Metabolic safety of growth hormone in type 1 diabetes and idiopathic growth hormone deficiency.

To evaluate metabolic consequences of growth hormone (GH) treatment in children with type 1 diabetes. This study is an analysis of metabolic changes in 37 patients with childhood-onset GH deficiency and type 1 diabetes, documented in the Diabetes Patienten Verlaufsdocumentationsystem database. Main outcome measures were changes in hemoglobin A1c and daily insulin requirements during GH therapy in children with GH deficiency and type 1 diabetes compared with a large cohort of adolescents with type 1 diabetes. Thirty-seven patients with type 1 diabetes and a diagnosis of idiopathic GH deficiency after onset of diabetes were compared with 48,856 patients with type 1 diabetes. After adjustment for age, sex, duration of diabetes, and migration background, a significant difference in mean daily insulin requirement was seen between the 2 groups (1.0 IU/kg/day in subjects with GH deficiency and type 1 diabetes vs. 0.85 IU/kg/day in controls; P < .05). An increased daily insulin requirement should be considered in patients with type 1 diabetes treated with GH. With adequate adaptation of
insulin dosage, metabolic control is not impaired during GH treatment.