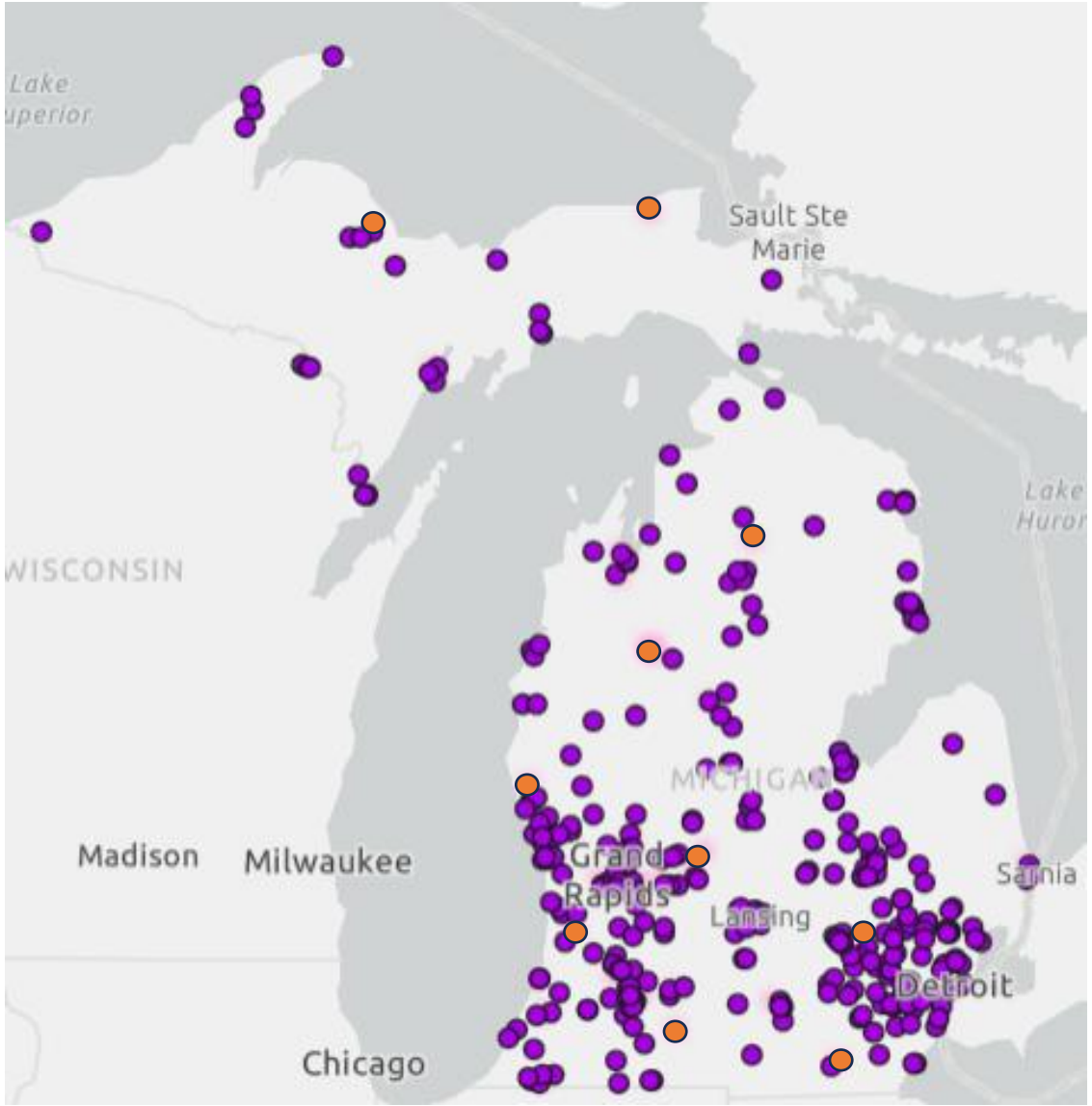
Health Beliefs in Action: Designing Michigan's PFAS Health Education Campaign

Ellery Johnson, MPP and Sarah Allison, MPH

October 8, 2026



PFAS in Michigan



PFAS Sites		PFAS Areas of Interest	
●	359	●	39

MPART: PFAS Geographic Information System
(URL: Eh.Michigan.gov/PFASMap)

Map updated October 2026

Preventing PFAS Exposures is Key

- There are currently no approved treatments to reduce elevated blood PFAS levels.
  - Many PFAS take a long time to leave your body.
- Overall, low PFAS levels have been shown to cause some health effects.
- The more PFAS (specifically, PFOA and PFOS) a person is exposed to, the higher their risk of developing certain cancers.
- Understanding health effects of individual PFAS and combinations of different PFAS continues to grow.
- State, federal and international PFAS standards and guidance values have changed over time.

PFAS Background and Support for a Statewide Recommendation

- **Response Activities.**
  - Michigan PFAS Action and Response Team (MPART): Michigan.gov/PFASResponse.
- **Exposure Assessments and Health Studies.**
  - MDHHS biomonitoring projects: Michigan.gov/DEHBio.
- **Growing Scientific Literature.**
  - MDHHS peer-reviewed PFAS and thyroid article: Eh.Michigan.gov/MiPEHSthy.
  - CDC's Multi-site Stud: ATSDR.CDC.gov/pfas/health-studies/multi-site-study.
- **Evolving Regulations and Health-Based Values.**
  - EPA PFAS regulations: EPA.gov/PFAS.
  - CDC's PFAS health-based information: ATSDR.CDC.gov/PFAS.

MDHHS recommends everyone in Michigan reduce their exposure to all PFAS when and wherever possible.

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Recommendation Purpose



- MDHHS issues statewide guidance on issues with broad public health significance.
- Acknowledges eliminating **all** exposure pathways to **all** PFAS may not be possible.
- Encourages people to do what they can to reduce their exposure.

Recommended Actions to Reduce PFAS Exposure

- Learn if your drinking water contains PFAS.
  - Consider using a certified PFAS-reducing filter if you are concerned about PFAS in your drinking water.
- Follow Eat Safe Fish guidelines.
- Limit your use of products that may contain PFAS.
- Don’t touch foam on surface water.



Barriers to Action

- Financial cost.
- Availability of products.
- Cognitive burden.*
- Prioritizing.*
- Overwhelm.*
- Utility of PFAS in consumer products.
- Reliance on PFAS-containing products in various occupations.
- Trust in government recommendations/interventions.*

*Barriers we can, at least partially, address in our campaign.

Using Health Behavior Theory

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Recap

So, we have:

1. An identified problem.
   - Evidence of a hazard.
   - Exposure data.
2. Basic language approved.
3. Action steps approved.
4. Identified barriers.

Let’s build a plan!

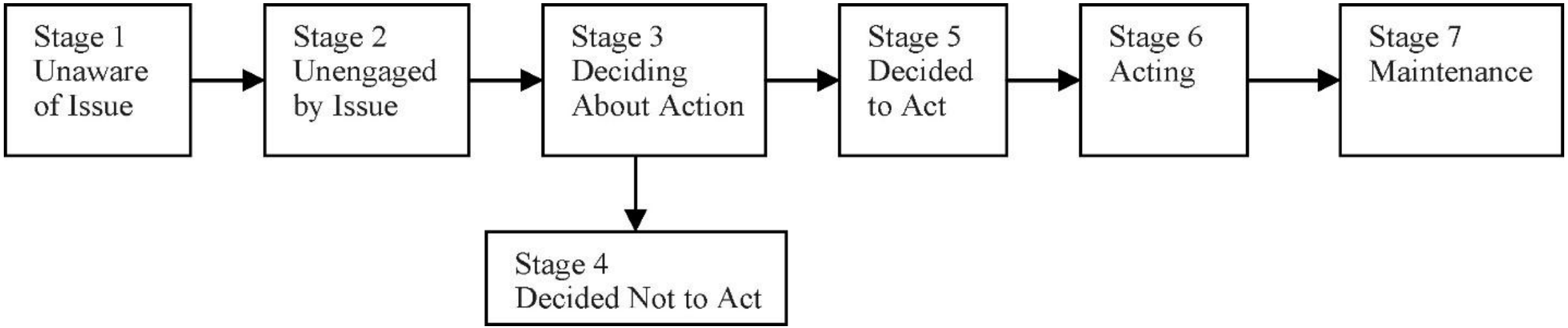
Health Behavior Theory

- Health behavior theories provide evidence-based frameworks for encouraging behavior change.
- Primary theory used in our plan: Precaution Adoption Process Model (PAPM).[1]
  - With concepts borrowed from:
    - Health Belief Model (HBM)[2].
    - Transtheoretical Model and Stages of Change (TTM)[3].

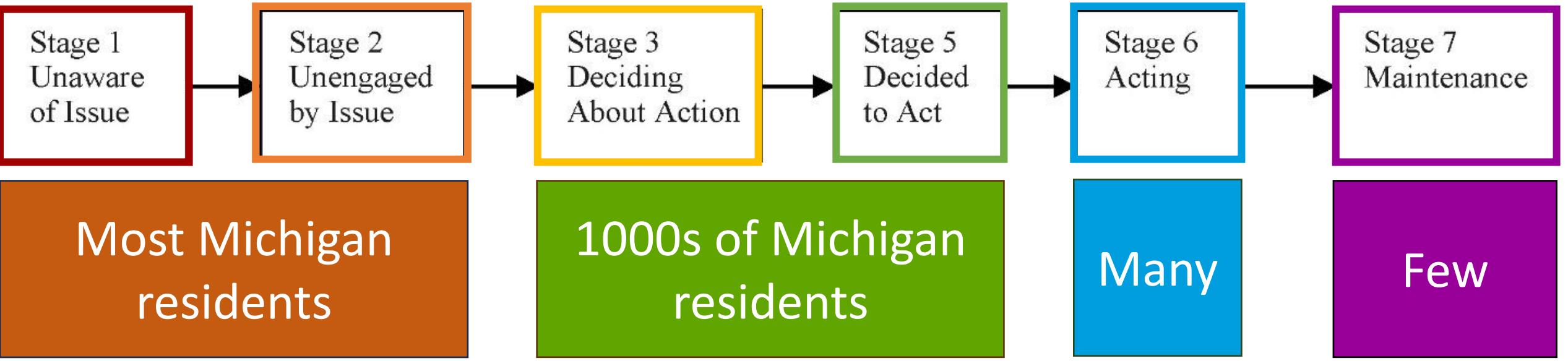
[1]Weinstein and Sandman (2008) Precaution Adoption Process Model. In K. Glanz, B. K. Rimer, & K. Viswanath (Eds.), *Health behavior and health education: Theory, research, and practice* (4th ed., pp. 45-65). Jossey-Bass.
[2]Champion, V.L. and Skinner, C.S. (2008) The Health Belief Model. In K. Glanz, B. K. Rimer, & K. Viswanath (Eds.), *Health behavior and health education: Theory, research, and practice* (4th ed., pp. 45-65). Jossey-Bass.
[3]Prochaska, J.O., Redding, C.A., Evers, K.E. (2008). The Transtheoretical Model and States of Change. In K. Glanz, B. K. Rimer, & K. Viswanath (Eds.), *Health behavior and health education: Theory, research, and practice* (4th ed., pp. 97-121). Jossey-Bass

Precaution Adoption Process Model

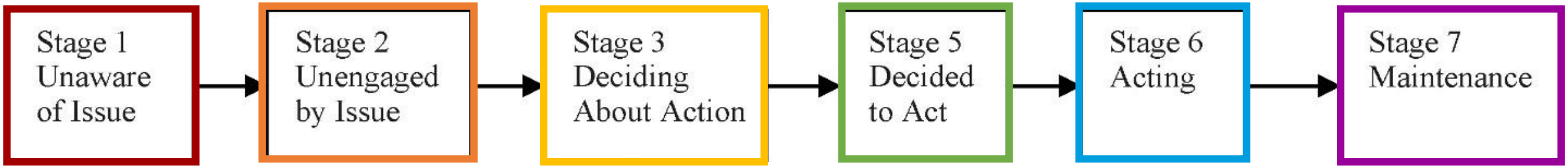
"A stage theory that seeks to explain the adoption of new health-protective behaviors."



Assumptions



PAPM Tactics[1] to Help People Move Through the Stages



- Mass media messaging.
- Maximize personal relevance.

- Mass media messaging.
- Use trusted messengers.

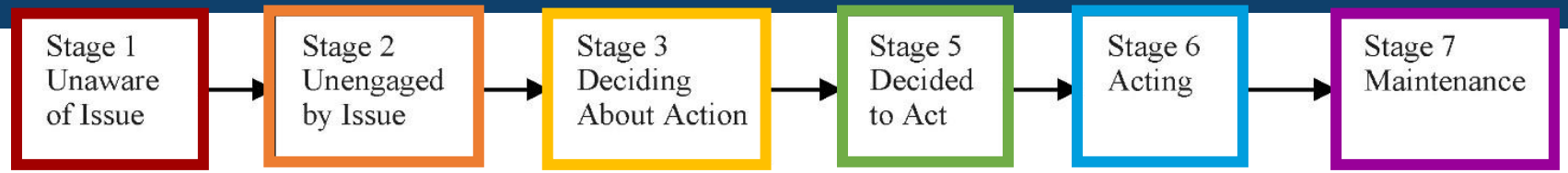
- Address beliefs.
- Incorporate HBM: Identify barriers, benefits and how a person can calculate their own risk.
- List of simplified actions.

- Identify the time, effort and resources needed to act.
- Provide detailed "how-to" information.
- Set up reminders and other cues to action.
- Assist in carrying out the action.

- Reminders.
- Identify and reduce barriers to maintenance.
- *Counterconditioning* (TTM).
- Incorporate rewards for *self-efficacy* (HBM).

[1]Weinstein and Sandman (2008) The Health Belief Model. In K. Glanz, B. K. Rimer, & K. Viswanath (Eds.), *Health behavior and health education: Theory, research, and practice* (4th ed., pp. 45-65). Jossey-Bass.

PAPM in the Communications Plan



Goal 1: Promote the statewide recommendation to reduce PFAS exposure from all sources.	
	Objective 1a: Depending on their identified PAPM stage, Michigan residents will:
Stage 1, Stage 2	Understand the different pathways of PFAS exposure in the human body. (Stages 1 & 2)
	Understand the negative health effects of long-term PFAS exposure. (Stages 1 & 2)
Stage 3	Identify sources of PFAS in their day-to-day lives. (Stage 3)
Stage 5	Identify ways to reduce their PFAS exposure. (Stage 5)
Stage 6	Take steps to reduce their PFAS exposure. (Stage 6)
Stage 1, Stage 2	Strategy 1: Create and disseminate public-facing materials about the recommendation.
Stage 2	Strategy 2: Create and disseminate materials to promote statewide guidance to external partners and organizations.
Stage 3, Stage 5	Strategy 3: Create/update materials providing information on how to identify PFAS sources and ways to reduce PFAS exposure.
Stage 5, Stage 6, Stage 7	Strategy 4: Create website and web-based tool to help residents identify their next steps, and to encourage them to take those steps.

PFAS Media Campaign

Stage 1
Unaware
of Issue

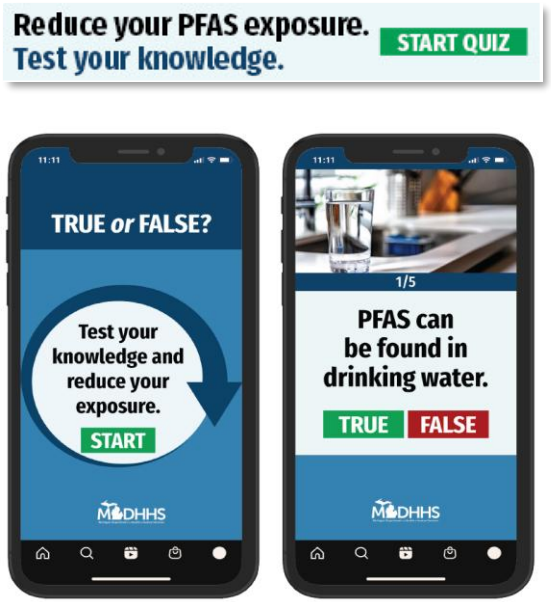
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Stage 2
Unengaged
by Issue

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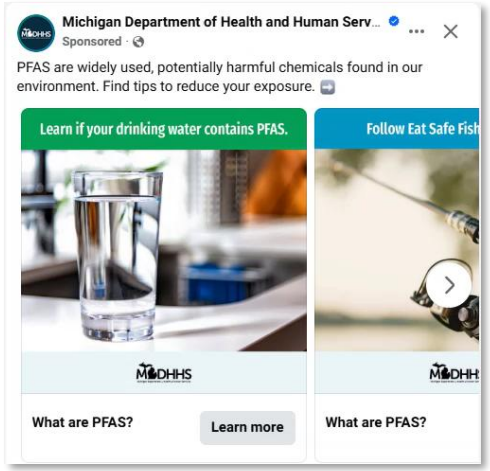






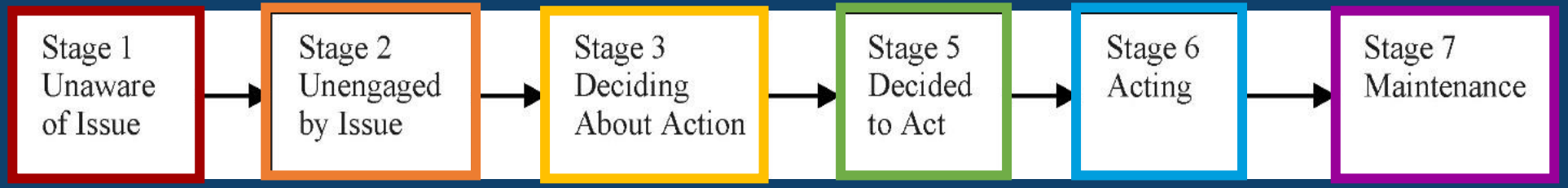








Website

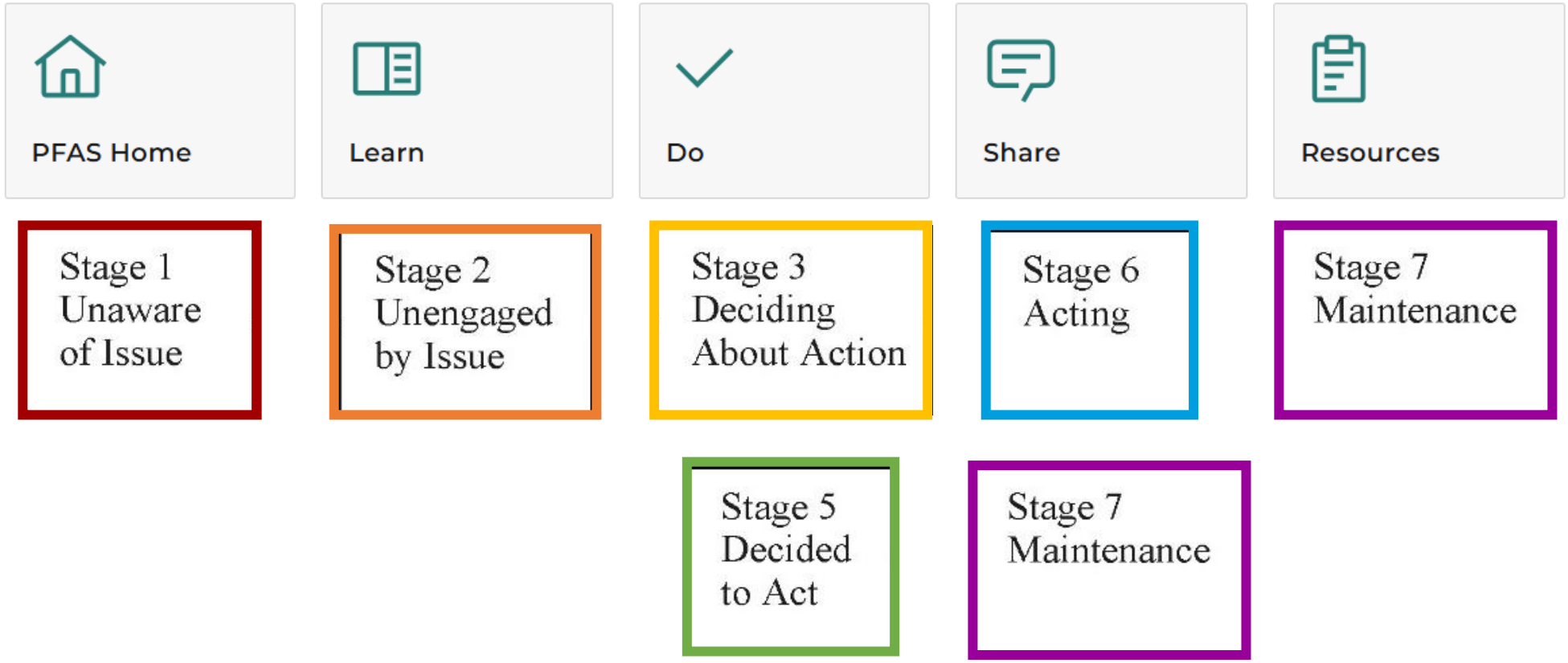


Visit Michigan.gov/PFAS for:

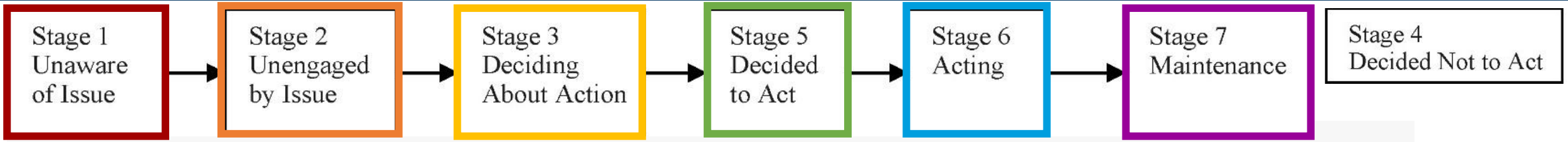
- Recommended actions to reduce PFAS exposure.
- A lifestyle survey to create an individualized action plan.
- Resources to share with your community:
  - Translated fact sheets.
  - Social media toolkit.
  - Free promo items.
- Ways Michigan is leading the nation in PFAS exposure prevention.
- More information about PFAS.



PAPM on Website Navigation



PAPM on the Website



Which situation is right for you?

I don't know much about PFAS. Tell me more.

I have a lot of things to worry about. Why should I care about PFAS too?

I am not ready to reduce my exposure to PFAS yet, but I might want to in the future. Can you remind me later?

I have heard about PFAS and want to reduce my exposure. Tell me how.

I am already taking actions to reduce my exposure to PFAS. What more can I do?

I am a health care provider looking for more information.

I work at a local health department and am looking for more information.

I am part of a community organization looking for more information.

Lifestyle PFAS Exposure Survey

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Stage 1 Unaware of Issue → Stage 2 Unengaged by Issue → Stage 3 Deciding About Action → Stage 5 Decided to Act → Stage 6 Acting → Stage 7 Maintenance

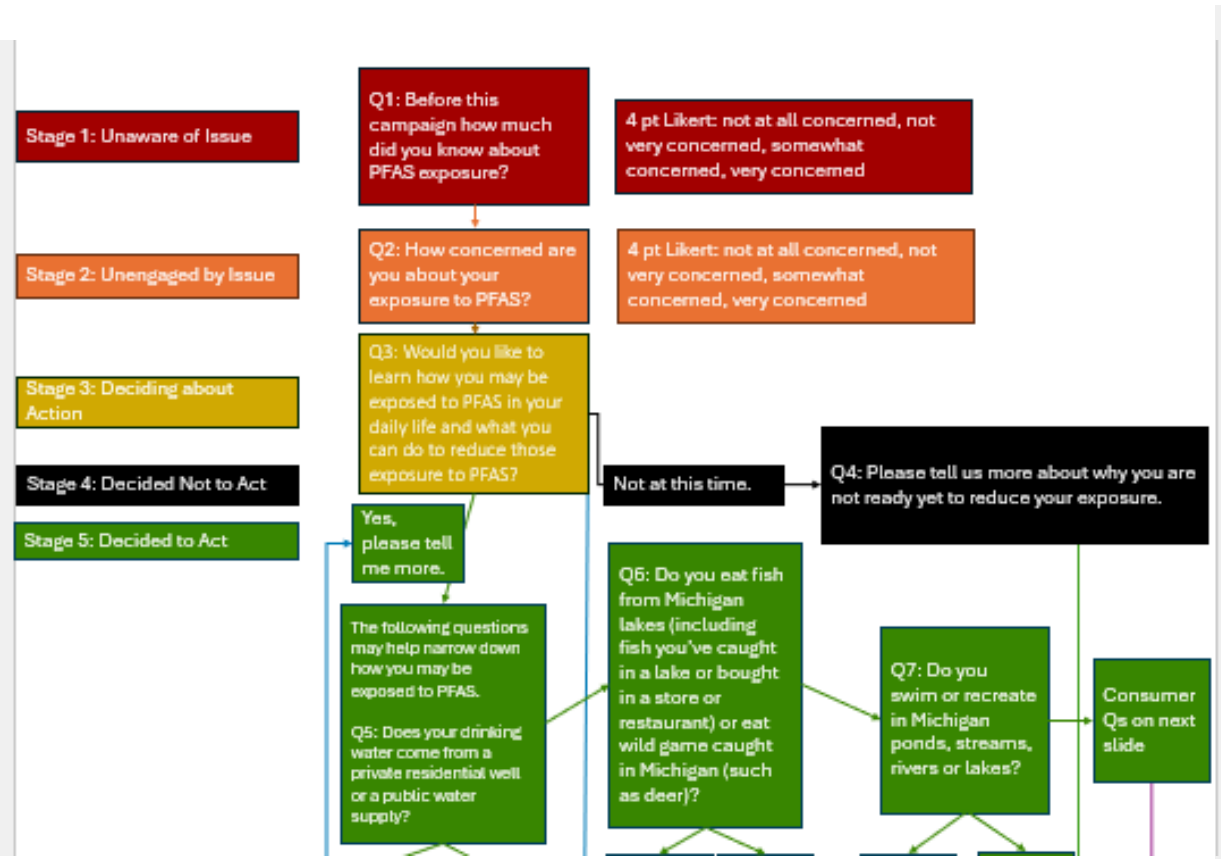
Stage 4 Decided Not to Act

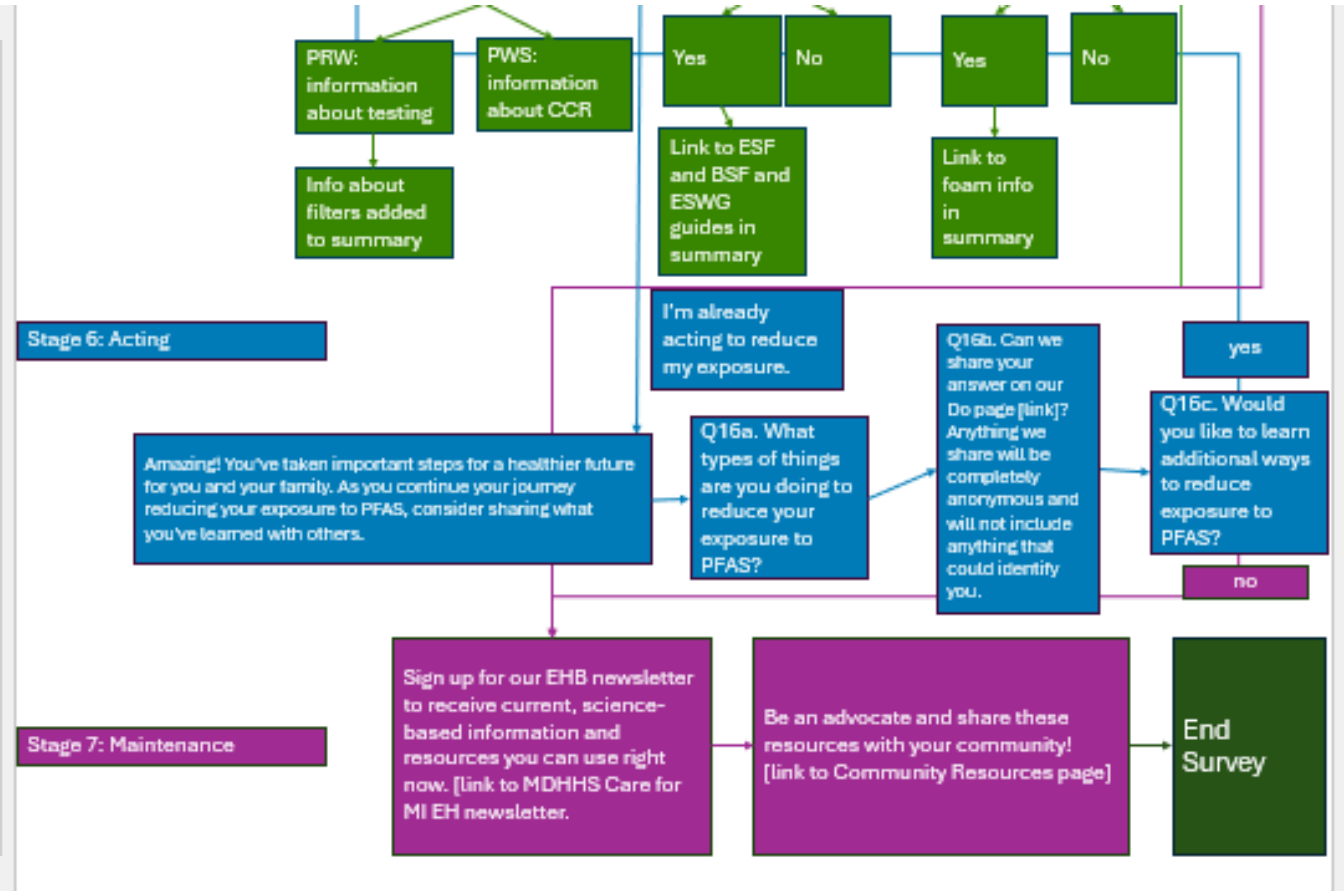
Taking steps to limit your contact with PFAS can be challenging!

Take our Lifestyle PFAS Exposure Survey to create an action plan for reducing exposure to PFAS that is specific for you and your family. By answering a few questions, you can see what you can start doing today.



PAPM on the Survey





Involve Residents

Stage 6 Acting → Stage 7 Maintenance

Share your experiences with others.



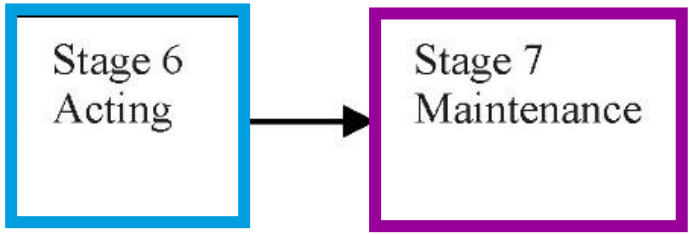
You've taken important steps for a healthier future! Consider sharing what you've learned with others.

Anything submitted here might be shared on our website. Anything we share will be completely anonymous and will not include anything that could identify you. When you submit this form, it will not automatically collect your details like name and address unless you provide it yourself.

What types of things are you doing to reduce your exposure to PFAS? (optional)

Submit

Create Space to Share Community Ideas



Here's what other Michiganders are doing to reduce their exposure to PFAS. To share your PFAS-reducing actions, visit our Share page.

> ***I've been swapping out my old cookware with PFAS free items! Even my Air Fryer.***
>
> > ***When buying a sleeping bag I looked for versions that didn't use PFAS for the waterproofing sealants.***
>
> ***I use metal strainers for tea instead of tea bags.***
>
> > ***I switched to carbon steel, stainless steel and glass for my cookware.***
>
> ***I've had a sink reverse-osmosis system for over a year now.***
>
> > ***I replaced microwave popcorn with making popcorn at home in a stainless-steel pan.***

Send Reminders

Stage 7
Maintenance

Sign up for the MDHHS Care for MI Environmental Health Newsletter!

Michigan Department of Health & Human Services (govdelivery.com)

Our environment changes every day. Learn how to protect yourself, your family and friends from not only PFAS, but other environmental hazards. Sign up for the MDHHS Care for MI Environmental Health newsletter to receive current, science-based information and resources you can use right now!

This is a great option for you if you'd like bite-sized reminders about reducing your exposure to PFAS and other environmental hazards.

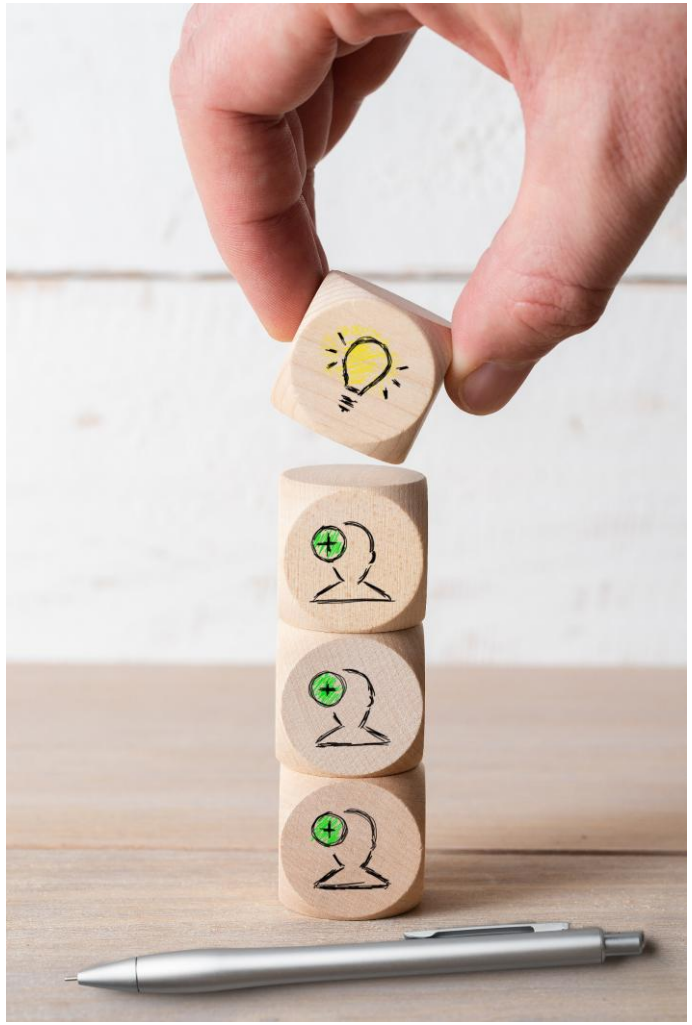


Build Trust

- Consider focus groups.
- Share materials for feedback and follow-up with final resources.
- Provide early notifications about communication plans.
- Meet people where they're at.
- Be transparent.
- Maintain relationships with impacted communities and key partners.



Public Health Campaign Tips



- Identify audience, goals and objectives.
- Use public health theory.
- Focus on plain language.
- Define all acronyms.
- Prioritize community engagement, outreach and trust.
- Plan for how to measure success – evaluation is important.
- Be creative!

Kahoot! Scan or copy link to join.

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https://kahoot.it/challenge/01391831

Game PIN:

01 39 18 31

Lessons Learned



- Collaboration is key.
- Spend time developing, sharing and following your communication plan.
- Get leadership buy-in early.
- Plan for delays.
- Embrace flexibility.

Questions?

Contact us at:

- Ellery Johnson at JohnsonE38@michigan.gov
- Sarah Allison at AllisonS4@michigan.gov

For more information about PFAS and health, visit:

Michigan.gov/PFAS

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Mission

MDHHS provides services and administers programs to improve the health, safety and prosperity of the residents of the state of Michigan.

MDHHS recommends everyone in Michigan reduce their exposure to all PFAS when and wherever possible.

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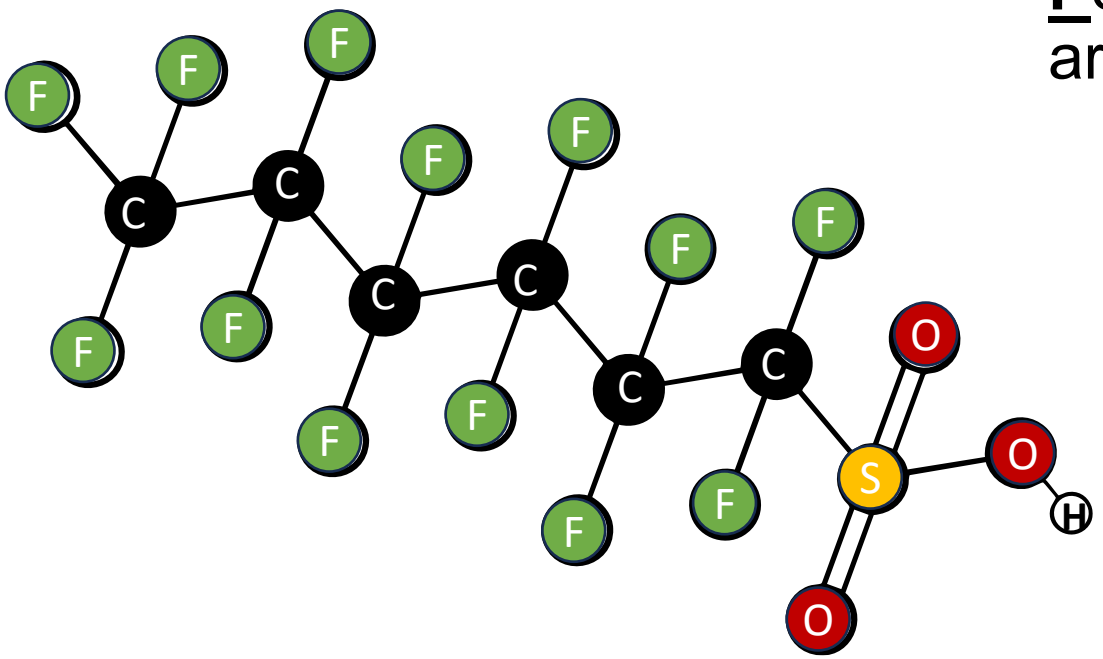
Agenda

- What are PFAS?
- Scientific Support for a Statewide Recommendation.
- Health Behavior Theory.
- Effective Public Health Communication.
- Lessons Learned.

What are PFAS?

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Per- and Polyfluoroalkyl Substances

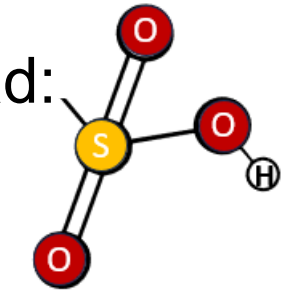


This is **p**er**f**luoro**h**e**x**ane **s**ulphonic acid.
It's also denoted as:

- PFHxS.
- $F_3C\text{-}CF_2\text{-}CF_2\text{-}CF_2\text{-}CF_2\text{-}CF_2\text{-}SO_3H$.
- $C_6F_{13}SO_3H$

Per- and poly**f**luoro**a**lkyl **s**ubstances (PFAS) are:

- A group of widely used and potentially harmful chemicals.
- Fluorine atoms: F
- Connected to a chain of carbon atoms: C
- Connected to a molecular head:



- Sometimes other atoms (like hydrogen) are included in the chain.

PFAS are effective.

Products with the following functions most likely contain PFAS:

- Waterproof.
- Repels water or water repellant.
- Water-beading.
- Nonstick.
- Stain-resistant.
- Grease-resistant.
- Oil-resistant.















Scientific Support for a Statewide Recommendation

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The Trouble with PFAS

- Most PFAS are **persistent chemicals**, meaning they do not break down easily in the environment.
- Some PFAS **bioaccumulate**, meaning they build up in your body over time.
- Some PFAS **biomagnify**, meaning they increasingly build up in bodies of animals as you move up the food chain.
- Some PFAS move through the environment easily, especially groundwater and other drinking water sources.

- Many PFAS are associated with harmful health effects:
  - Thyroid disease (PFOA, PFOS).
  - Liver damage (PFOA, PFOS, PFHxS).
  - High cholesterol, especially total cholesterol and LDL cholesterol (PFOA, PFOS, PFNA, PFDeA).
  - Decreased immune system response to vaccines in children (PFOA, PFOS, PFHxS,PFDeA).
  - Development of certain types of cancer, particularly kidney and testicular cancers (PFOA).
  - Reduced fertility (PFOA, PFOS).
  - High blood pressure or preeclampsia during pregnancy (PFOA, PFOS).
  - Small decreases in infant birth weight (PFOA, PFOS).

PFAS in the Environment

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