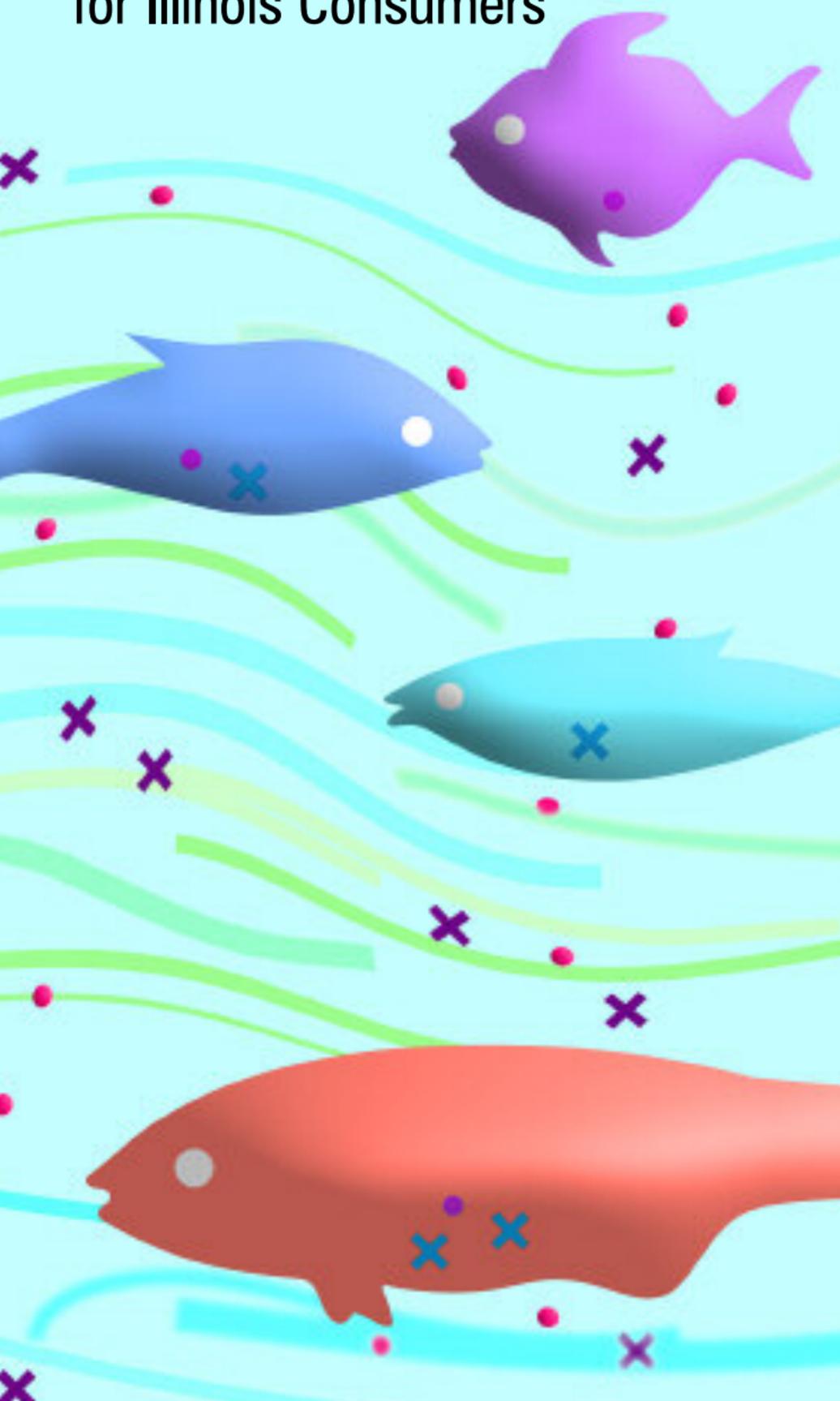


Contaminants in Fish & Seafood

A Guide to Safe Consumption
for Illinois Consumers



Fish are an excellent source of proteins, minerals and vitamins.

Fish are an excellent source of protein and other nutrients that play a role in maintaining a healthy, well-balanced diet.

However, did you know that some fish can contain harmful contaminants? This is of special concern if you are pregnant, nursing a baby, or have a young child. Contaminated fish may not look, smell, or taste different. But they can still harm you and your child.

You can still get the benefits of eating fish by wisely choosing:

- safer types of fish
- safer ways to prepare fish
- how often you eat fish

This publication includes more information about these recommendations. However, you should also discuss fish consumption with your healthcare provider.

Comparison of Food Composition

Amount		Calories	Protein (gr.)	Fat (gr.)
Beef burger	3.5 oz.	219	27.4	11.3
Chicken roasted	3.5 oz.	166	31.6	3.4
Egg	1 large	82	6.5	5.8
Halibut	3.5 oz.	171	25.2	7.0
Herring	3.5 oz.	98	17.5	2.6
Ocean Perch	3.5 oz.	227	19	13.3



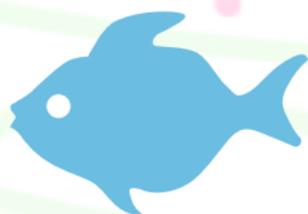
Mercury, PCBs and Chlordane: Chemicals Affecting Babies and Young Children

Exposure to low levels of some contaminants may have long lasting health effects on your body. Mercury, polychlorinated biphenyls (PCBs) and chlordane are among the major contaminants found in Illinois fish.

Harmful levels of PCBs, chlordane and mercury can build up in your body without you even being aware of it. These contaminants can be especially harmful to your developing child during pregnancy because you can pass the contaminants directly to your baby.

Above certain levels, mercury can damage the nervous system, particularly in developing children. Low amounts of mercury may cause subtle effects on the central nervous system, such as learning deficits. PCBs have also been linked to learning deficits in children. Behavioral problems in children exposed prenatally or during nursing to PCBs and/or chlordane have also been documented.

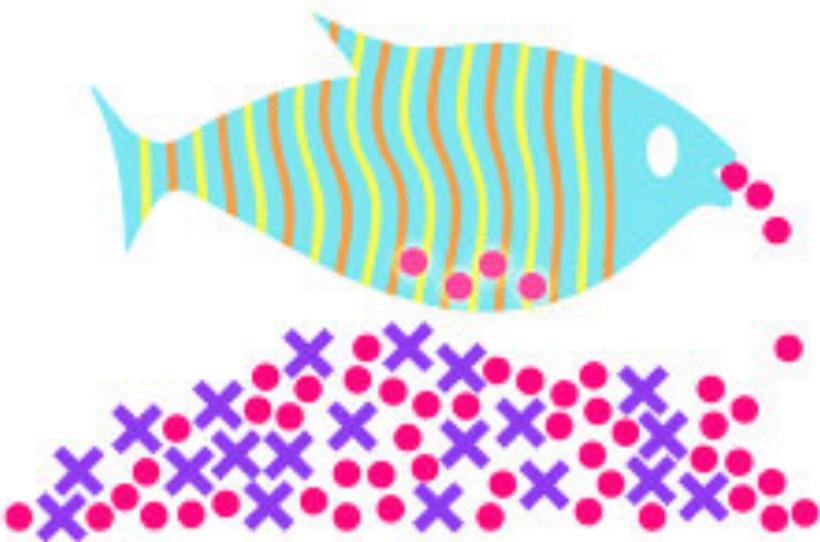
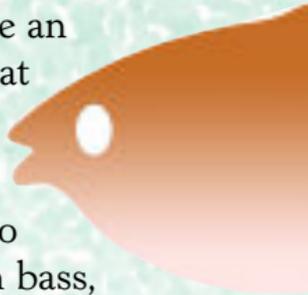
Your exposure to these contaminants before pregnancy matters too because traces of these contaminants may remain in your body for a period of time after ingestion. Over time, your body can rid itself of some contaminants however, you can reduce your risk of exposure as well as your future child's risk by consulting your healthcare provider and following the advice in this brochure.



Reduce Your Exposure to Mercury, PCBs and Chlordane

The Type of Fish

- Always remember to eat a variety of fish. Fish with more fatty flesh tend to accumulate contaminants such as PCBs and chlordane (PCBs and chlordane have an affinity to collect in the fat). Fish that tend to be fatty are the salmonids (e.g., coho and steelhead).
- Predatory fish that eat other fish also build up contaminants. Largemouth bass, as an example tend to have higher levels of mercury. Mercury binds to the muscle and is not removed during cooking.
- Eat smaller fish (within state size regulations). Fish build up contaminants from the water they live in and the food they eat. Larger and or older fish tend to build up contaminants in their bodies.
- Fish that feed along the bottom of lakes, streams and rivers ingest more contaminants than those swimming in the water column (contaminants tend to settle to the bottom with the sediments).



Choosing Where To Fish

- Protect yourself and your family by knowing where fish have been caught. If you have that knowledge, then use the “Illinois Fish Consumption Advisory” booklet to determine the recommended rate of consumption.
- If you are uncertain about the waterbody from which the fish have been caught, then eat no more than one meal (up to 6 ounces) of fish per week.

Follow Consumption Advice

Illinois and neighboring states sharing water bodies have tested several fish species from a variety of lakes, rivers and streams and developed fish consumption advisories where needed. In several instances, fish migratory patterns and feeding habits have resulted in statewide advisories. For a listing of specific water bodies and corresponding fish species please visit www.iisgcp.org or call (217) 782-5830 for a copy of Illinois' Fish Consumption Advisory.

If you are given a recreationally-caught fish, ask what species of fish it is, where it was caught, and check the advisory guide to see if a health advisory exists for that fish.



Choose How Much Fish You Should Eat and How Often?

Illinois has issued fish advisories for certain bodies of water in the state. Fish from areas with suspected or known contamination and from areas with no suspected contamination have been analyzed for chemicals that are known to have an adverse impact on human health. The advisory is created after analysis of the fish tissue. The advisory is based on the following:

- which fish are unsafe to eat,
- which fish should be eaten in limited quantities, and
- which fish can be eaten in unlimited amounts.

The current Illinois Fish Consumption Advisories are directed towards fish found to have higher levels of mercury, (PCBs) polychlorinated biphenyls and chlordane.

Who Should Follow Illinois' Fish Consumption Advisory Guidelines?

The fish advisories are intended to primarily protect sensitive populations such as pregnant or nursing women, women of childbearing age, and children less than 15 years old. Women who eat highly-contaminated fish for many years prior to becoming pregnant may have children who are slower to develop and learn. Adults are less likely to have health problems at the same low levels of exposure that impact children's health, so the meal advice contained in the advisory may be overprotective for women beyond child bearing years and males older than 15 years of age.

Are Store-Bought Fish Safe?

Consumption advice is usually not necessary for many of the popular seafood species, such as flounder, pollock, cod, salmon, canned light tuna, clams and scallops, which have relatively low levels of mercury and are low in fat content.

The Food and Drug Administration (FDA) and the Environmental Protection Agency (EPA) are advising pregnant women, nursing mothers, women of childbearing age who may become pregnant and children on the hazard of consuming certain kinds of fish that may contain high levels of methyl mercury. Due to high levels of mercury, the FDA/EPA is advising women not to eat tuna steaks, orange roughy, grouper, tilefish (golden snapper and golden bass), etc. For more information see table.

The FDA advisory board and EPA acknowledge that seafood is an important part of a balanced diet for pregnant women, those of childbearing age who become pregnant, nursing mothers and young children. EPA and FDA advise women to select a variety of fish, including shellfish, canned fish, smaller ocean fish and farm raised fish. Based on these recommendations, women, including young children can safely eat 12 ounces per week (2 average meals) of cooked fish (a typical serving is 3 to 6 ounces).

Level of Mercury	Maximum Amount to Eat	Commercial Fish Species
High	Never	tilefish (golden bass or golden snapper – Gulf of Mexico), swordfish, shark, king mackerel, tuna (fresh or frozen), orange roughy, Spanish mackerel (Gulf of Mexico), marlin, grouper
Moderate	4 ounces per week (1 meal/2 weeks)	albacore/white tuna (canned), halibut, snapper, saltwater bass, bluefish, buffalo fish, white croaker (Pacific), sea trout (weakfish), northern lobster, sablefish, scorpion fish
Low	8 ounces per week (1 meal/week)	canned light tuna, mahi mahi, carp, freshwater perch, skate, Spanish mackerel (S. Atlantic), monkfish, tilefish (Atlantic), sheephead
Lowest	12 ounces per week (2 meal/week)	shrimp, salmon, Pollock, farm-raised catfish, cod, crab (Blue, King and Snow), clams, tilapia, flatfish (Flounder, Plaice, Sole), scallops, haddock, farm-raised rainbow trout, herring, crayfish or crawfish, mackerel (Atlantic, Jack), mullet, oysters, croaker (Atlantic), ocean perch, pickerel, hake, sardines, squid, shad (American), whiting, whitefish, anchovies, jacksmelt, spiny lobster, chub mackerel (Pacific), butterfish

Consuming 6 ounces of these fish every week will provide the suggested amount of the omega-3 fatty acids, EPA and DHA.

The above table is located at: <http://fn.cfs.purdue.edu/anglingindiana/>

Preparation and Cooking Guidelines for Fish Under Advisories

PCBs and chlordanes are stored in the fat of fish whereas mercury is stored in the muscle of the fish. You can reduce the level of PCBs and chlordanes (but not mercury) by properly cleaning, skinning, and trimming the species and by following the cooking recommendations.

- Before cooking, remove and do not eat the organs, head, skin and the dark fatty tissue along the lateral line, backbone and belly.
- Bake or broil the fish on an elevated rack that allows fats to drain to the pan below; do not fry in collected fats.
- After cooking, discard all liquids. Do not reuse for soups or sauces.

PCBs and chlordanes are stored in fat and can be removed prior to cooking and during the cooking process.

Mercury is stored in muscle tissue and cannot be removed by cooking the fish.



How to Protect Your Baby or Young Child and Still Enjoy Fish

- Remember to consider all sources of fish you eat when making choices.
- Discuss the fish you eat with your healthcare provider.
- Carefully choose the fish you eat prior to becoming pregnant, during pregnancy and while nursing.
- Consider making changes in how you eat fish: the kind of fish you eat; the source of the fish; how much you eat; how often and; how you prepare the fish.
- Eat a variety of foods, including fish.

The American Heart Association recommends at least 6 ounces/week for adults (3 ounces of fish is about the size of a deck of cards). Children from 2-6 years of age should eat at least 2 ounces/week. Include those fish that contain more of the healthy omega-3 fatty acids (EPA and DHA). The mother provides EPA and DHA to the unborn child or nursing infant.



***For More Information About
Illinois' Fish Advisories
contact:***

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(217) 782-5830

Illinois Department of Natural Resources
(217) 782-6424

TTY (hearing impaired use only)
(800) 547-0466

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