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A review on phytochemicals and their activities

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Zinc is a common element in human and natural environments and plays an important part in many biological processes. Zinc, which is defined as an essential trace element, or a micronutrient, is essential for the normal growth and the reproduction of all higher plants and animals and of humans. In addition, it plays a key role during physiological growth and fulfills an immune function. It is vital for the functionality of more than 300 enzymes, for the stabilization of DNA, and for gene expression. This review summarizes the role and manifestations of zinc in the environment and its importance for human health and metabolism, as well as its physiological role. Toxicity, teratogenicity, carcinogenicity and immunological functions of zinc are outlined with particular reference to the properties of zinc as an antioxidant, and its role in cancer prevention. Compared to adults, infants, children, adolescents, pregnant, and lactating women have increased requirements for zinc and thus, are at increased risk of zinc depletion. Zinc deficiency during growth periods results in growth failure. Epidermal, gastrointestinal, central nervous, immune, skeletal, and reproductive systems are the organs most affected clinically by zinc deficiency. Review on zinc biochemical and physiological functions, metabolism including, absorption, excretion, and homeostasis, zinc bio-availability (inhibitors and enhancers), human requirement, groups at high-risk, consequences and causes of zinc deficiency, evaluation of zinc status, and prevention strategies of zinc deficiency.

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