BLUEWATER

BLUEWATER HYDRATION is a water intelligence series to spark consumer awareness about the importance of staying well hydrated at work, rest and play.

HYDRATION AND PLASTIC WATER BOTTLES

Ban the bottle: Bluewater offers ways to end the need for single use plastic bottles.

Are plastic bottles really harming us and the planet?

Many scientists, health advocates and environmentalists believe single-use plastic water bottles may threaten human health and wellbeing.

Most of us realize how important it is to stay properly hydrated throughout the day. So it's not unusual to see people frequently topping up water bottles, at the office, in the gym or from a public water station. Nor is it uncommon to see people refilling a empty plastic bottle with drinking water, some seeing it as recycling, others as a way to save money.

But people should be wary about reusing a plastic bottle, especially ones designed for single use. A study published in Environmental Health Perspectives revealed that almost all commercially available plastic products sampled leached chemicals, including those advertised as being free of BPA, a chemical linked to disrupting hormones.

And while single-use plastic bottles rarely use BPA, they may contain a BPA variant such as BPS, BPAF or BPP, which new research indicates can interfere with male sperm counts and the quality of female eggs.

At Bluewater, we pretty much distrust all plastic water bottles, single-use and refillable alike. This lack of trust has led us to explore the alternatives and then develop and launch our own range of stainless steel and glass bottles, which are both safer to use and less destructive to the environment.

We have made it our mission at Bluewater to actively help end the need for single-use plastic bottles. We believe what they generate in terms of chemicals,microplastics, and air pollution from transportation threatens the health of our planet, endangering humans and wildlife alike.

The bare truth is that some six decades after the plastics revolution got underway, microplastics are now in the water we drink, the food we eat, and the air we breathe.

A looming plastics time bomb?

There are three key issues when it comes to plastic water bottles: They are made using chemicals that may leach into the liquids inside; if not recycled, they end up in landfill and oceans where they break down into ever smaller particles; and, their production and transportation is not resource efficient, resulting in huge CO2 emissions.

Threat to human health

A variety of chemicals are used to make plastic containers such as single-use and reusable water bottles. Probably the best-known chemical used in plastic containers and packaging is BPA or Bisphenol A, a synthetic chemical used since the late 1950s. Most of us have been exposed to BPA – and its alternatives – due to its widespread use in refillable bottles, liners in canned foods, plastic plates and plastic cups.

As far back as 2004, the U.S. Centers for Disease Control and Prevention discovered that 93 percent of people tested in its National Health and Nutrition survey had detectable levels of BPA in their urine.

A 2013 study reviewed all the published research of potential links between BPA and human health. The researchers found that of the 95 studies some 75 linked BPA to numerous adverse perinatal, childhood and adult health effects, including altered behavior and asthma in children. BPA has been replaced in refillable plastic bottles, but the substitutes may be no better. One – fluorene-9-bisphenol, or BHPF – was found, in a Chinese study, to cause female mice to have smaller wombs and smaller pups, which means it may have the potential to cause fertility problems in humans.

Most throwaway bottles do not contain BPA as they are made using polyethylene terephthalate, also know as PET. However, the manufacturers advise against frequent use on the grounds it can break down the material and allow bacteria to build up in the scratches. Washing these bottles in hot water is also often advised against because of the risk of chemical leaching.

Threat to the air we breathe

An issue with all plastic bottles is their production and transportation. Many popular bottle brands are transported across national borders for hundreds of kilometers from their source.

A project by the Australian University of Queensland studied the large consumption of energy used in capturing water for bottling, conveying the water, and treating it at the bottling plant. The project said additional energy consumption occurs in producing the bottle, and in cleaning, filling, sealing, labeling and refrigerating. Finally, energy is required to transport the bottle to retailers, and then to the consumer. The total energy required to produce bottled water is 5.6-10.2 MJ per liter, while tap water typically requires 0.005 MJ per liter in treatment and distribution.

Research by TAPP, a Spanish water company, concluded that the CO2 footprint of the 480 billion plastic water bottles produced in 2018 equalled between 67 billion - 192 billion kg of CO2, the equivalent to the entire yearly CO2 footprint of a nation like Greece (72 billion kg).

A 2019 report from the Center for International Environment Law (CIEL) estimated the cradle to grave footprint of plastic. CIEL concluded that the rapid global growth of the plastic industry 'is not only destroying the environment and endangering human health but also undermining efforts to reduce carbon pollution and prevent climate catastrophe'.

Even at 'end of life' when being incinerated, plastic bottles release toxic chemicals. CIEL found that in 2019, the production and incineration of plastic would produce more than 850 metric tons of greenhouse gases, toxic emissions and pollutants that contribute to global warming.

Threat to planetary health

The United Nations warns that while the plastic in the world's oceans has garnered massive media attention, plastic pollution 'arguably poses a bigger threat to the plants and animals who are based on land.'

Stressing that little of the plastic discarded every day is recycled or incinerated in waste-to-energy facilities, the UN says much is ending up in landfills, taking up to 1,000 years to decompose, and continually leaching potentially toxic substances into the soil and water.

The plastics that end up in planetary ocean and land environments degrade into smaller and smaller pieces to form microplastic particles smaller than 5mm. A WWF report concluded we're now eating the equivalent of a credit card's weight in plastic every week.

And the news gets worse. Researchers are now looking at nanoplastics, which are invisible to the naked eye and measured in nanometers (1,000 nanometers = 1 micrometer). Once absorbed into the body, such nanoplastics may negatively impact the functioning of organs such as liver, kidneys and intestines, according to a study published in Science Direct.

There is no doubt about the source of plastics pollution. In 2018, one million plastic bottles were purchased every minute (that's 60 million an hour, 1.3 bn a day, 40 bn a month, and almost 482 bn a year).

According to Bioplastics News, almost four trillion bottles were sold between 2008 - 2018 with the majority ending up in the environment, landfill sites, or oceans around the world.

Potential health threats posed by chemicals in plastics to humans

- Breast cancer
- Prostrate cancer
- Genital abnormalities
- Infertility in men and women
- Early puberty in girls
- Diabetes
- Asthma

(Sources include the Bisphenol A: Understanding the Controversy study from 2016; https://journals.sagepub.com/doi/10.1177/2165079915623790)

Some good news
For those of us who want to avoid the chemicals and bacteria buildup in plastic water containers, safer bottle alternatives do exist.

Aluminum, stainless steel and glass water bottles are widely considered to be the safer choices, although some water cans made of aluminum do have a plastic liner. A major plus point for glass and stainless steel bottles is that they can be washed and reused again and again.

Bluewater BHP-free stainless steel bottles are designed in Sweden to last a lifetime of use. And be passed on to the next generation – closing the eco-circle by giving users a real alternative to plastic water bottles.

- The only bottle you'll ever need
- No leaching of contaminants
- Easy-carry silicone loop
- Durable, recyclable food-grade stainless steel
- Helps stop single-use plastic water bottles from filling the oceans
- Prevents microplastics in the food chain and water supply
- No hormone-disrupting chemicals from plastics
- Sweatproof, double-wall construction keeps liquids hot 12h and cold 24h
- Reusable, refillable bottle reduces transport emissions

Here and now solutions delivering fresh, healthier water for home, work and play

Bluewater has made removing single-use plastics from the planet a cornerstone of our mission to help create a healthier, cleaner world for all living on it.

Armed with a high-performance Bluewater water purifier, people and professional businesses alike can achieve peace of mind and safeguard against water contamination posed by the plastic threat.

Bluewater makers deliver pure water generated at source for use in the home, in workplaces and in public spaces. Bluewater hydration stations have been used at large-scale sporting and music events that have prioritized sustainability, including The Open golf tournament, Cape Town Marathon, and the Ohana Festival at California's Doheny State Beach.

Bluewater super-efficient purifiers, like the Bluewater Spirit (photo), not only take out 99.7% of all known contaminants but also remineralize the water to add pristine minerals to enhance flavor and wellness.

Hitting a healthy water intake

Water is vital to your health and wellbeing. So here are three simple approaches that will help you drink enough:

- Always carry a water bottle with you. That way you can easily plan and measure your daily water intake to ensure you stay optimally hydrated.
- Keep track of your water intake. Calculate your water needs based on your body weight and make it your goal to drink what you need every day.
- Pace yourself. Ensure you drink half your planned daily intake by lunchtime and the remainder just before you go to bed.

About Bluewater
Bluewater is a world leading water brand, innovating, manufacturing, and commercializing water purification technologies and solutions for residential, business and public use. Bluewater harnesses patented, second-generation reverse osmosis technology to remove pollutants from water, including lead, bacteria, pesticides, pharmaceutical residues, chlorine, microplastic particles and limescale.

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