

EVOLUTION OF THE FAECAL LIPIDOME IN PRETERM NEONATES AND ITS ASSOCIATION WITH ECZEMA OR WHEEZE DEVELOPMENT - A LONGITUDINAL TWIN STUDY

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Poster

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A longitudinal study of preterm twins and triplets found that most siblings maintain similar faecal lipidome profiles in early life, but antibiotic use, nutrition, and birthweight drive lipidomic variation that correlates with eczema development.

KEY POINTS

- Among 24 preterm infants from 11 twin and triplet sets, only 4 sibling sets showed statistically significant differences in faecal lipidome profiles during the first 35 days of life, with most siblings maintaining similar profiles.
- Antibiotic use, nutrition, and birthweight each drove lipidomic variation, with 553, 763, and 626 metabolites respectively differing statistically across these environmental factors.
- Two microbial co-metabolic fatty acids (FA 15:0 and FA 17:0) statistically differentiated between twins, antibiotic use, nutrition, and eczema status at 2-4 years follow-up.
- At follow-up, 114 metabolites differed between eczema-positive and eczema-negative infants, and 84 metabolites differed for wheeze status, with 8 infants eczema-positive and 12 wheeze-positive.
- This study is relevant to researchers investigating early-life microbiome development, metabolomics, and allergic disease risk in preterm populations.

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