The Hunt for Nanoplastics Is On

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How do you count the nanoplastics in your body? Leiden researchers published a method in Nature Protocols today that should make this easier. Important for both environmental and medicine research.

From a molecular point of view, plastic is quite similar to organic material. That makes it a difficult substance to detect in living beings. ‘Everything with carbon atoms is difficult to measure in organisms, so plastic too,' explains Martina Vijver, Professor of Ecotoxicology. ‘Animals and plants themselves consist largely of carbon. So, what are you measuring: the plastic or the organism itself?’

Detecting it in the right way

The new method developed by Professors Martina Vijver and Willie Peijnenburg in cooperation with a consortium led by Dr Fazel Monikh lifts a corner of this veil. By allowing nanoplastics to first absorb metal, you can then follow them much more easily. As long as you track them down again in the right way.

This happens when you eat plastic

The article that was published today in Nature Protocols describes the different ways in which you can find the metal nanoplastics again. ‘This allows you to see what happens to the nanoplastics after they have been absorbed', says Vijver. ‘For example, which animals pick them up, or, which organs pick them up? And also, how many plastic particles do they pick up? You can then measure all that.'

A way to compare different results

The paper thus mainly describes the way in which this research can be done. ‘It is actually a very dry paper to read', Vijver laughs. ‘But it is important for scientists that we can use the same protocol. This way the different results are comparable.’

Where exactly in the body are these nanoplastics located?

‘We find it very logical to know where substances are in the environment', says Vijver. ‘But we also need to know where they are in cells or organisms. Are they stored in the fatty parts, for example, or in the body fluids? With this method we can discover just that.’

Not just a tool for ecologists

And it is not only ecologists who are happy about this. Vijver: 'This protocol is also very important for drug development. You can very easily use it to find out how well medicines arrive at the right place in the body.’

Read the original article on leiden university.