Abstract

Objective: To evaluate body composition differences between children that were born small (SGA) or large for gestational age (LGA) compared with their counterparts born adequate for gestational age (AGA). Methods: Body composition was assessed in 124 healthy Caucasian children (50% girls) aged 6-10, classified according to their birth weight for gestational age as AGA, SGA and LGA. Fat mass (FM), percentage of FM, lean mass (LM), bone mineral content (BMC) and bone mineral density were measured by dual-energy X-ray absorptiometry (DXA) in the whole body and at different body regions. Results: LM (adjusted for age and sex) and total BMC (adjusted for age, sex and weight) were both significantly higher in LGA children and lower in SGA when compared with those born AGA. After adjustments for height, LM and BMC differences between groups were not significant. In SGA children, truncal (P < 0.05) and abdominal fatness (P < 0.01) were higher when compared with both AGA and LGA children, after adjustments for age, sex and height. There were no differences in the percentage of total and central FM between children born LGA and AGA. Conclusions: During childhood, children born SGA had higher central adiposity regardless of their body size. Children born LGA seem to have a higher body size but with harmonic body composition and adequate body fat distribution. Small size for gestational age at birth could programme excess abdominal fat deposition in children, which is a major factor for the clustering of cardiovascular disease risk factors defining the metabolic syndrome.

Keywords

Birth weight, Body composition, Body fat, Bone mineral content.