Poisons In Our Planet

What Are You Lead To Believe?

How are we exposed to Lead?

- Older (pre-1986) water pipes and plumbing fixtures often contain lead.
- Lead usually enters tap water through the ‘corrosion’ of plumbing materials.
- Even plumbing in new homes can be a source of lead. “Lead-free” plumbing may contain up to 8% lead. Brass or chrome-plated brass faucets and fixtures are the biggest problem.
- For children and adults, the greatest exposure to lead is from swallowing lead paint chips or dust or breathing in dust that contains lead.

Lead causes health problems:

- In children, exposure to lead can make it more difficult to pay attention and to learn. Lead can also affect how you grow and develop.
- Lead can cause increases in blood pressure.
- Adults who drink this water over many years could develop kidney problems or high blood pressure.
- Testing your blood for lead is the only way to know if you have "lead poisoning." Usually, having your blood checked for lead uses a small finger prick.
- The level of lead in blood that is "lead poisoned" is 10 µg/dL (micrograms per deciliter). But, even blood lead levels less than 10 µg/dL have some risks.

Reduce your exposure:

- Wash your hands especially before eating, drinking, or touching your face. Help younger children do the same.
- Eat food that is low in fat and high in calcium and iron such as skim or 1% milk and green vegetables. Why? Because these foods help block lead from staying in your body.
- Water sitting in pipes collects lead. Solution: Run tap water several minutes before you use it to cook or drink if the faucet has not been used for more than a few hours.
- Do not use hot water to cook or make baby formula. Instead, run the water until you feel the temperature change.
- Hot water makes lead come out of the pipes into your food, water, and other drinks made with water.
- Boiling water does not get rid of lead.
- Some faucet and pitcher filters can remove lead from drinking water.
- If you use a filter, be sure you get one that is certified to remove lead by the NSF International, a not-for-profit organization that certifies food, water, and consumer products.

DO make sure you...

- WASH your hands BEFORE eating, drinking or touching your face.
- EAT HEALTHY especially focus on foods rich in calcium and iron like milk or green veggies.
- RUN tap water several minutes BEFORE you use it to cook or drink if the faucet has not been used for more than a few hours.

NIEHS Children's Environmental Health Sciences Core Center
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Mercury comes from many sources:
- Mercury occurs naturally in the environment and is also released into the air through industrial pollution.
- Mercury falls from the air and accumulates in streams and oceans where it is turned into methylmercury.
- Fish absorb and accumulate methylmercury as they feed. It builds up more in some types of fish than others, depending on what the fish eat.
- Mercury in our food supply can be dangerous:
  - Nearly all fish and shellfish contain traces of mercury. For most people, the risk from mercury by eating fish and shellfish is not a health concern. Yet, some fish and shellfish contain higher levels of mercury that may harm an unborn baby or young child’s developing nervous system.
  - Mercury is harmful because it harms the proper development and function of the nervous system.
  - Mercury can disrupt the normal function of specific hormones in the body, affects the immune system, and affects learning abilities.
- If you regularly eat types of fish that are high in methylmercury, it can accumulate in your bloodstream over time.
- Methylmercury is removed from the body naturally, but it may take over a year for the levels to drop significantly. Thus, it may be present in a woman even before she becomes pregnant.
- This is the reason the Food and Drug Administration (FDA) and the Environmental Protection Agency (EPA) are advising women who may become pregnant, pregnant women, nursing mothers and young children to avoid some types of fish and instead eat fish and shellfish that are lower in mercury.

Game plan for reducing your exposure to Mercury

Fish is good for you!
- Fish and shellfish contain high-quality protein and other essential nutrients, are low in saturated fat, and contain healthy omega-3 fatty acids.
- A well-balanced diet that includes a variety of fish and shellfish contributes to heart health and children’s proper growth and development. So, women and young children should include fish/shellfish in their diets due to the many nutritional benefits.

Just be careful when eating fish and shellfish:
- The risks from mercury in fish and shellfish depend on the amount of fish and shellfish eaten and the levels of mercury in the fish/shellfish.
- One week’s consumption of fish does not change the level of methylmercury in the body much at all. If you eat a lot of fish in one week, cut back for the next week or two. Make sure you average the recommended amount per week.

Three recommendations when eating fish/shellfish:
1. Do NOT eat Shark, Swordfish, King Mackerel or Tilefish because they contain high levels of mercury.
2. Eat up to 12 ounces/2 average meals a week of a variety of fish and shellfish that are lower in mercury.
3. Check local advisories about the safety of fish caught by family/friends in your local lakes, rivers or coastal areas. If no advice is available, eat up to 6 ounces (one average meal) per week of fish you catch from local waters, but don’t consume any other fish during that week.

By following these three recommendations for selecting and eating fish/shellfish, women and young children will receive the benefits of eating fish and shellfish and be confident that they have reduced their exposure to the harmful effects of mercury.

Good sources for mercury-fish advisories can be found at: The U.S. Food and Drug Administration’s food information line toll-free at 1-888-SafeFood or visit FDA’s Food Safety Website, the Environmental Protection Agency’s Fish Advisory website or the Wisconsin Department of Natural Resources. For information on EPA’s actions to control mercury, visit EPA’s mercury website.
Medicines and Personal Care Products seeping into your H₂O

The medicines you take can affect the environment:

- Certain medicines have been detected in various water sources. These Medicines Include:
  1. Antibiotics
  2. Anti-depressants
  3. Birth control pills
  4. Seizure medicines
  5. Cancer treatments
  6. Pain Killers

Medicines in your water supplies come from many sources. They include:
1. Pharmaceutical industries
2. Hospitals/other medical facilities
3. Household waste (including unused medicines flushed down toilets, human excreta containing incompletely metabolized medicines, meaning up to 90% of medicines taken by mouth pass through humans unchanged)
4. Agriculture and livestock
   * Hormones
   * Antibiotics in water sources may be the worst problem as they may make antibiotics used to treat infections become ineffective. More than 40% are used to enhance growth!
   * Veterinary Medicines
   * Manure spread on soil that gets washed into streams and lakes or seeps into groundwater.

Medicines end up in lakes, rivers and groundwater because:

- They pass unchanged through most sewage treatment facilities.
- Discarded medicines often end up in dumps and landfills where they can get into groundwater.
- Wastewater treatment methods used in the U.S. aren’t designed to remove many of these medicines. So, much of what goes down our toilets and drains find their way to our drinking water sources.
- Many medicines such as those used in agriculture run directly into groundwater, lakes and rivers.

Personal care products also are showing up in our water.

- Generally, these chemicals are the active ingredients or preservatives in cosmetics, toiletries or fragrances. Also, sunscreen agents have been detected in lakes and fish.
- The amount of medicines and personal care products released to the environment is estimated to be about the same as the amount of pesticides used each year.
- Anti-depressants have been blamed for altering sperm levels and spawning patterns in marine life.
- Scientists are still not sure of the effects of medicines and similar chemicals on humans and wildlife. However, because of the potential for long-term effects of these chemicals on humans, especially on hormone production, caution is advised.

What can Industries do? Industries are working to produce more environmentally friendly chemicals and increase point of use treatment.

What can YOU do? Don’t dump medicines down the drain/toilet. Store unused medicines away from children. Bring unused medicines to medicine disposal sites.

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