

Mercury in Fish

Mercury is a highly toxic metal found in neon signs, fluorescent lights, older thermometers, and certain kinds of telescopes. Although scientists today understand that mercury is extremely poisonous, and so it is found in only a small number of products, in the past mercury were used in many common household objects. Mirrors, hats, photography equipment, and even several kinds of medicines used to contain various levels of mercury. Prolonged contact with mercury can be very dangerous for human beings. Because we now know how toxic mercury is, **chemists** and other people who work with mercury are careful to limit their exposure to it. However, while most household objects no longer contain mercury, and most people are not exposed to it at their jobs, there is still a significant amount of mercury in something that many people eat on a regular basis: fish.



The mercury we might find in a can of tuna is most likely an indirect result of the coal industry. Mercury, which is naturally found in coal, is released into the air when coal is burned. As coal is transformed into energy, mercury vapor enters the atmosphere, becomes trapped in the clouds, and then returns to the lakes, rivers, and oceans in the form of rain. This mercury-laced rain can be carried great distances from the original coal plant. Scientists have found mercury in fish from nearly 300 streams across the country, even in bodies of water that are located hundreds of miles from coal plants.

Mercury accumulates in certain kinds of fish through a process called biomagnification. To understand bio magnification, one must first understand the food chain. The ocean's food chain starts with algae, sea plants that get their nutrients from the sun. The algae are then eaten by small sea creatures, such as shrimp. Small fish, like herring, then eat these **shrimp**. Larger fish, like trout, eat the **herring**. Even larger fish, like albacore tuna, then eat the trout. A human being might then eat the albacore tuna. Biomagnification occurs when a substance enters the food chain in small amounts at the very bottom and then increases in concentration in animals higher up on the food chain. In this example, algae absorb mercury in the seawater. **Shrimp** eat the mercury-filled algae, and then the **shrimp** are eaten by **herring**, which are eaten by trout, which are eaten by albacore tuna.

Once a fish eats another creature containing mercury, the mercury does not leave that fish's body, but instead it is stored in fat. Therefore, the mercury continually accumulates as more mercury-contaminated fish are eaten. There may not be very much mercury in any one of the creatures at the lower levels of the food chain, like the **shrimp** or the **herring**, for example. Yet because the tuna eats so many of the mercury-contaminated fish, the mercury concentration in the tuna's body is much higher than it is in the herring's body.

Despite the toxicity of mercury and the **widespread** nature of fish contamination, there is no need for the public to be overly apprehensive. Many popular fish, such as salmon, catfish, shrimp, or tilapia, are generally safe to eat. Fish, especially tuna and grouper, should only be eaten in moderation. **Children** should be especially cautious about how many servings of mercury-contaminated fish they have per week.

It is recommended that people in these groups not eat more than 2 servings of mercury-contaminated fish per week. Fish with the highest levels of mercury include shark, swordfish, and king mackerel. People should avoid eating large amounts of these kinds of fish, and no one should eat these more frequently than once a month.

- 1 The primary purpose of the passage is to
- a warn people who work at coal plants about the dangers of mercury
 - b inform people about the presence of mercury in edible fish
 - c familiarize people with the history of mercury in industrial products
 - d instruct people about the process of biomagnification
- 2 Based on information in paragraph 1, it can be inferred that only older thermometers contain mercury because
- a older thermometers do not work as well as newer models
 - b newer thermometers were made using coal power; older thermometers were made before coal power was in widespread use
 - c thermometers with mercury were made before people understood how dangerous mercury is
 - d thermometers made in earlier times used older technology
- 3 In the final paragraph, the author argues that
- a it is not safe to eat any seafood
 - b only children and pregnant women must be cautious about the fish they consume
 - c people must think carefully about what kinds and amounts of fish they are eating
 - d it is only safe to eat the most popular varieties of fish
- 4 Using your own words, explain the concept of biomagnification.

For me biomagnification is when a substance enters the food chain in small quantities that later increased its quantity.