



CUSP

The European research cluster to understand
the health impacts of micro- and nanoplastics



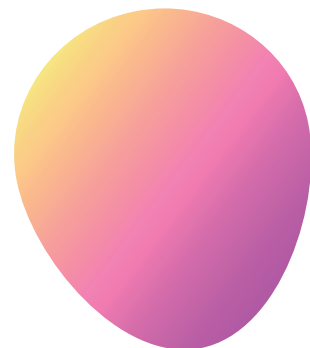
**WHAT ARE THE
IMPACTS OF
MICRO- AND
NANOPLASTICS
ON THE HUMAN
BODY ? We are here
to find out!**



Collaborating in research on micro- and nano plastics & health

CUSP is a consortium of five research initiatives bringing together **75 organizations** from **21 countries**.

Supported by the European Union, an **interdisciplinary team** of scientists, policymakers and civil society is collaborating in this large-scale effort to find out what effects **micro- and nanoplastics** may **have on human health**.



The problem

Micro- and nanoplastics (MNPs) pollution is ubiquitous and part of our everyday life.

MNPs find their way into our bodies through the food we eat, the water we drink, and the air we breathe, yet we currently do not know how they affect human health.



From science to policy

CUSP research results will contribute to the health-relevant aims of the European Strategy for Plastics in a Circular Economy and the Bioeconomy Strategy, as well as the REACH restrictions on intentionally added MNPs, by providing new evidence for better preventive policies.

Our strategy

The five multidisciplinary research initiatives will collaborate on transversal themes in six common working groups in order to establish a framework programme for research on MNPs.

At the same time, each one of the five CUSP projects will concentrate on specific aspects related to MNPs and health.

Common CUSP Working Groups



Analytical methods & representative materials

Preparation and characterization of standardized samples, and analytical methods used in micro- and nanoplastics characterization



Data-sharing

Managing data across CUSP projects to allow for efficient data findability, accessibility, interoperability and reusability



Inter-laboratory comparisons

Harmonizing the process for accurate and comparable results on micro- and nanoplastics identification and quantification methods in an international framework



Exposure assessment

Collaboration to advance external and internal exposure assessment of micro- and nanoplastics



Risk assessment

Generating scientific evidence on the hazards of micro- and nanoplastics for regulatory risk assessment purposes



Communication & dissemination

Maximising and sustaining the visibility and impact of the CUSP projects among target audiences in support of the European Plastics and Bioeconomy Strategies at European and international levels

The five CUSP projects



"In AURORA, we are developing novel tools for measuring micro- and nanoplastics in human tissues, and we will then scale up these analytical methods so that we can detect plastic particles in placentas, blood and umbilical fluid – if they are present."

Prof. **Roel Vermeulen**
University Medical Center Utrecht

www.auroraresearch.eu



"In the IMPTOX project, we will study, for the first time, the effects of environmental or dietary exposure to MNPs on allergy and asthma, using different preclinical models and clinical studies in allergic children."

Prof. **Tanja Ćirković Veličković**
University of Belgrade

www.imptox.eu



"In PLASTICHEAL we will study the long-term impact on the general population and also on the most vulnerable groups, not only among the people most exposed to MNPs, but also among those with health conditions that could make them more vulnerable to potential adverse effects."

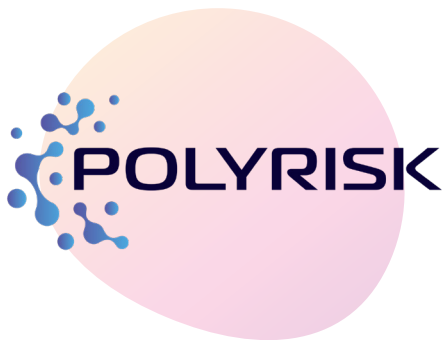
Prof. **Ricard Marcos**
Autonomous University of Barcelona

www.plasticheal.eu



“To get a better science-based understanding on the type and extent of human hazard and exposure to micro- and nanoplastics and the associated risks for human health, in PLASTICSFATE we plan to develop and use validated methods that can create the robust and reliable data we need to take decisions on both the regulatory and industrial level.”

Dr. **Rudolf Reuther**
ENAS
www.plasticsfate.eu



“POLYRISK’s human risk assessment strategy combines highly advanced sampling, sample pre-treatment and analytical methods to detect microplastic and nanoplastic particles, MNPs, in complex matrices, up-to-date fit-for-purpose hazard assessment technologies and multiple real-life human exposure scenarios. We focus on key toxic events linked to several chronic inflammatory diseases.”

Dr. **Raymond Pieters**
Utrecht University
www.polyrisk.science

75 organizations from 21 countries

AURORA: Carl von Ossietzky Universität Oldenburg | Food Packaging Forum Foundation | Icahn School of Medicine at Mount Sinai | Instituto de Salud Global Barcelona (IS Global) | University of Eastern Finland | Masaryk University | University Medical Center Utrecht | Universiteit Hasselt | Universiteit Utrecht | Vrije Universiteit Amsterdam | Institute of Occupational Medicine (IOM)

IMPTOX: Centre National de la Recherche Scientifique CNRS | Haute Ecole Spécialisée de Suisse Occidentale | Karolinska Institutet | Katholieke Universiteit Leuven | Medizinische Universität Wien | Moverim consulting sprl | Promoscience srl | Sciensano | Srebrnjak children's hospital | Universität Wien | Universiteit Gent

PLASTICHEAL: Universidad Autónoma de Barcelona | Työterveyslaitos | Wageningen University | Danmarks Tekniske Universitet | Commissariat à l'Énergie Atomique et aux Énergies Alternatives | Fundación para la Formación e Investigación Sanitarias de la Región de Murcia | The University of Manchester | Asociación de Investigación de Materiales Plásticos y Conexas | L'Institut National de la Santé et de la Recherche Médicale | Helmholtz-Zentrum für Umweltforschung GmbH | Universität Leipzig

PLASTICFATE: ENAS | Optimat | European Research Services GmbH | Statens Arbejds miljøinstitut | Det Nationale Forskningscenter for Arbejds miljø | Friedrich-Alexander-Universität Erlangen-Nürnberg | Universitair Medisch Centrum Utrecht | Stichting Wageningen Research | Bundesanstalt für Materialforschung und -prüfung | Agencia Estatal Consejo Superior de Investigaciones Científicas | Consiglio Nazionale delle Ricerche | Fraunhofer Gesellschaft zur Förderung der Angewandten Forschung e.v. | Helmholtz-zentrum für Umweltforschung gmbh | Forschungsverbund Berlin eV | Universiteit Leiden | Univerza v Ljubljani | Universität für Bodenkultur Wien | Universität Bayreuth | Università degli Studi di Torino | Università degli studi di Roma Tor Vergata | Université de Paris | National Technical University of Athens | Instituto Tecnológico del Embalaje, Transporte y Logística | Ecamricert srl | Fundación Gaiker | Innosieve Diagnostics bv | Dechema Gesellschaft für Chemische Technik und Biotechnologie e.v. | Umweltbundesamt

POLYRISK: Utrecht University | Vrije Universiteit Amsterdam | Stichting VUmc | German Federal Institute for Risk Assessment | Bundesanstalt für Materialforschung und -prüfung | Bundesanstalt für Arbeitsschutz und Arbeitsmedizin | Norwegian Institute of Public Health | University Medical Centre Utrecht | The Research Development National Institute for Textile and Leather | Italian National Agency for New Technologies, Energy and Sustainable Economic Development | Ideacconsult Ltd. | Health and Environment Alliance | Fraunhofer-Center für Silizium-Photovoltaik | European Research Services | Umweltbundesamt



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