

International Journal of Environmental Research and Public Health



Special Issue Reprint

Medical Geology

www.mdpi.com/books/reprint/4481

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ISBN 978-3-0365-1840-4 (Hardback) ISBN 978-3-0365-1839-8 (PDF)



All living organisms are composed of major, minor, and trace elements supplied by local geology. Such elements occur in varying concentrations and forms throughout the atmosphere, lithosphere, and hydrosphere. As a result, plants, animals, and humans are exposed regularly to these elements. With respect to each essential element, all organisms depend on a specific range of tolerance or adequate range of exposure that is safe. Deficient or excess levels of concentration for the essential elements can lead to adverse health effects. and, in certain cases, death. Medical geology links the influence of natural geological and environmental benefits and risk factors on the distribution of health problems in humans and animals. The composition of rocks and minerals is imprinted on the air that we breathe, the water that we drink, and the food that we eat. For many people, this transference of trace elements from minerals is beneficial as they are the primary source of nutrients (such as calcium, iron, magnesium, potassium, and about a dozen other elements) that are essential for a healthy life. However, sometimes, the local geology can cause significant health problems because there is an insufficient amount of an essential element or an excess of a potentially toxic element (such as arsenic, mercury, lead, fluorine, etc.), or a harmful substance such as methane gas, dust-sized particles of asbestos, quartz or pyrite, or certain naturally occurring organic compounds. Global environmental threats have historically been largely ignored in terms of health, despite their enormous impact on both people and the planet.



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