

Medical Geochemistry

Paolo Censi • Thomas H. Darrah • Yigal Erel
Editors

Medical Geochemistry

Geological Materials and Health

 Springer

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Preface

According to Goldschmidt, Geochemistry describes elemental distributions in geochemical spheres, assessing their abundances and rules driving element fractionations therein. Since dawn of civilization and more so since the Industrial Revolution, at the same time, the development of analytical techniques allow us to exposures can significant human health, especially interactions between solids (or products coming from their dissolutions) and different interfaces within the human body (respiratory, gastrointestinal, skin). These phenomena the recognition of this role. This solid-liquid processes between geogenic materials, dust or soils, and the human body in order to explain to the medical community. These contributed to the recognition of mechanisms responsible for several health maladies, the growth of a new geochemical branch, Medical Geochemistry.

This book is provided for students and researchers (chemists, geologists, geochemists, environmental scientists) Medical Geochemistry. The chapters in this lectures that the authors the Summer School on Medical Geochemistry at the Institute of the Coastal Marine Environment of Italian National Research Council (IAMC-CNR) in Capo Granitola (Italy) the University of Palermo and CNR with the aid of Regione Sicilia and contributions of Thermo Scientific and Bruker Corporation Italia.

Related to the human exposure interactions with geogenic solids, the structure of this book is based on eight chapters regarding the inhalation of suspended solids and their dissolution in contact with lung fluids; effects of the biological, geographical, dietary, and environmental exposure histories on the compositions of human bones; the origin of source materials of potentially inhaled atmospheric dust; biological effects on crystallization of newly formed minerals; mineralogical techniques exploited to investigate newly formed biominerals under physiological conditions; and trace element accumulations in hairs as a consequence of the human environmental exposure, rigorous assessment of the applied to data.

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