

# Are Plastic Water Bottles Safe?

We all know the importance of staying hydrated. The method of choice for most people these days is to carry around a trendy, colorful plastic sports bottle filled with water. You know, the tough, hard plastic ones that everyone from bikers and hikers to active business folks to on-the-go moms tote around - not to mention students ranging from elementary to college. They're perfect for an active lifestyle - light, durable and available in a rainbow of colors. However, new research has shown that these plastic sports bottles may pose serious health hazards.

The irony is that the hazard may actually come from the material that makes these bottles so attractive. Lexan polycarbonate resin, a plastic polymer accidentally developed by General Electric in 1953, was and still is a revolutionary material. It's been used in a variety of products over the last four decades including compact discs and DVDs, bulletproof windows, mobile phones, computers, baby bottles and water bottles. Lexan is a perfect choice for water and baby bottles as it's durable, doesn't hold flavors or odors nor delivers any taste from the bottle material itself to the fluids it holds.

## The Problem:

This is where the confusion begins. Many folks assume that because it doesn't impart flavor to the liquid it holds that it's safer than other types of plastic bottles. Research findings published in 2003 by the journal *Current Biology*, show otherwise. These findings were the result of a study by Dr. Patricia Hunt of Case Western University in Ohio that questioned the use of polycarbonate plastics such as Lexan.

In 1998, Hunt discovered that plastics made from polycarbonate resin can leach bisphenol-A (BPA), a potent hormone disruptor. BPA, a chemical found in epoxy resin and polycarbonate plastics, may impair the reproductive organs and have adverse effects on tumors, breast tissue development and prostate development by reducing sperm count.

BPA can be leached into the water bottles contents through normal wear and tear, exposure to heat and cleaning agents. This includes leaving your plastic water bottle in your car during errands, in your back pack during hikes and running it through your dishwasher and using harsh detergents. And, a 2003 study conducted by the University of Missouri published in the journal *Environmental Health Perspectives* confirmed Dr. Hunt's study conclusions but also found that detectable levels of BPA leached into liquids at room temperature. This means just having your plastic water bottle sitting on your desk can be potentially harmful. In this author's humble opinion, the best thing to do is to avoid plastic altogether. (Side note: baby bottles made from polycarbonate plastics have quietly disappeared from the market despite industry assurances that polycarbonate plastics are safe)

## The Solution:

There are two approaches to take to avoid exposure to BPA. First, if you are active and take water with you, switch to a stainless steel water bottle. But, be careful. Many products on the market are lined with an epoxy finish. This defeats the purpose. Make sure that the bottle is stainless steel both inside and out. Stainless steel water bottles are light, durable and hold both hot and cold liquids well. There's a wonderful stainless steel water bottle called the **Klean Kanteen**. It's available in an **18 oz**, **27oz** and a **40oz** size and is available at [www.greenfeet.com](http://www.greenfeet.com).

The second approach is to reuse glass containers such as quart sized juice bottles. Yes, they are a bit heavier but are good solutions if you're in an office environment where mobility isn't an issue.

Either way, to avoid bacteria build up, wash out your containers with warm water and biodegradable dish soap. Be sure to wipe the mouth of the container and the lids. And most importantly, let the container completely dry before refilling. Keeping any container continually filled with liquid can lead to bacteria developing and potential illness.

Keeping hydrated is extremely important year round - but especially during the summer. It keeps our systems functioning properly and is important in sustaining good health. Here's a tip on how much water you should be consuming daily based on a formula provided by the Mayo Clinic: Simply take your body weight and divide in half. For example, if you weighed 150 pounds, you need 75 oz (9-10 8oz glasses) daily. Caffeinated and alcoholic beverages are dehydrating so for every glass of these beverages you drink, add an extra glass of water.

So, while you take care to only fuel your body with plenty of pure, filtered water, take the next step and ensure the container holding your water is safe.

## Bottom's up!