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Microplastics Found in Brain Affect One Sense in Particular, Study Finds

Story by Chris Malone Méndez • 3d • 2 min read

person-with-medical-gloves-handling-microplastics-with-tweezers
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Microplastics continue to be found in some concerning parts of the human body. A new study published Sept. 16 in the *JAMA Network Open* journal explains how microplastics in the human brain can affect an important part of our daily lives: how we smell.

Researchers in Brazil examined the olfactory bulbs of 15 cadavers and detected the presence of microplastics in the olfactory bulbs of eight of them. The olfactory bulbs, located at the bottom of the brain with one in each nasal cavity, contain different kinds of nerve cells that are responsible for helping us smell. The most common material they found was polypropylene, of the most widely used polymers in plastic products today.

"Previous studies in humans and animals have shown that air pollution reaches the brain, and that particles have been found in the olfactory bulb, which is why we think the olfactory bulb is probably one of the first points for microplastics to reach the brain," study lead author Dr. Thais Mauad told *NBC News* of the research. "We thought that if bacteria can pass through this pathway, microplastics might be able to too."

Unfortunately, the base compound of polypropylene is hard to escape in our everyday lives. "Propylene is everywhere—in furniture, rugs, clothes," Mauad said. "We know the place we are most exposed to particles is indoors, because all of our homes are full of plastic."

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Because the study subjects were deceased, the scientists could only learn so much from the phenomenon. More research needs to be done to investigate just how these microplastics in our olfactory bulbs can actually affect our sense of smell in our lives.

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"This case series provides evidence of [microplastics] found in the human olfactory bulb, suggesting a potential pathway for the translocation of [microplastics] to the brain," the authors wrote in the study. "The findings underscore the need for further research on the health implications of [microplastic] exposure, particularly concerning neurotoxicity and the potential for [microplastics] to bypass the blood-brain barrier."