

IMPACT OF NANOPLASTICS AS A VEHICLE FOR ENVIRONMENTAL POLLUTANTS ON HUMAN HEALTH

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Nanoplastics

Plastic waste breaks down into small particles, which depending on their size can be classified as microplastics (0.001 - 5 mm) or nanoplastics (up to a maximum of 0.001 mm), which can be transported by air, water and food.



Toxic exposure vehicle

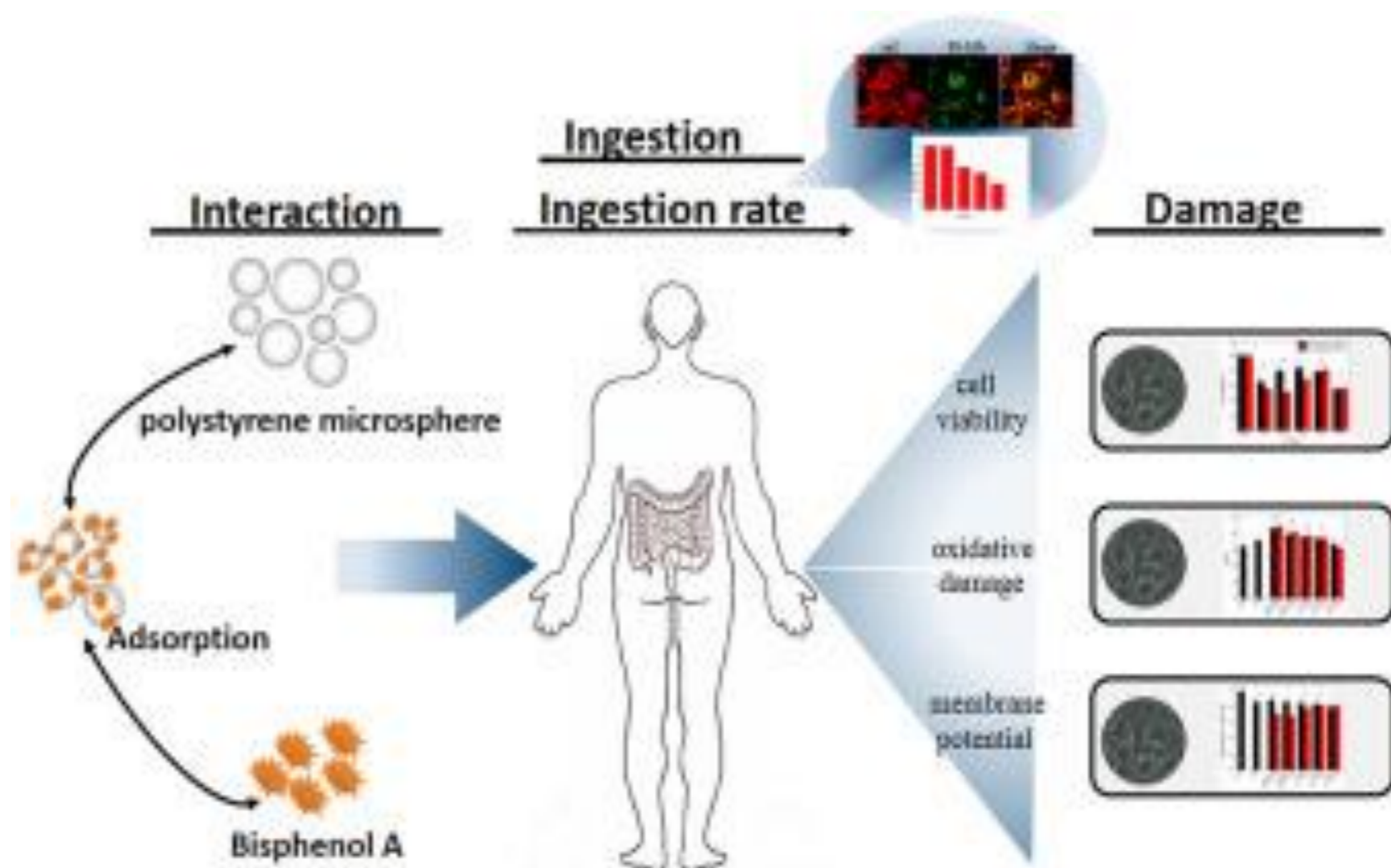
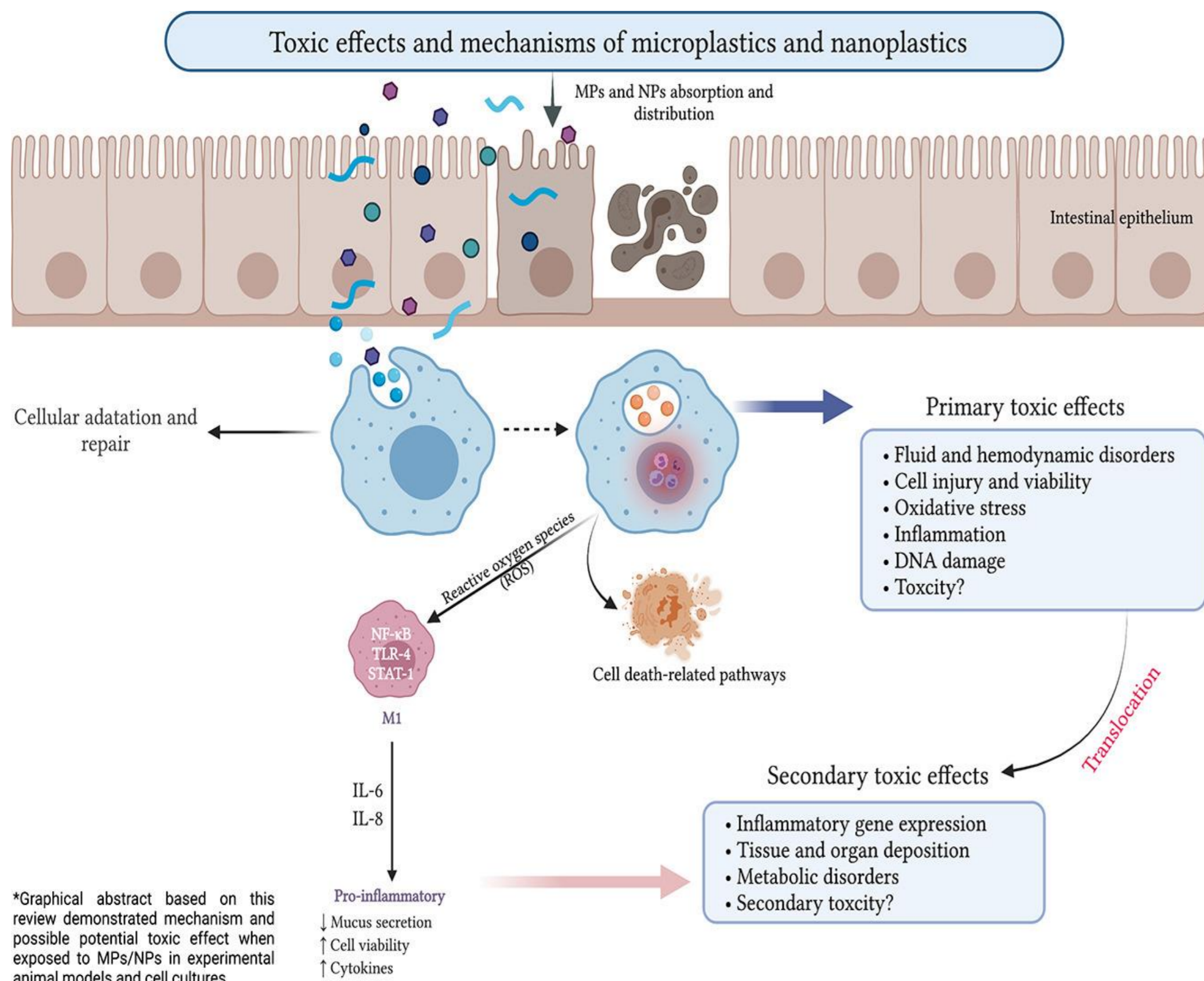
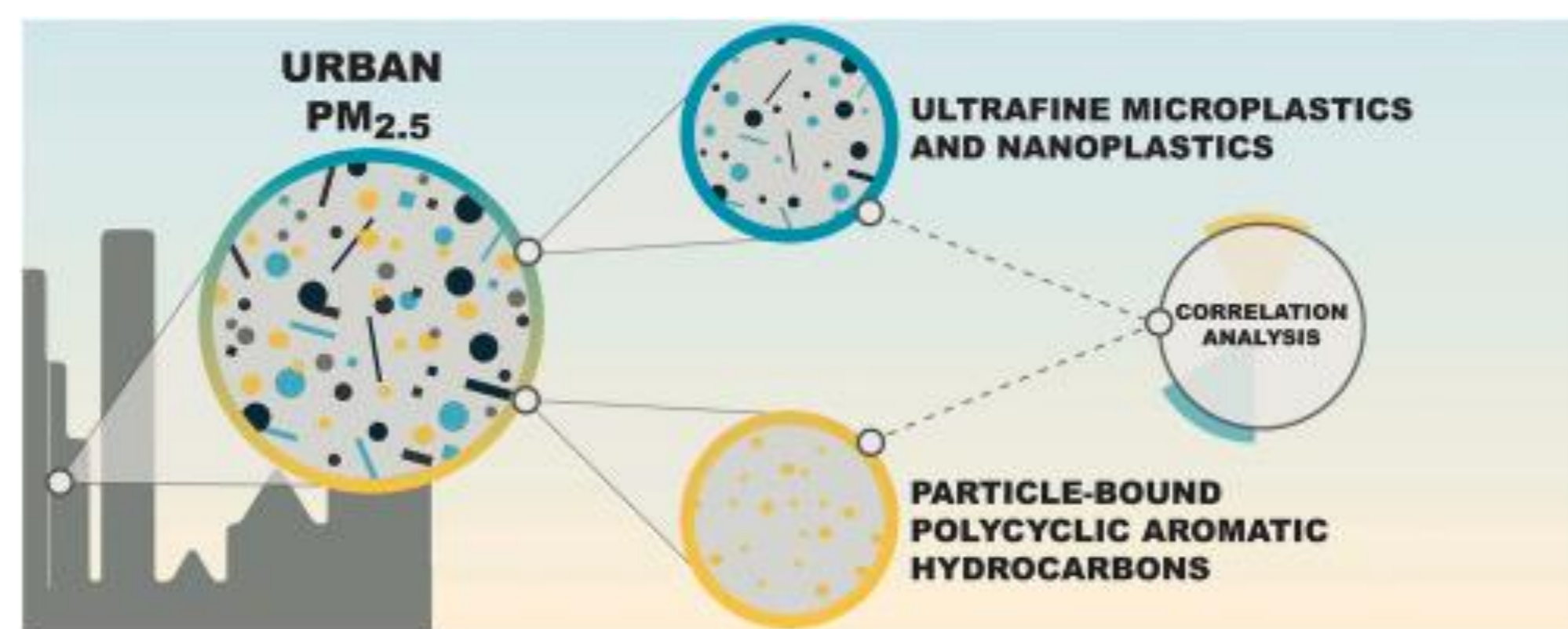
In addition to these effects *per se*, nanoplastics are the polymers with the greatest impact on the environment, since they can absorb and thus act as vectors for highly toxic compounds such as aromatic hydrocarbons, heavy metals, persistent organic pollutants (POPs), endocrine disruptors (Bisphenol A, Phthalates), among others.

POPs - directly linked to hormonal, immunological, neurological and reproductive dysfunctions. They remain in the environment for a long time and, once ingested, have the ability to attach themselves to body fat, blood and body fluids in animals and humans.

BPA – in packaged products; exposure to which is associated with various diseases such as diabetes, polycystic ovary syndrome, infertility, uterine fibroids, among others.

In humans

The main causes of contamination by these particles occur via the **airways**, contact with **products for personal use** and through the consumption of **food and water**. This causes direct or indirect damage to the body's homeostasis. Studies carried out in the field of nanoplastics show that due to their size, these particles have the ability to internalize, causing effects such as damage to membranes and organelles, inflammation, cytotoxicity and cell death, among others.



Conclusions

To summarize, given the **ubiquity of plastics** in the environment, their potential for transporting other toxic substances, as well as their **versatility** in being absorbed through **various routes of exposure**, they meet the conditions to be considered a **problem for human health**.