

On a global scale, trace elements occur at very low concentrations (Wedephol 1978). At a regional scale, elevated trace element concentrations can be associated with natural and/or anthropogenic sources and are of concern because of their potential detrimental health effects on natural life forms, including humans. The term 'trace elements' used throughout this chapter encompasses heavy metals (also known as trace metals) such as chromium, copper, cobalt, nickel, manganese, lead, cadmium and zinc, and other trace elements (metals, metalloids and non-metals) which are also known to cause potentially detrimental health effects in high doses. The ecological role, toxicity and dual-toxicity of trace elements has been the subject of much scientific research (WHO 1996).