

ZINC DEFICIENCY IN DIABETES MELLITUS

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Diabetes mellitus represents a metabolic disorder with a variable incidence throughout the world. The treatment of diabetes mellitus includes dietary regimens, oral antidiabetic agents, and insulin. There is strong evidence that an abnormal metabolism of several micronutrients exists in diabetic individuals. Zinc is one of the essential micronutrients with an altered status and metabolism in this condition. Zinc plays a key role in the regulation of insulin production by the endocrine pancreatic tissue and in glucose utilization in muscles and adipose cells. Insulin synthesis and secretion, and also peripheral glucose oxidation are impaired in zinc deficiency. Zinc intestinal absorption rates and plasma zinc levels are reduced in diabetic patients. Zinc is involved in insulin receptor-initiated signal transduction mechanisms regulation and in insulin receptor synthesis.