

## **Microplastics Found in Male Reproductive Organs for the First Time: Study**

The most common microplastic was PET known to leach toxic substances that can cause cancer and pregnancy issues.

Microplastics have been discovered in male reproductive organs for the first time, raising concerns about how these contaminants impact people's sexual health, according to a recent study.

The peer-reviewed study, published in the International Journal of Impotence Research on June 19, investigated whether microplastics (MP) aggregated in penile tissue.

Microplastics are particles of less than five millimeters and have been found in human tissues, including lungs and the human heart.

Researchers analyzed penile tissue samples from five individuals in the study and discovered seven types of microplastics in four of the samples. "The most prevalent MPs were PET (47.8 percent) and PP (34.7 percent), accounting for about 82 percent of the total amount of MPs," the study said.

More research is needed to uncover the consequences of microplastics in live bodies given their "capacity to act as a vector for pathogens, as well as induce and be influenced by oxidative stress, inflammation, and immune response," the study said.

PET (Polyethylene-Terephthalate) is a type of plastic used for manufacturing water bottles, shopping bags, microwave containers, and housing material. PET is known to leach toxic substances linked to cancer, pregnancy issues, and skin problems.

PP (Polypropylene) is a flexible, soft plastic used in products like straws, medicine bottles, yogurt cups, and ketchup bottles. It is usually considered the safest of all plastics for human use. However, it can also create health issues. For instance, inhalation of fine PP particles may cause respiratory irritation. PP fumes can result in asthma-like symptoms among people.

According to the authors, this is the "first study to our knowledge to identify the presence of MPs within penile tissue."

Researchers in the study point out that microplastics are "commonly thought to enter the human body through ingestion and inhalation." Studies have proposed that microplastics smaller than 150 micrometers "may have the potential to migrate from the gut cavity to the lymph and circulatory system, leading to systemic exposure."

In the study, 84 percent of the microplastic samples measured 20 to 100 micrometers, well below the 150 micrometer threshold.

When the penis gets swollen due to increased blood flow, the corpus cavernosum and associated tissues expand. Corpus cavernosum is the erectile tissue of the penis. Dilation of blood vessels in such a situation can allow the circulating microplastics in the body to come into contact with penile tissue, potentially resulting in the accumulation of microplastics.

"MPs pervade our environment and are here to stay for the foreseeable future. Therefore, it is imperative to understand how they interact with the human body to grasp their potential implications on human health and physiology," the researchers wrote.

## **Microplastics in Testicles, Placenta**

A study published last month had identified microplastics in human testicles. The researchers examined human and canine samples and discovered that human testicles had three times more microplastics than canines.

Researchers found that canine samples with higher levels of polyvinyl chloride (PVC) microplastics had lower sperm counts. However, this correlation was not identified with polyethylene microplastics.

PVC is used to make pipes, flooring, some plastic bottles, packaging, credit cards, signage, vinyl records, and inflatable products.

“PVC can release a lot of chemicals that interfere with spermatogenesis and it contains chemicals that cause endocrine disruption,” Dr. Xiaozhong Yu, a professor at the UNM College of Nursing and lead researcher, said in a press release.

Microplastics have been found in other parts of the human body as well. A Feb. 17 study identified microplastics in the human placenta.

All 62 placenta samples tested contained microplastics, with concentrations ranging from 6.5 to 790 micrograms per gram of tissue.

Placenta provides oxygen and nutrients to the baby while also removing waste products from the child’s blood.

Matthew Campen, professor in the UNM Department of Pharmaceutical Sciences, who led the team that conducted the placenta study, believes the accumulation of microplastics in human tissue could explain the puzzling rise in certain health problems like colon cancer among people younger than 50, inflammatory bowel disease, and decreasing sperm counts.

“It’s only getting worse, and the trajectory is it will double every 10 to 15 years ... So, even if we were to stop it today, in 2050 there will be three times as much plastic in the background as there is now. And we’re not going to stop it today,” he said.