Microplastics and More: Is My Trash Going to Kill Me?

You know those pictures you see on social media showing how terrible plastic is for the environment? You know the ones – the turtle practically cut in half by plastic soda rings and the dead bird with big pieces of plastic in its stomach. If you have a heart (and we hope you do), seeing pictures like that makes you want to swear off plastic forever.

But unfortunately, those pictures only tell half the story. It's not just the big pieces of plastic that you can easily see that are causing all the problems; there are also microplastics in our environment.

What are microplastics and where do they come from?

Like the name implies, microplastics are small bits of plastic. (Micro = very small, plastics = well, plastics, of course.) Technically speaking, a piece of plastic qualifies as "micro" if it measures less than five millimeters in diameter. For a bit of perspective, 5 millimeters is about the size of a sesame seed. That's pretty teeny.

There are a variety of sources for microplastics, but they're generally broken down into two types: primary and secondary. Primary microplastics enter the environment in their original form, at the size they were intended – as miniscule particles; in essence, they were created to be small. A few examples of primary microplastics would be synthetic microfibers from clothing, plastic pellets used in the manufacturing of plastic goods, and microbeads (which the U.S. banned from personal care products in 2015. Thanks, Obama!)

Secondary microplastics started their lives as bigger, stronger pieces of plastic, but then they started to break down as they aged. (Me too, plastic. Me too.) That means anything

from a plastic water bottle or straw to a children's toy or tire could eventually become microplastic.

Because of its exposure to environmental factors like sun, wind, and water, plastic breaks down faster once it reaches a river or ocean. But it takes forever for a piece of plastic to completely decompose. And that's not just an exaggeration – plastic isn't biodegradable.

Every piece of plastic that has ever been created is still around in some form. So when plastic "breaks down" in the ocean, the pieces just get smaller and smaller, eventually becoming microplastics.

How do microplastics enter the environment?

While it would be easy to point the finger and say that humans are responsible for microplastics entering the environment, the answer is actually a bit more complicated than you might think.

Yes, we are the ones who demand the convenience of single-use plastics then don't dispose of them properly. But most of the microplastics in our environment don't come from these larger items; instead, more than 85% of them can be attributed to things you probably never thought of like small synthetic fibers that come out in the washing machine, the erosion of tires, and city dust.

So while we do use an inordinate amount of plastic, human carelessness and overconsumption aren't the primary drivers of microplastics. Instead, it's laundry and road run off. And the sad truth is that water treatment plants do filter out most microplastics, but the "sludge" collected from the facility is often used as a fertilizer replacement, which puts all those microplastics right back into the environment.

What effect do microplastics have on the environment?

Honestly, we don't know for sure what effect all those microplastics are having on humans and the environment as a whole. We can naturally assume it's not good, but because the study of microplastics is relatively new, we don't have much solid data to support our assumptions.

What we do know is that once microplastics reach our rivers, lakes, and oceans, they can often be mistaken by marine life for food. Then the microplastics end up in their stomachs, where they're unable to be digested. The accumulated microplastics then damage the digestive tract, causing malnourishment and often death. If that's what

microplastics do to marine wildlife, it certainly makes you wonder what effect they're having on the rest of us.

How can we reduce microplastics?

The good news is that you can make changes to help reduce the amount of microplastics that enter the environment. Here are a few suggestions:

- Advocate for water treatment reform so filtered microplastics aren't released back into the environment.
- Take public transportation whenever possible to reduce overall tire wear.
- Buy fewer clothes made with synthetic fibers; choose those made from natural materials instead.
- Wash your clothes less frequently to prevent microfibers from washing down the drain.
- Only wash full loads of laundry; this creates less friction, which reduces the number of microfibers released in the wash.
- Wash your clothes in cold water, if possible, and for a shorter cycle to prevent the shedding of microfibers.
- Use a microfiber-catching ball in the wash and/or install a microfiber filter on your washing machine.
- Air dry your clothes instead of running them through the dryer.
- Contact washing machine manufacturers and urge them to update designs to filter out microfibers.
- Participate in local clean-ups to keep plastic out of our streams, rivers, lakes, and oceans.
- And as always, reduce your use of plastic, recycle as much as possible, and purchase reusable and/or biodegradable products instead of those made from plastic.