

Do plastic additives harm human health?

Yes.

**Many plastic additives disrupt hormone signaling.** That makes them endocrine disrupting chemicals (EDCs), which links them to many of today's epidemics of non-communicable diseases, like breast cancer, testicular cancer, infertility, immune disorders, and brain impediments, including ADHD, autism and degenerative neurological disorders.

**Sometimes the toxicity stems from additives which are mixed with the pure plastic.**

Additives alter the material characteristics of the basic plastic so that engineers can make products, like converting a hard plastic into a soft one.

**But plastic additives are not the only source of harm from plastics.**

Sometimes it's caused by the monomers, the backbone of plastic chains. Sometimes it's impurities in the ingredients that interact chemically with the additives or other impurities. Very often we don't even know their identity, but we do know they are there.

**Most chemicals in plastics have never been tested for safety.** A few, like BPA, phthalates, perfluorinated compounds (PFAS, the "forever chemicals"), are notoriously hazardous. Studies from Europe demonstrate that even chemicals "of very high concern" are regularly used in plastics. Even bio-based plastics can have toxic characteristics.

**You can't assume plastics are safe.** If you don't test using tools from 21st century science, you don't know. Most chemicals in plastics were grandfathered into commerce as "safe," before we understood how endocrine disrupting chemicals cause damage. We have a lot of catching up to do.

And, unfortunately, **most of the readily available substitutes for hazardous chemicals were designed using the same flawed design criteria as the chemical they are replacing.**

This has led to endless cycles of replacement with what turn out to be regrettable substitutes.

**If you don't test, you don't know.**

**Understanding what EDCs are and their effects will help guide smart policy.**

