Trace Elements in Human Health and Disease

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These include essential elements, such as iodine and zinc, probably essential elements, such as manganese and silicon, and potentially toxic elements, such as fluoride, lead, cadmium and mercury, which may also have some essential functions at low levels. Chapters in the final part provide detailed guidelines for the design and interpretation of research on trace elements. A chapter on analytical methodology concentrates on the problems encountered in determining trace elements in biological samples and dietary materials. The next chapter uses data from dietary surveys in 27 countries to discuss human health has a vital relationship with the balance of essential trace elements for the healthy functioning of human body. Supplementation with trace elements should be carefully controlled. When given in quantities exceeding those required for accomplishing their biological functions, they will cause toxic effects. The dietary reference intakes provided by national regulatory agencies are guides to define intake, supplementation, and toxicity of trace elements for humans. Keywords. Nielsen FH (1993) Essential and toxic trace elements in human health and disease: an update. Wiley-Liss, New York, pp 355–376 Google Scholar. Nomcebo H, Lizzy M, Maggie N, Maurice S (2014) Inactivation of Escherichia coli using silver nanoparticles modified cation resin beads.