

PLASTICS AND HUMAN HEALTH

FACT SHEET

Plastic products are known to contain and leach **toxic chemicals** including various endocrine disruptors, carcinogens, and reprotoxicants (substances that negatively impact reproduction). These chemicals, in addition to plastic particles, have been found in several major organs and in bodily fluids. Negative effects are highest among **infants, young children, and firefighters** and communities located near **farms, airports, military bases, landfills, and incinerators**.

PARTICLE SOURCES & EFFECTS

- Plastic particles come from many different sources and in many different shapes and sizes. Some sources include packaging, paints, cosmetics, and food.¹
- These particles can cause damage to human cell membranes, chronic inflammation, and oxidative stress.²⁻³
- Newborns and young children are the most vulnerable.⁴

CHEMICAL SOURCES & EFFECTS

- There are over 16,000 chemicals used to make plastics. Of those, over 25% are known to be hazardous to human health, and over 65% have no known hazard data.⁵
- Each plastic item has its own unique chemical composition, and most of those chemicals are not bound to the material and will be released during production, use, or disposal.⁶⁻⁷
- These chemicals leach out of plastics, enter the environment, cause air, water, soil, and food pollution, and result in human exposure and disease.⁸
- Plastic chemical exposure has been linked to:
 - Birth defects, autism, ADHD, lower IQs, and language delays in young children.⁸⁻⁹
 - Negative impacts to the endocrine, reproductive, immune, and respiratory systems.^{7,10-12}
 - Increased risk of infertility, obesity, diabetes, cancer, stroke, and cardiovascular disease.^{3,8,11}
 - Neurodevelopmental disorders, metabolic disruption, skin conditions, and obstructed bladder syndrome.^{7,11-12}

DID YOU KNOW? Plastic particles have been found in:

Arteries
Blood
Blood vessels
Bone
Bone marrow
Brain
Breast milk
Cartilage
Cells
Colon
Elbow joints
Feces
Heart tissue
Intervertebral discs
Kidney
Knee joints
Liver
Lung
Lymph node tissues
Meconium
Olfactory bulb
Placenta
Saliva
Semen
Spleen
Sputum
Stomach
Testicles
Urine
Veins

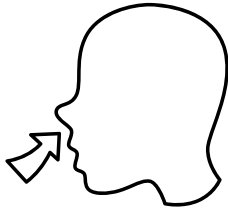
... and research continues

See sources 2-3,10,13-22, 28

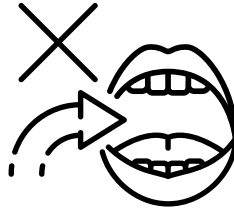
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EXPOSURE

Humans are exposed to plastic particles and chemicals through three primary methods:⁷



Inhalation



Ingestion



Dermal Contact

SPECIFIC IMPACTS OF COMMON PLASTICS

POLYSTYRENE FOAM

- Especially harmful when used for food packaging²³
- Styrene is linked to:²³
 - Cancer
 - Vision and hearing loss
 - Poor memory and impaired concentration
 - Impaired nervous system

ARTIFICIAL TURF

- Composed of numerous toxic chemicals, including benzene, arsenic, styrene, phthalates, neurotoxins, and more²⁴
- Known to shed microplastics from plastic blades and crumb rubber infill²⁴

PLASTIC BOTTLES, BAGS, AND STRAWS

- Usually made of harmful chemicals, such as polyethylene
- Breaks up into micro- and nanoplastics over time that can enter human bodies through various pathways

See sources 25-27

SOLUTIONS

- Policies and management solutions that reduce the production and use of harmful plastics and hold producers accountable for plastic waste management.
- Limit use of plastic in your community and household to reduce exposure to harmful plastic particles and chemicals.

LEARN MORE

For more information about this project and to view the sources of this information, please visit:



**SHOW-ME LESS
PLASTIC**