

HEALTHY LIVING

Is the Plastic in Your Kitchen Harmful?

May. 30, 2025



Plastic containers and utensils are staples in many kitchens—but could they be affecting your health?

Plastics, often seen as a single material, are actually made from many different polymers, each with a unique chemical makeup. They contain different chemical additives like dyes, plasticizers, and flame retardants. As these plastics interact with microbes and environmental chemicals, the risk to human health becomes more complex.

One of the most common ways people are exposed to plastics is in the kitchen:

- Black plastic spatulas and other utensils may contain harmful chemicals picked up when recycled from electronic waste.
- Plastic cutting boards shed tiny fragments of varying shapes and sizes that can be ingested.

University of Rochester researchers are at the forefront of efforts to understand the complex role that plastics play in human health. [Katrina Korfmacher, PhD](#), is the co-director of the [Lake Ontario MicroPlastics Center \(LOMP\)](#), a collaboration between

- Plastic containers can leach chemicals when heated in the microwave.

the University of Rochester and the Rochester Institute of Technology (RIT), and [Jane van Dis, MD](#), is an assistant professor of Obstetrics and Gynecology at URMC.



What Is Black Plastic, and Why Are There Health Concerns?

Black plastic is commonly used in kitchen utensils, takeout containers, food trays, and children's toys. But many of these products are made from recycled electronic waste, which can contain harmful chemicals like brominated flame retardants and heavy metals. These chemicals have been linked to a variety of health concerns, including:

- [cancer](#)
- endocrine disruption
- neurotoxicity
- infertility

A [recent study](#) found flame retardants in 85% of 203 tested consumer products, including banned chemicals, suggesting they were made from old electronic waste.

Are Black Plastics a Risk to Children?

Children are more vulnerable to environmental chemicals because their bodies and brains are still developing.

"Flame retardants have been detected in breast milk samples across the US. Children can also be exposed through contaminated food and house dust," said Jane van Dis, MD, assistant professor of Obstetrics and Gynecology at University of Rochester Medical Center.

Researchers at the University of Rochester, supported with funding from the National Institutes of Health Environmental Influences on Child Health Outcomes (ECHO) Program, are studying the effects of flame retardants and other chemicals on children's health and development.

[Silent Spring Institute: What You Should Know About Flame Retardant Chemicals](#)

Some plastic toys contain flame retardants that may leach out when children chew on them, exposing children to chemicals that can affect brain and reproductive system development.

Are Plastic Cutting Boards Safe?

A [recent study](#) tried to mimic everyday exposure by feeding mice microplastics made by chopping on real plastic cutting boards. The results showed that different plastics caused different health effects: one type led to gut inflammation, while another changed the gut bacteria. This suggests that real-life plastic exposure is more complicated than lab studies conducted on single types of standard particles might suggest.

In an [invited commentary](#) on the study, the co-directors of the [Lake Ontario MicroPlastics Center \(LOMP\)](#), [Katrina Korfmacher, PhD](#), professor of Environmental Medicine at the University of Rochester Medical Center, and Christy Tyler, PhD, professor at RIT, reflected on how much plastic we might be adding to our food just by preparing meals at home using plastic tools and containers. They emphasized that while microplastic exposure is a growing concern, we still don't fully understand how it affects human health. For instance, although lab studies link microplastics to gut inflammation, only a small percentage of people have such symptoms.

Ever Wonder: How Are Plastics Harmful to Our Health?



How do I limit my exposure to black plastics?

"The ways that flame retardants and other harmful chemicals end up in plastics we use on a daily basis are complex, as are the solutions," said Korfmacher.

Still, there are simple ways to reduce exposure:

- Choose wood or stainless steel utensils over black plastic.
- Avoid microwaving food in plastic containers.
- Wash hands and wipe down surfaces after handling plastic packaging.
- Don't let young children chew on plastic toys.

"These substances are known endocrine disruptors, meaning they can interfere with hormonal systems and potentially lead to various health issues," said van Dis.

In the long run, they argue that better testing, safer alternatives, and preventing electronic waste from entering the production of consumer products—especially those that come in contact with food—need to occur to reduce sources of exposure.

A recent [New York Times](#) article explores growing concerns about microplastics and their potential health risks. [Jacques Robert, PhD](#), an immunology researcher at URMC who is involved in LOMP, discusses his research into how these particles may impair immune function and accumulate in organs.

Rochester Research on Microplastics

The Lake Ontario MicroPlastics Center (LOMP) is a hub for research, translation, and community engagement around how different types of plastics enter and move through the Great Lakes ecosystems and how microplastics may affect human health under different climatic conditions.

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Author



Mark Michaud

(585) 273-4790

mark_michaud@urmc.rochester.edu

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