What is Bioaccumulation?

The word *bioaccumulation* is used to describe the build up of chemicals in fish. Through the food chain, chemicals like PCBs, DDT, dioxins, and mercury build up in the bodies of the fish. The picture below shows how this might happen in a lake near you.

People are at the top of this food chain. When you eat a lot of fish that have chemicals in them, those chemicals can build up in your body, too. While the chemicals in fish won’t make you sick right away, they could cause health problems someday.

### Bioaccumulation in Action

1. There are many ways chemicals end up in lakes and rivers, including wind and rain run-off.

2. The chemicals sink to the bottom of the lake or river, where they settle in the sediment.

3. Small creatures, called *macroinvertebrates*, eat these chemicals as they dig in the sediment for food.

4. The *macroinvertebrates* are eaten by minnows, minnows by medium-sized fish, and those fish are eaten by large fish - each collecting and storing some of the chemicals in their bodies.

5. This is why larger fish, predator fish, and longer-living fish are likely to have more chemicals in their bodies than smaller, younger fish. Check the *Eat Safe Fish Guide* to find safe fish.

If you eat a lot of fish or always go fishing in the same lake or river, check the *Eat Safe Fish Guide* to be sure you’re eating safe fish!

Call 1-800-648-6942 or visit [www.michigan.gov/eatsafefish](http://www.michigan.gov/eatsafefish) to learn more.
What are Persistent Chemicals?

Persistent chemicals are chemicals that are very stable and don’t break down over time. Chemicals such as PCBs, DDT, dioxins, and mercury are all persistent chemicals. Because they don’t break down and go away, these chemicals are a problem when it comes to fish that we eat. Especially when you consider that these chemicals can also bioaccumulate, or build up, in fish, wild game, and your body, too.

**Persistent Chemicals in Action**

In 1970, a factory puts out a lot of persistent chemicals through its smoke stacks.

In 2011, the factory has pollution control devices on its smoke stacks, but the chemicals put out in past years still remain behind.

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Persistent & Bioaccumulative Chemicals in Fish

If you eat a lot of fish that have these types of chemicals in them, the chemicals can build up and stay in your body, too. This could someday cause health problems, like cancer or diabetes, in some people. Not everyone will get sick, though. Some people may be fine after years of eating fish with these chemicals in them. Others may have health problems.

There is no way to know who might get sick and who won’t from the chemicals in fish. That’s why it’s best for everyone to make good choices when it comes to eating fish. The Michigan Department of Community Health looks at the amount of these chemicals in fish and uses the information to make the eating suggestions found in the Eat Safe Fish Guide.

If you eat a lot of fish or always go fishing in the same lake or river, check the Eat Safe Fish Guide to be sure you’re eating safe fish!

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