



## Environmental epidemiology is the study of how the environment affects human health

David Dowdy\*

Department of Epidemiology, Mailman School of Public Health, Columbia University, New York, USA

Environmental epidemiology is a branch of epidemiology that studies how exposure to the environment affects human health [1]. This field studies how numerous external risk factors might either predispose to or protect against disease, illness, injury, developmental anomalies, and mortality. These elements may be present in the environment where people live, work, and play naturally or may be introduced.

According to the World Health Organization's European Centre for Environment and Health (WHO-ECEH), preventable environmental exposures cause 1.4 million fatalities per year in Europe alone [2]. Chemicals, physical agents, and microbiological pathogens are examples of proximate environmental exposures, which include chemicals, physical agents, and microbiological pathogens, and distal environmental exposures, which include socioeconomic conditions, climate change, and other broad-scale environmental changes. Air, food, water, and skin touch are all sources of proximate exposure. Directly by affecting proximate exposures, distal exposures produce unfavourable health consequences, and indirectly through changes in ecosystems and other human health support systems [3].

Government policy changes, risk management initiatives, and the establishment of environmental standards can all benefit from environmental epidemiology research. When an individual or a subpopulation is exposed to an environmental agent, vulnerability is the sum of all risk and protective factors that ultimately determine whether an individual or a subpopulation experiences negative health outcomes. Sensitivity refers to an individual's or a subpopulation's heightened responsiveness to that exposure, which is mostly due to biological factors. Biological sensitivity is linked to developmental stage [4]. Pre-existing medical disorders, acquired factors, and genetic factors, by increasing the likelihood of exposure to harmful agents, interacting with biological factors that mediate risk, and/or leading to differences in the ability to prepare for or cope with exposures or early stages of illness, socioeconomic factors play a critical role in altering vulnerability and sensitivity to environmentally mediated factors. Due to the geography and environmental qualities of a place, populations residing in certain areas may be at greater danger.

### History

Hippocrates' treatise *On Airs, Waters, and Places*, written in 460 B.C., acknowledges that the environment has an impact on human health [5]. In it, he encourages doctors to think about how variables like drinking water can affect their patients' health. Another well-known example of environment-health interaction is the ancient Romans' lead poisoning, which was caused by the use of lead in their water pipes and kitchen crockery [6]. A Roman architect named Vitruvius sent a letter to discourage the use of lead pipes, citing health concerns:

"Water carried through earthen pipes is more wholesome than water carried through lead pipes; certainly, water carried through lead pipes must be harmful, for white lead is obtained from it, and this is thought to be harmful to the human system [7]." As a result, if what is generated from it is harmful, there is no doubt that it cannot be a healthy body. This can be seen in the workers in the lead industry, who have a pallid complexion; because while casting lead, the fumes from it fix on the

various members, and daily scorching them, weaken the vigour of the blood; water should therefore never be carried via leaden pipes if we want it to be healthy. The fact that the flavour of what is communicated through earthen pipes is superior is demonstrated at our daily meals, for even those whose tables are set with silver dishes use those made of earth because of the purity of the flavour kept in them"[8].

John Snow, widely regarded as one of the founding fathers of modern epidemiology, conducted the first environmental epidemiology study in 1854. He demonstrated that those who drank sewage-contaminated water were more likely to contract cholera than people who drank clean water.

### References

- Merrill RM (2008) *Environmental epidemiology: principles and methods*. Jones & Bartlett Learning.
- World Health Organization (2019) *Towards a tool for assessment of cumulative risks from indoor air pollutants in public settings for children: the first expert consultation: Bonn, Germany, 3–4 December 2018: meeting report*. World Health Organization. Regional Office for Europe.
- Slikker Jr W, Paule MG, Wang C (2018) *Handbook of developmental neurotoxicology*. Academic Press.
- Balbus JM, Malina C (2009) Identifying vulnerable subpopulations for climate change health effects in the United States. *J Occup Environ Med* 51(1):33-37.
- Grandjean P (2015) Only one chance: how environmental pollution impairs brain development—and how to protect the brains of the next generation. *Environmental Ethics and Science*.
- Hippocrates on Airs, Waters, and Places. Printed—not for sale—by Wyman & Sons.
- Boulakia JD (1972) Lead in the Roman world. *Am J Archaeol* 76(2):139-144.
- Snow J (1855) On the mode of communication of cholera. John Churchill.

\*Corresponding author: David Dowdy, Department of Epidemiology, Mailman School of Public Health, Columbia University, New York, USA, E-mail: ddowdy@jhmi.edu

**Received:** 05-Feb-2022, Manuscript No. ECR-22-55816; **Editor assigned:** 07-Feb-2022, Pre QC No. ECR-22-55816(PQ); **Reviewed:** 21-Feb-2022, QC No. Q-ECR-22-55816; **Revised:** 26-Feb-2022, Manuscript No. ECR-22-55816(R); **Published:** 04-Mar-2022, DOI: 10.4172/2161-1165.1000427

**Citation:** Dowdy D (2022) Environmental epidemiology is the study of how the environment affects human health. *Epidemiol Sci*, 12: 427.

**Copyright:** © 2022 Dowdy D. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.