

## Clinical Evidence for the Use of *Lactobacillus reuteri*

**Chai PF**

Department of Paediatric, Pantai Hospital Kuala Lumpur

### ABSTRACT

The human gastrointestinal tract is home to 100 trillion microbes from around 1200 species of bacteria. This microbial community is collectively known as the intestinal microbiota or gut flora. A healthy microbiota is made up of 85% commensal bacteria and 15% pathogenic bacteria. When this balance is disturbed, gastrointestinal problems may occur. Probiotics are live microorganisms, such as yeasts and bacteria, that confer health benefits to the host when consumed in sufficient amounts. *Lactobacillus reuteri* is a naturally-occurring commensal probiotic derived from human breast milk. It is one of the most abundant indigenous species to reside in the human gastrointestinal tract, and can be found in the stomach and small intestines. It is also naturally present in a variety of food, such as meats, dairy and fermented products. *Lactobacillus reuteri* DSM 17938 is a specific probiotic strain isolated from breast milk. This strain has been shown to possess anti-inflammatory properties, and can be safely consumed at 10<sup>8</sup> colony-forming units (CFU) or 100 million bacteria cells per day without complications. There is growing evidence that *Lactobacillus reuteri* DSM 17938 is effective for the prevention and treatment of various gastrointestinal problems in children, such as infantile colic, constipation, regurgitation, acute diarrhea and necrotising enterocolitis in preterm infants. Extensive studies on *Lactobacillus reuteri* DSM 17938 have demonstrated its potential benefits for the prevention and treatment of infantile colic and managing the functional constipation among children by increasing the frequency of daily bowel movements as well as in improving bowel consistency and hence, reduced abdominal pain and flatulence. Studies show that *Lactobacillus reuteri* DSM 17938 can be safely consumed by infants and children at a dose of 10<sup>8</sup> CFU daily. *Lactobacillus reuteri* DSM 17938 is well-tolerated and is not associated with any side effects.

### KEY WORDS:

*Lactobacillus reuteri* DSM17938, infantile colic, functional constipation

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## Key Nutrients for Growth and Cognitive Development in Children

**Khor GL**

Department of Nutrition and Dietetics, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Serdang

### ABSTRACT

Malnutrition in children is a major public health problem that contributes to the global burden of disease. Serious nutrition deprivation during infancy not only leads to poor physical growth but also adversely affects the development of cognitive, motor and socio-emotional skills throughout childhood. Several nutrients are responsible for optimal growth and normal neurodevelopment in children. Focus of this presentation will be on iron, iodine, zinc, calcium and vitamin D. Iron deficiency is the most common micronutrient deficiency globally, affecting more than 30% of the world's population. Iron is critical for optimal growth and iron deficiency in early childhood is linked to multiple neuro impairment including poor cognitive function, motor skills and attention problems. Iodine is primarily involved in the synthesis of thyroid hormone, which is essential for regulation of growth and development. Severe iodine deficiency leads to a spectrum of disorders including cretinism and impaired mental function. In being an essential mineral in the activity of over 200 enzymes, zinc is required for normal growth and protection against infections. Available evidence however does not support zinc supplementation in improving cognitive development. The importance for growth of calcium and vitamin D is well established. While calcium is needed primarily for the formation and maintenance of the structure and rigidity of the skeleton, vitamin D provides a supporting role by maintaining serum calcium and phosphorus levels for bone mineralisation and other major metabolic functions. Through their roles in the growth of the skeleton, both calcium and vitamin D are essential during childhood and adolescence. Implications of dietary intake recommendations and consumption status of these key nutrients will be discussed.

### KEY WORDS:

*Nutrients, Growth, Mental Development, Children*