

The GiraFFE Study™

Goat Infant Formula Feeding and Eczema Study

A large clinical study investigating if whole goat milk formula (WGF) can protect formula-fed infants from developing eczema*.

*Compared to standard whey-adjusted cow milk formula (CF)

Study objective

The primary objective of the study was to investigate the effect of WGF on cumulative incidence (new cases) of atopic dermatitis (AD, or eczema) in formula-fed infants up to 12 months of age compared to standard cow milk formula (CF).

Prevention vs. Treatment

Prevention: Avoiding development of a disease and its negative impact.

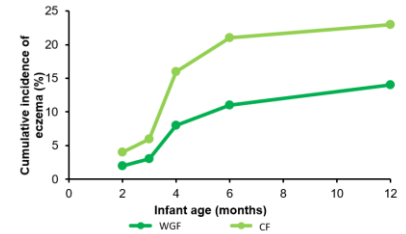
Treatment: Minimising symptoms or curing disease. Not all diseases can be cured – eczema cannot be cured.

Avoiding (i.e. preventing) development of eczema is the best way to avoid its significant, negative impact.

80% of eczema cases develop in infancy, making the first 12 months of life a unique window of opportunity.

Background

An earlier growth study found a trend of a **1/3 lower risk of eczema** in infants fed WGF vs CF. Together with findings from pre-clinical research, it seemed plausible that WGF may have a protective effect on AD.



Carpenter E, Prosser C. J Pediatr Gastroenterol Nutr 2017, p977-978.

THE GIRAFFE STUDY™ - METHODOLOGY

Study population

A total of **2,132 healthy, term infants** meeting key criteria were included – no preselection by risk (e.g. family history of AD/allergy).

The GiraFFE Study™ is the largest goat formula study, and **one of the largest infant formula studies.**



Healthy, term infants - no preselection by risk of atopic dermatitis



<3 months of age at enrolment



Already decided to formula-feed (to protect breastfeeding)



No AD, skin condition or cow milk intolerance/allergy

Study intervention

Infants were randomly assigned to receive either:



Whole goat milk formula (WGF)

Whole goat milk, no added whey, ~50% of fat from goat milk



Standard cow milk formula (CF)

Skim cow milk, added whey, ~95% of fat from vegetable oils

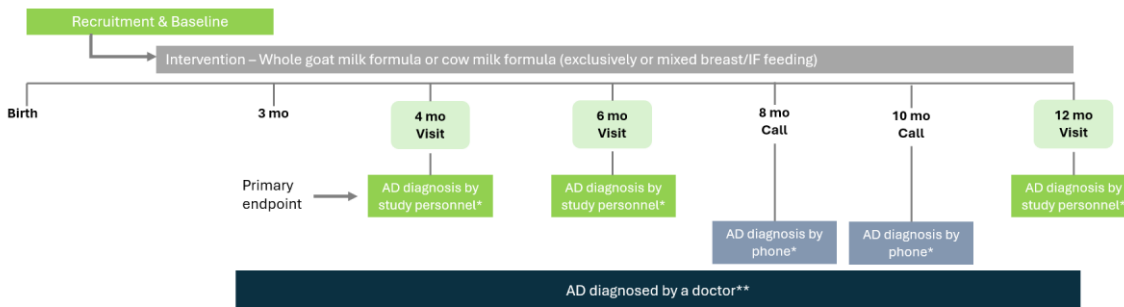
Study design

The GiraFFE Study™ used the most robust, gold-standard design in clinical research



- **Double-blind:** study participants and personnel do not know what treatment (formula) participants receive
- **Randomised:** participants are randomly allocated to a study group, ensuring study groups are similar
- **Controlled:** the intervention product (WGF) is compared to a comparator product (CF)

Study timeline – first 12 months



*Diagnosis based on objective but strict criteria by UK Working Party (UKWPP)

Other study endpoints:

AD up to 5 years, severity of AD, allergy prevalence, growth, digestive tolerance, sleep & wellbeing, microbiome, inflammatory markers, blood lipids & amino acids, metabolome, adverse events

UKWPP criteria for diagnosing AD

Standardised criteria for objective diagnosis across centres, modified use in infants.

Infants had to meet the following criteria to be diagnosed:

- Ever had an itch; **and**
- 3 of 4 additional criteria at study visit: ever had skin condition affecting cheeks, outer arms or legs; ever had dry skin; family history of AD/allergy/asthma; visible dermatitis.

Doctor-diagnosis of AD

- AD that was diagnosed by a doctor at any time.
- Relies on experience of a doctor, therefore is more subjective.
- Reflects real-world diagnosis.
- Any imprecisions due to subjective variations would be evenly spread across groups due to randomisation, therefore unlikely impacting outcomes.

Acknowledgements

- Led by Prof. Berthold Koletzko (Key Principal Investigator) & team at Ludwig Maximilians Universität (LMU), Munich
- 10 study sites across Spain (6) and Poland (4)
- Co-funded by DGC and the New Zealand Government

Reference

Grote V, et al. (2026). Whole Goat Milk versus Cow Milk Formula and Atopic Dermatitis in Infants: A Randomised Clinical Trial. Clinical Nutrition, *submitted*.

THE GIraFFE STUDY™ – KEY RESULTS

Atopic Dermatitis ALL INFANTS

- There was a **34% significantly lower risk of developing AD**, as diagnosed by a doctor at any time in the first 12 months, in infants who received WGF continuously* throughout the study**.
- There was a similar AD incidence between infants consuming WGF or CF when it was diagnosed at the 3 study visits (primary endpoint).

*Per protocol: study product continuously consumed (no interruption of study formula >3 days); no solid food before 4 months of age; **Compared to CF.

3 of 10

AD cases as diagnosed by a doctor can be prevented in formula-fed infants receiving WGF*.

*When consumed continuously up to age 12 months, compared to CF

Atopic Dermatitis HIGH-RISK INFANTS (parental history of AD)

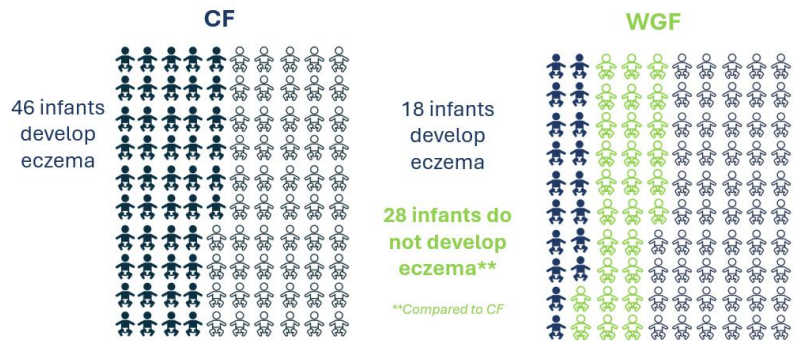
- A protective effect of WGF versus CF on **all AD outcomes** was observed among infants with parental history of AD.
- There was a **64% significantly lower risk of developing AD**, as diagnosed by a doctor at any time in the first 12 months, in infants who received WGF and had a family history of AD.
- The protective effect was **stronger in infants who consumed WGF continuously** throughout the study.

6 of 10

AD cases in high-risk, formula-fed infants can be prevented with WGF*.

*Compared to CF

Out of 100 formula-fed infants with family history of eczema*...



...over a period of one year.

*Diagnosed by any method

THE GIraFFE STUDY™ – OTHER RESULTS



Growth was similar between WGF and CF, confirming safety of WGF



AD severity in those diagnosed at the 3 study visits did not differ between WGF and CF.

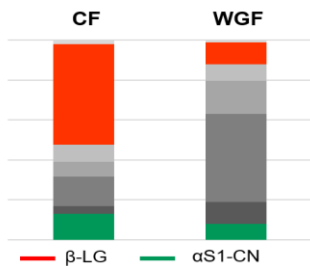


There was no difference in number of adverse events.

POSSIBLE MECHANISMS

Several key features of WGF from Dairy Goat Co-operative likely play an important role in preventing AD.

Lower in β-lactoglobulin, a key allergen not found in human milk, due to no added whey. WGF is also low in αS1-casein, another key allergen.



WGF proteins are digested more efficiently, further reducing allergenic potential.

~50% milk fat delivers beneficial lipids for skin integrity and reduced inflammation.

Animal studies show goat milk proteins are less allergenic and goat milk fat may play a role in eczema prevention.

Others being explored (e.g. gut microbiome)

THE GIraFFE STUDY™ RESULTS PUT IN CONTEXT

- 15-30% of children are affected by eczema – 80% develop it in infancy, making it a key window of opportunity.
- Eczema causes severe itching – itch is harder to control than pain
- Eczema not only affects the skin, it leads to sleep problems, mental health issues and can impact cognitive development.
- Eczema in early life often leads to food allergy, asthma and hay fever – preventing eczema can help prevent other atopic disease.
- The economic cost of eczema is significant – in Europe alone around €30bn per year.
- **Preventing eczema can have a profound positive impact.**

THE GIraFFE STUDY™ RESULTS AT A GLANCE

Risk reduction by group and diagnosis method

Atopic Dermatitis diagnosis	All Infants Intention-to-Treat	All Infants Per Protocol	High Risk Intention-to-Treat	High Risk Per Protocol
UKWP – Study Personnel (primary)	No effect	No effect	↓52% (trend)	↓76%**
UKWP total	No effect	No effect	↓53% (trend)	↓76%**
Doctor-diagnosed	↓21% (trend)	↓34%**	↓64%**	↓79%**
Any AD diagnosis	↓16% (trend)	↓25%*	↓61%**	↓75%**

*Significant (p<0.05), **Highly significant (p<0.01)

BREASTFEEDING IS THE BEST WAY TO FEED A BABY AND SHOULD ALWAYS BE THE FIRST CHOICE.

CONCLUSION:

WGF can reduce the incidence of AD in formula-fed infants in the first year of life, especially in presence of parental history of AD.