



FISH CONSUMPTION: MINIMIZING CONTAMINANTS

ALAN S. PETERSON, M.D.

Associate Director, Family & Community Medicine
Walter L. Aument Family Health Center

Recently the Association of Reproductive Health Professionals (ARHP) and the Physicians for Social Responsibility (PSR) put together a quick reference guide for clinicians entitled "Fish Consumption to Promote Good Health and Minimize Contaminants". I'd like to summarize some of the more significant features.

Health benefits of fish and seafood have been well documented and widely promoted in recent years. Fish is low in saturated fat and is a healthy alternative to red meat. It provides the body with essential vitamins and minerals, including iron; zinc (from shellfish); vitamins A, B and D; and, of course, protein. Omega-3 fatty acids found in fish are also beneficial, particularly in terms of cardiovascular health. Preliminary evidence suggests that early exposure to omega-3 fats may enhance brain development as well. At the same time, fish are also vulnerable to contamination by toxic industrial pollutants, such as mercury, as well as polychlorinated biphenyls (PCBs), dioxins, flame retardants, and other lipophilic chemicals. These pollutants accumulate in fish flesh (mercury) or fish fatty tissue (PCBs), exposing people who eat them.

Developing fetuses are particularly vulnerable to common fish contaminants, and infants and children remain vulnerable due to rapid brain growth and development. The guidelines provided here are most important for pregnant and breastfeeding women and for young children.

A woman who is contemplating pregnancy can lower her blood mercury level by careful eating for six to twelve months before becoming pregnant, but PCBs accumulate over time, and life-long vigilance is required to minimize maternal body burden of PCBs. All women of childbearing age — even adolescent girls — should follow the recommendations summarized below. It is also important to acknowledge that, since there are as yet limited data on which to base recommendations, these guidelines should be viewed as provisional and subject to revision as more is learned or as effective measures are taken to eliminate toxic pollutants from our environment.

The ARHP and PSR believe that women who might become pregnant should strive to keep their blood mercury levels at or below 5.8µg of methylmercury per liter of blood. This level correlates with intake at the EPA reference dose of 0.1µg of methylmercury per kilogram of body weight per day. The National Research Council has endorsed the EPA reference dose as appropriate to protect the developing fetus. Based on the best information available on mercury content in fish, it is estimated that many as 6 to 7% of women following the advisory issued by the FDA are likely to be exposed above the safe level. Recent analysis suggests this level may need revision due to evidence that cord blood levels may be significantly higher than maternal blood levels.

The ARHP and PSR also believe that the evidence for health risks from exposure to PCBs in fatty fish is sufficient to warrant a recommendation for limiting consumption of these fatty fish to one or two times per month.

SUMMARY OF ARHP/PSR FISH CONSUMPTION GUIDELINES

For women of childbearing age and adolescent girls:

- Eat up to 12 ounces per week (2 servings) of fish low in mercury and low in fat. Cod, haddock, Pollock, shrimp, tilapia, and chunk light canned tuna are among the low-fat, low-mercury choices.
- Eat a variety of fish and seafood.
- Follow local, state, and federal fish advisories.
- Eat no more than 6 ounces of fish per week (one serving) if you eat canned albacore tuna or other fish that are moderately contaminated with mercury. Examples: blue fish, grouper, orange roughy, marlin, and fresh tuna.
- Do not eat any fish high in mercury. Examples: sword fish, shark, king mackerel, and tilefish.
- Eat fatty fish no more than 1 to 2 times per month. Fatty fish, such as salmon, herring, and sardines, are low in mercury, but may carry relatively high quantities of other contaminants. Use cooking methods that allow the fat to drain away as follows:

Encourage patients to prepare fatty fish such as salmon with cooking methods that minimize the risk from fat-soluble contaminants such as PCBs. (Note: This does not remove mercury, which is found in fish muscle rather than in fat.) The suggestions below are adapted from a guide for expectant mothers, published by the Illinois Department of Natural Resources.

- Trim away fatty areas such as the belly, top of the back, and the dark meat along the side.
- Remove or puncture the skin before cooking to allow the fat to drain off.
- Broil, grill, roast, or steam the fish on a rack to allow fat to drain away.
- Do not fry large, fatty types of fish such as salmon and blue fish.
- Throw away fatty drippings; don't use them in other cooking.

For children under the age of 15:

- Serve children a variety of fish and seafood that are low in mercury and other contaminants: Cod, haddock, pollock, tilapia, chunk light tuna and shrimp are among the low-fat, low-mercury choices. Fish sticks are usually made from fish that are low in pollutants.
- Limit how frequently children eat fish and seafood in accordance with the guidelines for women of childbearing age above.
- Limit the amount of each child's serving based on age and body weight. For example, a toddler might eat a serving of 1 to 2 ounces, whereas an older and larger child may be served 2 to 3 ounces of low-mercury fish. Toddlers and small children should probably not be offered fish moderately contaminated with mercury, such as canned white albacore tuna because — even at reduced serving sizes — they may get too much mercury for their weight.

REFERENCES

1. www.arhp.org for the Association of Reproductive Health Professionals.
2. www.mercuryaction.org and www.envirohealthaction.org are both Physicians for Social Responsibility sites.

Alan S. Peterson, M.D.
Associate Director, Family & Community Medicine
Walter L. Aument Family Health Center
317 South Chestnut Street
Quarryville, PA 17566
717-786-7383
ASPeters@lancastergeneral.org