
IS20. APPLYING THE EXPOSOME CONCEPT IN STUDIES OF OCCUPATIONAL AND ENVIRONMENTAL EXPOSURES

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The “exposome” concept encompasses the totality of environmental (non-genetic) exposures from conception onwards, complementing the genome. Developments following the introduction of the exposome concept offer unprecedented opportunities for discovery of the causes and mechanisms of disease. New technologies such as the so-called “OMICS” biomonitoring approaches, but also the inventive use of existing exposure data can contribute to defining and measuring the exposome. Challenges in developing the exposome concept into a workable approach for epidemiological research include the integration of exposure uncertainty and variability, the integration of omics techniques, and the development of statistical techniques that can analyze the associations between exposome data and adverse health end points. Various European projects (e.g. ExposOmics, Helix) have started to implement the exposome, promising more integrated, holistic, ways of studying the environment over the life course. I will present examples from studies of both occupational and environmental exposures in which we applied the exposome concept, will discuss which difficulties we encountered, and will highlight where further research is needed.

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