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Zinc deficiency

Essentiality of zinc for humans and its deficiency was recognized in 1963. During the past 50 years, it has become apparent that deficiency of zinc in humans is prevalent. Nutritional deficiency of zinc may affect nearly 2 billion subjects in the developing world. Consumption of cereal proteins high in phytate decreases the availability of zinc for absorption. Conditioned deficiency of zinc is also very common. Growth retardation, hypogonadism in males, rough skin, impaired immunity, neuro-sensory disorder and cognitive impairment are some of the clinical manifestations of zinc deficiency. Zinc is involved in many biochemical functions. Over 300 enzymes require zinc for their activation and nearly 2000 transcription factors require zinc for gene expression. Zinc is essential for cell mediated immunity. Zinc is a second messenger of immune cells and intracellular zinc in these cells participate in signaling events. Zinc is also an effective antioxidant and anti-inflammatory agent. In therapeutic dosages, zinc has been used for the treatment of acute diarrhea in infants and children, common cold, Wilson's disease, sickle cell disease and for prevention of blindness in patients with age related macular degeneration.

Biography

Ananda S Prasad has been at Wayne State University since 1963 when he took a position as Director of the Division of Hematology, a post he held until 1984 when he became the Director of the Division of Research. He has also been a Professor of Medicine at Wayne from 1968 until the present. He was appointed as Distinguished Professor of Medicine, Division of Hematology-Oncology in 2000. He is author of twelve books and over three hundred scientific articles. He has received many awards, which include Medal of Honor from the Mayor of Lyon, France, Honorary Doctorate from Claude Bernard University, France, election as corresponding member of The European Academy of Sciences, Arts and Humanities, and American College of Physicians' (ACP) highest award for outstanding work in science as related to Medicine. In 2010, he received the prestigious Mahidol Award from Royal Highness King of Thailand for his discovery of zinc as an essential element for human health. In 2011, he received a Congressional Commendation for his lifelong studies involving zinc as an element essential for human survival. In May of 2012, he received The Lawrence M. Weiner Award, honoring outstanding contributions of non-alumni to the School of Medicine through the exceptional performance of his research at Wayne State University. Most recently, The American College of Nutrition will honor him as a distinguished Professor of Internal Medicine, with its 2014 Alexander and Mildred Seelig Magnesium Award.

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