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Exposure to Chemicals in Plastic

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Depending on where you live and work, you're likely to be exposed to many plastic products every day. Food and beverage containers, some disposable plates, and toiletry bottles are all plastic and all are made from chemicals. Research suggests that all plastics may leach chemicals if they're scratched or heated. Research also strongly suggests that at certain exposure levels, some of the chemicals in these products, such as bisphenol A (BPA), may cause cancer in people.

BPA is a weak synthetic estrogen found in many rigid plastic products, food and formula can linings, dental sealants, and on the shiny side of paper cashier receipts (to stabilize the ink). Its estrogen-like activity makes it a hormone disruptor, like many other chemicals in plastics. Hormone disruptors can affect how estrogen and other hormones act in the body, by blocking them or mimicking them, which throws off the body's hormonal balance. Because estrogen can make hormone-receptor-positive breast cancer develop and grow, many women choose to limit their exposure to these chemicals that can act like estrogen.

BPA also seems to affect brain development in the womb. In 2011, a study found that pregnant women with high levels of BPA in their urine were more likely to have daughters who showed signs of hyperactivity, anxiety, and depression. The symptoms were seen in girls as young as 3. It's not clear why boys aren't affected in the same way.

Steps you can take

While it's likely impossible to completely avoid all plastic products, try to use as little plastic as possible, especially if you're pregnant, and never use it around food.

To reduce your exposure to BPA:

- **Carry your own glass, steel, or ceramic water bottle** filled with filtered tap water.
- **Reduce how much canned food you eat and how much canned formula your baby uses.**
- **Use baby bottles with labels that say "BPA free."**
- **Avoid handling carbonless copy cash register receipts.** If you get a carbonless receipt, **don't recycle it.** Recycling receipts with BPA in them can spread the BPA to other products made with recycled paper, including napkins and toilet paper.
- **Look closely at plastics with a number 7 recycling symbol** on the bottom. If the plastic doesn't also say "PLA" or have a leaf symbol on it, it may contain BPA. See the chart below for more information on plastic types.

To reduce your exposure to other chemicals in plastics:

- **Don't cook food in plastic containers or use roasting/steaming bags;** the plastic residues may leach into food when heated in a regular or microwave oven.
- **Use glass, porcelain, enamel-covered metal, or stainless steel pots, pans, and containers for food and beverages** whenever possible, especially if the food or drink is hot.

- **Plastics with recycling symbol 2, 4, and 5 are generally considered OK** to use. Plastics with recycling symbol 7 are OK to use as long as they also say "PLA" or have a leaf symbol on them. The recycling symbol number is the code that shows what type of plastic was used to make the product.
- **Recycling symbol 1 is also OK** to use, but shouldn't be used more than once (no refilling those store-bought water bottles!). Keep all plastic containers out of the heat and sun.

Polyethylene terephthalate (PETE or PET): includes clear plastic soda and water bottles; generally considered OK to use, but don't reuse

High density polyethylene (HDPE): includes opaque milk jugs, detergent bottles, juice bottles, butter tubs and toiletry bottles; considered OK to use

Polyvinyl chloride (PVC): includes food wrap, cooking oil bottles, and plumbing pipes; **do not cook food in these plastics and try to minimize using no. 3** plastics around any type of food (use wax paper instead of plastic wrap and use glass containers in the microwave)

Low density polyethylene (LDPE): includes grocery bags, some food wraps, squeezable bottles, and bread bags; considered OK to use

Polypropylene: includes most yogurt cups, water bottles with a cloudy finish, medicine bottles, ketchup and syrup bottles, and straws; considered OK to use

Polystyrene/Styrofoam: includes disposable foam plates and cups and packing materials; **do not cook food in these plastics and avoid using no. 6** plastics around any type of food

All other plastics not included in the other categories and mixes of plastics 1 through 6 are labeled with a 7, including compact discs, computer cases, BPA-containing products, and some baby bottles.

PLA (polymer polylactide) is a plastic made from plants (usually corn or sugarcane) that is also labeled with a 7. PLA plastics don't contain BPA; no safety concerns have been raised about using PLA plastic with food. Right now, it can be difficult to tell the difference between a PLA no. 7 plastic and a BPA-containing no. 7 plastic. Some PLA plastics may also say "PLA" near the recycling symbol. Others may have a leaf symbol near the recycling symbol.

To clear up any confusion, the manufacturers of PLA plastic are working with the American Society for Testing and Materials International, a global group that develops standards, to create a new recycling numbering system that would give PLA plastic its own number.

Do not cook food in no. 7 plastics that aren't PLA and avoid using non-PLA no. 7 plastics around any type of food.

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