

Santé!

Holistic Health News from Dr. Sarah Cimperman

July 2007

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"You can have plenty to eat and still have poor nutrition. It's a matter of quality versus quantity."

Christiaan Barnard, MD

Probiotics For Better Health

The gastrointestinal tract is a complex ecosystem and microorganisms are essential. Experts have estimated that the human body contains more bacterial cells than human cells, so it's no wonder that intestinal flora can have important impacts on health. The balance of microorganisms in the gastrointestinal tract can be influenced by age, diet, antibiotic use and stress. When the delicate balance is disturbed, disease and dysfunction often follow. Fortunately, as recent research studies show, supplementing healthy flora can reestablish microbial balance and improve many health conditions.

Probiotic Basics

Probiotics are beneficial live microorganisms naturally present in the human gastrointestinal tract. They can be taken as a dietary supplement in capsule, tablet or powder form, but certain foods, such as yogurt, kefir and miso contain these organisms as well.

Probiotics generally come from two groups of bacteria, *Lactobacillus* and *Bifidobacterium*, and one species of yeast, *Saccharomyces boulardii*. Each bacterial group has several species, such as *Lactobacillus acidophilus* and *Bifidobacterium bifidis*, and within each species exist several strains. Probiotics are generally safe and well tolerated. Side effects are rare and usually limited to mild digestive disturbances such as gas and bloating.

Anti-microbial Effects

Probiotics prevent pathogenic (disease-causing) microbes such as parasites, fungi, yeasts and bacteria from attaching to the wall of the intestines. They also produce bacteriocins, proteins that are lethal to unfriendly bacteria, and compounds such as lactic acid, acetic acid, hydrogen peroxide that maintain a pH that is unfavorable for many pathogenic microorganisms.

Not only are probiotics useful for preventing and treating gastrointestinal infections, but they are also effective against diarrhea and other infections. Probiotics can improve symptoms of antibiotic-induced diarrhea, radiotherapy-induced diarrhea, irritable bowel syndrome, sinus infections, urinary tract infections, bacterial vaginosis and yeast infections in women. Continued use of probiotics can also prevent recurrences.

Anti-allergy and Anti-inflammatory Effects

Researchers in Finland have demonstrated the benefit of probiotic supplementation in the prevention and treatment of allergic inflammation. In a double-blind, randomized, placebo-controlled study, twenty-seven breast-fed infants diagnosed with atopic eczema were weaned to whey formulas with or without probiotics, specifically *Bifidobacterium lactis* or *Lactobacillus rhamnosus GG*. The infants who were given either strain of probiotics experienced great improvements in their skin conditions compared to the placebo group. Another Finnish study followed more than one hundred four year old children and concluded that those who were given *Lactobacillus rhamnosus GG* during the first two years of life had the lowest rates of eczema.

The use of probiotics in other inflammatory conditions, such as Crohn's disease and ulcerative colitis, is under investigation. A small study in Italy followed twenty-four patients with Crohn's disease and found that after four weeks of supplementation with *Saccharomyces boulardii*, seventeen of them went into remission. Overall, studies have had mixed results, but the research continues.

Immune System Support

Supplementation with probiotics has been associated with increased immunity and resistance to cancer and infection. Studies on animals and humans have demonstrated that lactic acid bacteria like *Lactobacillus acidophilus* and *Bifidobacterium lactis* can increase levels of white blood cells and immune factors, such as antibodies, cytokines and interferon, which modulate the immune system. Additionally, *Bifidobacterium lactis* has also been shown to enhance activity of natural killer cells.

Clinical trials have tested the effectiveness of probiotics on certain immune-related diseases, including cancer. A double-blind, randomized, placebo-controlled study in Ireland followed eighty patients for twelve weeks. Some had been diagnosed with colon cancer and others had undergone surgery for removal of intestinal polyps. Those who were given probiotic strains *Lactobacillus rhamnosus GG* and *Bifidobacterium lactis* reduced their risk of development and recurrence of colorectal cancer.

Benefits for Babies

Probiotics have benefits for babies too. Supplementation can reduce risk of diarrhea in infants, especially rotavirus gastroenteritis. *Lactobacillus rhamnosus GG* has been shown to decrease incidence of cavities in children. Preliminary trials also suggest that

supplementation with *Lactobacillus rhamnosus GG* may reduce frequency of respiratory tract infections as well as related antibiotic treatments and absences from school. Additionally, there is evidence that preterm infants and babies with low birth weight may benefit from supplementation with *Saccharomyces boulardii*. This yeast inhibits colonization by pathogenic *Candida* species and promotes a balance of stool flora similar to that of breast-fed babies.

Supplement Standards

Talk to your doctor before taking any new medication or supplement, including probiotics. She or he can recommend the best strains of microorganisms for your condition, as well as an appropriate dosage. Some probiotic supplements also contain prebiotics, which are complex sugars such as inulin, lactulose or fructo-oligosaccharides (FOS) that stimulate growth of beneficial bacteria. In some individuals, FOS can cause gas and bloating. Prebiotics can also be supplied by the diet. Food sources include garlic, onions and fermented foods such as miso, tempeh, kefir and kombucha.

Choose carefully when selecting probiotic supplements. Unless otherwise indicated, most probiotics need to be refrigerated to maintain viable and stable live cultures. Buy products that have been kept cool and store them in the fridge when you get home. The label should list all ingredients and each serving should contain at least one billion colony-forming units (CFU). A lot or batch number should also be listed, along with the name and address of the manufacturer. Most importantly, buy supplements that are GMP-certified by the National Nutritional Foods Association. The NNFA has outlined guidelines for good manufacturing practices (GMP) regarding the design, manufacture, packaging, and labeling of dietary supplements sold in the United States and certification guarantees that the products contain what they are labeled to contain.

Blueberries and Colon Cancer

Researchers in Georgia studied the anti-cancer effects of blueberries in vitro. They examined compounds extracted from blueberries, including phenolic acids, tannins, flavonols, and anthocyanins. All compounds inhibited the proliferation of cancer cells, and anthocyanins also induced cell death (apoptosis). Researchers concluded that blueberries may reduce the risk of colon cancer.

Yi W et al. Phenolic compounds in blueberries can inhibit colon cancer cell proliferation and induce apoptosis. *Journal of agricultural food and chemistry*, 53(18):7320-9, Sept 2005.

Researchers at Rutgers University in New Jersey studied the anti-cancer effects of a constituent in blueberries in animals. They added pterostilbene to the diet of animals exposed to cancer-causing substance and found that the formation of precancerous growths in the colon was reduced. The researchers also confirmed the results with in vitro studies of human cancer cells.

Suh N et al. Pterostilbene, an active constituent of blueberries, suppresses aberrant crypt foci formation in the azoxymethane-induced colon carcinogenesis model in rats. *Clinical cancer research*, 13(1):350-5, Jan 2007.

Ask the Doc: Interval Training for More Efficient Workouts

I have a new job and less time to work out. I would rather shorten my time at the gym than skip it altogether. How can I make my workouts more efficient?

Alex
New York City

First of all, let me say that doing something is always doing better than nothing. Even if you have to cut your workouts down to once or twice a week, the exercise will keep your muscles and joints in shape in the interim so your body will be ready to resume your regular routine as soon as your schedule can handle it.

Interval training is a great way to make exercise routines shorter and more efficient. There are other benefits too, like burning more calories, increasing endurance, and staying focused. Recent research has confirmed that interval training also causes the body to burn more fat.*

The basic idea of interval training is to alternate short bursts of high intensity activity with periods of lower intensity exercise that allow muscles to recover. Increasing intensity can include faster speeds as well as greater resistance. Adding intervals of high-intensity exercise to your regular routine allow you to get a similar workout in a shorter amount of time.

Interval training can be done with almost any activity: walking, running, biking, swimming, rowing, strength training. Experts recommend varying the intensity and duration of the intervals based on how you feel. There is no single formula for determining time frames, but a few general guidelines exist:

- The high intensity spurt typically involves one to four minutes of exercise at 85 percent of maximum heart rate (220 minus your age). This interval should leave you out of breath.
- Low intensity intervals should not last long enough for the heart rate to return to a resting rate.
- A warm-up period of five minutes or more should always precede the first interval.
- Space sessions of interval training at least 48 hours apart.

Always get your doctor's permission before beginning any exercise program. Once you have the green light, gradually introduce high-intensity intervals into your usual routine for better cardiovascular fitness and more focused and efficient workouts.

* Researchers in Ontario studied eight moderately active women who participated in seven interval training sessions over two weeks. Each session included ten four-minute periods of high intensity aerobic exercise followed by two minutes of rest. At the end of the two weeks, the women burned thirty-six percent more fat during regular workouts.

Talanian JL et al. Two weeks of high-intensity aerobic interval training increases the capacity for fat oxidation during exercise in women. *Journal of Applied Psychology*, 102(4):1439-47, April 2007.

Wild Rice Salad with Grapefruit and Avocado

½ cup dry wild rice, cooked, rinsed and cooled
1 large grapefruit, peeled and cubed
1 large avocado, peeled and diced
Sea salt
Dash hot sauce (optional)
½ cup raw pumpkin seeds

In a medium mixing bowl, gently toss together the wild rice, grapefruit, avocado, sea salt and hot sauce if you choose to use it. Taste and adjust seasoning if necessary. Sprinkle with pumpkin seeds and serve immediately.

Banana Coconut Chocolate Chip Muffins

2 large eggs, at room temperature if possible
½ cup unsalted butter, at room temperature if possible
1¼ cups whole wheat flour
½ tsp sea salt (fine)
1 tsp baking soda
½ cup shredded, unsweetened coconut
3 very ripe bananas
¾ cup maple syrup
1 tsp vanilla extract
Dash cinnamon
½ cup walnuts
1 handful dark chocolate chips

If eggs and butter are not yet at room temperature, take them out of the fridge and set aside. Preheat oven to 350F. Use olive oil or butter to grease a muffin pan.

Sift together the flour, salt and baking soda in a large bowl. Stir in the coconut.

Add the eggs, butter, peeled bananas, maple syrup, vanilla and cinnamon to a blender (in that order). Puree until smooth. If you don't have a blender, use a food processor or mash the banana and mix it by hand.

Pour the banana mixture into the flour mixture and stir just to combine. Fold the walnuts and chocolate chips into the batter, then pour it into the muffin pan. Bake until a clean toothpick inserted into the center comes out clean, about 10 to 12 minutes. For smaller muffins, start checking doneness after 7 minutes. Do not overcook.

Cinnamon Iced Coffee

You don't even need your stove to make this coffee. Instead, your fridge will do all the work. Use a coffee press if you have one, otherwise combine the ingredients in a glass jar, use a fine mesh strainer to filter the grounds, then allow any sediment to settle to the bottom before you pour off the liquid.

2 rounded tbsp ground coffee
¼ tsp cinnamon
1 cup cold water

Combine all ingredients and refrigerate overnight (8 to 24 hours). Strain coffee and dilute to desired concentration with cold water. Pour over ice to serve.

Serves 2