Clinical Response to PFAS Exposure

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PEHSU
Pediatric Environmental Health Specialty Units

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Exposure to PFAS in the general population

National Report on Human Exposure to Environmental Chemicals – CDC 2017

- ***The vast majority of Americans have detectable levels of PFAS***

Environmental chemicals in pregnant women in the United States: NHANES 2003-2004. Woodruff TJ, Zota AR, Schwartz JM. Environ Health Perspect. 2011 Jun;119(6):878-85

- 163 chemicals, 268 pregnant women
- ***"Certain polychlorinated biphenyls, organochlorine pesticides, PFCs, phenols, PBDEs, phthalates, polycyclic aromatic hydrocarbons, and perchlorate were detected in 99-100% of pregnant women."***

Should I order PFC levels on my exposed patients?

NO

- No known “safe” or “unsafe” levels
- No treatment for elevated levels
- Levels cannot predict health outcome
- Levels may be due to multiple exposure sources
- Increased anxiety, dread, desire for additional testing

Screening for health effects of exposure

- Elevated cholesterol → fasting lipid panel
- Hyper/hypo-thyroidism → TSH
- Ulcerative cholitis → symptom history
- Testicular CA → symptom history, PE, teach STE
- Kidney CA → symptom history, urine/abd exam?
- PIH/preclampsia → routine BP, urine dip

Risk Communication

- External hazards → FEAR, LACK OF CONTROL

- Scientific facts play less of a role in *perception of risk* than beliefs, values, and experiences

Communication

- LISTEN and empathize
- Be clear about acknowledging uncertainty and unknowns
- Advise about risk reduction activities:
  - **Reduce/Remove from exposure**
  - **Healthy lifestyle**
  - **Routine primary health care**
  - **Follow local fish advisories**
- Offer resources

Risk communication

- For exposures at the reference level of a chemical the "chances" are *1:1,000,000*
- *"The chances are very low that you will have health consequences from this exposure."*
- Benefits and risks should be weighed, e.g. breastfeeding
- Give the patient some control back: Ask for their participation in the risk management response:
  - *"What actions do you think you can take to lower your exposure and your risk of health outcomes?"*

Patient questions

- *My water is contaminated. Will you please order a blood level?*
- *My blood level is high. What should I do?*
- *I live in a contaminated area. Can I breastfeed my baby?*

Patient questions

- *Can we bathe in contaminated water?*
- *This is really stressing me out. What can I do?*
- *I'm afraid I'm going to get cancer. Can you check me for it?*
- *I want to get pregnant but now I'm worried. Should I postpone pregnancy?*

Resources

Additional Information

Resource	Link
ATSDR: PFAS portal	http://www.atsdr.cdc.gov/pfc/index.html
C8 Science Panel	http://www.c8sciencepanel.org/prob_link.html http://www.c8sciencepanel.org/publications.html
EPA: PFAS	https://www.epa.gov/chemical-research/research-perfluorooctanoic-acid-pfoa-and-other-perfluorinated-chemicals-pfcs
IARC	http://www.iarc.fr/
NIEHS: PFAS	https://www.niehs.nih.gov/health/materials/perflourinated_chemicals_508.pdf
Pediatric Environmental Health Specialty Units (PEHSU)	http://www.pehsu.net/

Resources

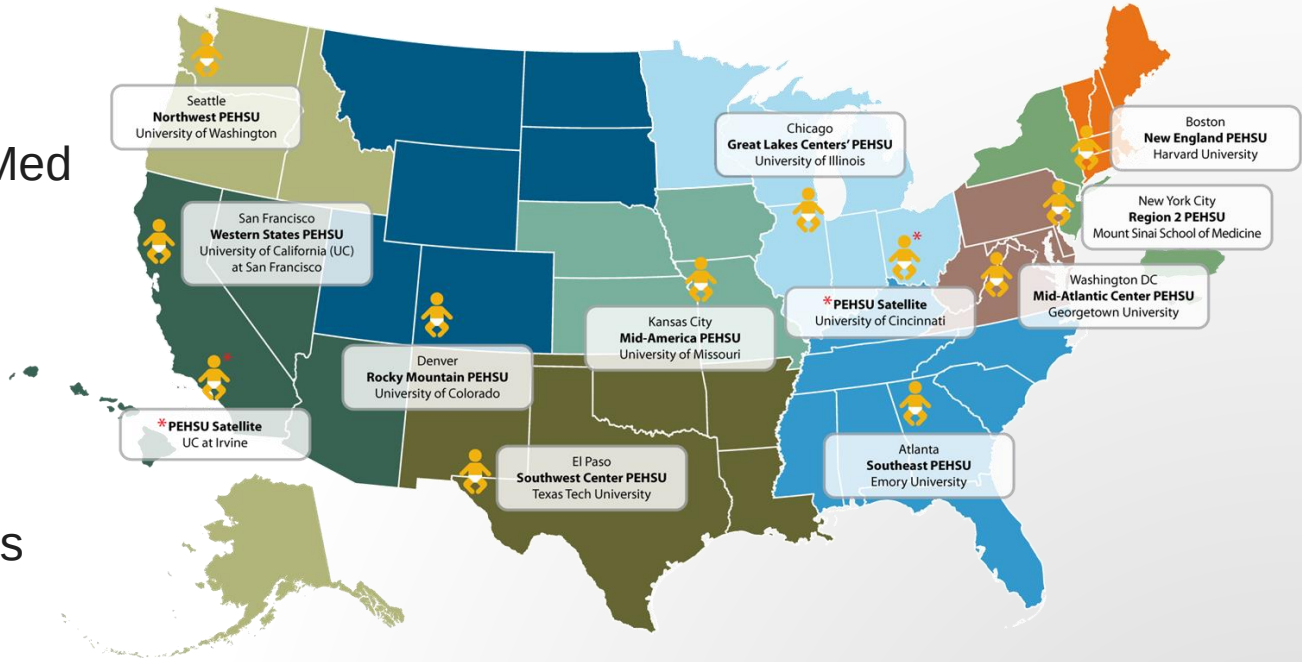
- Who to call?
- More information about PFAS:
- Information about PFAS contamination in Michigan:

PEHSU
Pediatric Environmental Health Specialty Units

Funded by federal EPA, ATSDR

Staffed by:

- Occupational/Enviro Med
- Peds or Family Med
- Medical toxicologists
- Pediatric health nurses
- Industrial hygienists



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(312) 864-5526 or (866) 967-7337

Michigan Poison Control: (800) 222-1222

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