



# Probiotics in pregnancy and postpartum: Infant atopic eczema

## Intervention

Oral probiotics (containing only *Lactobacillus* species) taken by women during pregnancy and/or women and infants during the postpartum period.

## Indication

The gut of a healthy fetus is sterile. After delivery, the mother's gut flora colonises the infant's gut.

Infants at higher risk of atopic eczema, with the aim of preventing or reducing its incidence.

Higher risk is determined by a family history of allergic disease. There is a strong hereditary component to infant atopic eczema: if both parents have a history of eczema, the offspring risk is 60–80%.

Probiotics may reduce the relative incidence of atopic eczema by almost 80%. In trials, the favourable effect was similar across different periods of probiotic use (ie after delivery only or also during pregnancy), the receiver(s) of the probiotics (ie mother, child or both) and the duration of probiotic use.

Probiotics have several actions in the gut, including actively competing with pathogens for nutrition, making gut contents acidic, secreting local antimicrobial agents and enhancing specific and non-specific immune responses. The composition of gut flora may reduce allergies by driving maturation of the immune system.

## Precautions

Evidence suggests that probiotics are safe for the vast majority of people. Although there is little risk of sepsis, these agents should potentially be avoided in patients who are immunocompromised, severely debilitated, critically ill or postoperative.

## Adverse effects

Probiotics are safe in both pregnant women and infants, and are not associated with serious adverse effects.

Some people experience bloating and diarrhoea.

## Availability

Many different formulations of probiotics (capsules, powders, sachets) are available from supermarkets, pharmacies and health food stores. Products containing probiotics that are classed as foodstuffs (eg yoghurt) are not subjected to the same rigorous processes for labelling and listing as are applied to medicines.

Probiotics containing *Lactobacillus* species are widely available.



## Description

In medical trials, probiotic supplementation was generally started in the mother at 34–36 weeks of gestation and continued in the postpartum period until the baby was 3–6 months of age (or until weaned). Some of the infants in the trials were given probiotics mixed in breast milk or formula, either concurrently or independently of the mother taking probiotics.

*Lactobacillus* species (particularly *Lactobacillus rhamnosus* GG) are typically used, most commonly at a strength of  $2 \times 10^{10}$  CFUs (colony-forming units) daily. However, there does seem to be a moderate effect seen across all probiotics tested.

Probiotics may be taken alone or with food/fluid to manufacturer's directions.

## Training

Further information about allergy prevention in infants is available in the [ASCIA Guidelines](#).

## Grading

NHMRC Level I evidence.

## References

Doege K, Grajecki D, Zyriax BC, Detinkina E, Zu Eulenburg C, Buhling KJ. [Impact of maternal supplementation with probiotics during pregnancy on atopic eczema in childhood – a meta-analysis](#). *Br J Nutr* 2012;107:1–6.

Pelluchi C, Chatenoud L, Turati F, et al. [Probiotics supplementation during pregnancy or infancy for the prevention of atopic dermatitis: A meta-analysis](#). *Epidemiology* 2012;23(3):402–14.

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