

PRESCRIPTIONS FOR PARENTS -

MAKING SCIENTIFIC RESEARCH PRACTICAL FOR FAMILIES



PROBIOTICS

Probiotics, prebiotics, and other biologicals are being investigated around the world as a way of preventing disease as well as a method of treatment. "Probiotic" comes from the Greek language meaning "for life". The World Health Organization defines probiotics as "live microorganisms which when administered in adequate amounts confer a health benefit on the host."

Prebiotics are supplements that the host cannot digest but are able to exert beneficial effects by selectively stimulating the growth or activity of bacteria that are present in the intestinal tract.

The research in this area is often difficult to generalize or apply practically as there are many different bacterial organisms that are used in the research - and they are used in varying dosages. However, no large study has demonstrated any adverse or negative effects of the use of probiotics when given to healthy children and adults.

This newsletter will present some of the research documenting the benefits of probiotics to help you make informed decisions for your family.



INFANTS and TODDLERS -

NEC, Crying, Diarrhea,



PRESCHOOLERS -

Upper respiratory symptoms and



ELEMENTARY - obesity, diabetes, ulcers, irritable bowel syndrome



ADOLESCENTS - and ADULTS (and children) -

Atopic Dermatitis (Eczema)

For premature infants: These small infants are often at risk for a serious medical condition called necrotizing enterocolitis that may require surgical treatment. Studies now show that infants receiving probiotics in the intensive care nursery setting have a lower risk of this disease.

Lin, HC, et al. "Oral Probiotics Reduce the Incidence and Severity of Necrotizing Enterocolitis in Very Low Birth Weight Infants." Pediatrics 2005; 115:1 - 4.

For term infants: Studies are also demonstrating that young infants (1-3 months of age) may have less crying if they or their breastfeeding mothers receive probiotics.

Anabrees J. Probiotics for the management of infantile colic in breastfed infants. J Clin Neonatol 2013;2:9-11

Szajewska H, et al. Lactobacillus reuteri SMT 17938 for the management of infantile colic..." J Pediatrics 2013; 162:257-62

In a study from Israel, infants age 4 - 10 months of age in child care centers were randomly assigned to receive formula with or without probiotics. Infants receiving formula with probiotics had fewer number of diarrheal illnesses and illness was of shorter duration.

Weizman Z, et al. "Effect

influenza; diarrhea

A study from China was performed in 3 day care centers. Children (ages 3 - 5 years) in one center received no probiotics; in one center they received low dose probiotics; in one center the children received high dose probiotics. The children receiving the higher dose probiotics had less influenza illness; while those receiving no probiotics had the highest incidence of illness.

Leyer GJ, et al. "Probiotic Effects on Cold and Influenza-Like Symptom Incidence and Duration in Children" Pediatrics 2009; 124:3172-179

The Cochrane Database Systematic Review evaluated the use of probiotics to prevent infections causing diarrhea in infants and children. 56 studies showed clear beneficial effects in shortening the duration of diarrhea and reducing the frequency of stools.

Allen SJ, et al. "Probiotics for treating acute infectious diarrhea" Cochrane Database Sys Rev 2011; Sep 7; (9)

There is some evidence that probiotics can help in the treatment or prevention of obesity and diabetes.

Hypocaloric diet supplemented with probiotic cheese improves body mass index and blood pressure indices of obese hypertensive patients - a randoized double-blind placebo-controlled pilot study. Sharafeddin, KK et al Nutrition Journal 2013, 12:138 doi:10.1186/1475-2891-12-138

Probiotics have been used to treat the infection Helicobacter pylori which can cause gastritis and ulcers. A randomized trial in children showed that the probiotic supplemented group responded better to treatment than did the placebo group.

Sykora J, et al. Effects of a specially designed fermented milk product containing probiotic..." J Clin Gastroenterology. 2005; 39(8):692-698.

One study evaluates the use of probiotics in treating children with irritable bowel syndrome. Lactobacillus reduced abdominal distension and discomfort in 50 children over a 6 week period of study.

Bausserman M, Michail S. The use of Lactobacillus GG in irritable bowel syndrome in children: a double blind randomized control trial. J Pediatrics 2005;147(2):197-201.

Clostridium difficile infections after antibiotic use, chronic ulcerative colitis

The Cochrane Database Systematic Review evaluated the efficacy of using probiotics to prevent a serious bacterial diarrheal illness that occurs in children and adults as a consequence of antibiotic use. Clostridium difficile, often abbreviated C diff, occurs when the normal bacteria that live in the gastrointestinal tract are killed due to ingestion of antibiotics. This environment allows the C diff bacteria to overpopulate the GI tract, causing serious diarrhea that may lead to death.

A review of 23 studies including 4213 patients concluded that probiotics are safe and effectively prevent C diff diarrhea.

Goldenberg JZ, et al. "Probiotics for the prevention of Clostridium difficile-associated diarrhea in adults and children" Cochrane Database Syst Rev. 2013; May 31; 5

Several studies have evaluated the use of probiotics in adults with ulcerative colitis and one study in 29 children showed those who were randomly assigned to probiotics had promising results.

Miele E, et al. "Effect of a probiotic preparation (VSL#3) on induction and maintenance of remission in children with ulcerative colitis" Am J Gastroenterology.

*of a Probiotic Infant
Formula on Infections in
Child Care Centers:
Comparison of Two
Probiotic Agents"*
*Pediatrics 2005; 115: 5 -
9*

Studies are also demonstrating the beneficial effects of probiotics in children who have atopic dermatitis (eczema). 53 children in Australia who were randomized to receive probiotics versus placebo were followed for 16 weeks. Children receiving probiotics had more improvement than those children receiving placebo.

Weston S, et al. "Effects of probiotics on atopic dermatitis: a randomised controlled trial" Arch Dis Child 2005; 90:892 - 897.

Probiotics were given to pregnant women at risk for atopic dermatitis. Their children had 1/2 the risk of developing atopic dermatitis versus those whose mothers received placebo.

*Kalliomaki M, et a.
"Probiotics in primary prevention of atopic disease: a randomised placebo-controlled trial. Lancet 2001; 357:1076-9.*

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