

COMMENTS AND RESPONSES

Response to Comment on: Jeffery et al. Age Before Stage: Insulin Resistance Rises Before the Onset of Puberty: A 9-Year Longitudinal Study (EarlyBird 26). Diabetes Care 2012;35:536–541

We thank Thukral et al. (1) for their interest in our article (2) and welcome the opportunity to respond. We are aware of the findings of Bavdekar et al. (3) who reported on Indian children studied at the age of 8 years in whom low birth weight was associated with insulin resistance. In our population of Caucasian children, the mean birth weight was 3.5 kg (SD 0.56), and only 5% weighed less than 2.5 kg at birth. This contrasts with the mean birth weight of 2.8 kg in the Indian children, of whom 35% had low birth weight. In the EarlyBird cohort, we found no correlation

between birth weight and insulin resistance at the onset of puberty ($r = 0.05$ and 0.03 in boys and girls, respectively). The thrifty hypotheses appear to have less relevance in healthy U.K. children who have not suffered gestational privation.

The EarlyBird study had a low attrition rate: at age 14 years, 235 children (76% of the cohort recruited at age 5 years) provided data. Of these 235 children, 187 (79.6%) had complete data every year from age 5 to 14 years (10 years). A further 27 children had data at 9 of the 10 years (total with at least 9 years' data, 91%). The advantage of using linear mixed-effects modeling lies in its ability to model data from all individuals despite some missing data points, provided these are missing at random. The approach is crucially important to the interpretation of longitudinal data. EarlyBird used the 1990 U.K. reference curves to calculate BMI standard deviation scores (4).

The point about adrenal hormones is important. Dehydroepiandrosterone sulfate rises abruptly from the age of 6–7 years and could account for the rise in insulin resistance from age 8 years. These hormones are currently being measured in a subset of EarlyBird children from age 5 to 14 years.

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