

Abstract

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High prevalence of vitamin D deficiency in children and adolescents with type 1 diabetes.

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BACKGROUND: Vitamin D is important for bone health. An inadequate supply of vitamin D to the body is associated with a higher fracture risk in the elderly. Young adults with type 1 diabetes are reported to have a lower peak bone mass than healthy individuals, which could possibly lead to an increased fracture risk in the future. The prevalence of vitamin D deficiency in healthy young people is high. Thus, optimal supply of vitamin D may be of particular importance for bone health in children with type 1 diabetes.

METHODS: In this prospective cross-sectional study we measured serum 25-hydroxy-vitamin D, iPTH, total and ionised calcium, phosphate, and alkaline phosphatase in 129 Swiss children and adolescents with type 1 diabetes.

RESULTS: Of the 129 subjects 78 (60.5%) were vitamin D deficient, defined as a 25-hydroxy-vitamin-D level below 50 nmol/L. During the winter this number rose to 84.1%. 25-hydroxy-vitamin-D levels showed marked seasonal fluctuations, whereas there was no correlation with diabetes control. Despite the high prevalence of vitamin D deficiency, we found a low prevalence of secondary hyperparathyroidism in vitamin D deficient diabetic children and adolescents.

CONCLUSIONS: Prevalence of vitamin D deficiency in diabetic children and adolescents is high. Therefore, screening for vitamin D deficiency and supplementation in children with low vitamin D levels may be considered.

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