

# Differences in body composition and resting energy expenditure in childhood in preterm children born with very low birth weight

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**Background:** Rapid early ponderal growth is associated with adverse metabolic risks in young adults born at term. **Aim:** To determine whether there are differences in body composition, resting energy expenditure (REE) and metabolic variables between preterm children born with very low birth weight (VLBW) either appropriate (AGA) or small (SGA) for gestational age and whether these differences are related to an early period of weight gain. **Methods:** 67 VLBW preterm (40 AGA, 27 SGA). Body composition by DEXA, REE by indirect calorimetry and blood sampling at age  $6.7 \pm 0.5$  years.

**Results:** VLBW SGA children were lighter, shorter, had a lower waist and hip circumference, HDL cholesterol and lipid oxidation rates than their AGA counterparts (adjusted for age, sex and BMI).

Birth weight correlated negatively with total body and trunk fat mass. In a multivariate linear regression analysis, we found a positive association between weight gain in the first 3 months of life and total and trunk fat at