

Medical Geology: Impacts of the Natural Environment on Public Health



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Medical Geology

A Working Definition

Medical Geology is defined as the science dealing with the relationship between geological materials and geologic processes and their impacts on health problems in man and animals.

The scope and range of Medical Geology include:

- identifying and characterizing natural sources of harmful materials in the environment;
- learning how to predict the movement and alteration of chemical, infectious, and other disease-causing agents;
- and understanding how people may be exposed to such materials.

Impact of Geologic Events on Human and Environmental Health



*Tsunami
December 2004*



Natural and Mineral Dust

**Water-Borne
Diseases**

Volcanic Emissions

Medical Geology

Links to Human Diseases

Health Effects

Cancer

Trace Elements/Toxic Metals
(I.e., DU, Ra, Pb, As, Hg)

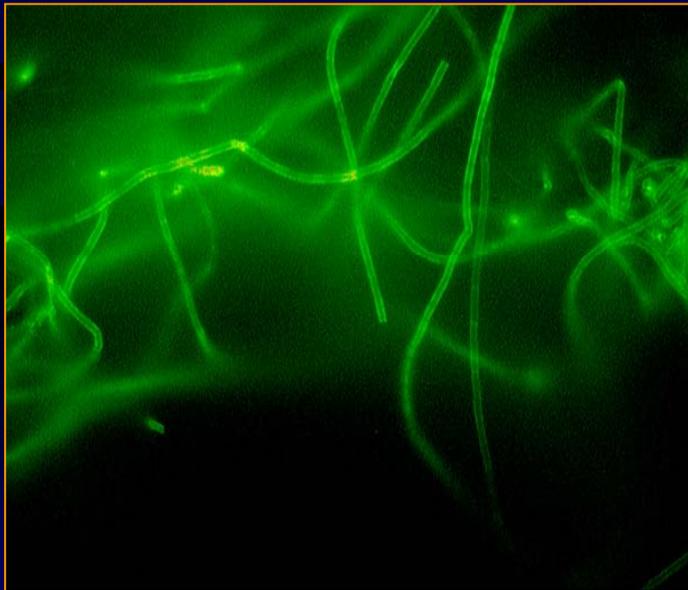
(prostate, breast)

**Emerging Infectious
Diseases**

Addressing Emerging Infectious Disease Threats

- **Goal:** To develop a Global System with particular emphasis on: surveillance, assessment, response, control strategies and prevention of emerging infections.

Anthrax



Cutaneous leishmaniasis



Smallpox





Dominant dust source regions (in brown)