHS)

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The Role of MDHHS

- ▶ Evaluate potential exposure to chemicals in the environment
- ▶ Determine if harm may occur
- ▶ Provide recommendations
- ▶ Provide technical support to the local health department
- ▶ Outreach to public, healthcare, others

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
- ▶ Preeclampsia (PFOA)

High-dose studies in laboratory animals have shown:

- ▶ Developmental effects
 - ▶ Changed bones in the paw
 - ▶ Lowered pup birth weight
 - ▶ Sooner puberty in male pups
- ▶ Immune system dysfunction
- ▶ Changes in liver and kidney weight

EPA's Health Advisory Levels

- ▶ Based on reference doses (RfD) derived from developmental toxicity study in rodents
- ▶ Lifetime Health Advisory
 - ▶ PFOA + PFOS = 70 ppt (ng/L)
 - ▶ Short-term and long-term exposure
- ▶ Protects fetus and others against noncancer health issues (also protective against development of cancer)

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

Thank you

