

Supplement Sampler

Probiotics, Atopy and Colic

Mechanism of Action

Probiotics are bacteria that enhance the health of the host. *Prebiotics* are foods (Oligosaccharides) that these bacteria need to grow. *Synbiotics* are nutritional supplements that contain both Pre and Probiotics.

Probiotics are a hot area of research. We are beginning to understand the importance of developing a healthy ecosystem within the newborns' intestinal track that may influence their long-term health. A baby is born with a sterile GI tract and it becomes inoculated as it passes through the birth canal (dominant bacteria: Lactobacillus. Labia=Lactobacillus©) and when it feeds from the breast (dominant bacteria: Bifidobacteria, Breast=Bifidobacter©). We are seeing a rise in childhood atopy which may have something to do with the type of environment we expose the neonate to at the time of birth. With the growing C/S rate and use of perinatal antibiotics, the neonatal gut is not always exposed to these "healthy" bacteria. If this hypothesis is true, we can set the stage for atopy if a child is born via a sterile environment (C/S), gets perinatal antibiotics for GBS (reduces lactobacillus in the vagina) and is bottle fed (decrease in exposure to Bifidobacter). Three strikes and infants may be on the road to itchy skin and abdominal pain...see below for the research!

Best Studies

Atopy: 132 mothers and newborns with a family history of atopy were treated with *Lactobacillus GG* or placebo two weeks prior to delivery (Mothers) and 6 mths after delivery (infants). There was a 50% reduction in atopic dermatitis in the probiotic group (15/64=23%) compared to the placebo group (31/68=46%) at one year of age. (Kalliomaki, *Lancet*. 2001;357:1057-1059). A follow-up study showed this benefit lasted up to 4 years of age. (Kalliomaki, *Lancet*. 2003; 361(9372):1869-1871.

Colic: 90 breast fed infants were randomized to *Lactobacillus reuteri* supplement at a dose of 1×10^8 live bacteria daily or simethicone, 60 mg/d for 28 days. During this time, parents were taught to monitor frequency of crying episodes (colic). After one month there was a total of 51 minutes/day of crying in the *L.reuteri* group compared to 145 minutes/day in the simethicone group. That's 90 minutes less of colicky crying a day, a plus for any set of sleep deprived parents. (Savino, *Pediatrics*. 2007;119(1):e124-e130)

Dosage

This is a challenge due to the wide variety of studies and products. Research of both infants and adults (IBS) show an average benefit of 1×10^8 (100 million) to 1×10^9 (1 billion) Colony Forming Units (CFUs) a day, often divided into BID dosing.

Products

There are a bunch of products out there that are riddled with poor colony stability and questions regarding their ability to colonize the GI tract with live cultures. Look for expiration dates and in general avoid products that say "No refrigeration necessary" since these generally have a life span of less than 6



Probiotics, Atopy and Colic

months. Stick with the refrigerated products. Two companies that we trust are Floragen 3 (made here in Madison, WI) and Theralac (www.theralac.com). The former has the benefit of buying local with more assurance of a fresh product. The later is known for excellent quality with each bottle being able to be tracked back to its place and time of production). Unlike B-vitamins, which are really inexpensive to make, don't buy the cheapest probiotic. With these products, you generally get what you pay for. (See our patient handout on probiotics for more information and other brands).

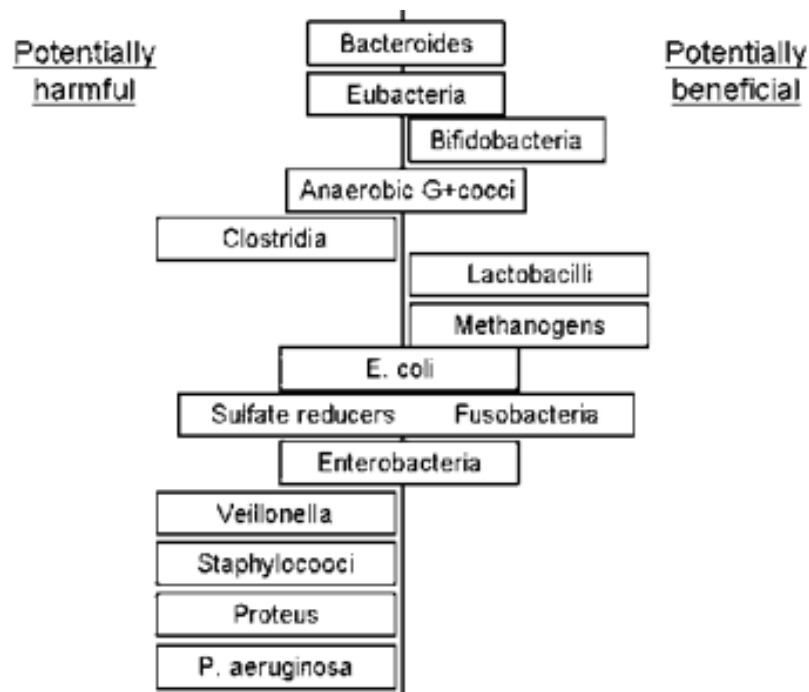
Precautions

These products are consistently safe. Theoretically you should use caution in any immunocompromised host.

Common Sense

The goal is to live life so you don't need these products: hopefully moms will be able to eat a well balanced diet that includes some fermented products such as yogurt prior to a vaginal delivery followed by breast feeding and lots of lovin'! But if this isn't always possible, the child may benefit from probiotic along with the lovin'!

For other *Supplement Samplers*, check out; www.fammed.wisc.edu/integrative and click on "teaching modules and patient handouts."



Brought to you by your colleagues in the UW Department of Family Medicine Integrative Medicine Program.

Date created: November 2007