

Putting the exposome into practice: political claims and spatial limitations of the European Human Exposome Network

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Objectives: Contemporary research on the exposome, i.e. the sum of all the exposures an individual encounters throughout life and that may influence human health, bears the promise of an integrative and policy-relevant research on the effect of environment on health. Considering critical analyses of the first generation of exposome projects, the emergence of the European Human Exposome Network (EHEN) provides an opportunity to better situate the ambitions and priorities of this approach.

Methods: A critical textual analysis of profile articles from each of the projects involved in EHEN, published in *Environmental Epidemiology*, was carried out to derive common promises, innovations and methods across EHEN as well as their overall spatial representativeness.

Results: EHEN consolidates its integrative outlook by reinforcing the volume and variety of data, its data analysis infrastructure and by diversifying its strategies to deliver actionable knowledge. Yet data-driven limitations severely restrict the geographical and political scope of this knowledge to health issues primarily related to urban setups, which may aggravate some socio-spatial inequalities in health in Europe.

Conclusions: The second generation of exposome research doubles down on the initial ambition of an integrative study of the environmental effects of health to fuel better public health interventions. This intensification is, however, accompanied by significant epistemological challenges and doesn't help to overcome severe restrictions in the geographical and political scope of this knowledge. We thus advocate for increased reflexivity over the limitations of this conceptually and methodologically integrative approach to public and environmental health.

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