

Microplastic Blood Testing & Nutritional Intervention Observational Study

Background

Microplastics are increasingly recognized as an emerging environmental exposure, with growing evidence of their presence in human tissues and circulation. However, until recently, no clinical tool existed to quantify microplastic particles directly in human blood. The development of a dried blood spot (DBS) assay capable of measuring particle counts by size now enables early exploration of human microplastic burden and how it may change over time.

This observational PRE-POST study was designed to explore measurable changes in microplastic levels using the first blood-based microplastic particle test, alongside daily use of a proprietary nutritional supplement formulated to support natural wellness pathways.

Testing Methodology

Microplastic levels were assessed using the PlasticTox™ microplastic particle test (ArrowLab, USA), the first human blood assay capable of quantifying microplastic particles by size. The test uses a dried blood spot collector card and provides particle counts across three defined size categories:

- <10 µm
- 10–30 µm
- 30–70 µm

This methodology enables quantification of microplastic exposure in a minimally invasive, repeatable format.

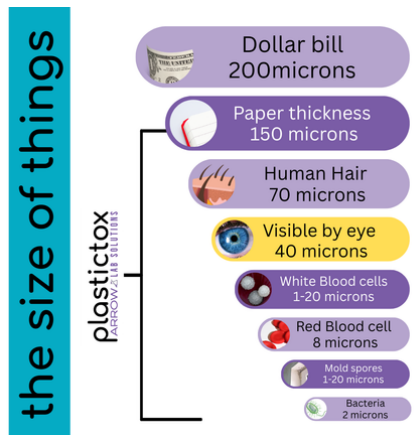
Intervention

Participants used ChemZyme™ (Optimal Health Systems), a multi-enzyme nutritional formula containing Phthalazyme™, a proprietary pre-digested microbial ferment derived from *Sulfobacillus acidophilus*. In environmental settings, related microbial species have demonstrated the ability to metabolize phthalates and plasticizers. Phthalazyme™ was formulated to provide biologically active compounds intended to support the body's natural detoxification and wellness pathways.

Participants were instructed to take:

- 2 capsules daily: 1 mid-morning & 1 mid-afternoon, both on an empty stomach

The intended protocol duration was 45 days, though real-world timing varied slightly. All participants who completed both tests took the supplement daily during the intended 45-day protocol period.



Study Design

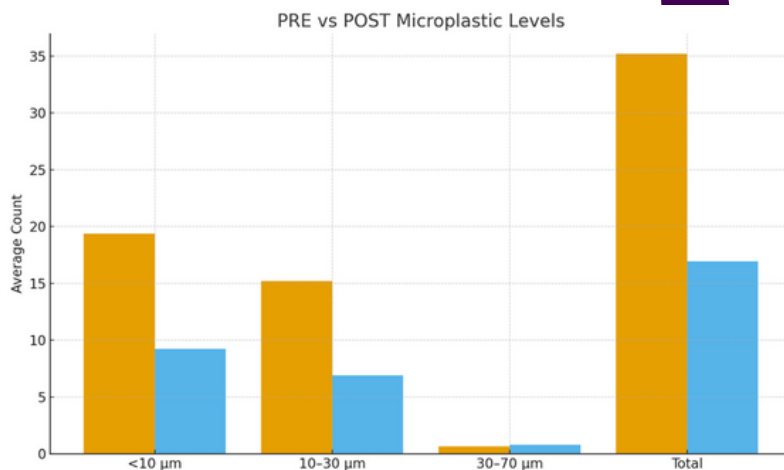
A real-world, observational PRE–POST approach was used:

- 103 participants completed baseline PRE testing
- 41 participants completed both PRE and POST tests
- Participants self-administered the intervention at home
- PRE and POST microplastic levels were compared within individuals
- No control group or blinding was used, consistent with exploratory observational design

The objective was to evaluate measurable changes in microplastic burden during the intervention period.

Detailed numerical findings from the PRE–POST analysis are summarized in the accompanying 2-page results brief.

Across participants who completed both tests, measurable changes in microplastic levels were frequently observed during the intervention period.



Interpretation

Findings from this observational dataset suggest that:

- Microplastics are widely detectable in human blood
- Quantitative changes over time can be measured reliably using DBS testing
- A substantial proportion of participants experienced notable reductions in measured microplastic levels during the intervention window
- The supplement protocol appeared feasible and well-tolerated in real-world use

Because this was not a controlled clinical trial, causal relationships cannot be inferred. However, the consistent directionality and magnitude of changes across participants justify further controlled research to evaluate mechanisms, kinetics, and reproducibility.

Conclusion

This exploratory PRE–POST analysis demonstrates the feasibility of measuring microplastic burden through DBS testing and provides early evidence that microplastic levels can shift measurably during a structured nutritional intervention period. These findings support the need for controlled studies to further investigate mechanisms, durability of effects, and broader clinical relevance.

Limitations

- Observational, non-randomized design
- No placebo or comparison group
- Self-reported adherence
- Timing between tests varied
- Environmental exposures not controlled
- Microplastic testing is emerging and evolving

Disclosures

The supplement (ChemZyme™) is produced by Optimal Health Systems. Microplastic testing was performed by ArrowLab (PlasticTox™). No diagnostic or therapeutic claims are made.

MICROPLASTICS BLOOD TESTING RESULTS...

AT A GLANCE

Real-World Observational Data

In this PRE-POST observational analysis, participants completed the world's first microplastic particle blood test before and after daily use of a revolutionary nutritional supplement formulated to support the body's natural detoxification and wellness pathways.

• 103 Baseline Tests

• 41 Paired PRE→POST Tests

100% of Participants Had Detectable Microplastics

Significant Reductions After the Intervention

- <10 μm average: 14
- 10–30 μm average: 12
- 30–70 μm average: 1
- Total average particles: 27



- 51% average total reduction
- 53% reduction in <10 μm
- 53% reduction in 10–30 μm



Meaningful Improvements Were Common

56%
achieved
 $\geq 25\%$
reduction

39%
achieved
 $\geq 50\%$
reduction

22%
achieved
 $\geq 75\%$
reduction

Top 10 Responders (PRE → POST)

Reductions ranged up to 97%, with some individuals decreasing by more than 450 particles.

Strong results occurred across both moderate and high baseline levels.

CASE STUDIES

Participant #75

PRE = 80

POST = 97

RE-TEST = 4

95% reduction

**Delayed but powerful
improvement.**

Participant #20

PRE = 10

POST = 16

RE-TEST = 13

**Real biological
change isn't always
linear.**



These results reflect observational data and individual responses vary. Microplastic measurement does not diagnose, treat, cure, or prevent any disease. Changes in microplastic levels may be influenced by multiple factors. This information is for educational purposes only and no therapeutic claims are made or implied.

SHIFTING WORLDS

Two Worlds Collide

Meet Jack, who lived a “two-worlds” lifestyle—exceptionally clean at home yet exposed to high-plastic environments during frequent travel. He and his wife expected his starting test to be low when they joined the **45-Day Microplastic Challenge**. Instead, the initial results delivered an unexpected surprise: his microplastic level was far higher than either anticipated.



In Transit

After the unexpected starting result, Jack committed to the 45-Day Challenge exactly as outlined—taking ChemZyme daily while keeping his lifestyle and travel routine unchanged. The Arrow Lab test served as his checkpoint, helping him trace how his “two worlds” might influence his microplastic levels over time.



Off Course

Jack’s Post-test number unexpectedly rose from 80 to 97, highlighting how variable exposure can be in a “two-worlds” lifestyle. He stayed consistent with ChemZyme and added Vitamin D and Resveratrol, choosing to continue the journey and see what time might reveal.



Course Correction

As the months went on, Jack stayed steady with his ChemZyme routine, keeping his lifestyle and travel patterns unchanged. With consistency as his only variable, he looked to his next Arrow Lab test to see whether his numbers would shift in a new direction.



Brave New World

Jack’s next Arrow Lab test revealed a dramatic shift: his microplastic number dropped from 80 to just 4, a 96% reduction across seven months of consistent routine. His journey shows how repeat testing can uncover meaningful trends—even when life, and exposure, remain the same.

