German Federal Institute for Risk Assessment

Communication 023/2023

10 July 2025

Microplastics in the brain? BfR evaluates new study - so far no evidence of health risks

In a recently published scientific study, researchers report that they have detected microplastics in the brains of deceased people. The study is the subject of controversial scientific debate and is currently being evaluated by the German Federal Institute for Risk Assessment (BfR). In particular, the suitability and specificity of the measurement method (pyrolysis gas chromatography mass spectrometry, or pyrolysis GC/MS for short) is being scrutinised. The BfR is preparing its own statement on the issue. Furthermore, the BfR will take up the topic at a public consumer protection event focussing on "Microplastics" in December 2025.

According to the current state of knowledge, there is no reliable toxicological evidence of health risks from the ingestion of microplastics via food. The BfR provides further information on the current status in its FAQ.

Intensive research has been conducted on the topic of microplastics for some time in order to obtain reliable data and thus better assess the health risk for consumers. The BfR is also conducting scientific studies on possible health risks and researching the public's perception on microplastics through representative population surveys.

The term microplastics generally refers to small particles that consist of water-insoluble synthetic polymer materials, usually made from crude oil. The particles differ in terms of their origin, size, shape and chemical composition. In most cases, particles between 1 micrometre (µm, equivalent to 0.001 millimetres, mm) and 5 mm in size are meant when talking about microplastics.

Microplastics are widespread in the environment and can be found in water, soil and the air. Humans can come into contact with microplastics via air, dust, drinking water, food and cosmetics, for example, and absorb them through food or when breathing.

According to the current state of knowledge, it is unlikely that plastic particles, for example in food or cosmetics, pose a health risk to humans; there is no evidence of harmful effects.

Comprehensive information on microplastics and possible health risks can also be found in our FAQ "Microplastics - facts, research and unanswered questions".

Scientific publication on microplastics in the brain:

Nihart, A.J., Garcia, M.A., El Hayek, E. et al. Bioaccumulation of microplastics in decedent human brains. Nat Med 31, 1114-1119 (2025). https://doi.org/10.1038/s41591-024-03453-1

Further information on microplastics

FAQ: Microplastics – facts, research and open questions
https://www.bfr.bund.de/en/service/frequently-asked-questions/topic/microplastics-facts-research-and-open-questions/

Topic page “Health assessment of microplastic”s
https://www.bfr.bund.de/en/product-safety/health-assessment-of-microplastics/

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Responsible according to the German Press Law: Dr Suzan Fiack

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