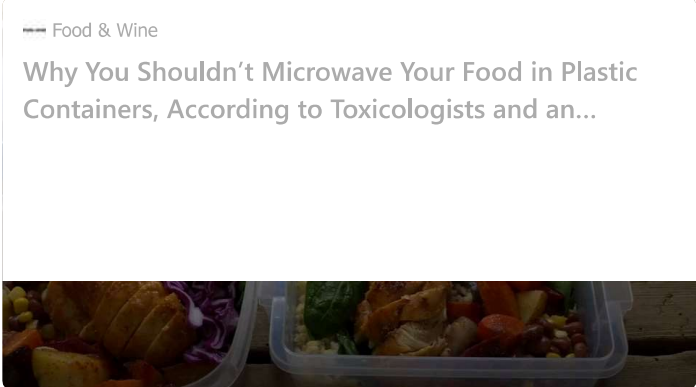


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Why You Shouldn't Microwave Your Food in Plastic Containers, According to Toxicologists and an Epidemiologist

Story by Korin Miller • 1w • 4 min read

Glass containers are really where it's at.



When it comes to heating up food, it's generally recommended that you avoid microwaving stuff in plastic containers. But while many people are aware that this isn't an ideal way to heat up food, many still do it.

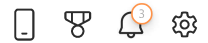
Even if you avoid microwaving plastics, it's understandable to be fuzzy on details of why this isn't ideal for food prep. So, why is it so bad to microwave plastics, and what can happen? Here's the deal, according to toxicologists and an epidemiologist.


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Why is it so bad to microwave plastics, anyway?

There are a few things to consider here. "Microwaving in plastic heats up the dish as well as the food item," says [Phoebe Stapleton, Ph.D.](#), associate professor in the Department of Pharmacology and Toxicology at Rutgers University. "This increased temperature allows for the chemicals within the plastic dish to be released into the food being reheated."

That's even true of plastics that are marked "microwave safe," says [Kelly Johnson-Arbor, M.D.](#), a toxicologist at MedStar Health. (What the label really means is that it's more a designation to indicate that your plastic container won't easily break down when you nuke it a few times, she says.) "Despite the stable chemical structure of plastic products, however, chemicals can leach from plastics under certain conditions, including exposure to high temperatures such as those



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Those chemicals include bisphenol-A (BPA) and phthalates, which can [accumulate in the body's tissues](#) and are linked to negative health effects (more on those in a minute). "Microwaving can also enhance the release of tiny plastic particles called microplastics into foods and drinks," Johnson-Arbor says.



A 2023 [study](#) out of the University of Nebraska-Lincoln backs this all up: For the study, researchers experimented on two baby food containers made from polypropylene and a reusable pouch made of polyethylene. The containers were filled with deionized water or 3% acetic acid, meant to mimic dairy products, fruits, and vegetables — commonly found in toddler and baby food — and then nuked them in the microwave. The researchers discovered that the amount of nanoparticles that ended up in the food and liquid varied but estimated that infants who drink products with microwaved water and toddlers who have microwaved dairy products take in the largest relative concentrations of microplastics. In a later experiment that

tested those concentrations on kidney cells, the researchers found that just 23% of the exposed cells survived.

Beyond all that, this is less concerning, but still worth mentioning: While plastic gear is generally durable, regularly microwaving your containers increases the wear of the plastic, per Stapleton.




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What, exactly, should you avoid?

Microwaving anything in plastic isn't ideal, Stapleton says. But if you need to go this route, Johnson-Arbor suggests looking for products that are labeled "BPA-free."

"However, containers that are labeled as being BPA-free may still contain other potentially harmful bisphenol chemicals," she says. "Just because a container is advertised as being BPA-free does not mean that it is entirely safe."



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Stapleton agrees. "While the packaging may say 'microwave-safe,' this is not referring to human health," she says. "No plastic is 'OK.'"

"In general, individuals should avoid microwaving all plastic products, regardless of the exact type of plastic or plastics used to create them," says [Jordan Kuiper, Ph.D.](#) epidemiologist and assistant professor in the George Washington University Milken Institute School of Public Health.



What can happen if you do microwave your food in plastic containers?

If you heat food in a plastic container once or twice, you'll probably be just fine. But regularly doing this is definitely not great. "It may not be immediately detrimental, but continued use increases exposure and dosage to chemicals that have demonstrated risk for disease including cancers, endocrine disruption and fertility issues, and metabolic and neurological disease," Stapleton says.

Kuiper says that scientists are only beginning to understand the health effects nanoplastics can have on people. "Recent studies have found these plastic particles in human tissues that they certainly do not belong in, including the brain, heart, placenta, and testicles," he says. Kuiper also cites a recently published study in the *New England Journal of Medicine* that found a 4.5 times higher risk of heart attack, stroke, or death in people who had nanoplastics detected in their cardiovascular system.

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"For chemicals used as plasticizers during the production of plastic products, they tend to be classified as endocrine-disrupting chemicals, those chemicals which are capable of interfering with hormones in the human body," Kuiper says.

Ultimately, experts say you really shouldn't be nuking your plastic containers. "Immediately stop microwaving plastics," Kuiper says. "When feasible, it is also highly recommended that products made from glass, which are microwavable, be used as a substitute.

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