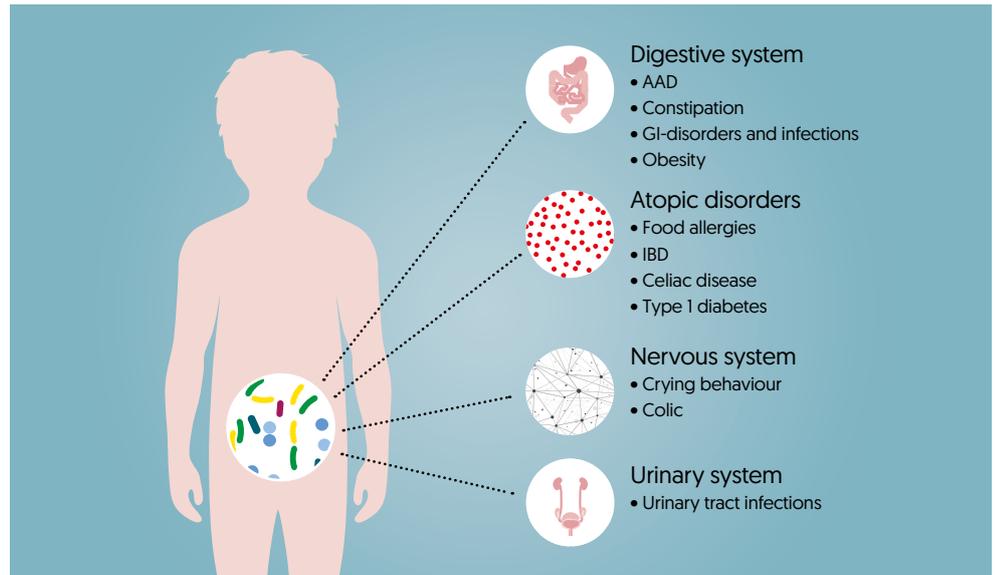


# Improving intestinal health of children

**The human gastro-intestinal (GI) tract harbours trillions of microbes, the so-called gut microbiota, which plays an essential role in infant and child health. Disturbances in the gut microbiota have been associated with a variety of health problems.**

The development of the microbiota already starts in utero and continues to evolve the first years of life<sup>1</sup>. During our lifetime the microbiota co-develops with our immune system. The establishment of a diverse and stable microbiota in early life is important to maintain health later in life.<sup>1,2</sup> Besides successful early life colonization, the microbial composition is largely influenced by environmental factors such as; antibiotic-use, unhealthy diet, household-setting, spoiled food or medical interventions.<sup>2,3,4</sup> Disturbances in the gut microbiota have been shown to affect the child's health and behaviour. Paediatric diseases known to be associated with gut-dysbiosis include; antibiotic associated diarrhoea, functional gastro-intestinal diseases, constipation, obesity,

Figure 1: Diseases linked to disturbances in the gut microbiota of children.



gastrointestinal infection, atopic disorders, [food] allergies, inflammatory bowel disease, celiac disease, type 1 diabetes and urinary tract infections.<sup>5</sup> Fortunately, as described in a report of the World Health Organisation (WHO), the

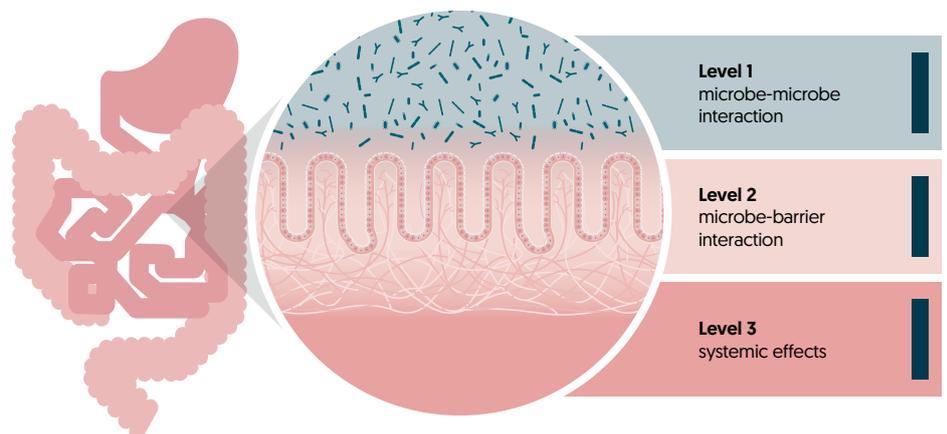
use of probiotics can be used as a therapeutic intervention to manage the microbial populations.<sup>6</sup> Probiotics can provide infants with the necessary beneficial microbes to restore the microbial balance and prevent diseases.

## Strain selection

Winlove Junior is a broad-spectrum, multispecies probiotic formulation developed for managing and maintaining the intestinal balance of children. The formulation contains 6 specially selected probiotic strains. Probiotic strains can exert health effects at different levels in the gut (see figure 2). The probiotic strains of Winlove Junior are active on all three levels. The strains have been screened for their capacity to:

- inhibit various pathogens such as; *C. difficile*, *E. coli*, *Salmonella*, *Shigella* and *P. agglomerans*
- improve the barrier function
- stimulate a less allergic response of the immune system by; inducing T- and B-cell proliferation, increasing IFN- $\gamma$  and IL-10 production and decreasing IL-5 and IgE production.

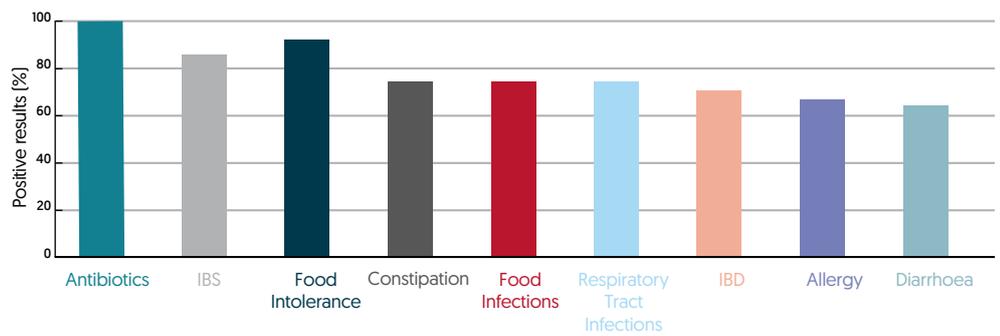
Figure 2: Probiotic strains can be active on three levels in the gut. The strains in Winlove Junior have been proven active at all three levels.



## Clinical evidence

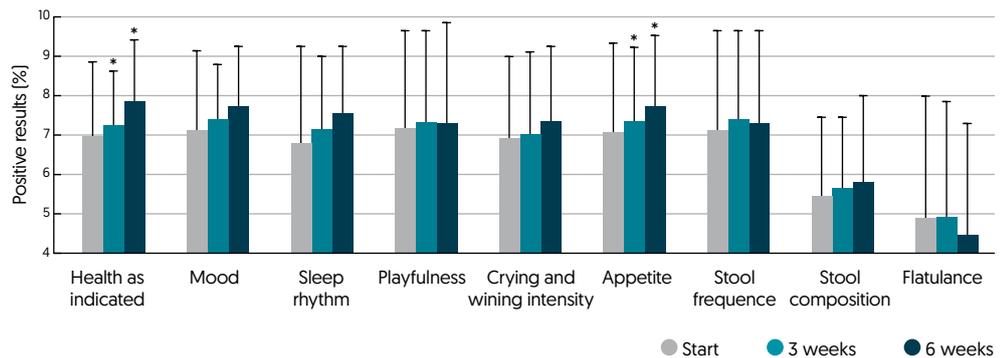
In a post-marketing study among therapists in the Netherlands it was investigated for which indications Winclove Junior is prescribed and how its use is experienced (positive/negative). The results of this survey are shown in figure 3. As can be seen in the graph, Winclove Junior is prescribed for many health problems and shows the most satisfying effect (100%) for use during antibiotic use. Also for the other indications, high satisfaction scores (60%-80%) were obtained (data not published).

Figure 3: Results of a post-marketing survey with Winclove Junior.



In addition, Winclove Junior has been studied in another post-marketing survey investigating the effect of Winclove Junior on children's health. 80 children in the age of 0.5 – 6 years old used the probiotic for 6 weeks. A general health questionnaire was filled out by their healthcare professional together with the parent(s). Results showed that Winclove Junior significantly increased health and improved appetite, see figure 4. The researchers reported no side-effects (data not published).

Figure 4: Results of a post-marketing survey with Winclove Junior. \* Significant effect.



## Formulation details

Indication	Broad-spectrum probiotic for improving the intestinal health of children.		
Colony forming units (CFU)	5 x 10 <sup>9</sup> CFU/gram.		
Bacterial strains	<i>B. lactis</i> W51 <i>B. lactis</i> W52	<i>L. acidophilus</i> W55 <i>L. casei</i> W56	<i>L. salivarius</i> W57 <i>L. lactis</i> W58
PROBIOACT® Technology	Protective and nutritional ingredients that improve the stability of the formulation, GI survival and metabolic activity of the bacteria.		
Recommended daily dosage	Variable.		
Treatment period	For as long as desired/needed.		
Storage and stability	2 years stable at room temperature, no refrigeration needed.		
Available dosage forms	Dry powder which can be supplied as bulk or sachets, fully packed (with your design).		
Safety and Quality Profile	All probiotic strains have the Qualified Presumption of Safety (QPS) status. <sup>7</sup> Winclove is a NSF International Certified GMP Facility for manufacturing dietary supplements and is ISO 22000:2005 certified for the development and production of pre- and probiotics.		
Marketing	Private label.		

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This information is intended for business professionals only, not for consumers. The formulations contained herein are concepts, not commercially available and not intended to diagnose, cure or prevent any diseases.

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