



HOWARU[®] PROTECT EARLYLIFE

The safe and effective way to support the development of immune health in infants

Your daily challenge

Supports unborn child/infant's developing immune system during pregnancy

Proven as safe for mothers and infants (GRAS)

Available as ready-to-market products or in concentrate form

Clear, long-term clinical evidence

A top quality, clinically-studied probiotic to address developing infant microflora and immune system function

During pregnancy, a mother's nutrition is crucial for the development of child. Healthy maternal nutrition has been shown to have a positive influence on an infant's microbiota and immune health. Balanced development of the immune system is associated with life-long health.

Infant gastrointestinal microflora develops quickly after birth and is linked to development of the immune system. The first exposure for an infant takes place via the mother, who becomes a primary source of bacterial species found in the developing gut microbiota of the infant. Infant nutrition (breast feeding or formula feeding) provides further support for an infant's microbiota growth which continues to develop until 3 years of age. During this period development of infant microbiota helps drive the maturation of the immune system. The disruption of the development of the microbiota and immunity during this critical period has been linked with the development of allergies and eczema. The prevalence of eczema and allergies is increasing world-wide.



Early life, protected

Demand is growing for safe products with proven efficacy to support the immune health of infants. As part of the DuPont™ Danisco® premium ingredient range, HOWARU® Protect EarlyLife contains the probiotic strain *Lactobacillus rhamnosus* HN001™ and is designed specifically for pregnant women and children (0 to 2 years). It is proven to support the development of immune health in infants and children, whilst helping to meet this new burgeoning demand.

HOWARU® Protect EarlyLife – clear, long-term clinical evidence

A double-blind randomized placebo controlled clinical study was designed to test the efficacy of *L. rhamnosus* HN001™ on the prevalence of eczema and allergic sensitization. In total, 316 mothers and their infants were divided into placebo (n=159) and EarlyLife (n=157) groups. Pregnant mothers were supplemented daily from 5 weeks pre-term to 6 months post-term if breastfeeding. Infants were supplemented daily from birth until 2 years old. The probiotic was administered in capsules to mothers and as powder, powder diluted to milk, or sprinkled on top of the food to infants.

At the age-points of 2, 4 and 6 years the prevalence of eczema and allergic sensitization were determined by using clinical diagnosis and skin prick tests respectively (Wickens et al. 2008; Wickens et al. 2012; Wickens et al. 2013).

Results: Incidence of eczema

At the age of two years, the results demonstrated a significant reduction in the cumulative prevalence of eczema in the group supplemented with *L. rhamnosus* HN001™. By using clinical diagnosis criteria, the prevalence of eczema decreased by 49% (p=0.01) at 2 years of age and importantly the effect of *L. rhamnosus* HN001™ on decreasing the prevalence of eczema persisted until six years of age when the cumulative prevalence was found to be 44% lower (p=0.01). At the six year follow-up study it was found that supplementation with *L. rhamnosus* HN001™ decreased the cumulative prevalence of positive skin-prick tests by 31% (p=0.04). Furthermore, at 4 years of age the relative risk of rhinoconjunctivitis (rhinitis and red eyes) was found to be 62% less in the probiotic group (p=0.01).

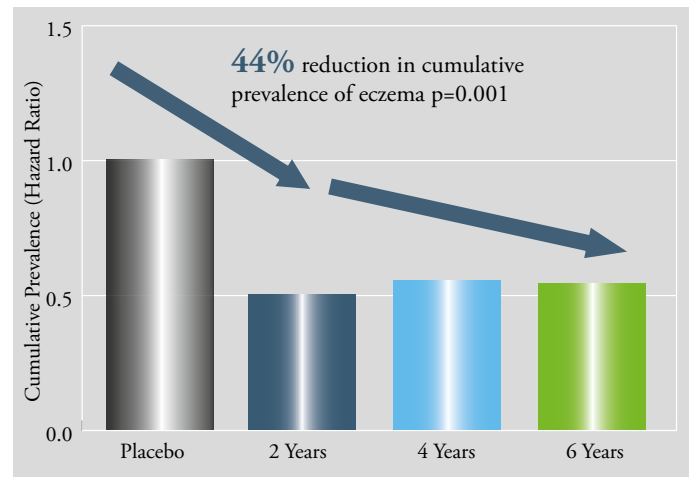


Figure 1. Cumulative prevalence of eczema. The children in *Lactobacillus rhamnosus* HN001™ group (blue bars) had a significantly lower cumulative prevalence of eczema at 2, 4 and 6 years of age compared with children in placebo group (black bar).

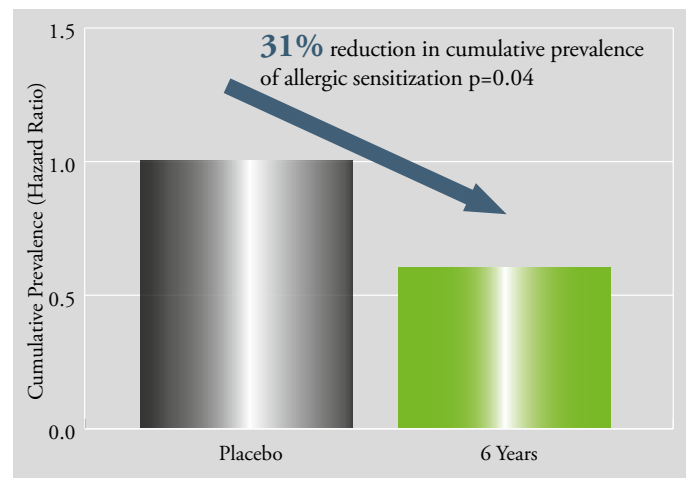
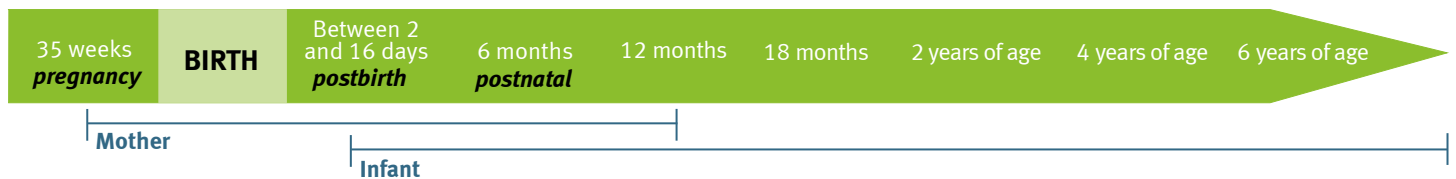


Figure 2. Cumulative prevalence of allergic sensitization. By using skin prick tests children in *Lactobacillus rhamnosus* HN001™ group (blue bar) had a significantly lower cumulative prevalence (Hazard Ratio 0.69; p=0.04) of allergic sensitization compared with children in placebo group (black bar).



Why choose HOWARU® Protect EarlyLife?

- Proven to support the development of immune health in infants
- Significant protective effect observed during first two years of life, a prolonged effect over six years and a unique long-term benefit promoting balanced immune health
- Proven as safe and well tolerated by mothers and infants
- Available in a range of formulations to facilitate daily consumption
- Proprietary stabilization techniques ensure that EarlyLife is in prime condition throughout shelf-life
- Strain is registered in China for incorporation into Paediatric Formula

Why choose DuPont?

- Leaders in probiotic science
- Unrivalled dietary supplement formulation expertise
- Global and regional applications expertise widely used by the food and beverage industries
- Robust regulatory support to help you comply with the requirements of local authorities
- Marketing support and industry insights to help you successfully position your products.

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