David Daines @daviddorg

Oct 22, 2025 · 11 tweets · daviddorg/status/1981072450978009406

I reduced the microplastic particle count in my blood by 67% in 4 months with a new method.

Feb 2025: 42 particles (2.1 million/5L of blood)
Apr 2025: 23 particles (~1.2 million/5L of blood)
Jun 2025: 14 particles (700 thousand/5L of blood)

Then my levels rebounded...

Aug 2025: 34 particles (1.7 million/5L of blood)

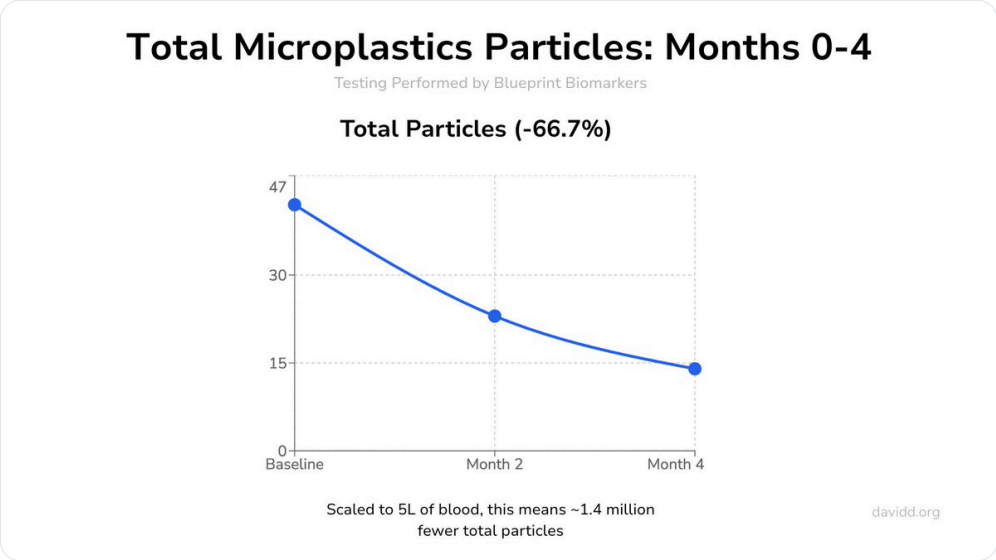
Here's what I did, why it probably worked, why my progress reversed, and what I'd do different to get far better results.

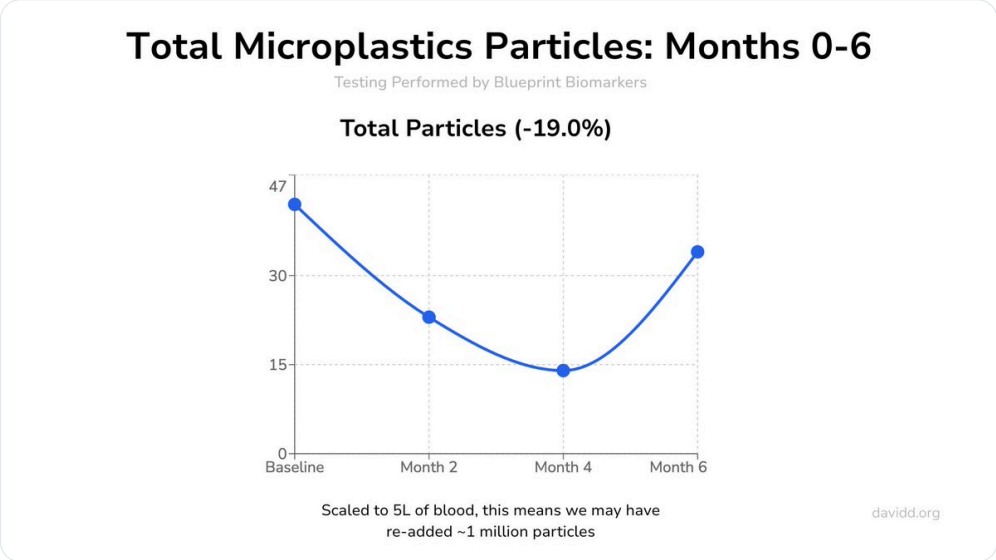
By the way, this method may also help reduce tissue and cellular load (more research is needed).

(Testing performed by @bryan_johnson's Blueprint)

1/ First things first. Here is what months 0-4 looked like on my protocol: a 67% reduction across all particle sizes.

So you can imagine my surprise when the trajectory changed so much in months 4-6.
But what was my protocol and why did this happen? I'll get there very soon.



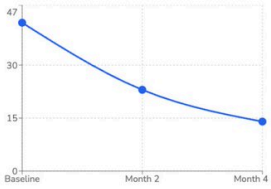


2/ If we look at particle size ranges (test range is approx. 1μm-70μm), we see a notable pattern.
There were 1) more smaller particles, and 2) the smaller the particles were, the less they decreased.
The same general pattern is present even when we include month 6.
We'll discuss this (important) pattern more later, but for now, I'll put an end to the waiting and show you exactly what my protocol for this experiment was.

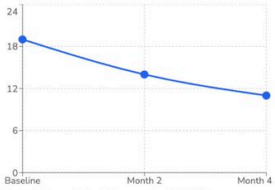
Particle Counts: Months 0-4

Testing Performed by Blueprint Biomarkers

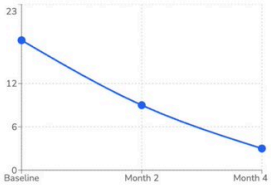
Total Particles (-66.7%)



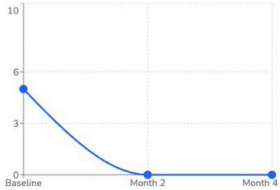
Particles <10 µm (-42.1%)



Particles 10-30 µm (-83.3%)



Particles 30-70 µm (-100%)



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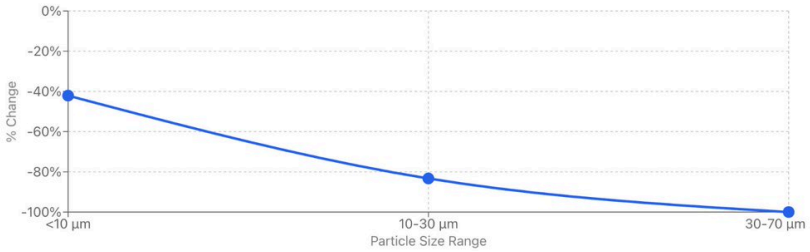
Change By Particle Size: Months 0-4

Testing Performed by Blueprint Biomarkers



<10 µm	10-30 µm	30-70 µm
-42.1%	-83.3%	-100.0%
reduction	reduction	reduction

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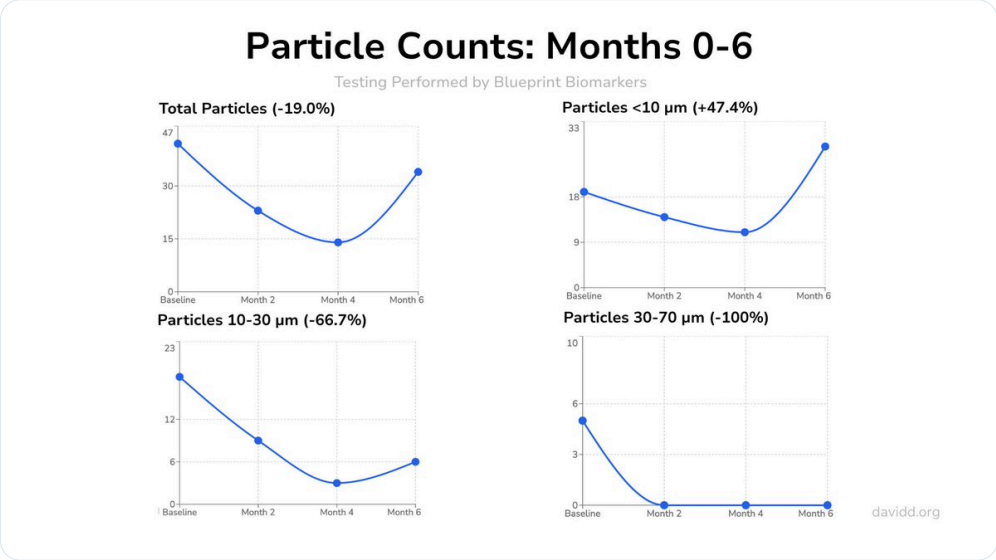
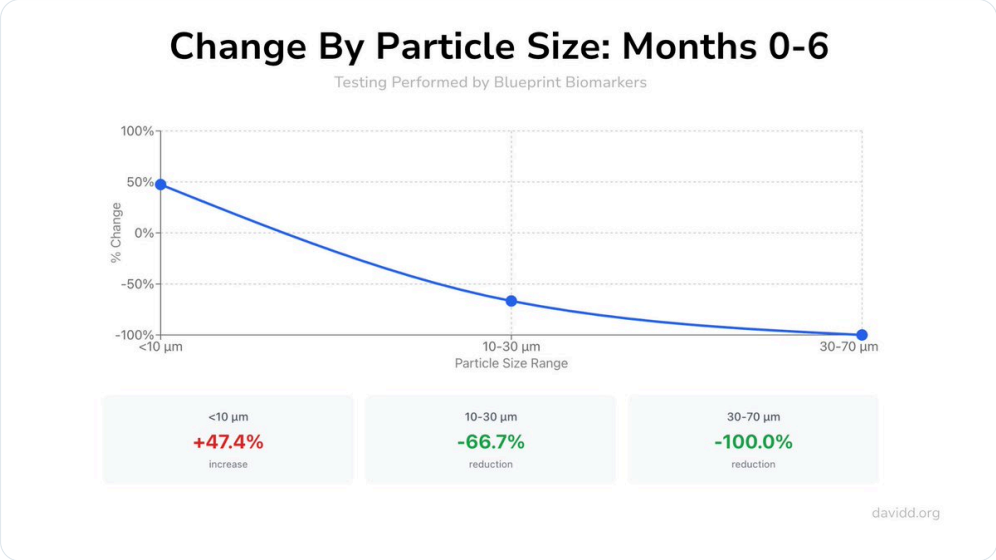




3/ It's very simple. For six months, I consumed 1 fl. oz. of this phospholipid complex every day (a very high dose), split into two doses (with breakfast & dinner):
(No financial relationship, though BodyBio did supply me for this N=1)

I also did my best to control anything else that could affect results: same drink, containers, same diet, same cutlery and food storage containers, same fitness routine (e.g. no starting/stopping sauna use), bedding, wardrobe, etc.

Ultimately, messing up these controls is probably what changed the trajectory of my progress so dramatically (more on that later). But the upside is, that's also why I could likely get something closer to a 95% reduction by throwing the entire kitchen sink at the problem in a repeat experiment with fewer controls (I'll tell you how).

But first: Why did I think this might work? And why did I decide to try it?

4/ It started with a marketing graphic I was extremely skeptical of.
This graphic represents a case study performed by BodyBio with the same protocol I followed, demonstrating a dramatic reduction in a wide variety of both water and fat soluble contaminants.

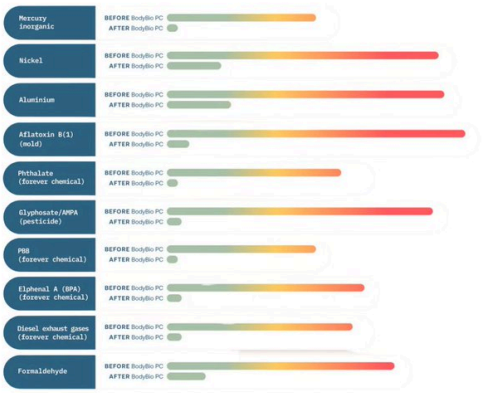
Again, I doubted whether this was legitimate, but I decided to do more digging.

And what did I find?

First, supplemental phosphatidylcholine (one of the phospholipids in the complex) may have a pretty significant impact on the integrity of the gut lining (especially mucosa) and reduce gut permeability.
Second, as the core constituent of cell membranes, supplemental phospholipids may speed up the turnover & repair of damaged membranes that are overly permeable and that may have embedded particles, etc. promoting that greater permeability by structural disruption and inflammatory means.
Yes, much of the compound is broken down in digestion, but it may not matter (for reasons I won't be getting into in this post).

To summarize these first two points, if we reduce the permeability of various membranes + facilitate repair, we may be able to significantly reduce translocation of plastic particles throughout the body, especially in the nanoplastic (very small) range. We also may reduce bioaccumulation.

BodyBio PC Case Study



Based on case study with 2T PC/day for 6 months presented in BodyBio marketing materials

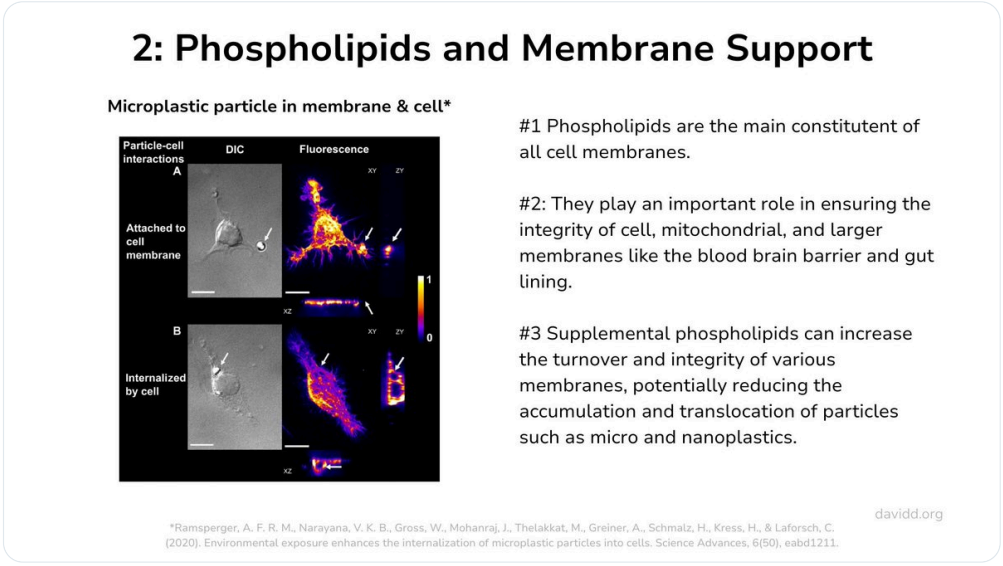
1: Phosphatidylcholine And Gut Integrity

#1 PC is a core mucus barrier lipid, and it's depleted ~70% in Ulcerative Colitis patients.

#2 In a 160-person trial, delayed release PC significantly improved mucosal healing and reduced disease activity*

#3 Improved mucosal health may 1) improve tight junctions and 2) prevent plastic particles from translocation into the blood

*Karner, M. et al. First multicenter study of modified release phosphatidylcholine "LT-02" in ulcerative colitis: a randomized, placebo-controlled trial in mesalazine-refractory courses. American Journal of Gastroenterology 109, 1041–1051 (2014).



5/ Important sidebar: AFAIK, the Blueprint test does not quantify any nanoplastics, which are likely much more abundant in our bodies. The smallest bucket reported on the test is simply "<10µm."

Based on a third-party attestation I obtained, the test is accurate at least from 1µm (mitochondrion) to 70µm (human hair).
This is by no fault of Blueprint or their lab partners. It's incredible that we have a consumer-ready test at all, and the technology will only improve from here.

For context, a 2024 study quantified 10 to 100x more plastic particles (240,000 on average) in a liter of bottled water than were previously measurable thanks to a technological advance enabling measurement and quantification of nanoplastics.

Why do we tend to see so many smaller particles? Quite simply, 1 x 70µm particle could potentially break down into 700 x 100nm particles (not to mention leached additives).

And in general, the smaller a particle is (all the way down to plastic associated chemicals, including monomers like BPA, phthalates, etc.), the deeper it is capable of traveling into tissue and even cells.
This is almost certainly the main reason we see more smaller particles in my blood, and less effective elimination of them.

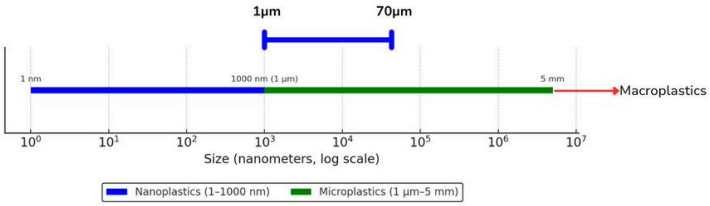
Potential health risks (very generalized) also vary a lot across the size spectrum:

The Blueprint Microplastics Test

~100µl Sample: Metal Lancet → Blood Spot Card

Particle counts are reported in the following ranges:

- Total
- <10µm
- 10-30µm
- 30-70µm



From third-party review of the test:

1. "The LLOQ has demonstrated that a single particle of microplastics at ~1mcm [1µm] is detectable."
2. "ULOQ (Upper Limit of Quantification) is theoretically infinite..."

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Breakdown of Plastics

Breakdown is facilitated by mechanical forces, UV radiation, heat, moisture, oxygen, and other environmental stressors.

Macroplastics → Microplastics → Nanoplastics → Oligomers, Monomers, Additives

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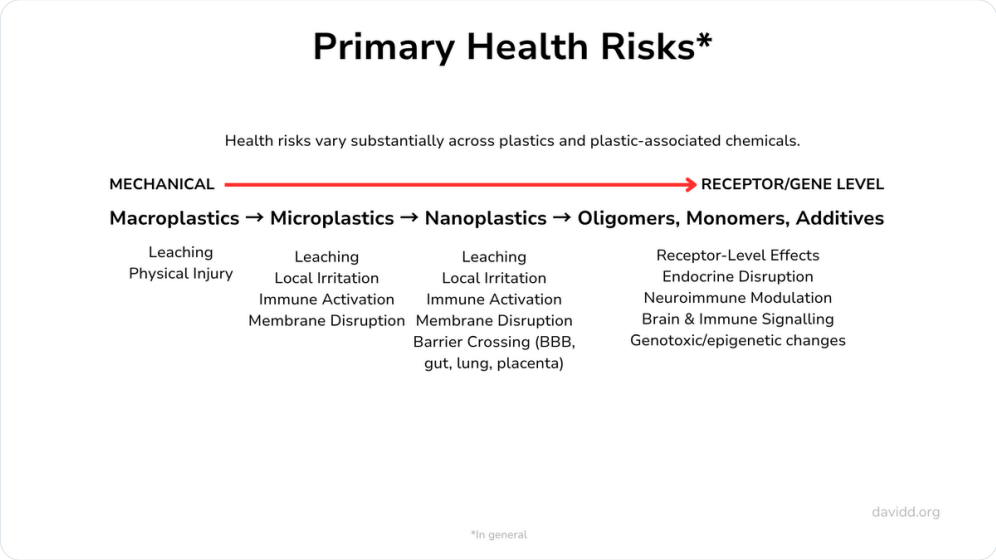


6/ Ok, onto the next potential mechanism: augmenting bile flow and/or altering bile composition.

One of the functions of bile is to carry out lipophilic (fat loving) waste, which could include smaller plastic particles (and certainly other far smaller plastic associated chemicals).

Based on what we know right now, bile/feces is the primary elimination root for plastic particles, so the effect of this could be quite significant.

In a mouse study, high-dose PC increased bile flow by ~30%.

Phospholipids also form “micelles” and “vesicles”—two different “compartments” capable of trapping things and making them easier to excrete.
Next, let us consider some of the effects of choline liberated from the complex.

A lot of choline in the phosphatidylcholine is liberated and may be used to produce more of the neurotransmitter acetylcholine.

At a high dose (such as what I consumed), this can be significant.

As the primary neurotransmitter that stimulates the parasympathetic nervous system, an excess of acetylcholine can stimulate faster elimination and increased bile flow.
I saw very clear signs of high acetylcholine immediately after I started this experiment: vivid colors, more salivation, more rapid elimination, unusually acute body awareness during workouts, etc.

Important: Some individuals with unfavorable microbiome composition (rare) can produce a lot of TMAO with high choline consumption that can be very bad for cardiovascular health.

Next up, we have another choline-related mechanism. This would apply more to some of the (much smaller) plastic-associated chemicals than plastic particles themselves, but it may

help explain some of the results seen in the BodyBio graphic above.

Long story short: supplemental choline can help speed up the activity of phase II detox enzymes, especially in individuals who have certain genetic variations (like me). Ultimately, I decided there was enough here for me to attempt the experiment.

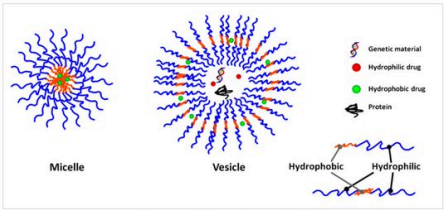
I liked that, while the main focus has been on not consuming or inhaling microplastics (reasonably), this approach might actually offset inflow and potentially even reduce tissue load by increasing membrane turnover and outflow + decreasing translocation and accumulation.

3: Phospholipids and Bile Flow

#1 PC is a major bile component. When supplemented, the formation of stable micelles and vesicles that can encapsulate (nanoscale) lipophilic waste may increase.

#2 Bile is the "path out" for 70-80% of lipophilic waste.

#3 In mice, high dose PC increased bile flow by 30%.*



Source: Sahar Awwad, UCL

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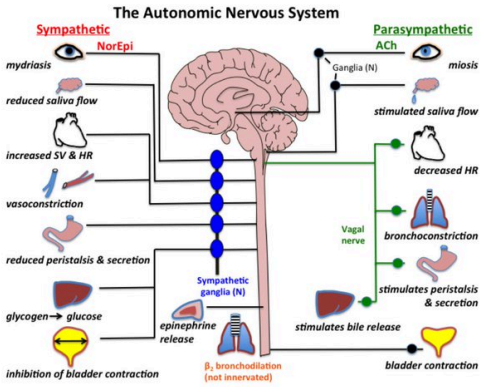
*Kasbo, J. et al. Phosphatidylcholine-enriched diet prevents gallstone formation in mice susceptible to cholelithiasis. Journal of Lipid Research 44, 2297–2303 (2003).

4: Acetylcholine and Elimination



Source: Peirson Center For Children

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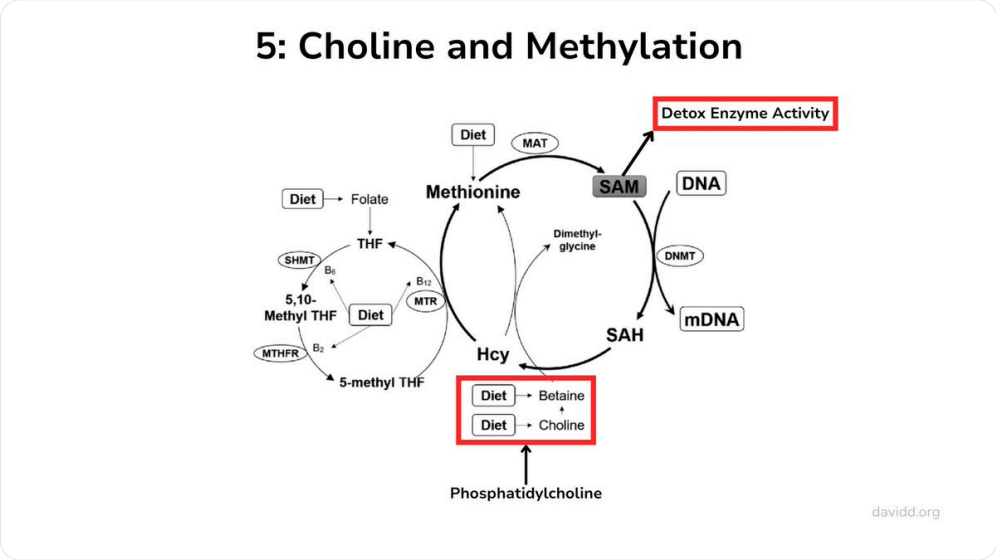
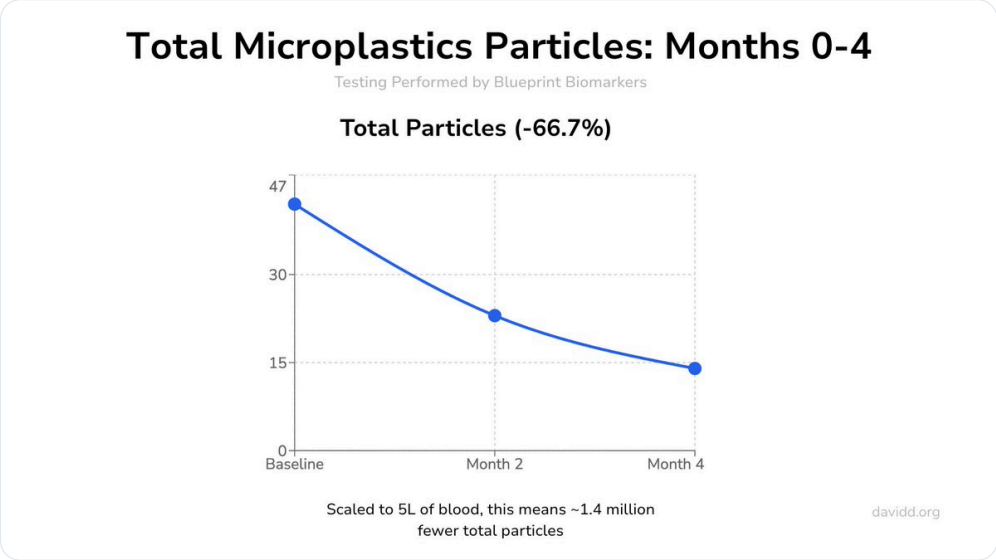
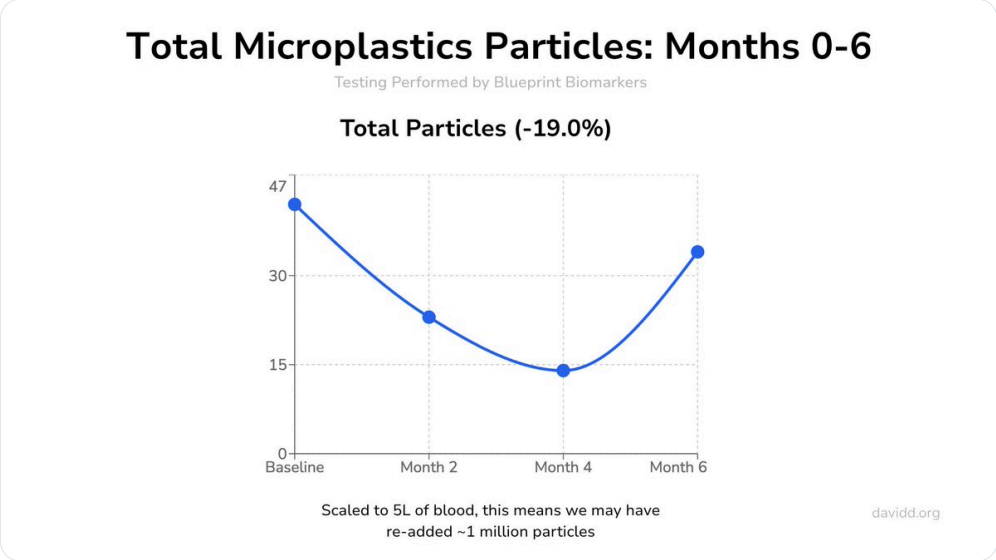


7/ Over the duration of the experiment, I consumed ~180 fl. oz. of the phospholipid complex, adding up to ~11 16 fl. oz. bottles.
(Yes, fairly expensive, which is why I gladly accepted BodyBio's offer to supply me for this N=1)

To recap a bit: after a ~67% decrease in a mere 4 months (extremely surprising especially without trying to change intake), the compound appeared to be very effective.
But why did things turn around so drastically?
I've already alluded to this, but now I'll give you all the details.





8/ Why did things turn around so drastically?

Let's start with a simple model that explains how plastic particles move through the body. They come in through ingestion, inhalation, IV/cuts, and potentially direct skin contact. They move through the body, sometimes traveling deeper and embedding in tissue, cells, etc. (or breaking down/leaching additives), and they are excreted primarily through feces (as far as we know).

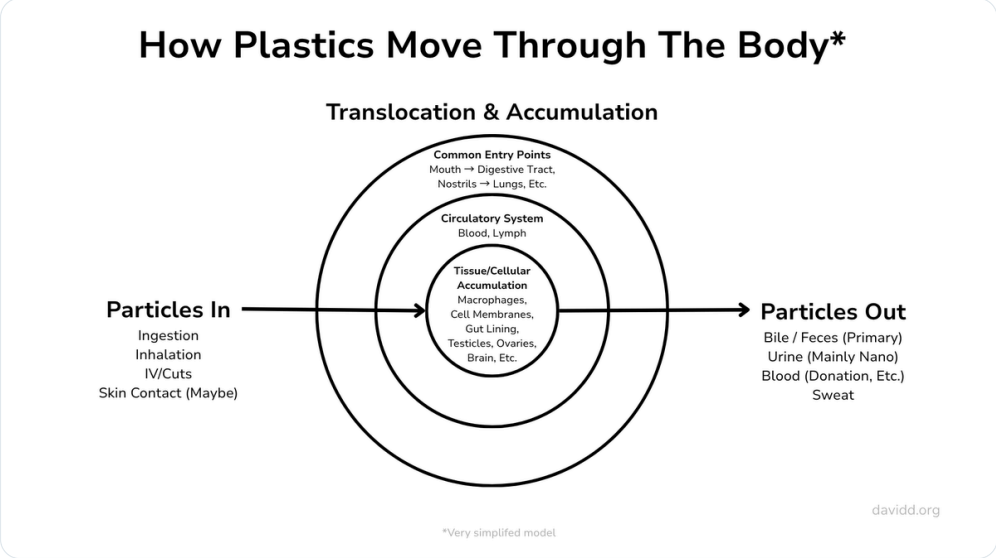
To simplify this even further:
Plastic Particles in Blood = Particles In - Particles Out

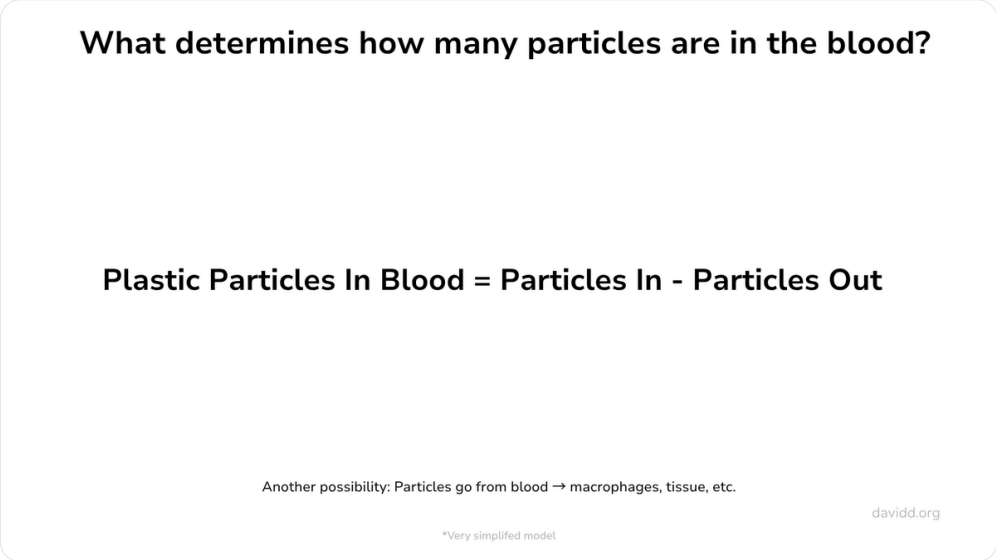
The main reason that my results reversed, assuming no test error, is very likely that I messed up the "Particles In" piece of this equation.

In the last ~2 months of my experiment, my routine changed significantly.
→ Instead of drinking my gallon of water a day from a Berkey filter I'd used since long before the experiment, I started filling up my four glass jars at the gym.
→ The pipes at home are copper. The pipes at my gym? PEX or PVC (both plastic).
→ I spent a lot more time at my cabin.

At my cabin, 1) there are a lot more synthetic fibers, 2) there is no air filtration system, and 3) there was an old nonstick pot I boiled water for beverages in ~7 times before I caught myself and threw it out.

I think increased intake is the main factor, but there are a few other possibilities: test contamination/error on my end, decreased product efficacy over time, more permeable membranes (e.g. from higher stress), release from tissue, test fluke (unlikely, though 100µL is not a huge sample).





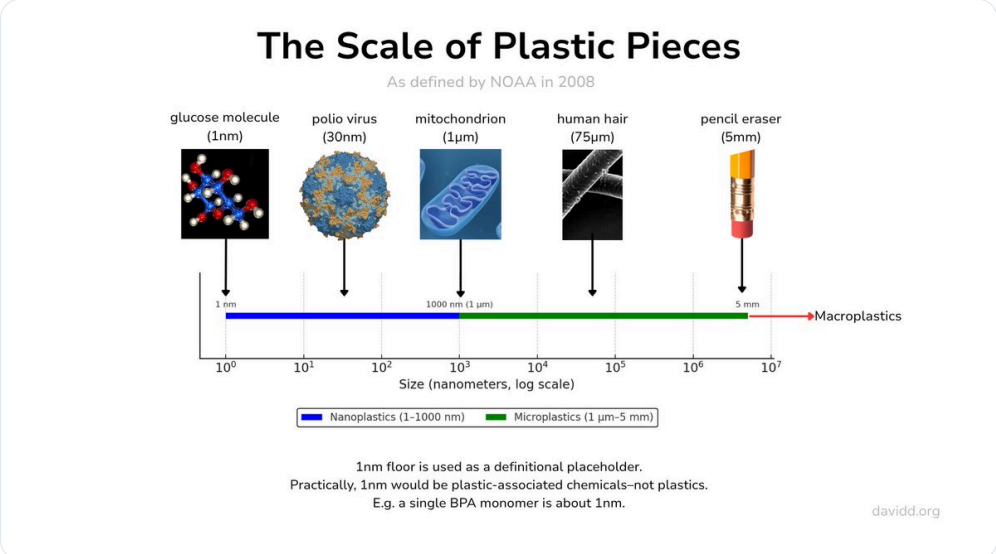
9/ In any case, here's what I do if I re-ran the experiment and went for max reduction in blood microplastics instead of just isolating the phospholipid complex.

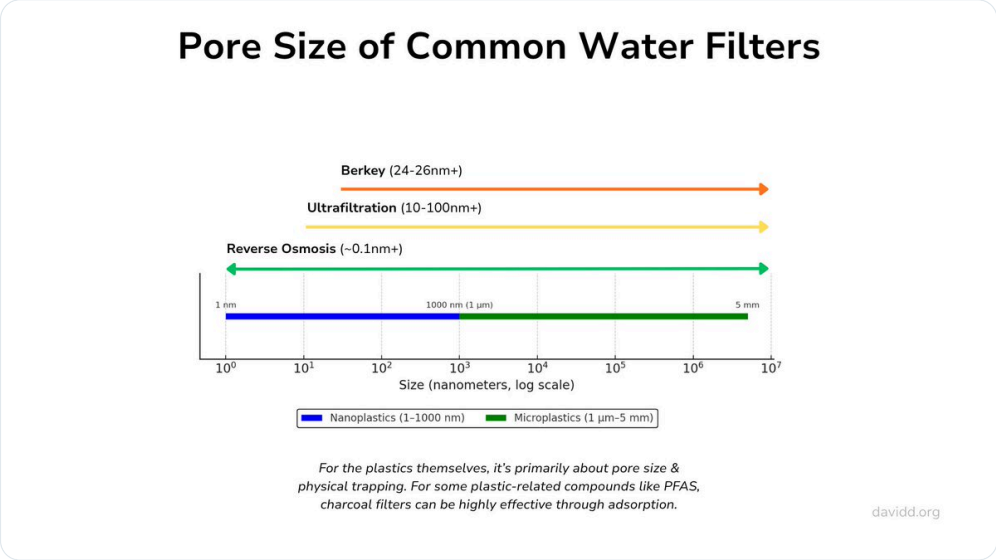
Quite simply, I'd hit all three pieces of the equation.

1. Minimize Inflow
→ Water filtration (reverse osmosis preferred)
→ No drinks from plastic containers
→ Avoid plastic touching food as much as possible (especially with temperature fluctuations)
→ Use a mined rock salt instead of sea salt for seasoning
→ Air filtration system (whole home or a few IQAair units)
→ HEPA vacuum filter
→ Replace synthetic fiber clothing, bedding, etc.
→ Consider looking at plasticlist.org and avoiding food sources higher in plastic-associated chemicals (credit @natfriedman @yaroshipilov @chandhana01).
2. Maximize Outflow + 3. Minimize Accumulation & Translocation
→ 2T phospholipid complex per day
→ If constipated, resolve
→ Increase fiber consumption (esp. insoluble)
→ Increase water intake
→ Blood donation (probably not worth it, though it does work)
→ Experimental: Sauna, BPC-157, Chitosan (fiber derivative with some promising research for binding microplastics), Bitter Foods, High Cruciferous Vegetables, Turmeric

Stacking all these things, we'd likely see a very rapid reduction in blood microplastics particle count.

The extent to which the phospholipid complex facilitates this and may even reduce current tissue/cellular load requires more research (some of which may now be ongoing...).





10/ In Closing:

→ Plastic is omnipresent in our environment and our bodies (yes, it's everywhere—including up to 0.5% of mass in autopsied brain samples)

→ Many risks are known, but the magnitude of effect in any given person is highly uncertain.

→ High-dose BodyBio PC is likely effective for reducing blood concentration of plastic particles + potentially tissue/cellular accumulation.

→ For max reduction: 1) Reduce inflow, 2) Reduce accumulation & translocation, 3) Increase outflow

Thank you to @bryan_johnson + Blueprint and @JessKBerman + @BodyBio for making this experiment possible.

Follow me on here or get on my email list at davidd.org if you want to see more in-depth N=1 experiments like this. I have some very exciting stuff in the pipeline.

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