
COMMON CHEMICALS CAN TRIGGER ALLERGIES, NEW STUDY FINDS¹

Emily Main[©]

Sneezing a bit more than you used to? Are you one of those people who "always gets sick"? It may have something to do with your toothpaste. A new study published in *Environmental Health Perspectives* found that common chemicals such as triclosan, an antibacterial chemical used in toothpastes and other personal-care products, and bisphenol-A (BPA), used in plastics and the linings of food cans, could be interfering with our immune systems.

THE DETAILS: Knowing that BPA and triclosan both interfere with the endocrine system and act like estrogen in the body, the authors suspected that because estrogen protects immune cells, the chemicals could have some impact on the health of the immune system. Previous laboratory studies have also shown that BPA and triclosan, along with a few other endocrine-disrupting chemicals, increase production of cells that lead to allergy development.

The authors used data from the 2003 to 2006 National Health and Nutrition Examination Surveys, surveys conducted annually by the Centers for Disease Control and Prevention that measure the levels of chemicals and various health markers in a representative sampling of the U.S. public. The researchers compared levels of BPA and triclosan in roughly 5,000 participants' urine samples with two markers of immune-system health: a professional diagnosis of allergies or hayfever and levels of antibodies for cytomegalovirus, a common virus that most people contract at a very young age and that stays in our bodies for the rest of our lives. "Controlling this virus becomes a top priority for immune system, and high antibody levels signal that the immune system is less effective at controlling it," says Erin Rees Clayton, PhD, research investigator at the University of Michigan School of Public Health and one of the study's coauthors.

Triclosan was significantly associated with allergies and hayfever, their analysis showed. That finding supports the "hygiene hypothesis," or the idea that the more we try to sanitize our homes and our environments, the less able our immune systems are to defend us against common "invaders" like allergens and pollen. Although BPA wasn't found to have an impact on allergies, it did seem to affect those cytomegalovirus antibodies. Adults over 18 who had higher levels of BPA also had higher levels of antibodies, suggesting that their immune systems weren't functioning as well as they should be.

WHAT IT MEANS: Scrubbing yourself clean with triclosan-saturated antibacterial soap may be a bad deal for your immune system. And so might BPA, which lurks in canned-food linings and cash-register receipts, among other places. "Hygiene clearly has very important benefits for protecting ourselves from infection," says Clayton. "But some of the chemicals in cleaning products and hygiene products may have more risks than benefits." How these chemicals actually interfere with the immune system is unclear, Clayton says. But one thing her results do suggest "is that the timing of exposure to BPA and perhaps the length of time someone's exposed may be affecting immune-system response." So older adults who've been exposed to BPA their entire lives are more likely to suffer immune problems than younger kids are (but at the same

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time, BPA has other effects on small children, including behavioral problems, so parents should avoid exposing children to it as much as possible).

The good news about triclosan (the active ingredient in antibacterial products) is that once you stop using products containing it, the levels in your body drop relatively quickly. BPA isn't quite so easy to avoid. The World Health Organization recently declared food as our primary source of exposure to BPA, but a study published last year found that people who'd fasted for 24 hours still had somewhat high levels of BPA in their bodies. It's presumed that we excrete BPA within six or so hours of consuming it, so those results suggest that it either isn't excreted as quickly as thought, or that we're constantly being exposed to the chemical through other nonfood sources, such as ATM and cash-register receipts and the flame retardants used in mattresses and furniture.

To avoid BPA, limit your consumption of canned foods, don't microwave in plastic containers (BPA is a component of some plastics), and avoid other known exposure sources, such as receipts. Decline receipts at the ATM, gas stations, and any other retail outlet that gives you the choice. When you do get a receipt, store it in a separate envelope, rather than in your wallet.

To avoid triclosan, avoid all products labeled "antibacterial" or "antimicrobial." The chemical is listed as an active ingredient in all personal-care products in which it's used. But triclosan is also added to household goods as diverse as cutting boards and garden hoses. Keep an eye out for terms like "Microban" or "Biofresh" as both are trade names for triclosan.