

EFFECT OF FEEDING MODE ON LONGITUDINAL BODY COMPOSITION IN EARLY LIFE

K.S. de Fluiter¹, I.A.L.P. van Beijsterveldt¹, D. Acton², A.C.S. Hokken-Koelega¹

¹ Erasmus University Medical Center, Department of pediatrics, subdivision of Endocrinology, Rotterdam, The Netherlands

² Nutricia Research, Utrecht, The Netherlands

CONCLUSIONS

- Longitudinal FM% is comparable for BF and FF infants from 1 to 24 months
- Visceral fat mass trajectories from 3 to 24 months tend to be higher in FF infants

Background

Excessive gain in fat mass (FM) during the first months of life, known as the critical window for adiposity programming, is associated with an increased risk for adiposity and cardiovascular diseases in later life. Early life nutrition (breastfeeding or formula feeding) might influence body composition (FM and fat-free mass (FFM)) development in early life.

Objective

To investigate differences in sex-specific longitudinal body composition from 1 month to 24 months between exclusively breastfed (BF; for 3 months) and formula fed (FF) infants.

Methods

In 219 exclusively BF (120 boys) and 112 exclusively FF (65 boys) term born infants from the Sophia Pluto Study Cohort, we measured:

- FM% by PEA POD (COSMED, Italy) at 1, 3 and 6 months.
- FM% by DXA (Lunar Prodigy, GE Healthcare, UK) at 24 months. DXA scans were analysed using enCORE software version 14.10.
- Abdominal (subcutaneous and visceral) fat mass were measured by ultrasound at 3, 6 and 24 months.

Body composition development trajectories were analysed using linear mixed model analyses.

Email: k.defluiter@erasmusmc.nl

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Results

Weight-for-length SDS and FM% trajectories during the first two years of life were not different between BF and FF infants ($p=0.55$ and 0.36 , resp.).

Girls had higher FM% compared to boys at all time points and boys a higher FFM (both $p<0.001$). FFM was significantly higher in BF compared to FF infants ($p=0.038$).

We found a tendency for higher visceral fat mass trajectories from 3 to 24 months in FF infants compared to BF infants ($p=0.091$). Subcutaneous fat mass trajectories were comparable between feeding groups ($p=0.519$).

