

Environment and health research supported by the EU Research and Innovation Framework Programmes



Due to persistent public concerns about the impact of environmental factors on health and the need to provide a solid scientific evidence base for evolving policies, the European Union (EU) has supported a wide range of research in the area of environment and health. Since 1998 approximately over 400 collaborative environment and health research projects have been funded (EUR ~1.2 billion) under the EU Research and Innovation Framework Programmes. Environment and health research plays an important role in contributing to the EU's political commitments to the Sustainable Development Goals, in particular for 'Good health and well-being'. Furthermore, it underpins the implementation of the EU's 7th Environmental Action

Programme, a wide range of specific EU sectoral policies and global environment and health actions under the auspices of the World Health Organization's European Region and the United Nations Environment Programme.

The main policy objective behind the research funded is to provide evidence to justify the cross-sectoral political and societal changes required to enable cost effective, preventive actions. The research undertaken provides new knowledge of how factors external to the human body and to health and healthcare systems impact human health and well-being and evidence of the associated socio-economic burden.

Recent technological and scientific advances in fields such as molecular analysis and exposure assessment are strong drivers for a fundamental shift in environment and health research, moving away from 'one exposure, one disease' towards a more overarching approach taking into account concurrent environmental factors. The final calls for proposals of Horizon 2020 will continue to fund research on emerging pollutants, nature based solutions, climate change and urbanisation, and their impact on health. New opportunities in these areas are expected under Horizon Europe.

Web-sites and contact

For more information see 'Environment and Health' on:

<https://ec.europa.eu/research/health/index.cfm?pg=policy&policyname=environment>

For information on Horizon 2020 see: <https://ec.europa.eu/programmes/horizon2020/> and [latest projects \(2014-2017\)](#)

For Horizon Europe see: <https://ec.europa.eu/info/node/71880>.

Some examples of research projects and initiatives funded under Horizon 2020 (2014-2020) and the 7th Framework Programme for Research and Innovation (2007-2013) are:



Exposures to chemicals

- **HBM4EU** is a joint programme of 28 countries and the European Commission. The objective is to use human biomonitoring to better assess exposures of people to chemicals in Europe, to understand the associated health impacts and to improve chemical risk assessment.
- **EU-TOXRISK** is driving a paradigm shift in toxicological testing away from 'black box' animal testing towards a toxicological assessment based on human cell responses and a mechanistic understanding of cause-consequence relationships of adverse chemical effects.
- **ED TESTING CLUSTER** is a cluster of eight projects developing new test and screening methods to identify endocrine disrupting chemicals.

Clean air and sustainable urban environments

- **BLUEHEALTH** is researching how water-based environments in towns and cities affect health and wellbeing.
- **CLAIR-CITY**, **ICARUS** and **iSCAPE** deal with air pollution in cities: CLAIR-CITY is looking at how citizens can be involved in decisions on the local options for cleaner air; ICARUS aims to develop a methodology and toolkit for an integrated impact assessment of air quality improvement, climate change mitigation and health promotion; iSCAPE is developing and evaluating an integrated strategy for air pollution control in European cities grounded on evidence-based analysis.
- **GROWGREEN** aims to create climate and water resilient, healthy and livable cities by investing in nature-based solutions, such as high quality green spaces and waterways.

Health impacts of lifelong environmental exposures

- The **EUROPEAN HUMAN EXPOSOME NETWORK** is the world's largest network of nine H2020 projects studying the impact of environmental exposure on human health, demonstrating European leadership in this field. Previously **HEALS**, **HELIX** and **EXPOSOMICS** developed a conceptual framework to improve our understanding of the exposome.
- **LIFEPATH** is investigating the biological pathways underlying social differences in healthy ageing.
- **LIFECYCLE** focused on the developmental origins of disease, i.e. how early exposures lead to late health effects. One of its main aims is to set up a sustainable EuroCHILD Cohort Network.

Foresight and strategy development

- **FRESHER**, focusing on the burden of non-communicable diseases, aimed to identify alternative future health scenarios for Europe, taking into account structural long-term trends in demography, technology, economic, environmental, and societal factors up to 2050.
- **INHERIT** aims to identify ways of living, moving and consuming that protect the environment and promote health and health equity.
- **EURO HEALTHY** aimed to promote health equity through a systematic analysis of health determinants and health outcomes, following a holistic understanding of population health. It produced the Atlas of Population Health in European Union Regions. The findings demonstrate a high degree of variation in the geographical distribution of health determinants and health outcomes, emphasizing that inequalities persist in Europe.
- **HERA** project is developing a future environment and health research and innovation agenda in support of the preparation of research calls and actions under the next Framework Programme – Horizon Europe.



European Commission




Sampling of EU-funded environment and health projects

Chemical safety

			
HBM4EU European Human Bio monitoring Initiative (2017-2021)	EDC-MIXRISK Integrating epidemiology and experimental biology to improve risk assessment of exposure to mixtures of endocrine disruptors (2015-2019)	EU-TOXRISK An European 'flagship' program driving mechanism-based toxicity testing and risk assessment (2016-2021)	EURION Cluster of 8 research projects on new testing and screening methods to identify endocrine disrupting chemicals (2019-2024)
 www.hbm4eu.eu	 www.edcmixriskise	 www.eu-toxrisk.eu	 eurion-cluster.eu

Exposome

			
EUROPEAN HUMAN EXPOSOME NETWORK Cluster of 9 research projects aiming to decipher the human exposome to improve health and reduce the overall burden of disease (2020-2025)	LIFECYCLE Early-life stressors and life cycle health (2017-2021)	HELIX The Human Early-Life Exposome – novel tools for integrating early-life environmental exposures and child health across Europe (2013-2018)	HEALS Health and Environment-wide Associations based on Large population Surveys (2013-2018)
 www.humanexposome.eu	 www.lifecycle-project.eu	 www.projecthelix.eu	 www.heals-eu.eu

Climate change

		
BLUEHEALTH Linking environment, health and climate for inter-sector health promotion and disease prevention (2016-2020)	ATOPICA Atopic diseases in changing climate, land use and air quality (2011-2014)	HEAT-SHIELD Inter-sector framework to increase workers thermal resilience in the context of global warming (2016-2020)
 bluehealth2020.eu	 www.atopica.eu	 www.heat-shield.eu



Air quality

ESCAPE European study of cohorts for air pollution effects (2008-2012)	ICARUS Integrated climate forcing and air pollution reduction in urban systems (2016-2020)	ISCAPE Improving the smart control of air pollution in Europe (2016-2019)	CLAIR-CITY Citizen led air pollution reduction in cities (2016-2020)
 www.escapeproject.eu	 icarus2020.eu	 www.iscapeproject.eu	 www.claircity.eu

Cities

URBAN-WASTE Urban strategies for waste management in tourist cities (2016-2019)	TRACE Tracking movement to promote cycling and walking in cities (2015-2018)	GREEN GREEN Green cities for climate and water resilience, sustainable economic growth, healthy citizens and environments (2017-2022)
 www.urban-waste.eu	 h2020-trace.eu	 trinomics.eu/project/growgreen

Foresight and strategy development

HERA Integrating Environment and Health Research: a Vision for the EU (2019-2022)	EURO-HEALTHY Shaping EUROpean policies to promote HEALTH equity (2015-2018)	INHERIT INte r-sectoral Health Environment Research for InnovaTions (2016-2020)	SOPHIE Seas, Oceans and Public Health in Europe (SOPHIE): a Strategic Research Agenda for Europe and Beyond (2017-20)
 https://cordis.europa.eu/project/rcn/219916/factsheet/en	 http://www.euro-healthy.eu/	 www.inherit.eu	 sophie2020.eu

For more information on projects see also: www.cordis.europa.eu