

Understanding Microplastics Burden in the Body

What it is, why it matters, and the emerging role of therapeutic plasma exchange (TPE)



What Are Microplastics?

Microplastics are tiny plastic particles—often invisible—that result from the breakdown of larger plastics. They are now widespread in the environment and have been detected in air, water, food, and consumer products.

Recent scientific studies have confirmed that microplastics can be found inside the human body, including in the bloodstream.

How Do Microplastics Enter the Body?

Everyday exposure may occur through:



Drinking water
(bottled and tap)



Food, including
seafood and
packaged foods



Airborne
particles and
household dust



Consumer and
personal care
products

Because exposure is ongoing,
microplastics may accumulate over time.

Why Microplastics Burden Matters

While research is still evolving, scientists are studying how microplastics interact with human biology. Early findings suggest microplastics may:

- ✓ Contribute to systemic inflammation
- ✓ Interact with immune and vascular systems
- ✓ Carry or bind other environmental toxins
- ✓ Persist in circulation rather than being easily eliminated

The long-term health implications are not yet fully understood, making continued human research essential.

What the Science Shows

Research into microplastics and human health has accelerated significantly in recent years, with academic researchers and federal health initiatives increasingly focused on how environmental exposures may interact with inflammation, vascular health, and broader biological processes.

Recent clinical findings from Circulate Health¹ add to this evolving body of research by demonstrating a measurable reduction in circulating microplastics following Therapeutic Plasma Exchange (TPE). While research into long-term health implications is still ongoing, these findings represent an important early step in evaluating whether circulating microplastic burden may be responsive to clinical intervention.

Key areas of ongoing scientific focus include:

- ✓ Detection of microplastics in human tissues and blood
- ✓ The relationship between environmental exposure and inflammation
- ✓ How circulating burden may change over time
- ✓ Potential approaches to measuring and reducing exposure levels

TPE and Its Role in Microplastics Burden Reduction

Therapeutic Plasma Exchange (TPE) is a well-established, FDA-cleared medical procedure that has been used safely for decades in hospital and clinical settings to treat a range of autoimmune, neurological, and inflammatory conditions.

During treatment, blood is circulated through a medical device that separates and removes plasma—the liquid portion of blood where many circulating particles and proteins are carried. The blood cells are then returned to the body with replacement fluids.

Because circulating microplastics are carried within plasma, TPE offers a direct mechanism for reducing microplastics burden in the bloodstream.

Why Testing Matters: Before and After TPE

Testing plays an important role in understanding and managing microplastics burden.

- ✓ Baseline testing helps establish an individual's starting level of circulating microplastics and related biomarkers
- ✓ Follow-up testing allows patients and providers to assess changes over time and better understand how the body responds to intervention
- ✓ Recent clinical findings demonstrated measurable changes in circulating microplastics following TPE, reinforcing the value of longitudinal testing

Your healthcare provider can help determine whether testing and TPE are appropriate based on your individual health goals and medical history.

A Measured, Evidence-Informed Approach

Circulate Health approaches microplastics burden with clinical rigor and scientific responsibility. As research evolves, our focus remains on contributing meaningful human data while supporting patients with safe, evidence-informed care.

¹ R.Weinstein, Z. S.Yuksel, C.Anderson, et al., "Can Plasma Exchange Be Used to Lower the Circulating Burden of Microplastics in Human Patients?," *Journal of Clinical Apheresis*41, no. 3 (2026): e70135, <https://doi.org/10.1002/jca.70135>.

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