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Abstract

Biomonitoring and biomarkers to assess human exposure to micro- and nanoplastics

Beatrice BATTISTINI, Flavia RUGGIERI, Stefano CAIMI, Beatrice BOCCA

Environment and Health Department (ISS)

The worldwide presence of micro- and nanoplastics (MNPs) in the environment has raised significant concerns about their potential impact on human health. The assessment of human exposure to MNPs using biomonitoring involves the measurements of these particles in subjects currently exposed or who have been exposed in the past. Recent studies identified MNPs in human biological samples suggesting that the exposure can occur through multiple routes. In this context, human biomonitoring, alongside the identification of specific exposure biomarkers, is crucial in public health as it helps to evaluate possible interventions before any health effects occur. However, biomonitoring techniques for the characterization of MNPs in human still pose a challenge for research. A combination of several methods is necessary to obtain reliability of MNPs exposure assessment, developing also new and effective biomarkers as tools for public health intervention.