

van Hoffen *et al.*, A specific mixture of short-chain galacto-oligosaccharides and long-chain fructo-oligosaccharides induces a beneficial immunoglobulin profile in infants at high risk for allergy. *Allergy* 2008; doi: 10.1111/j.1398-9995.2008.01765.x

Background: It has been suggested that human breast milk oligosaccharides play a role in the development of the immune system in infants, and may consequently inhibit the onset of allergy. A specific prebiotic mixture of short-chain galacto-oligosaccharides and long-chain fructo-oligosaccharides (GOS/FOS) has been shown to reduce the incidence of atopic dermatitis (AD) at 6 months of age in infants at risk for allergy. **Aim of the study:** This study was aimed to analyze the effect of GOS/FOS on the immune response in these infants. **Methods:** In a double-blind randomized placebo-controlled study, infants received a hypoallergenic whey formula with either 8 g/l GOS/FOS in a 9 : 1 ratio (IMMUNOFORTISTM) or 8 g/l maltodextrine (placebo) for 6 months. At 3 months of age, children were vaccinated with Hexavac against a.o. diphtheria, tetanus, polio (DTP). At 6 months of age, plasma samples were collected from 84 infants (verum group n = 41, placebo group n = 43). Levels of total immunoglobulins (Ig) and of cow's milk protein (CMP-) and DTP-specific Ig were measured. **Results:** GOS/FOS supplementation led to a significant reduction in the plasma level of total IgE, IgG1, IgG2 and IgG3, whereas no effect on IgG4 was observed. CMP-specific IgG1 was significantly decreased. DTP-specific Ig levels were not affected. **Conclusions:** This study shows that GOS/FOS supplementation induces a beneficial antibody profile. GOS/FOS reduces the total Ig response and modulates the immune response towards CMP, while leaving the response to vaccination intact. This suggests that oral GOS/FOS supplementation is a safe method to restrain the atopic march.