

Comparison of leptin levels, body composition and insulin sensitivity and secretion by OGTT in healthy, early pubertal girls born at either appropriate- or small-for-gestational age

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Background: Small for gestational age (SGA) has been associated with decreased insulin sensitivity (IS). A possible mechanism is the postnatal development of a metabolically disadvantageous body composition (BC). **Aim:** To determine whether there are differences between IS and BC in girls in early puberty who were SGA (birth weight < 10th percentile) or appropriate for gestational age (AGA, 10th-90th percentile). **Methods:** Age-matched (SGA/AGA) early pubertal girls (Tanner II) were recruited from local schools. We determined waist circumference (WC), the sum of four skinfolds (S4S), and per cent fat mass (fat %) by impedanciometry. Leptin and OGTT assays were performed. The insulinogenic index (I-In), HOMA-IR (homeostasis model assessment of insulin resistance) and WBISI (whole body insulin sensitivity) were calculated. **Results:** Median age (interquartile range) for 30 SGA and 35 AGA girls was 10.2 (1.1) vs. 9.8 (0.9), respectively (P = NS). BMI percentiles were 62.6 (56) vs. 67.4 (39); WC