



Avoid Leaving Bottled Water in Hot Cars

Description

Warnings are often given about not drinking water from a plastic bottle left in a hot car, but why is this? Understanding the science behind this can help.

Plastic bottles are made from PET, a strong synthetic material. Although considered safe, research shows why it's best to avoid using them if they've been overheated. When plastics are exposed to heat or sunlight, chemicals can move into the water more easily.

Phthalates, the chemicals that make plastics flexible, can leach out when heated. These chemicals are endocrine disruptors, interfering with body hormones, according to Professor Emily Barrett from Rutgers School of Public Health. Exposure to such chemicals, including BPAs found in plastics, has been linked to health issues like infertility and cancer.

The FDA says current BPA levels in packaging are safe, but experts suggest minimizing exposure. Claims that heated bottles release harmful dioxins are false, says environmental epidemiologist Dr. Nicole Deziel from Yale.

Another issue is microplastics, tiny plastic fragments which can increase in heated bottles. Studies show microplastics may damage cells and genes, posing cancer risks. Research on animals has found them to affect reproduction and metabolism negatively.

Heat also promotes bacterial growth in bottles. Bacteria can multiply rapidly, potentially causing illness, explains Dr. Bruno Silvester Lopes of Teeside University.

Many people now choose reusable bottles. Stainless steel or glass options avoid risks linked to plastic, such as BPA exposure and microplastics. If opting for plastic, hard plastics like Nalgene are safer.

Stainless-steel bottles are less likely to harbor bacteria, notes Dr. Suzanne Wylie, but must be cleaned regularly to prevent mold.

In summary, avoiding leaving plastic bottles in heat can reduce chemical, microplastic, and bacterial risks.



Vocabulary List:

1. **phthalates** /'θæleɪts/ (noun): chemicals used to make plastics flexible
2. **leach** /li:tʃ/ (verb): move out of something into a liquid
3. **endocrine** /'ɛndə,kraɪn/ (adjective): connected to the body's hormone system
4. **exposure** /ɪk'spoʊʒər/ (noun): being near something that may harm you
5. **microplastics** /,maɪkroʊ'plæstɪks/ (noun): very small pieces of plastic in the environment
6. **harbor** /'hɑːbər/ (verb): contain and protect something dangerous or unwanted

Comprehension Questions

Multiple Choice

1. What material are plastic bottles made from?
Option: PVC
Option: PET
Option: PP
Option: HDPE
2. What is a major concern when plastic bottles are overheated?
Option: Increased water purity
Option: Leaching of chemicals
Option: Reduction of plastic waste
Option: Enhanced flavor
3. Which chemical is commonly associated with plastic and linked to health issues?
Option: Phthalates
Option: Formaldehyde
Option: Sodium
Option: Chlorine
4. What type of plastics are considered safer according to the text?
Option: Soft plastics
Option: Biodegradable plastics
Option: Hard plastics



Option: Compressed plastics

5. What do stainless steel bottles help to avoid?

Option: Infertility

Option: Bacterial growth

Option: Heat exposure

Option: Chemical leaching

6. According to Dr. Nicole Deziel, what claim about heated bottles is false?

Option: They leak BPA

Option: They release harmful dioxins

Option: They cause bacterial growth

Option: They produce microplastics

True-False

7. Phthalates make plastics stiff and rigid.

8. Microplastics can potentially damage cells and genes.

9. The FDA believes current levels of BPA in packaging are unsafe.

10. Heat can promote bacterial growth in plastic bottles.

11. Stainless steel bottles can harbor bacteria if not cleaned regularly.

12. Bacteria cannot multiply rapidly in heated plastic bottles.

Gap-Fill

13. When plastics are exposed to heat, chemicals can move into the water more easily. This process is known as _____.

14. The chemicals known as _____ can interfere with body hormones.



15. Microplastics are tiny plastic fragments that may pose cancer risks and can _____ reproduction.
16. Stainless-steel bottles must be cleaned regularly to prevent _____.
17. Studies show that heated plastic bottles can increase the concentration of _____ in the water.
18. Experts suggest minimizing exposure to _____ found in plastics.

Answer

Multiple Choice: 1. PET 2. Leaching of chemicals 3. Phthalates 4. Hard plastics 5. Bacterial growth 6. They release harmful dioxins

True-False: 7. False 8. True 9. False 10. True 11. True 12. False

Gap-Fill: 13. leaching 14. endocrine disruptors 15. affect 16. mold 17. microplastics 18. BPA

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