

# 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<sup>1</sup> have confirmed that microplastics can be found inside the human body, including in the bloodstream.

<sup>1</sup> Environ. Health 2025, 3, 551–559, Environ. Sci. Technol. 2024, 58, 22843–22864

## 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 Is Showing

- ✓ Microplastics have been identified in **human blood samples**
- ✓ Higher circulating toxin burden is associated with **inflammatory and metabolic stress**
- ✓ Leading research institutions are actively studying how reducing circulating toxins may support overall health and healthspan

Circulate Health is contributing to this growing body of research through clinical studies and real-world data collection.

## The Emerging Role of Therapeutic Plasma Exchange (TPE)

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 autoimmune, neurological, and inflammatory conditions.

### During TPE:

- ✓ Blood is circulated through a medical device
- ✓ Plasma—the liquid portion of blood—is separated and removed
- ✓ Blood cells are returned with replacement fluids

Because many circulating toxins—including microplastics—are carried in plasma, **growing evidence and early clinical studies suggest that TPE may help reduce overall microplastics burden** when used as part of a physician-guided care plan.

## Why Testing Matters: Before and After

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
- ✓ Testing supports a **data-informed, personalized approach** rather than relying on assumptions or symptoms alone

Your provider may recommend a structured testing sequence before and after TPE to help guide care decisions and monitor progress.

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.

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