- Plastics

# Microplastics are discovered in human blood for the first time

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Microplastic pollution has been detected in human blood for the first time, with scientists finding the tiny particles in almost 80% of the people tested.

The discovery shows the particles can travel around the body and may lodge in organs.

The impact on health is as yet unknown. But researchers are concerned as microplastics cause damage to human cells in the laboratory, and air pollution particles are already known to enter the body and cause millions of early deaths a year.

Huge amounts of plastic waste are dumped in the environment and microplastics now contaminate the entire planet, from the summit of Mount Everest to the deepest oceans.

People were already known to consume the tiny particles via food and water as well as breathing them in, and they have been found in the faeces of babies and adults.

The scientists analysed blood samples from 22 anonymous donors, all healthy adults, and found plastic particles in 17. Half the samples contained PET plastic, which is commonly used in drinks bottles, while a third contained polystyrene, used for packaging food and other products.

A quarter of the blood samples contained polyethylene, from which plastic carrier bags are made.

"Our study is the first indication that we have polymer particles in our blood — it's a breakthrough result," said Professor Dick Vethaak, an ecotoxicologist at Vrije Universiteit Amsterdam in the Netherlands.

"But we have to extend the research and increase the sample sizes, the number of polymers assessed, etc."

Further studies by a number of groups are already under way, he said.

"It is certainly reasonable to be concerned," Vethaak told the Guardian. "The particles are there and are transported throughout the body."

He said previous work had shown that microplastics were 10 times higher in the faeces of babies compared with adults and that babies fed with plastic bottles are swallowing millions of microplastic particles a day.

"We also know in general that babies and young children are more vulnerable to chemical and particle exposure," he said. "That worries me a lot."

The new research is published in the journal Environment International and adapted existing techniques to detect and analyse particles as small as 0.0007mm.

Some of the blood samples contained two or three types of plastic.

Mr Vethaak acknowledged the amount and type of plastic varied considerably between the blood samples.

He added the differences might reflect short-term exposure before the blood samples were taken, such as drinking from a plasticlined coffee cup, or wearing a plastic face mask.