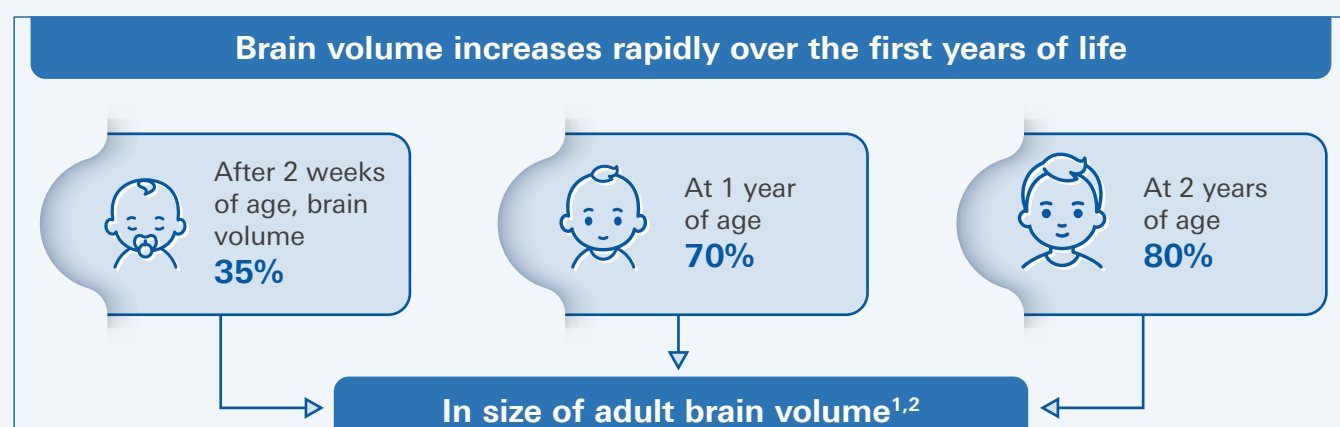


Can Early Life Nutrition Influence Myelination in Healthy Formula-Fed Infants?

Brain development is the fastest in the first years of life, including myelination, structural growth, and connectivity.¹

Brain volume increases rapidly over the first years of life



One of the hallmarks of neurodevelopment is myelination

Myelination supports brain connectivity and cognitive and behavioural development.³



Observational studies have identified KEY NUTRIENTS that may play a role in MYELINATION.³



To validate the role of the above-mentioned key nutrients, an **INTERVENTIONAL STUDY** was conducted.

FIRST-OF-ITS-KIND PAEDIATRIC NEUROIMAGING STUDY⁶

STUDY DESIGN

- ✓ Two-centre
- ✓ Double-blind
- ✓ Randomised
- ✓ Controlled
- ✓ 12-month intervention period
- ✓ 24-month follow-up

STUDY GROUPS

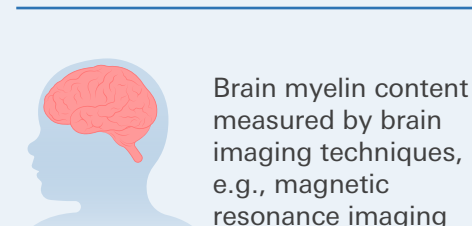
Infants were enrolled at a mean age of 30 days ± 1 week.



*The full analyses set comprises N=67 infants with N=35 in the investigational group and n=32 in the control group.

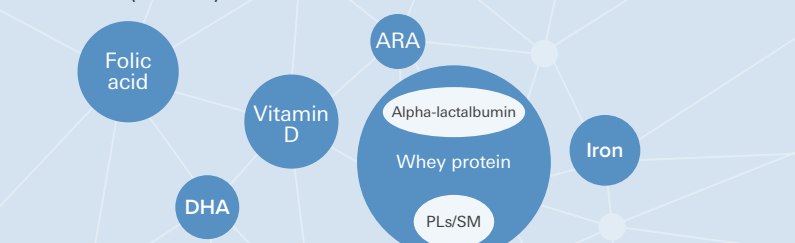
MAIN OUTCOMES

Brain myelin content



INTERVENTION

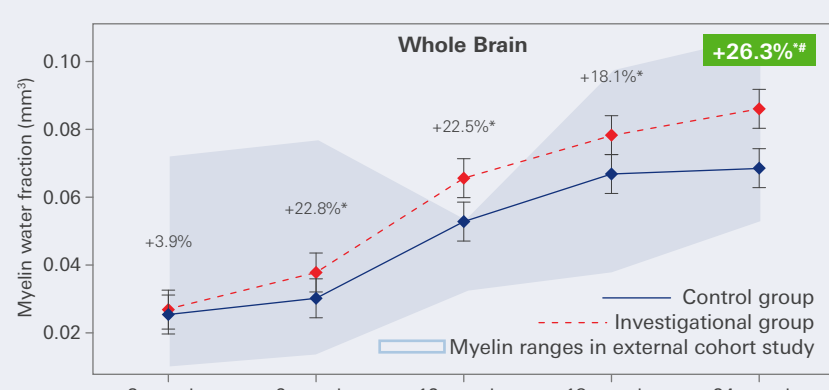
Formula containing higher levels of specific myelin-relevant nutrients (MRNs) vs. control:



The first result shows that a specific blend of MRNs enhances brain architecture by increasing myelination and grey matter volume.

1. Increased Whole Brain Myelin Content

Figure 1: Increased myelination up to 24 months of life.



*Statistically higher myelin for the investigational group compared to the control group.
*Significantly higher myelin in the investigational group compared to the breastfed group but within breastfed ranges.

The results show increased myelination in specific brain regions at 3, 6, 12, and up to 24 months involved in sensory, motor, and language functions.

2. Grey Matter Volume



The investigational group showed a significant increase in gray matter volume at 24 months, important for cognitive performance.

Figure 2: Significant increase in grey matter volume at 24 months.

3. Impact on Infant and Toddler Learning and Behaviours

A specific blend of MRNs increases sleep quality visible in markers such as reduced night awakenings and day sleep duration at 12 months, and enhancing SOCIABILITY BEHAVIOUR in novel social situations at 24 months.

Figure 3: Higher whole brain myelin levels linked to improved reduction in night awakenings and increased duration of day sleep.

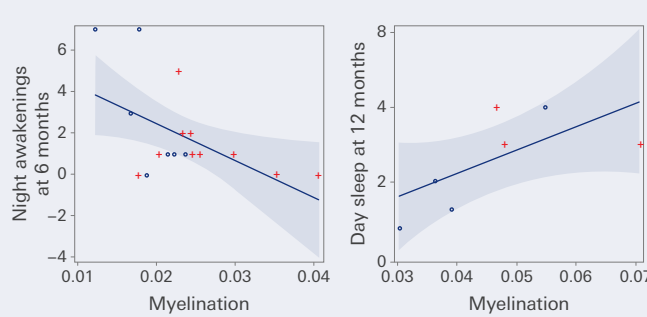
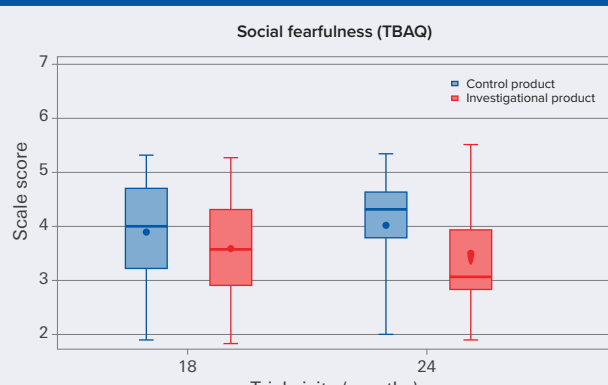


Figure 4: Decreased social fearfulness subscale of the Toddler Behaviour Assessment Questionnaire (TBAQ).



Key messages

- Scientific evidence demonstrates that early nutrition is a modifiable factor that influences myelination, a foundational process for learning abilities.³
- This study demonstrates that a formula supplemented with a unique myelin blend has a positive impact on myelination development in healthy term infants, which is important for future cognitive abilities.⁶

ARA: Arachidonic acid; DHA: Docosahexaenoic acid; PC: Phosphatidylcholine; PLs: Phospholipids; SM: Sphingomyelin.

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