

## Probiotics

It seems that probiotics have become the newest “trend”. There are so many forms of probiotics. It is added in foods such as yogurts, in fermented drinks like “Kombucha” or taken as a supplement in a pill form. We hear about the benefits of probiotics but what exactly is it and what does it do? The Food and Agriculture Organization of the United Nations (FAO) defines probiotics as “live microorganisms, which, when administered in adequate amounts, confer a health benefit on the host.”[1] Foods and products with the addition of the live bacteria are similar to the ones in our digestive tracts that facilitate in digestion and bowel movements.

But if we already have these good bacteria in our guts, why add more? The belief is that we destroy these good bacterias when using antibiotics which are usually broad spectrum, non-selective. Also poor food choices, stress and lack of sleep can also negatively effect the microflora environment in the gut. The addition of taking probiotics help introduce and replace the lost bacteria, which in-turn aid in digestion, synthesize vitamins and nutrients, metabolize medications, support the repair and function of the gut, and enhance the immune system.

So far the most commonly known bacterias in the intestinal tract are *Clostridia*, *Lactobacilli*, *Enterococci*, and *Escherichia coli*, *Lactobacillus*, *Bifidobacteria*, *Saccharomyces boulardii*, *Streptococcus thermophilus*. [2]

Simple enough to add more good bacteria to help our digestive health. However when entering the local drugstore, it can be overwhelming. There were 25 different brands at my local SMALL drug-store, and each brand had at least 5 different types of probiotics. For instance one brand known as **Culturelle** had probiotics for digestive health, separate ones for immune health, separate ones for kids, separate ones for vegetarians, chewable tablets, capsules, powders etc. When looking at the “supplement facts” on the back of the boxes however, they all had the same *Lactobacillus GG* with 10 million CFUs per serving and Vitamin C of the same quantity. All are recommend one capsule a day or two (one in the morning and one in the evening) when traveling. The chewable and vegetarian have “Inulin” which is a prebiotic aka food for the probiotic. But if they all contain the same amount and same exact active ingredient (except with the kids which has half the dosage as adults), why market it as a different product?

Another brand was **Natures Made** that contained *Lactobacillus acidophilus*. Again there were different types labeled as “extra strength” “targeted controlled delivery” “with pectin” and they had varying forms from gummy-candy, capsules and chews. The regular had about 5mg per 2 capsules of *Lactobacillus acidophilus* while the extra strength had 34mg per 2 capsules of “*Lactobacillus acidophilus*, *B. bifidum*, *L. salivarius*, *L. bulgaricus*”. I became extremely confused at this point because **Culturelle** used 10 million CFUs per serving as the units and now **Natures Made** is using mg. Exactly what’s the proper unit of measurement for bacteria and how much is too much or too little?

Both claim (as well as other brands) that the *Lactobacillus* can treat and/or preventing yeast infections, urinary vaginal health, IBS, antibiotic related diarrhea, traveler’s diarrhea, diarrhea resulting from *Clostridium difficile*, colitis, gastritis, treating allergic reaction like lactose intolerance, skin disorders like eczema, acne, sores and prevention of respiratory infections. The *Bifidobacterium bifidum* found in the **Natures Made** is also said to help with IBS, oral cavities, blood lipids, and glucose intolerance.

That being said, I seem to have found the cure to everything (if I solely believe the claims on all these products of probiotics) All this time I was taking antibiotics and other medications to get better when all I had to do was ingest and increase the good bacteria. Oh wait, the side effects? Well, in small print on the bottom of the boxes there seems to be the adverse effects of upset stomach, diarrhea, gas bloating, allergies, rashes and constipation just to name a few. But wait, I thought I was taking probiotics to eliminate these symptoms?

I went home to look up evidence for these amazing life-altering claims. Shockingly there seems to be little to no evidence of curing or preventing diseases. A recent study in 2014 found inconclusive results to specific probiotics and IBS treatment [3]. I also decided to check the websites for the two brands I looked at. **Culturelle** had the links to the references for their studies, however, the references were overwhelming studies done on food probiotics like yogurts and cheese. Not of the product![4] **Natures Made** had no additional information or external links to backup their claims, just yummy looking recipes and testimonials from users of the products.

FDA regulates probiotic foods but not the medications. The only time the FDA gets involved is when the supplement is found to be harmful and unsafe.[5]

It is important to know that the probiotics used must be alive to be beneficial. Which can be tricky especially when storing the product mainly at home. Usually we place our pills and vitamins in the bathroom but the temperature fluctuates there, which could kill the bacteria. Then we would be taking pills of dead bacteria. How appetizing!

Another thing to remember is that these bacterias are not all equal. The genus, strain, and species have to be the same for you to have any benefit. If any one of those is different you wont reap any benefit[6] And how do you know that these companies are using the same strand and kind when they don't have to document it to the government or another higher authority? Trust. You just have to trust that the company has your health as a priority. Also for people with suppressed immune systems (due to treatment like chemotherapy or a disease) taking probiotics may cause you to become more sick. Unfortunately not stated as a warning on the bottles. All in all, speak with your doctor before taking any additional supplements and keep a healthy balanced diet of fresh unprocessed foods, water and exercise.

[1]<http://www.fao.org/food/food-safety-quality/home-page/en/>

[2] Fijan, S. (2014). Microorganisms with Claimed Probiotic Properties: An Overview of Recent Literature. *International Journal of Environmental Research and Public Health*, 11(5), 4745–4767. doi:10.3390/ijerph110504745

[3] Ford, Alexander C; Quigley, Eamonn; Lacy, Brian E; Lembo, Anthony J; Saito, Yuri A; Schiller, Lawrence R; Soffer, Edy E; Spiegel, Brennan M R and Moayyedi, Paul.(2014) Efficacy of Prebiotics, Probiotics, and Synbiotics in Irritable Bowel Syndrome and Chronic Idiopathic Constipation: Systematic Review and Meta-analysis *The American Journal of Gastroenterology* 109, 1547-1561 doi:10.1038/ajg.2014.202

[4]<http://www.lactobacillusggprobiotic.com/references-2>

[5]<http://www.fda.gov/Food/IngredientsPackagingLabeling/GRAS/default.htm>

[6] Vuotto, Claudia; Longo, Francesca; Donelli, Gianfranco. (2014) Probiotics To Counteract Biofilm-Associated Infections: Promising And Conflicting Data *International Journal of Oral Science* (6), 189–194; doi:10.1038/ijos.2014.52; published 26 September 2014