

Insufficient Public Awareness of Microplastic Ingestion

Plastic pollution has attracted considerable media attention from the public, governments, and industry in the past decade resulting in increased awareness of the direct environmental, economic and human health impacts. However, consumers are unaware of the connections between their use and mismanagement of plastic packaging, and the threats posed by consumed microplastic on their health. Unregulated product labeling fails to identify food packaging as a primary mechanism for the uptake of MPs as a transference pathway.



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Opening plastic packaging produces microplastics that transfer into consumed food

Microplastics enter our bodies through our drinks, the air we breathe, and the food we consume, and the smallest microparticles could be the most damaging for health as they are more likely to penetrate into human cells.

Of increasing concern are nanoplastics. While microplastics range in size from 5mm to 1 μ m, one percent of the width of a human hair, nanoplastics include anything below this.

Research conducted in 2022 by Heather Leslie and others at the Free University of Amsterdam [\[1\]](#) found microplastics in the bloodstream of volunteers with an overall concentration of plastic particles in the blood of the 22 donors amounting to an average of 1.6 μ g/ml, comparable to a teaspoon of plastic in 1,000 litres of water (ten large bath tubs).

A quarter of the tested donors had no detectable quantities of plastic particles of any type in their blood. Polyethylene terephthalate, polyethylene, and polymers of styrene were the most common types of plastic found in the blood samples, followed by poly(methyl methacrylate).

A review by scientists at King's College, London in 2017 hypothesized that eating or inhaling microparticles may lead to them accumulating in the body over time and could create stress on the immune system.

Considering the potential harm, MPs have been found in placentas, newborn babies, lungs, hearts kidneys and brains, with unknown impacts, the transference of microplastics produced during the opening plastic packaging needs to be taken seriously.

In the drive to cut costs manufacturers have moved away from 'Peel to Open' packaging to heat-sealed packs. To access the food consumers must use a cutting edge. Findings suggest that everyday activities such as opening plastic packages can be a source of microplastics exposure.

The burden of food safety has been placed on the consumer, albeit unknowingly. We have termed this effect Involuntary Plastic Consumption (IPC).

With microplastics generated by ourselves in our daily life as extra sources, consumers must undertake purchasing responsibility to prevent microplastic contaminations.

Future studies will elucidate the long term effects of MP uptake on the body, and new insights will be provided into this widespread phenomenon with a particular interest in food safety, security issues, and ultimately human health.