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Titel des Beitrags: Is islet autoimmunity related to insulin sensitivity or body weight in children of parents with type 1 diabetes?

Abstract: AIMS/HYPOTHESIS: It has been suggested that metabolic demand and insulin resistance play a role in the development of type 1 diabetes, including the onset of autoimmunity. The aim of the present study was to determine whether insulin demand is increased in children with islet autoantibodies. METHODS: BMI standard deviation score (BMI-SDS) was measured from 2 years of age in 1,650 prospectively followed children of mothers or fathers with type 1 diabetes, including 135 who developed persistent islet autoantibodies. HOMA of insulin resistance (HOMA-IR) was determined using fasting samples from 777 of the children starting from age 5 years. RESULTS: An increased HOMA-IR was associated with female sex (p = 0.0004), older age (p<0.0001) and increased BMI-SDS (p<0.0001). Children with islet autoantibodies did not have an increased HOMA-IR compared with age-matched islet autoantibody-negative children (age 8 years: mean 0.61 vs mean 0.72, respectively, p = 0.21; age 11 years: mean 0.96 vs mean 1.21, respectively, p = 0.07). Furthermore, after correction for age and sex, autoantibody positivity was associated with decreased HOMA-IR values (p = 0.01). BMI-SDS was similar between islet autoantibody-positive and -negative children at age 2 (mean 0.07 vs mean 0.16, respectively), 5 (mean 0.06 vs 0.08, respectively), 8 (mean 0.09 vs mean 0.02, respectively), and
11 years (mean 0.22 vs mean 0.16, respectively) and similar to that of national reference values.

CONCLUSIONS/INTERPRETATION: Islet autoantibody-positive children in the BABYDIAB cohort are not insulin resistant and do not have an increased BMI around and early after islet autoantibody seroconversion. These findings are inconsistent with the notion that insulin resistance is a risk factor for islet autoimmunity.