Health impact of COVID-19 and environmental stressors

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Environmental stressors

- air pollution
- exposure to toxic chemicals via food, water and consumer products
- climate-related stressors (heat)
- noise, pollen etc.
- nutrition and obesity
- lifestyle (physical activity, smoking)
- stress and anxiety

Combined effects
Social modulation
Vulnerable populations
Prevention and adaptation measures

Longitudinal cohorts

Understanding the population burden and identifying populations at risk
Toxic exposures

- via inhalation, ingestion and dermal contact
- cumulative effect of toxic mixtures not fully understood
- chemicals disrupting endocrine system and contributing to development of the chronic conditions (cardiovascular diseases, altered immune response, metabolic and reproductive disorders)
- adverse outcome pathways
- analytical challenges
- vulnerable populations
- little is known about contribution of toxic exposures to the severity of the disease.
How to investigate in a coordinated way?

• development of chronic conditions is a long-term process
• effects of environmental stressors are modulated by socio-economy
• urgent need for larger scope data
• to examine the interplay of the pandemic with environmental factors
• to explore the individual responses (protective factors, levels of antibodies) and identify vulnerable groups
• to develop public health strategies.
How to adapt - what we need to know?

- validate strategies to mitigate negative “side effects”
- build resilience in the society
- cultural differences and social and health inequalities
- disaster management: need to build on lessons learnt
Research Infrastructures needed

• harmonised and interoperable environmental data
• population cohorts
• laboratories offering advanced methods for assessment of toxic mixtures,
• data storage and management facilities,
• integrative data analysis and modelling
• complementarity to the research projects
• ESFRI project
Interdisciplinary collaborative research for our healthy future

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