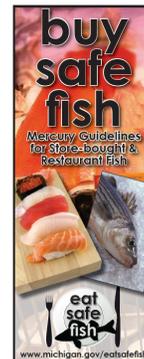
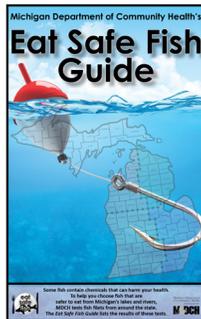


Michigan Department of Health and Human Services



Train-the-Trainer for Eat Safe Fish Materials



Includes talking points for:

Eat Safe Fish in Michigan

Eat Safe Fish Guide

Buy Safe Fish



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Overview for all audiences

What are “safe fish”?

As with any chemical, be it mercury or PCBs, it’s an over-simplification to call something that could potentially cause an illness ‘safe.’ However, MDHHS uses science-based risk calculations to determine consumption limits that are well below those which would cause disease. We define that as “safe” for communication purposes.

That’s not to say that a person who always follows the fish consumption guidelines won’t ever have health effects such as cancer or fertility problems. However, by limiting their exposure to these chemicals using the MDHHS guidelines, they are limiting their potential risk of developing disease.

Eating Safe Fish. It’s your choice.

It’s up to the individual to choose to follow these limits. There are no laws or regulations that require people to follow the MDHHS fish consumption guidelines. MDHHS simply makes the information available so people can opt to catch and eat fish that have been tested and are known to be lower in chemical contaminants.

Questions & Resources

If you or your clients have questions about Eat Safe Fish or the concepts herein, please do not hesitate to call us or provide our number to your clients. MDHHS has health educators and toxicologists on staff to answer any questions.

We’re available Monday - Friday, 8am-5pm at 1-800-648-6942, excluding holidays.

We have some materials available in print form that we can provide to you free of charge, but you can also view, download and print items on your own 24/7 at www.michigan.gov/eatsafefish.



Does your client eat fish?



YES

Great! There are many health benefits to eating fish:

- They are a low-fat protein source
- Some fish are high in omega-3 fatty acids, which are good for heart health
- Fish are a source of vital minerals and vitamins, including Vitamin D, which is important for brain development

However, some fish are safer to eat than others. The materials from MDHHS can help people choose fish to eat that have fewer chemicals - whether they are eating locally-caught fish or fish from their supermarket.

NO

Why not?

- Some people just don't like the taste, but others may be worried about what is safe to eat and what isn't - especially if they are pregnant or planning a pregnancy in the future.

The materials from MDHHS can take the worry out of eating fish and give people the tools they need to choose safer fish to eat - at any point in their life.



Fresh fish can be an affordable way to put dinner on the table, and you don't even need a fancy fishing pole to catch them.

Learn how to make a fishing pole out of household items:

http://files.dnr.state.mn.us/publications/volunteer/young_naturalists/fishing_pole/fishing_pole.pdf

Chemicals in Fish

The three most common chemicals found in some of Michigan's fish are listed below with some of their potential health effects:

- **Mercury**

- Can harm brain development in fetuses and children
- Can harm heart function in older adults
- Can harm immune systems

- **PCBs**

- Can harm brain development in fetuses and children
- Linked to the development of cancer and diabetes
- Can harm immune systems

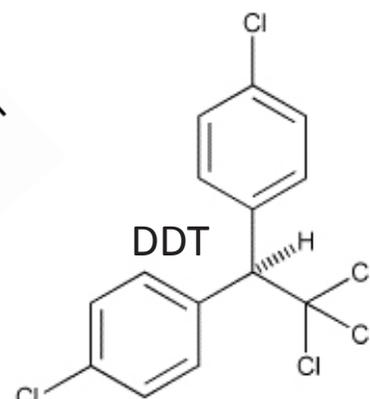
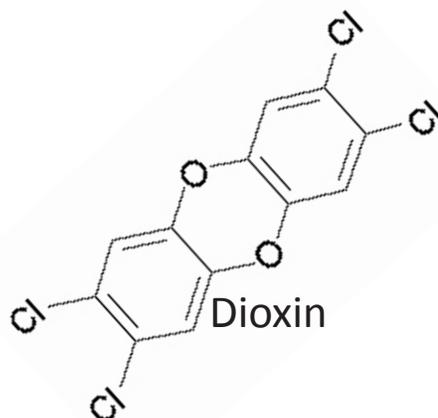
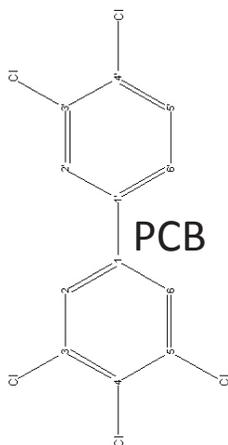
- **Dioxins**

- Linked to the development of cancer
- Linked to the development of diabetes
- Can harm fertility
- Can harm thyroid function
- Plus additional health issues...

PCBs and dioxin are stored in the fat of the fish. Up to half of these chemicals can be removed from the fish by proper cleaning and cooking methods. The 3Cs (Choose, Clean, Cook) by MDHHS show you how. You can find information about the 3Cs in the *Eat Safe Fish in Michigan* brochure and the *Eat Safe Fish Guide*.



Mercury is in the muscle tissue – the filet of the fish. It can't be removed by cleaning and cooking the fish. The only way to avoid mercury is by choosing your fish wisely.



Eat Safe Fish in Michigan brochure

The *Eat Safe Fish in Michigan* brochure is a general introduction to the Michigan fish consumption guidelines.

- **Translations available:**

- Spanish
- Arabic
- Chinese (simplified)
- Vietnamese
- Hmong

- **Audience:**

- Anyone who eats Michigan fish or would like to eat Michigan fish.
- The information is applicable to individuals of all ages.
- The MDHHS fish consumption guidelines are set to be safe for fetuses, children, anyone planning on having children in the next several years, breastfeeding women, as well as people with chronic health issues - like cancer or diabetes.
- It is also reasonable advice for anyone to follow who wishes to avoid getting too much of these chemicals in their body.
- By limiting exposure to the chemicals, you will also limit the chance of health problems related to these chemicals.



Key Messages

from the Eat Safe Fish in Michigan brochure

- **Fish are good for you.** But you should carefully choose the fish that you eat. Especially if you eat a lot of fish.
- **Some chemicals can be removed from the fish. Some cannot.** PCBs and dioxins are in the fat of the fish. Mercury is in the filet - the part of the fish that we eat.
 - If your clients follow the 3Cs (inside the brochure) as closely as possible, they can remove up to half of the dioxins and PCBs from the fish they are going to eat.
 - Mercury cannot be removed from fish by either cleaning or cooking. Choosing wisely is the only way to limit the amount of mercury eaten.
- **Larger fish, predator fish, and fish that eat directly from the bottom tend to have more chemicals in their bodies.** The chemicals build up in fish through their food chain (see image on back of brochure).
- **The water won't necessarily look dirty.** The chemicals have settled on the bottom of the lake or river. You can still swim in lakes and rivers with fish guidelines, unless the local health department has issued a temporary water quality advisory.
- **If you eat a lot of fish, use the *Eat Safe Fish Guide*.** Using the *Eat Safe Fish Guide*, published by MDHHS on a yearly basis, is the best way to choose fish that are safer to eat. See page 14 for more information.

Inside the *Eat Safe Fish in Michigan* brochure...



Get to know the **3Cs**

Choose, Clean, Cook

By choosing the right fish and then cleaning and cooking it the right way, you can reduce some of the chemicals in the fish by nearly half!

1 Choose

This quiz will help you find the best way for you to choose your fish. Read each sentence and mark 'T' for true or 'F' for false.

I only eat fish caught in Michigan a few times each year.

I'm 15 years old or older.

I DON'T plan on having children in the next several years.

I DON'T have health problems, like cancer or diabetes.

I DON'T eat fish from a lake or river that has posted signs with "Do Not Eat" guidelines from MDCH.

If **ALL** are **TRUE** for you:
 You're at lower risk from chemicals in fish. The S.A.F.E. tips will help you choose fish to eat once in a while without worry!

S **Smaller fish are better.**
They tend to have fewer chemicals.

a **Avoid large predator fish & bottom-feeders.**
Always check the *Eat Safe Fish Guide* before eating these fish.

f **Fat should be removed.**
Some chemicals are stored in the fat of the fish.

e **Eat fish that have been broiled or grilled on a rack.**
More fat can drip away during cooking.

If **ONE** or **MORE** are **FALSE**:
 You might be at higher risk. The *Eat Safe Fish Guide* will lead you to fish that are safer to eat on a regular basis.

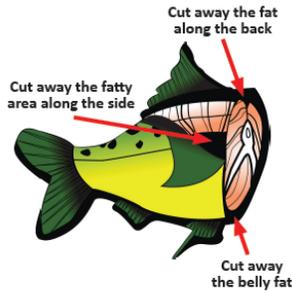
The *Eat Safe Fish Guide*:

- lists fish species that have had filets tested for chemicals by MDCH.
- protects people who eat Michigan fish often.
- protects anyone who has health problems, is young, is pregnant, or is planning on having children in the future.



Need a *Guide*? Call MDCH at 1-800-648-6942 or visit www.michigan.gov/eatsafe/fish.

2 Clean



Some chemicals, like PCBs and dioxins, collect in the fat of the fish.

- When cleaning the fish, trim away any of the fat you can see. Remove and throw away the organs, too.**

Careful cleaning can remove a lot of the chemicals from the fish.

3 Cook

Even after trimming away the fat that you can see on the fish, some fat will still be hidden inside the fish filets.

- Poke holes in the skin or remove it completely so that fat can drip away from the fish filet as it cooks.**
- Cook your fish on a grill or on a broiler pan in the oven. Any fat left can now drip away from the fish through the grates.**

If you cook your fish like this, you can get rid of even more of the chemicals that can be in the filet...**except mercury**, of course!



You can't remove mercury from fish by cleaning and cooking. Always choose your fish wisely!

3Cs – Choose, Clean, Cook

(translated versions: *3 Steps to Safer Fish* or *1,2,3...*)

1 - Choose:

There is a short quiz that can help people self-identify whether or not they should use the *Eat Safe Fish Guide* (ESF Guide) or if the S.A.F.E. Fish Tips are enough.

The deciding factors are:

- **who** they are
- **how often** they eat fish
- and **what kind** of fish they eat

This determines:

- **how often** they are able to be exposed to the chemicals found in some fish
- as well as the **amount** of chemicals to which they may be exposed

But, keep in mind, these are just general guidelines. Every **body** is different. If your client wants to be the safest possible, they can always check the *Eat Safe Fish Guide* before eating fish for the MDHHS fish consumption guidelines.

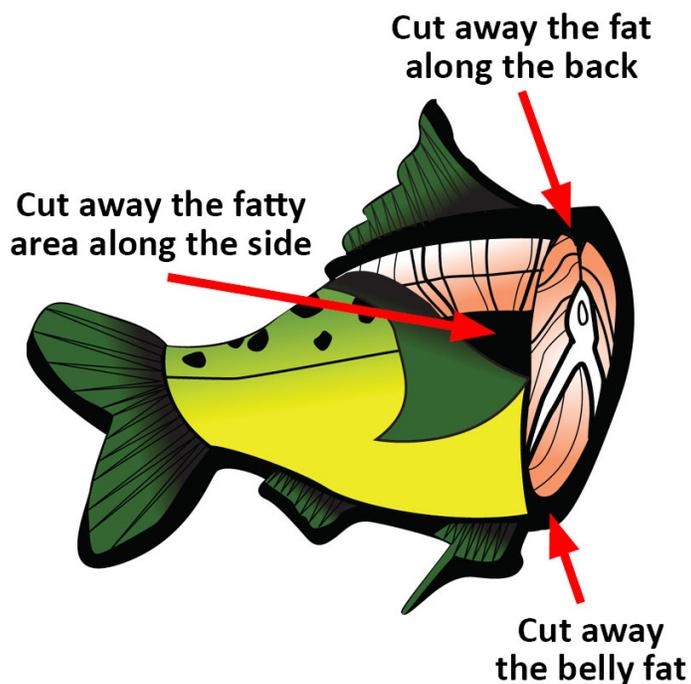
If your client is able to answer TRUE to all of the questions in the quiz box in the brochure, then they can opt to just use the S.A.F.E. Fish Tips (detailed under **Choose** in the brochure or see page 11 in this booklet). These tips are for people who don't eat a lot of Michigan fish.

Other people who might opt to use the S.A.F.E. Fish Tips:

- Tourists from outside of the Great Lakes region
- Individuals chartering a fishing boat, but otherwise don't fish on their own
- People who only fish during the DNR's Free Fishing Weekends

2 - Clean:

- As mentioned, any PCBs or dioxins that might be in fish build up in the fat. Removing the fat removes some of these chemicals.
- Most of the fat on a fish can be found in three areas:
 - back
 - side
 - belly
- Organs - like the stomach, egg sac, and liver - should be removed and thrown away. The organs from Michigan fish should never be eaten. They tend to have higher concentrations of chemicals than the filet of the fish.



Also available from MDHHS & at www.michigan.gov/eatsafefish:

- *How to Filet a Fish* - flyer with step-by-step directions

S.A.F.E. Fish Tips *(translated versions: fishing tips)*

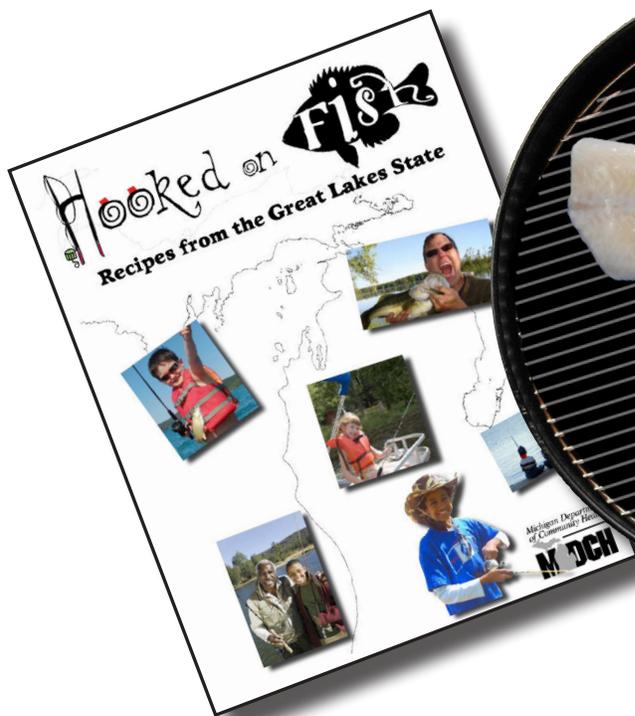
The S.A.F.E. Fish Tips were developed for healthy adults who do not eat a lot of fish. However, there may be times when even a frequent fish eater is caught without the *ESF Guide* while out on a lake or river. The S.A.F.E. Fish Tips are good for anyone to remember - regardless of how often they eat fish.

Having a general idea of the concepts behind the S.A.F.E. Fish Tips will help them make better choices for themselves and their family. They are basic guidelines that will consistently lead to better fish eating choices.

- **S - Smaller fish are generally better.**
 - This is because small fish are most likely younger, haven't been exposed to chemicals for as long, and have less chemicals.
- **A - Avoid large predator fish and bottom-feeders.**
 - These fish tend to be older, giving them more time to store up chemicals. Since they eat other fish or directly off the bottom, they tend to be exposed to more chemicals, as well. They also typically have more fat than smaller panfish.
- **F - Fat should be removed.**
 - PCBs and dioxins are stored in the fat of fish. Removing the fat can remove a large amount of these chemicals.
- **E - Eat fish that have been broiled or grilled on a rack.**
 - Cooking the fat on a grill or broiling pan so more fat can drip away is also a good way to get rid of more chemical-containing fat.

3 - Cook:

- Even after trimming away the fat you can see, some will remain inside the filet. This can't easily be removed with a knife.
- If the fish is cooked on a grill or broiler pan, more of the chemical-contaminated fat can drip away from the fish.
- If your client prefers fried fish, recommend that they pan-fry it.
 - Your clients can still enjoy fried fish, but they should throw away the leftover oil and not use it to cook other things.
 - We recommend pan-frying because it takes a smaller amount of oil than a deep fryer. Therefore a person may be more willing to dispose of the used oil.
- Frying fish isn't the best option, though, for two reasons:
 - Frying doesn't allow a lot of the chemical-contaminated fat inside the filet to leave the fish.
 - Frying fish obviously adds a lot of fat to an otherwise low-fat and healthy food.



Also available from MDHHS & at www.michigan.gov/eatsafefish:

- *Hooked on Fish: Recipes from the Great Lakes State* cookbook

Back of the *Eat Safe Fish in Michigan* brochure...

What are 'safe' fish?
Safe fish are fish that are low in chemicals. If you use the **Eat Safe Fish Guide** when you choose fish to catch and eat, you will protect yourself and your family from chemicals that could someday make you sick.

If there are chemicals in the fish, why should I still eat it?
 Fish have a lot of great health benefits.

- ☑ Fish can be a great low-fat source of protein.
- ☑ Fish are brain food.
- ☑ Some fish have heart-healthy omega-3s.

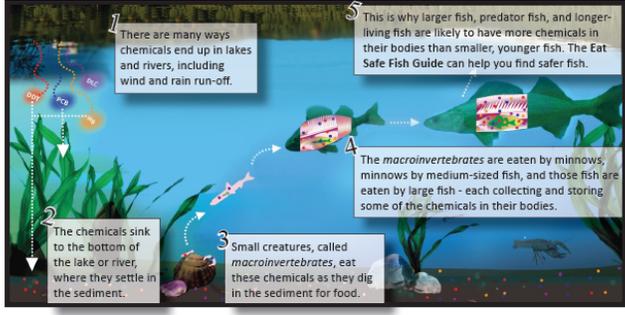
Plus, fishing is a fun way to get outside and enjoy Michigan's 11,000 lakes, rivers, and streams!

If you **follow the 3Cs** and go after fish that have **fewer chemicals** in them, you'll get a lot of health benefits and have **very little risk**.

Catching fish • Buying fish • Eating fish
 For more information on safe fish, call MDCH at 1-800-648-6942 or visit us online at www.michigan.gov/eatsafefish.

 with support from 

Why are there chemicals in some fish?



- ☑ PCBs, dioxins, and mercury are the most common chemicals found in filets of Michigan fish.
- ☑ These chemicals are *persistent* and *bioaccumulative*. This means the chemicals not only stay in the environment, they also build up in living things.
- ☑ Because of this, they have become part of the food chain for fish, as you can see in the picture above.
- ☑ Some chemicals, like PCBs and dioxins, build up in the fat of the fish. Mercury builds up in the muscle, or filet, of the fish.
- ☑ If you choose fish lower in mercury and follow the **3Cs**, you can keep chemicals from building up in your body, too.
- ☑ You can't see or taste these chemicals. They do not change how clear or dirty the water looks. The only way to know if these chemicals are in the fish is by testing for them in a laboratory.
- ☑ The **Eat Safe Fish Guide** can help you find fish species that have been tested for chemicals by the MDCH Lab. The **Guide** can help you and your family choose fish that are safer to eat.

To get the *Eat Safe Fish Guide* for your region or to learn more about catching or buying safe fish, call MDCH at 1-800-648-6942 or visit us online at www.michigan.gov/eatsafefish.

eat safe fish in Michigan

Learn about eating safe, local, and healthful fish from our Great Lakes State.

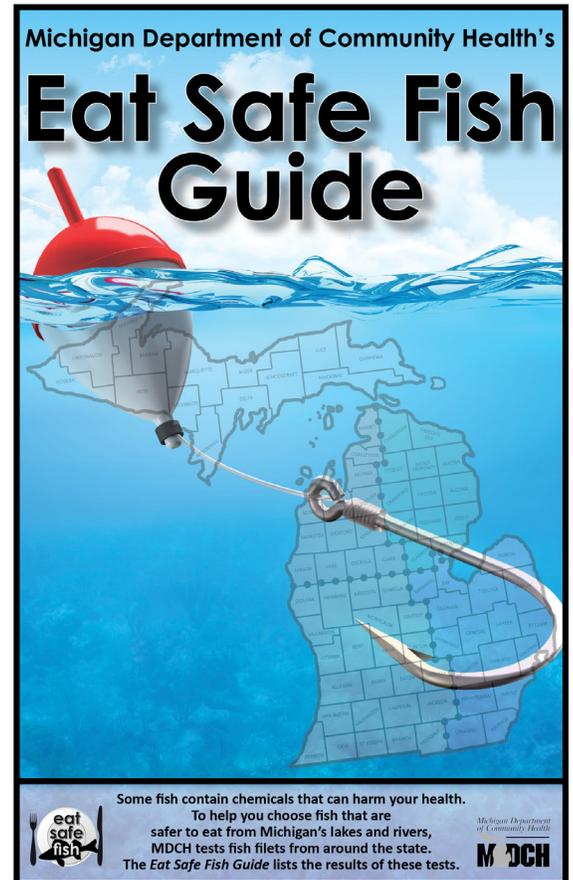


www.michigan.gov/eatsafefish

- On the flip side of the brochure, there is a diagram that explains how chemicals have gotten into fish.
- Beneath the image is a bulleted list with points about persistent chemicals, the process of bioaccumulation, and common myths.
 - Thanks to the federal Clean Water Act and Clean Air Act, along with other state regulations, chemicals aren't being dumped into our waterways like they once were.
 - Because of these stricter environmental regulations, levels of PCBs and dioxins are decreasing in our fish, and chemicals that are already in our waterways continue to slowly break down. However, mercury continues to increase. This can be attributed to coal-burning power plants and other industries around the world releasing mercury into our atmosphere.
 - However, despite the decrease in input, PCBs, dioxins, and mercury will remain in the sediment on the bottom of lakes and rivers, and they will continue to be in the food chain for fish for many years to come because these chemicals are *persistent*, meaning they don't break down easily.
 - There are still many great health benefits to eating fish, but because of these chemicals, it's important that people are aware of the importance of choosing fish that have less chemicals in order to avoid adverse health effects.
 - This brochure is written at the fifth grade level and is available in many languages to help make this information accessible to all of Michigan's citizens.

Eat Safe Fish Guide

- The *Eat Safe Fish Guide (ESF Guide)* is a detailed booklet of Michigan fish consumption guidelines.
- The guidelines are based on laboratory test results for chemicals that might be in the fish – like mercury, PCBs, or dioxins.
- Only the filet of the fish – the part that most people eat – is tested. The results of those tests are what MDHHS uses to set the *ESF Guide* recommendations.
- The *ESF Guide* replaces the Michigan Fish Advisory booklet, beginning with the 2012-2013 edition.
- There are 5 regional *ESF Guides* for the state: Upper Peninsula, Northwest, Northeast, Southwest, & Southeast.
- **Translations available:**
 - Spanish
- **Audience:**
 - People who eat Michigan fish more than once or twice a year.
 - The advice in this brochure is protective of everyone – from the developing fetus, to the very elderly, and anyone in between, as well as individuals who may have health problems, like diabetes or heart disease.
 - The *ESF Guide* is also useful for anyone who wishes to avoid getting too many chemicals in their body and avoid potential health problems related to these chemicals.



Key Messages

from the *Eat Safe Fish Guide*:

- **Fish in the *ESF Guide* have been tested.** The consumption guidelines published in the *ESF Guide* are based on laboratory testing of filets of fish only.
- **The *ESF Guide* is a tool that frequent fish consumers can use to choose safer locally-caught fish.** The guidelines can help your client make an informed decision when choosing and eating fish caught in Michigan waters.
- **The guidelines are designed to be health protective of everyone.** The recommendations in the *ESF Guide* can be used by pregnant women, children, the elderly, and people with health problems - as well as healthy adults - without concern. Page 8 of the *ESF Guide* explains how most of the recommendations can also be safely doubled if the 3Cs are followed carefully.
- **The guidelines are based on current science.** The recommendations in the new *ESF Guide* may differ from recommendations in past years. This is because scientists at MDHHS have updated our methods and calculations so that they are based on current science. MDHHS Reports and data are available at www.michigan.gov/eatsafefish.
- **The MDHHS fish consumption guidelines are recommendations.** The guidelines are not laws, and they don't have to be followed. However, there are real health benefits to following these guidelines.

Key Updates & Changes:

- There are no longer two categories of advice (*General Population* and *Women & Children*) in our new *ESF Guide*.
 - The new *ESF Guide* has been designed so it is protective of the most sensitive individuals in our state: fetuses and children, as well as individuals who have other health problems to which these chemicals have been linked, like cancer, cardiovascular disease, or diabetes.
- Current science also shows that even healthy adults can be at risk from low-level exposures of these chemicals.
- MDHHS consumption recommendations are very conservative for these reasons. But, if:
 - you follow the 3Cs perfectly, and
 - the fish you're eating is not listed as "Limited" in the *ESF Guide*, and
 - you check that mercury, selenium, or PFOS is not listed as the Chemical of Concern for the fish in the *ESF Guide*,
 - THEN, you can double the recommended MI Servings per month listed for the fish, should you choose to do so.

This is explained on page 8 of the *ESF Guide*.

Sample County

Map of Sample County, Michigan

LAKE SUPERIOR

Sample Lake 1

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Northern Pike	Mercury	Under 30"	12
		Over 30"	4
Yellow Perch	Mercury	Under 12"	12
		Over 12"	4
All Other Fish	See Statewide Mercury Advisory on Page 38.		

Sample Lake 2

Type of Fish	Chemicals of Concern	Size of Fish (length in inches)	MI Servings per Month*
Northern Pike	Mercury	Under 26"	4
		Over 26"	Limited ^A
Yellow Perch	Mercury	Under 9"	12
		Over 9"	4
All Other Fish	See Statewide Mercury Advisory on Page 38.		

Filets of fish from Sample Lake 1, Sample Lake 2 and Sample Lakes have been tested for chemicals.
For all other lakes and rivers in this county, see Page 38.

New *ESF Guide* Format:
One column of consumption recommendations. *MI Serving* size based on person's weight.
(See page 6 of the *ESF Guide*).

Two category system is no longer in use.

fish.	General Population								Women & Children										
	Length (inches)								Length (inches)										
all(s)	6-5	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30+	6-5	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30+	
Dioxins	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Dioxins					▼	▼	▼	▼						◆	◆	◆	◆	◆	
Mercury,					▲	▼	▼	▼						●	◆	◆	◆	◆	
Dioxins	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	
All other species	▼	▼	▼	▼	▼	▼	▼	▼	▼	●	●	●	●	●	●	●	●	●	
PCBs, Dioxins	▼	▼	▼	▼	▼	▼	▼	▼	▼	●	●	●	●	●	●	●	●	●	

The Primary Chemicals: PCBs, Dioxins, Mercury

- The most common chemicals that trigger our guidelines have been linked to a variety of negative health outcomes – like cancer, diabetes, heart disease, fertility problems...
 - But like any chronic disease, it isn't certain that exposure to these chemicals will always cause these health issues or, conversely, if these health issues were caused by these chemicals.
 - A way to explain this to others is: ***“Your body contains a million different locks (DNA), and everyone’s locks are different...there is no way to know what combination of keys (chemicals) will unlock cancer, diabetes, or other health issues that may be triggered by the chemicals found in some fish.”***
- It is always an individual's choice to decide what amount of fish and/or chemicals is right for them. Unfortunately, there is no perfect choice when it comes to chronic chemical exposures.
 - Science cannot predict the effect of chronic chemical exposure on any one person's health. Each person needs to make their own choice based on their current health and their own informed opinion.
- Some Michigan-caught fish tend to be a uniquely high source of these chemicals when compared to other foods like store-bought fish, beef, or chicken.

For the most part, eating one or two meals of Michigan fish a year is generally going to be OK, as long as:



- the lake or river isn't posted with signs by MDHHS, or
- you're not under the age of 15, or
- you're not pregnant, breastfeeding, or planning a pregnancy, or
- you're not under a doctor's care for the treatment of cancer, cardiovascular disease, diabetes, or another chronic illness.

Using the *Eat Safe Fish Guide (ESF Guide)*

- There are 5 different *ESF Guides* for the state. One for each region. (See the next page for a map of the regions.)
- Each *ESF Guide* is organized alphabetically by county name.
- There is an index on page 14 of each *ESF Guide* that lists the counties and page number.
- There is an index at the end of each booklet that alphabetically lists the lakes and rivers by name included in the booklet.
- Each county section includes a map that shows only the lakes and rivers from which fish have been taken and filets of fish tested. There will be a lot of other lakes and rivers in every county that are not listed on these pages.
- To find guidelines for any lake or river that is not listed in the *ESF Guide*, use the ***Statewide Safe Fish Guidelines*** on page 9 of the *ESF Guides*.
- Each county is included in the booklet on its own page(s) making it easy to print only the information you need for your clients, should you choose to do so.

- **If you print information for just one specific county, it is important that you also print the information on:**
 - **Page 7 – the definitions of Limited vs Do Not Eat**
 - **Page 9 - the Statewide Safe Fish Guidelines****from the ESF Guide.**

Other Regional Eat Safe Fish Guides

Call 1-800-648-6942 or visit www.michigan.gov/eatsafefish to get a free copy of the **Eat Safe Fish Guides** for other regions in Michigan.



Michigan Department of Community Health



Statewide Safe Fish Guidelines

The **Statewide Safe Fish Guidelines** should be used only when a lake or river isn't listed, or in the case where the lake or river is listed, but a specific fish species is not.

- The fish included in the **Statewide Safe Fish Guidelines** have NOT all been tested for all waterbodies in Michigan.
 - There are too many fish, lakes, and rivers in Michigan to be able to test ALL of them.
 - The **Statewide Safe Fish Guidelines** represent a scientific estimate of mercury or PCB levels in fish based on the amount of mercury or PCBs found in species of fish that have actually been tested in the state.
- Not every lake or river will have PCBs or dioxins, but since mercury primarily enters our waters from the air, every lake and river in Michigan will have some amount of mercury.



Statewide Safe Fish Guidelines

Michigan Department of Community Health

Use the Statewide Safe Fish Guidelines ONLY if:

- your lake or river is not listed in the *Eat Safe Fish Guide*, OR
- your lake or river is listed in the *Eat Safe Fish Guide*, but the fish species is not listed.

STOP

- Michigan is lucky to have over 11,000 lakes, rivers, and streams. Because of that huge number, it is not possible to test every fish species from every lake, river, or stream in the state.
- These general guidelines are based on the typical amount of chemicals found in fish filets tested from around the state. Some fish may be higher or lower.
- If any of these fish are listed in the *Eat Safe Fish Guide* for the lake or river you are fishing in, use **those** guidelines instead of the Statewide Safe Fish Guidelines. The *MI Servings* recommendation will be more exact for that lake or river because those filets have been tested.
- These general guidelines can be used for lakes, rivers, and fish species not included in the *Eat Safe Fish Guide*.

To get a free copy of the *Eat Safe Fish Guide*, visit www.michigan.gov/eatsafefish or call 1-800-648-6042.

Type of Fish	Chemical of Concern	Size of Fish (length in inches)	MI Servings per Month*
Black Crappie	Mercury	Any Size	4
Bluegill	Mercury	Any Size	8
Carp	PCBs	Any Size	2
Catfish	PCBs & Mercury	Any Size	4
Largemouth Bass	Mercury	Under 18"	2
		Over 18"	1
Muskellunge (Muskie)	Mercury	Any Size	1
Northern Pike	Mercury	Under 30"	2
		Over 30"	1
Rock Bass	Mercury	Any Size	4
Smallmouth Bass	Mercury	Under 18"	2
		Over 18"	1
Suckers	Mercury	Any Size	8
Sunfish	Mercury	Any Size	8
Walleye	Mercury	Under 20"	2
		Over 20"	1
White Crappie	Mercury	Any Size	4
Yellow Perch	Mercury	Any Size	4

*See page 2 to learn about MI Servings

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- In fact, every lake and river in the **country** contains some amount of mercury, as do the oceans.
- The MDHHS *Buy Safe Fish* brochure will help you choose fish caught outside of Michigan that are lower in mercury. **(See page 24 in this booklet for details.)**

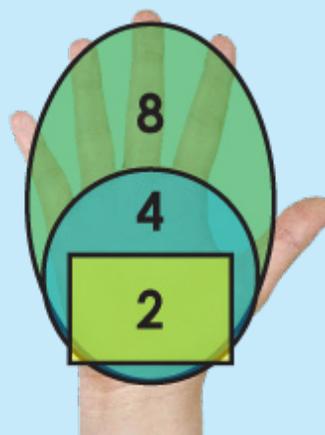
MI Serving – Serving Size (pronounced: My Serving)

- To estimate “*MI Serving*” you can use your hand – your “Michigan” – for a size reference.
- *MI Serving* is the serving size all statewide guidelines are based upon.
- If an adult or child is particularly small or large, or they want to calculate their *MI Serving* amount exactly, then they can use the chart on page 6 in the *ESF Guide* to figure it out...but for most people, the average amount is good enough for estimating purposes.
- Pregnant women should use their pre-pregnancy weight to determine the size of their *MI Serving*.



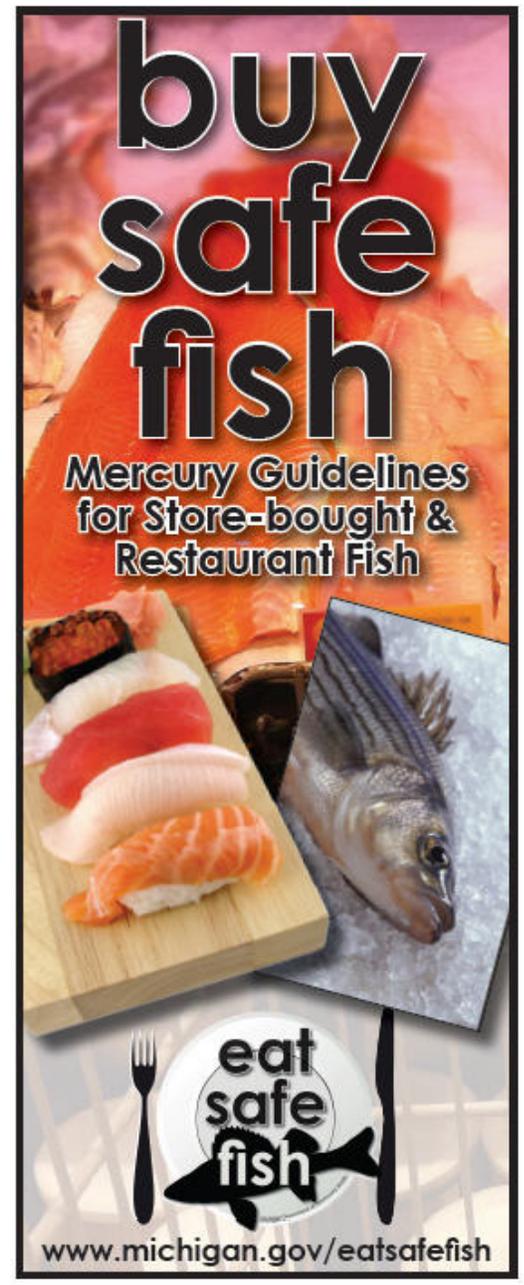
Average *MI Serving* sizes:

- For a 180-pound adult, an average *MI Serving* is 8 ounces.
 - A fish filet that is 8 ounces is approximately going to be about the size of an adult’s hand.
- For a 90-pound child, an average *MI Serving* is 4 ounces.
 - A fish filet that is 4 ounces is approximately the size of an adult’s palm.
- For a small child/toddler, an average *MI Serving* is 2 ounces.
 - A fish filet that is 2 ounces is approximately half of the size of an adult’s palm.



Buy Safe Fish brochure

- The **Buy Safe Fish** brochure has consumption guidelines for purchased fish that are sourced from places other than Michigan.
 - This brochure features **Eat 8!** This is a simple tool that individuals can use to be sure they aren't eating too much mercury.
- **Translations available:**
 - Spanish
 - Arabic
 - Chinese (simplified)
 - Vietnamese
 - Hmong
 - **Audience:**
 - Anyone who eats fish purchased from a store or restaurant.
 - The advice in this brochure is protective of everyone – from the developing fetus to the very elderly and anyone in between.
 - While mercury outreach used to primarily focus on pregnant women and children, recent studies have shown that mercury also has an effect on heart health – causing heart disease, including increased blood pressure and arrhythmias.
 - Therefore, we believe that all should be concerned with the health effects of mercury and avoid eating too much.



Key Messages from *Buy Safe Fish*:

- ***Buy Safe Fish* is about fish purchased from restaurants and stores.** However, if those fish are caught in Michigan or any of the Great Lakes, please refer your clients to the *Eat Safe Fish Guide* or the S.A.F.E. fishing tips.
- **Mercury can be found in fish from all over the world.** Mercury is in our atmosphere and it falls into our lakes, rivers, and oceans. The greatest amounts of mercury are released into the air by coal-fired power plants and other industrial sources.
- **Mercury can't be reduced in fish by cooking or cleaning.** Mercury is found in the muscle tissue – the filet of the fish that we eat.
- **Choosing fish lower in mercury is the only way to avoid getting too much.** Eat 8! is a tool inside this brochure that helps make the choice easy.

Inside the Buy Safe Fish Brochure

Eating Safe Fish

You've heard that eating fish is healthy for you and your family.



- ☑ Fish are a great low-fat source of protein.
- ☑ Fish are brain food.
- ☑ Some fish have heart-healthy omega-3s.

But you've also probably heard that some fish have mercury in them. And mercury is bad for your health - no matter what age you are.



You want to make the **healthy choice** for you and your family, but what is the **right choice**? Should you eat fish or not? Which fish are safe?

Luckily, making the **right choice and the healthy choice** is now as easy as counting to eight!

Mercury in Fish

- ☑ Mercury is found in the muscle of the fish, which is the filet that we eat. You can't remove mercury from fish like you can other chemicals.
- ☑ Choosing fish to eat that are low in mercury is the only way to avoid getting too much in your body.



Health Problems

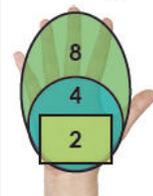
Mercury can cause health problems in people of all ages.

- ☑ Too much mercury can cause problems with the nervous system and kids' brain growth.
- ☑ Too much mercury can harm heart function.
- ☑ Too much mercury also limits your body's ability to fight off sickness.



What is 'MI Serving'?

MI Serving depends on who you are:



- ☑ For an adult, *MI Serving* is: 8 ounces of cooked fish = size of an adult's hand (large oval)
- ☑ For a child, *MI Serving* is: 2-4 ounces of cooked fish = size of the palm on an adult's hand (small circle/rectangle)

You might eat more than one *MI Serving* in a meal. That's OK, just keep track so you know!

Eat 8! Eat Great!

The FDA has tested for mercury in a variety of fish and shellfish that are available for sale in the United States.

Using the FDA test results for mercury in fish, MDCH created **Eat 8!**

Eat 8! can help you choose fish lower in mercury and higher in heart-healthy omega-3 fatty acids.

Eat 8! is safe for everyone to use, even pregnant women and kids!

How to Use Eat 8!

1. **Look on the back of this sheet and find the fish you plan to eat.** The lower the points, the lower the amount of mercury in the fish.
2. **Estimate how many 'MI Servings' you are going to eat.** One adult's *MI Serving* of fish is a filet about the size of their hand (8 ounces of cooked fish). A child's *MI Serving* is about the size of the palm of an adult's hand (2-4 ounces).
3. **Add up the points.** For example, one dinner, you have 16 ounces of salmon (2 *MI Servings*) for 2 points. The next week, you have one *MI Serving* (8 ounces) of halibut for 4 points. That's 6 points, so far, for the month.
4. **Keep track of your 'MI Serving' points during the month.** Eat no more than 8 points total of fish each month.

You can be sure you're not getting too much mercury in your body when you use **Eat 8!** to choose your meals.



Questions?
1-800-648-6942
www.michigan.gov/eatsafefish



- There are many health benefits of eating fish.
 - Low-fat source of protein
 - Heart-healthy omega-3s
- But there are health problems caused by mercury in fish, too.
 - We're most familiar with the damage to the nervous system - which is why, in the past, messaging on choosing safe fish and avoiding mercury focused primarily on pregnant women and small children.
 - However, new studies have shown that mercury also impairs heart function and, somewhat less so, your immune system. These effects have been primarily found in older adults.
 - This is why choosing safer fish to eat should be important for people of all ages.

Back of the Buy Safe Fish Brochure

Eat 8!

A Guide to Help You Choose Fish Low in Mercury from Restaurants and Grocery Stores

EAT no more than... **8** points per month

High in heart-healthy omega-3 fatty acids

Is the fish you're buying caught in Michigan waters? If so, please check the *Eat Safe Fish Guide* for advice.

Per MI Serving 1 Point	Anchovies	Pollock
	Catfish (farm-raised)	Salmon (canned, frozen, fresh)
	Crab	Sardines
	Crawfish	Scallops
	Flatfish (flounder, sole)	Shrimp
	Herring	Squid
	Mullet	Tilapia
	Oysters	Trout (freshwater)
	Perch (ocean or freshwater)	Whitefish
	Per MI Serving 2 Points	Cod
Freshwater Drum (aka Sheephead)		Snapper
Jack Smelt		Tuna (canned light)
Per MI Serving 4 Points	Bass (sea, striped, rockfish)	Scorpion Fish
	Bluefish	Tuna (Albacore, canned white)
	Halibut	Tuna (fresh, frozen)
	Lobster	Weakfish (sea trout)
	Sablefish	
Per MI Serving 8 Points	Grouper	Marlin
	Mackerel	Orange Roughy
<p>Do not eat these fish: Shark, Swordfish, Tilefish, King Mackerel</p>		

Questions? Call MDCH at 1-800-648-6942.

Great choices to go...You can cut the list out & take it with you!

Other Resources

Sustainable & Planet-Friendly Fish
Shedd Aquarium Right Bite
<http://bit.ly/3FjgWm>

Monterey Bay Aquarium Seafood Watch
<http://bit.ly/McxPS> or 1-877-229-9990

Cooking & Food Safety
Farm-Raised Fish Regulations (FDA)
<http://1.usa.gov/pOLSzW> or 1-240-402-2300

Fresh & Frozen Seafood - Selecting & Serving It Safely (FDA)
<http://1.usa.gov/qYLiyL> or 1-888-723-3366

Hooked on Fish: Recipes from the Great Lakes State Cookbook (MDCH)
<http://1.usa.gov/pri1qp> or 1-800-648-6942

Local Fish, Local Guide

If you are eating fish caught in Michigan or any of the Great Lakes, please call MDCH to request the *Eat Safe Fish Guide* for the region the fish is from. The regional *Guide* lists Michigan fish that have been tested for mercury and other harmful chemicals, like PCBs and dioxins.



Catching fish • Buying fish • Eating fish

For more information on safe fish, call MDCH at 1-800-648-6942 or visit us online at www.michigan.gov/eatsafefish.



Michigan Department of Community Health
MDCH

with support from
WAYNE STATE UNIVERSITY

buy safe fish

Mercury Guidelines for Store-bought & Restaurant Fish




www.michigan.gov/eatsafefish

- You will find resources for choosing sustainable and planet-friendly fish.
- MDHHS does not include information about farm-raised fish versus wild-caught by design.
 - It's hard for any of us to know what may be in the fish that isn't reported, and the scientific community is still debating the health benefits of wild-caught vs. farm-raised.
 - The FDA regulates the farmed-fish market. Their phone number is included on the back of the brochure. They have been very friendly any time I have called with questions.
- You will also find Eat 8! MDHHS's tool for choosing fish that are lower in mercury. (Learn more about Eat 8! on page 26.)

About Eat 8!

- Eat 8! is a point-based system. MDHHS recommends fish consumers stay at or below 8 points per month in order to stay within a safe range of mercury consumption.
- Eat 8! only takes into account mercury contamination in fish.
- Eat 8! guidelines were developed using mercury test results from the FDA. Fish are assigned points based on the mercury test results.
- Some of MDHHS's recommendations vary from the general FDA recommendations.
- The Eat 8! chart is printed so that it can be torn out from the brochure and folded into a wallet for later reference. There are usage instructions on the back of the chart.
- By simply adding up the points for the type of fish eaten and the number of MI Servings eaten each month, your clients will be able to easily calculate how much fish is safe to eat.

Eat 8! is safe for pregnant women and children.

How to Use Eat 8!

- 1. Find the fish you plan to eat.** The lower the points, the lower the amount of mercury in the fish.
- 2. Estimate how many 'MI Servings' you are going to eat.** One adult's *MI Serving* of fish is a filet about the size of their hand (8 ounces of cooked fish). A child's *MI Serving* is about the size of the palm of an adult's hand (2-4 ounces).
- 3. Add up the points.** For example, one dinner, you have 16 ounces of salmon (2 *MI Servings*) for 2 points. The next week, you have one *MI Serving* (8 ounces) of halibut for 4 points. That's 6 points, so far, for the month.
- 4. Keep track of your 'MI Serving' points during the month.** Eat no more than 8 points total of fish each month.

You can be sure you're not getting too much mercury in your body when you use **Eat 8!** to choose your meals.

Eat 8!

A Guide to Help You Choose Fish Low in Mercury from Restaurants and Grocery Stores

EAT no more than... 8 points per month

High in heart-healthy omega-3 fatty acids
Is the fish you're buying caught in Michigan waters? If so, please check the Eat Safe Fish Guide for advice.

1 Point	Anchovies	Pollock
	Catfish (farm-raised)	Salmon (canned, frozen, fresh)
	Crab	Sardines
	Crawfish	Scallops
	Flatfish (flounder, sole)	Shrimp
	Herring	Squid
	Mullet	Tilapia
	Oysters (ocean or freshwater)	Trout (freshwater)
	Perch (ocean or freshwater)	Whitefish
2 Points	Cod	Mahi Mahi
	Freshwater Drum (aka Sheepshead)	Snapper
	Jack Smelt	Tuna (canned light)
4 Points	Bass (sea, striped, rockfish)	Scorpion Fish
	Bluefish	Tuna (Albacore, canned white)
	Halibut	Tuna (fresh, frozen)
	Lobster	Weakfish (sea trout)
	Sablefish	
8 Points	Grouper	Marlin
	Mackerel	Orange Roughy

Do not eat these fish: Shark, Swordfish, Tilefish, King Mackerel

Questions? Call MDCH at 1-800-648-6942.

Great choices to go...You can cut the list out & take it with you!

See page 21 to learn about MI Servings.

Other outreach materials available from MDHHS:

Be Heart-healthy! Eat More Fish!

A flyer that has information about the health benefits of the omega-3 fatty acids that are found in some fish. Includes recipes featuring fish that are high in omega-3s.

Learn to Filet a Fish

A flyer that demonstrates a quick and easy way to clean and filet a fish. Two popular fish recipes are found on the flip side.

Eat Safe Fish FAQs

A flyer that covers some of the more basic questions MDHHS is often asked. It includes a chart of chemicals that often trigger consumption guidelines in Michigan, the length of time the chemical could stay in a person's body, and linked health effects.

Hooked on Fish: Recipes from the Great Lakes State

A free cookbook featuring favorite fish recipes from Michiganders from around the state!

Specialized local materials

MDHHS has developed location-specific materials for some areas in the state. Some of the locations include:

- Detroit Area
- Saginaw Bay Area
- Lange & Revere Canals (St Clair Shores)
- Clark's Marsh, Iosco County

Check www.michigan.gov/eatsafefish for other locations.

To order any of the free materials listed in this booklet, call MDHHS at 1-800-648-6942.

If you would like to be notified when new materials are available, please also ask to be added to the ***Eat Safe Fish Newsletter*** distribution list.

Toxicologists and health educators are available to answer questions about the fish consumption guidelines from 8am-5pm, Monday through Friday.

Everyone is welcome to call us at 1-800-648-6942.

You can also download our e-Toolkit by going to www.michigan.gov/eatsafefish and clicking on the *Contact Us* button.

The e-Toolkit includes direct links to all the brochures included in this manual, a sample press release, news articles, and social media messages to promote the *Eat Safe Fish Guides*.



Michigan Department of
Health & Human Services