

Vitamin D Deficiency in Type 1 Diabetes

Source: *Saudi Medical Journal*

Type 1 diabetes is a condition in which the pancreatic beta cells fail to secrete insulin. This is known as an absolute insulin deficiency, characterized by hyperglycemia and the breakdown of fats and protein in order to meet the energy demands of the body. The catabolism of fats and protein predisposes insulin dependent diabetics to an accumulation of ketone bodies and subsequent ketoacidosis. Insulin dependent diabetics require a continuous supply of insulin to prevent ketoacidosis and maintain a stable blood sugar concentration. Type 1 diabetes typically occurs in people younger than 30 years of age.

Vitamin D is known as the "sunshine" vitamin because it is formed in the body by the action of the sun's ultraviolet rays on the skin. The fat-soluble vitamin is converted in the kidneys to the hormone calcitriol, which is actually the most active form of vitamin D. The effects of this hormone are targeted at the intestines and bones. Vitamin D is important for growth and development of bones and teeth in infants and children. Vitamin D has been used in the treatment of rickets, psoriasis, osteoporosis, Crohn's disease, and has been found to reduce the incidence of breast cancer and type 1 diabetes.

A recently published study assessed the prevalence of vitamin D deficiency in children with type 1 diabetes. The study included 100 children with type 1 diabetes and 100 healthy control children. Researchers measured and compared serum levels of vitamin D, parathyroid hormone, calcium, phosphate and alkaline phosphatase in each of the participants. It was found that vitamin D levels were significantly lower in the children with type 1 diabetes compared with the control subjects. Overall, it was found that 84 percent of children with type 1 diabetes and 59 percent of the control children were vitamin D deficient. These results suggest that the prevalence of vitamin D deficiency is relatively high in children with type 1 diabetes and therefore screening for the deficiency appears to be warranted.¹

¹Bin-Abbas BS, Jabari MA, Issa SD, et al. Vitamin D levels in Saudi children with type 1 diabetes. *Saudi Med J.* Jun2011;32(6):589-92.