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Q&A WITH...

MICROPLASTICS EXPERT

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Q: What is the single biggest way the average person is currently exposed to microplastics - through the air, water, or food - and what is the clearest associated health risk?

A: It's difficult to point to just one, since exposure comes from air, water, and food in different ways. That said, inhalation is becoming an area of growing focus. The Eurofins PlasticDustCloud study showed just how many particles settle out of the air each day, many small enough to stay suspended and be breathed in. What that means for health is still being studied, but there are concerns about small particles reaching deep into the lungs and interacting with the body in ways we don't fully understand yet.

Q: Your team pioneered automated high-throughput Raman spectroscopy for microplastic analysis. Can you explain in simple terms what this method can detect that traditional testing misses?

A: There are several techniques for analyzing microplastics, each with its strengths, but many earlier approaches only looked at a limited number of particles. Our automated Raman method scans thousands, identifies what polymer they are, and measures their size down to about 20 µm — and in some cases we've been able to push down to around 5 µm.

Q: Microplastics are everywhere, but what are the most abundant types - like fibers from clothing or fragments from bottles - and where are they concentrating in our environment?

A: Fibers from clothing and fragments from packaging are by far the most common. We see polymers like polyethylene, polypropylene, and PET over and over. They show up in water and soil, in wastewater sludge that ends up back on farmland, and in the air we breathe indoors.

Q: Beyond water and soil, where have you found the most unexpected or surprising location of microplastic contamination that should concern the public?

A: Consumer products have been some of the most surprising. For example, there was a study on over-the-counter eye drops where microplastics were detected in every brand tested. We've also seen reports of MPs in bottled water, beer, and supplements. And in our own work, we've detected them in fruit tissue, like strawberries and raspberries. It shows that microplastics can appear in places people wouldn't normally expect.