



Pro-Biotics are "for life" and refer to bacteria, yeast, and other organisms (such as nano-bacteria and beneficial parasites; still under investigation) that naturally inhabit our bodies and serve numerous important functions. In addition to omega-3 fatty acids ("fish oils") and nutrient-dense fruits and vegetables, they have important wide-ranging roles in the prevention and treatment of numerous chronic conditions. There is much confusion about what to take, how to take them, and how to select the best product.

Evolution determined that it was more efficient to carry a farm of organisms within our bodies, to utilize their talents, rather than to re-create what they do. This is similar to why we utilize chickens for their eggs. However, just like we need farmers and fences, this internal farm requires management. The fences are our gut lining and the farmers are our immune system. Previous articles have focused on "leaky gut syndrome", allergy, auto-immune disease, yeast and other conditions that result when the ecology is altered and fences and farmers don't do their job.

Gory Details

We carry up to three pounds of bacteria and yeast in our gut, mostly the lower colon (large intestine) and some in the small intestine. Up to 25% of our stool volume is comprised of these organisms and their by-products. In addition, they line our skin and are ever-present in our environment. If one were to count the total number of cells within us, we only make up 10%; the bacteria and yeast cells make up 90%, but because they are smaller than our human cells, they take up less volume. These trillions of cells are comprised of up to 400 different species. Approximately 95% are good; 5% bad--when this ratio changes, we have a condition called "dysbiosis", which can be thought of as when weeds take over a yard, or even worse, termites take over a house. There are conditions that enable this imbalance to occur, and re-establishing balance can require multiple tactics, sometimes over several cycles to ensure a stable situation. Recently it has been proposed that the appendix is not vestigial but stores these organisms to re-innoculate the intestines after illness¹.

Humans, Yeast, and Bacteria

Since the beginning of human culture, these organisms have been used for preservation and nutrition. Fermenting and salting were the only means of food preservation before the use of pasteurization and refrigeration (see below). The greatest culinary inventions of civilization rely on fermentation, including bread, beer, wine, chocolate, salami, sauerkraut and several other foods. "Fermentation" is the process whereby these creatures consume certain compounds in their medium, usually sugars (starches and fiber) and in return produce carbon dioxide (gas), and some form of acid (alcohol, lactic acid), which altered and protected the food stuff from destruction by other organisms. Some cultures bury foods for months, creating strange concoctions that are reputed to have very strange tastes and health benefits. Our modern version of harnessing these critters is by altering their DNA to produce biological medications such as human insulin.

The Pros and Cons of Pasteurization

In the later 1800's Louis Pasteur was hired by a beer company to improve production. While they did not know about bacteria, they did know that some batches went right and some didn't. Pasteur determined that by heating the mixture, and then re-inoculating it with a good batch, the success of the process became less random. He eventually figured out that the heating process killed off bad bacteria. This process was then used to decrease the illness that would be caused by milk and other products. However, like all good things, more is not better. Pasteurizing yogurt and sauerkraut, and using anti-bacterial wipes on our bodies and kitchen counters may create the illusion of cleanliness, but all that they're doing is killing off good organisms and making room for bad ones.

Role of Pro-Biotic Bacteria and Yeast.

Whether we like it or not, bacteria, yeast and parasites are everywhere. The only choice is which ones are present. The bad ones create compounds that do damage—to our gut, our skin, and can invade other sites such as the sinuses and gallbladder. In summary, the gut has a major role not only in food processing, but the functioning of the immune, nervous and hormone systems of our body. When the ecology goes bad, these systems can spiral out of control. The good bacteria and yeast not only push out the bad, they manufacture critical compounds such as vitamin B12, biotin, and butyric acid.

Many patients with chronic disease trace their illness back to a bacterial illness that was or was not treated with antibiotics. In many cases, without knowing it, their ecology was altered, igniting a fire of imbalance and then frank illness. When gastro-intestinal ("GI") symptoms are present (pain, bloat, constipation, diarrhea, nausea), looking at the gut is straightforward. Even without GI symptoms, altered ecology is often implied by chronic illness.

Use of Pro-Biotics for Specific Conditions

Here are just a few of the many known uses for probiotics:

1. Allergy--by modulating the immune system;
2. Auto-immune disease--by modulating the immune system;
3. Constipation, diarrhea, IBS and more significant GI conditions such as Crohns, Ulcerative Colitis and possibly gallbladder disease;
4. Yeast infection of the skin, hair, nails, vagina--by changing the inner ecology, the outer ecology is changed;
5. Other infections by bacteria and viruses--possibly including herpes and swine flu²;
6. Inflammation and pain--proper gut balance decreases the production of inflammatory compounds;
7. Osteoporosis--by decreasing inflammation and enhancing absorption of critical nutrients;
8. Anxiety, depression, panic, ADHD, insomnia, and other neuro-psychological conditions--by changing the neuro-chemicals made by the gut;
9. High cholesterol--by improving absorption of nutrients and decreasing inflammation and physiologic stress;
10. Diabetes--by modulating the immune and hormonal systems and improving the processing of nutrients;
11. Toxicity with heavy metals, radiation and other

chemicals--some of these critters are able to bind up these toxins which enable them to be passed from the body;

12. Stress and hormone modulation--again by balancing the neuro-chemicals and neuro-hormones made by the gut.

How to Take Pro-Biotics

The following factors will determine which probiotics to take and how:

1. Therapeutic/Preventive Goal
2. Whether in acute or maintenance mode
3. Strain(s)--even within the same species, there are important differences between strains.
4. Rotation--since we were designed to have up to 400 species, rotation of species can be more effective.
5. Other agents--to support these organisms and/or modify some other aspect of digestion--see below.
6. Presence of serious medical conditions that affect the immune system--in some conditions, even good bacteria or yeast may not behave properly and need close supervision.

Judging Quality

There are a myriad of products being sold, each with claims. Here are some factors to be considered when purchasing a probiotic product:

1. Quantity--total and quantity of each strain;
2. Quantity "at expiration", not "at manufacture". Good companies will over-pack their product so the guaranteed amount is still present at time of expiration.
3. Quality of the strain(s)--while very technical, some strains have a better effect than others.
4. Refrigerated--while most products will last a short time unrefrigerated, most of these organisms will perish if kept for longer periods in warmer temperatures.
5. "Resident" vs. "Transient" Strains--some yeast strains are transient but very important to push out the bad species and enable re-population with healthy organisms
6. Whether strains are acid-sensitive or not--while controversial, most pro-biotic species are resistant to stomach acid. However, some may need to be protected in order to safely reach the intestines, where they populate.
7. Other contents, such as lactose. Some organisms must be grown on milk sugar, or lactose. After this step, there is none left. Some are packed with lactose as well. This may be a consideration for some (not all) people.
8. Reputable company, using "GMP", good manufacturing process. Because of their importance, probiotics should be "pharmaceutical grade".

Other Considerations regarding Pro-Biotics

Pro-biotics should be a part of a comprehensive nutritional program. Every cell of our body, whether host or guest, needs nutrients to grow and prosper. Ideally, there should be testing for deficiencies of critical vitamins such as D and B12, critical minerals such as Magnesium and Iron, and critical oils such as omega-3's and omega-6's.

The diet should be as free as possible of things that will kill off good bacteria, such as pesticides in produce, antibiotics in commercial meat and fish, and chlorine in drinking water. Certain medications, including antibiotics, NSAIDs (aspirin, ibuprofen, naproxen, etc) and others can alter the delicate ecology of our gut in just a few doses.

Foods to which we are allergic alert the immune system to go on the attack, which can create an inflammatory condition that ultimately will alter ecology and integrity.

As mentioned above, additional support supplements

may be needed to re-establish a healthy environment. Sometimes these probiotics need to be combined with "pre-biotics"--carbohydrates and fats that feed and support the bacteria and the GI lining. Sometimes other agents are needed to kill off aggressive bad species of bacteria or yeast (see below), or to support digestion in other ways such as through specific enzymes, acid and other aides.

Testing for Ecology

When chronic conditions persist, whether GI symptoms are present or not, testing for gut ecology can be important. Starting in childhood with antibiotics, vaccines, poor hand-washing and toxic exposure, we can carry malevolent organisms for decades. Testing the upper and lower GI tract through special urine and stool tests can identify specific recalcitrant organisms. In such cases special agents and sometimes medications are used as part of a sequenced strategy. Other tests, for toxins and food allergies and other conditions may explain a persistence of sub-optimal ecology.

IMPORTANT NOTE: This general information should not be used to make decisions about medical care without the involvement of an experienced practitioner.

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For More Information

- O See Dr. Cheikin's related articles on: Leaky Gut Syndrome, Adrenal Fatigue, Gut & Inflammation, Detoxification and more info on probiotics
- O Dr. Cheikin's website, www.cheikin.com, has more information
- O Dr. Cheikin offers workshops in several holistic health topics. Please call for more information or to host a Workshop.
- O see www.ewg.org for a list of toxic produce, fish and other environmental toxins.
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