

# Abstract

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## Bone metabolism in celiac disease.

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**OBJECTIVE:** To investigate the prevalence of both calcium metabolism alterations and bone defects in children with celiac disease (CD).

**STUDY DESIGN:** We studied 54 untreated patients with CD (mean age, 7 years). We compared the serum concentration of calcium, magnesium, 25(OH)vitamin D3, alkaline phosphatase, and parathyroid hormone (PTH) of patients with CD with those of 60 healthy children. Children with CD with 2 laboratory alterations underwent DEXA examination, which was evaluated after 6 months of a gluten-free diet (GFD).

**RESULTS:** The calcium and the 25(OH)vitamin D3 levels were lower in children with CD than in control subjects, and the PTH level was higher in children with CD than in control subjects ( $P < .001$ ). Hyperparathyroidism was found in 29 children with CD. Twenty patients tested positive for 2 laboratory alterations, and 10 of them were osteopenic. After 6 months of GFD calcium, 25(OH)vit.D3 and PTH levels normalized, with the improvement of bone mineral density.

**CONCLUSIONS:** Calcium metabolism defects are common in untreated children with CD, and they returned to normal after GFD. A detailed, time-consuming, and expensive study of bone metabolism is not necessary in children with CD shortly exposed to gluten who follow the GFD.

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