

ORIGINAL RESEARCH COMMUNICATION

# Infant feeding method and obesity: body mass index and dual-energy X-ray absorptiometry measurements at 9–10 y of age from the Avon Longitudinal Study of Parents and Children (ALSPAC)<sup>1,2,3</sup>

André M Toschke, Richard M Martin, Rüdiger von Kries, Jonathan Wells, George Davey Smith and Andrew R Ness

<sup>1</sup> From the Division of Health and Social Care Research, King's College London, United Kingdom (AMT); the Division of Pediatric Epidemiology, Institute of Social Pediatrics and Adolescent Medicine, Ludwig Maximilians University of Munich, Germany (AMT and RvK); the Department of Social Medicine, University of Bristol, United Kingdom (RMM, GDS, and ARN); and the Childhood Nutrition Research Centre, Institute of Child Health, London, United Kingdom (JW)

**Background:** Previous studies reported inconsistent associations between breastfeeding and body mass index (BMI; in kg/m<sup>2</sup>). Associations with body fatness are unknown.

**Objective:** We investigated the association of breastfeeding with fatness measured by dual-energy X-ray absorptiometry.

**Design:** The prospective cohort study involved 4325 singletons with measurements at 9–10 y of age to assess the main outcomes of BMI and total and trunk fat masses.

**Results:** Prevalence of any breastfeeding was 82%. In crude analyses, breastfeeding was inversely associated with total fat mass [% change per category increase (4 categories)] in breastfeeding duration (–4.4%; 95% CI: –3.1%, –5.6%) and trunk fat mass (–0.5%; 95% CI: –1.1%, 0.1%); the odds of adiposity were measured by total [odds ratio (OR): 0.81; 95% CI: 0.75, 0.88] and trunk (OR: 0.78; 95% CI: 0.71, 0.84) fat masses in the top decile. In adjusted models, the inverse association of breastfeeding with mean total fat mass was attenuated by 59% (% change per category increase in breastfeeding duration: –1.8%; 95% CI: –0.5%, –3.1%), but associations with trunk fat mass (% change per category increase in breastfeeding duration: –0.6%; 95% CI: 0.0%, –1.3%) and the ORs for total (0.76; 95% CI: 0.69, 0.84) and trunk (0.74; 95% CI: 0.67, 0.81) fat masses in the top decile were little altered. Children breastfed ≥6 mo had the lowest odds of total fat mass in the top decile (OR: 0.45; 95% CI: 0.33, 0.62). In multivariate models, there was little evidence that breastfeeding was associated with mean or threshold values of BMI.

**Conclusions:** The protective association of breastfeeding with mean total fat mass was attenuated somewhat after adjustment for confounders, which indicated that confounding may explain this association. Breastfeeding may protect against obesity if maintained for ≥6 mo.

**Key Words:** Avon Longitudinal Study of Parents and Children • ALSPAC • epidemiology • diet • prevention and control • energy metabolism • feeding behavior

*This Article*

- ▶ [Full Text](#)
- ▶ [Full Text \(PDF\)](#)
- ▶ [Purchase Article](#)
- ▶ [View Shopping Cart](#)
- ▶ [Alert me when this article is cited](#)
- ▶ [Alert me if a correction is posted](#)
- ▶ [Citation Map](#)

*Services*

- ▶ [Similar articles in this journal](#)
- ▶ [Similar articles in PubMed](#)
- ▶ [Alert me to new issues of the journal](#)
- ▶ [Download to citation manager](#)
- ▶ [Get Permissions](#)

*Citing Articles*

- ▶ [Citing Articles via HighWire](#)
- ▶ [Citing Articles via Google Scholar](#)

*Google Scholar*

- ▶ [Articles by Toschke, A. M](#)
- ▶ [Articles by Ness, A. R](#)
- ▶ [Search for Related Content](#)

*PubMed*

- ▶ [PubMed Citation](#)
- ▶ [Articles by Toschke, A. M](#)
- ▶ [Articles by Ness, A. R](#)

*Agricola*

- ▶ [Articles by Toschke, A. M](#)
- ▶ [Articles by Ness, A. R](#)

This article has been cited by other articles:



R. Carvalho, E. Johnson, M. Kozlosky, and A. O. Scheimann  
Clinical Profile of the Overweight Child in the New Millennium  
Clinical Pediatrics, June 1, 2008; 47(5): 476 - 482.

[\[Abstract\]](#) [\[PDF\]](#)



A. M Toschke, B. M Kurth, and R. von Kries  
The choice of cutoffs for obesity and the effect of those values on  
risk factor estimation  
Am. J. Clinical Nutrition, February 1, 2008; 87(2): 292 - 294.

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF\]](#)



S. D. Leary, A. R. Ness, G. D. Smith, C. Mattocks, K. Deere, S. N. Blair,  
and C. Riddoch  
Physical Activity and Blood Pressure in Childhood: Findings From a  
Population-Based Study  
Hypertension, January 1, 2008; 51(1): 92 - 98.

[\[Abstract\]](#) [\[Full Text\]](#) [\[PDF\]](#)