METALLOGENESIS APPLIED TO HUMAN HEALTH

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Nowadays, metallogenetic studies also begin to be applied to human health. It is important to understand the laws that control the concentration of elements in the nature and verify the possible endemies that they may cause. Heavy metals and other chemical elements that cause disease to human species occur in the nature and are concentrated in specific sites. Geological processes can explain many endemies. It is important to know the behaviour of chemical elements in both primary and secondary environment - mostly in rocks, soils and water. Geochemical exploration can detect anomalous areas and represent an important tool to identify the problem. In the primary environment, chemical elements appear in the rocks. In the secondary environment, they are retained in soils or available to water in many ways. In volcanic regions some elements are incorporated into the atmosphere. Problems caused by As (reduced and more toxic As3+) present in the auríferous regions of volcano-sedimentary sequences are well known. At these geological sites heavy metals like Pb, Zn, Cd, Sb, Se, Te and others, occur and may be harmful to human health. In south of Brazil and Argentina fluorine was identified in water of many areas, where fluorisis is a epidemielogical problem in the primary dentitions. The presence of fluorine is related to deposits or rocks that naturally contain abnormal abundances of this element. It is important to develop geological research, together with phisitians, dentists and other health profissionals, to find explanations to many endemical diseases and help to mitigate them