

Can Growing-Up Milk Help Boost the Child's Key Nutrients for Growth and Development?



Pregnancy
270 days



Year 1
365 days



Year 2
365 days



2 years
365 days

270 days + 365 days + 365 days = 1000 days

Crucial period for proper growth and neurodevelopment^{1,2}



Receiving adequate nutrients is of the utmost importance^{1,2}



Toddlers may have inadequate intakes of key nutrients that support growth and neurodevelopment due to limited availability, low consumption rates, and lack of access to nutrient-rich foods.¹⁻³

Special Nutritional Needs of Toddlers

As toddlers experience increasing energy and nutrient demands, breastfeeding complemented with nutrient-dense family foods is recommended⁴



Cow's milk remains a significant component of toddler's diet.⁵



Can result in a deficit of essential nutrients, as cow's milk lacks sufficient quantities of vital elements like DHA and iron^{6,7}



May lead to developmental shortfalls, including lifelong impairments in brain function⁷

Toddlers' critical nutrients and milk types.⁸

Toddler

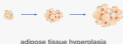
Whole cow's milk

- Calcium, phosphorous, and vitamin B group source
- Low levels of EPA, DHA, vitamin D, iron, and zinc
- Increases the risk of high protein intakes

Young child formula*

- Appropriated protein intake, balanced fatty acid profile
- Increases iron, zinc, and vitamin D intakes
- Decreases risk of iron and vitamin D deficiency

Early protein hypothesis



adipose tissue hyperplasia

Higher risk of iron deficiency and iron deficiency anaemia



Exclusive breastfeeding is recommended up to six months of age, with continued breastfeeding along with appropriate complementary foods up to 2 years of age or beyond.

*In some countries, Young Child Formula (YCF) is also referred to as Growing-Up Milk (GUM). Adapted from: Verduci E, et al. 2021.

Is Fortified Growing-Up Milk (GUM) a Solution?

A recent clinical trial showed that GUM with higher levels of DHA, choline, and lutein can enhance nutrient status, supporting growth in toddlers.⁹

Study Objective

Determine the effect of GUM on the biomarker levels of DHA, choline, and lutein, as well as measures of growth compared with cow's milk or no intervention.

Study Design

6-month dietary intervention trial

Study Participants

Included a total of 419 toddlers aged 18 months±2 weeks and their caregiver(s)

Intervention Groups



Group 1
Fortified GUM or standard GUM with varying DHA, choline, and lutein levels



Group 2
Cows' milk (COW)



Group 2
Non-intervention population (POP) consuming their usual diet

Main Outcomes



Red blood cell (RBC) DHA in percentage of total fatty acids plasma concentrations of choline and lutein

Study Results⁹

1. Impact of GUM on the status of iron, vitamin D, RBC DHA, lutein, and choline

- Toddlers receiving GUM after 6 months significantly showed higher levels of plasma ferritin, vitamin D, RBC DHA%, and plasma choline concentrations compared to those given COW and POP.
- At the study end, plasma lutein levels remained stable between GUM and COW or GUM and POP.

2. Impact of GUM on anthropometric measurements

Baseline

GUM and COW or GUM and POP had similar weight-for-length z-scores at baseline.



End-line

No difference in the end-line weight-for-length z-score between the different groups after adjustment for baseline and birthweight.

3. GUM impact on the nutrient intake of toddlers

After the 6-month intervention, energy-adjusted choline intake significantly decreased in the COW and POP groups ($p < 0.001$) compared to GUM group.



After adjusting for baseline nutrient intakes, both groups had similar end-line DHA and lutein intakes.



GUM promotes age-appropriate growth and helps maintain the proper nutrient status of essential nutrients for growth and brain development.

Key Takeaways

- ✓ Toddlerhood is a dynamic time of changes in eating patterns and associated nutrient intakes.
- ✓ Toddlers consuming GUM for 6 months, between the ages of 18 and 24 months, maintained their biomarker status of DHA and choline compared with toddlers consuming cow's milk or their habitual diet.
- ✓ GUM consumption has a protective effect on the biochemical status of DHA and choline.
- ✓ GUM may help to maintain nutrient status during a time of rapid growth and development.
- ✓ The giving of GUM to toddlers may help boost essential nutrients for growth and neurodevelopment.

COW: Cow's milk; DHA: Docosahexaenoic acid; EPA: Eicosapentaenoic acid; GUM: Growing-up milk; POP: Non-intervention population; RBC: Red blood cell.

References

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