



## *Probiotics Principles*

Dear Dr. Klaper:

I've been told to consume probiotics after taking antibiotics. What is the best kind of probiotics, should I take them while I am taking the antibiotics, and how do I know if the bacteria I have purchased are really alive? – B.P.

UPDATED: July 7, 2017

Dear B.P.,

Keeping the resident population of bacteria and other microbes in our intestinal tract balanced and beneficial is essential for good health, especially during and after taking a course of antibiotics.

We are learning that our population of gut bacteria interacts with our body in many remarkable ways, from stimulating our immune system to producing neurotransmitter molecules that ride the bloodstream up to the brain and influence our very thoughts and moods! A healthy population of normal gut microbes helps to prevent unfriendly bacteria and yeast from injuring the intestinal wall, which can result in increased intestinal permeability – the so-called “leaky-gut syndrome.” This can, in turn, lead to severe inflammation and autoimmune diseases that can damage vital organs and even threaten our lives.

Consequently, keeping our gut flora balanced and beneficial is essential and ingesting a preparation containing health-enhancing bacteria can be a timely strategy (along with a whole-food, plant-based diet.)

The bacteria in our intestines are originally common soil bacteria. How do they get into our guts? Animals who live earth-connected lives, like grazing deer and antelope, are constantly refreshing their intestinal flora as they eat and drink. They pull up clumps of grass with soil particles clinging to the roots and ingest the microbes when they swallow. When they drink from a nearby stream, they, again, ingest bacteria in the water that wash into the stream from the soils with every rainstorm. They, in turn, excrete the microbes back into the environment. So, a river of soil microbes moves through their digestive tracts and back to the soils – they are part of the flowing energies of the living Earth.

Humans, too, used to live Earth-connected lives, foraging for roots and tubers, digging them up covered with soil bacteria and usually eating them unwashed. We, too, drank from streams and rivers like other animals. Thus, we constantly refreshed our soil-born gut bacteria population, just like the deer and antelope. Our ancestors never swallowed probiotic capsules – Nature provided it free of charge.

But modern life, far from replenishing and nourishing our gut flora, is an assault on our intestinal microbial populations. Think of the bacteria-killing nature of what we swallow these days:

1. Drinking water treated with chlorine. (I am not against chlorinating the water supply – I do not want to be treating cases of typhoid fever or cholera. But every drink of tap water contains chlorine – specifically added to kill bacteria! Our produce fruits and vegetables are washed in chlorinated water. Not “gut flora friendly,” to say the least!
2. Soft drinks (colas, etc.) are often made with phosphoric acid, which gives them their “bite” on the tongue. Phosphoric acid kills microbes – and gut wall cells.)
3. Coffee – the coffee oils that give coffee its taste are quite harsh on bacteria
4. Alcohol – the glass of wine, that mug of beer may taste good, but, think about it: in the hospital, we dip our surgical instruments into alcohol to kill bacteria – and, yet, people drink it as a recreational beverage! Alcohol in the concentrations that people commonly drink kills every cell – plant or animal – that it touches.
5. Herbicides on plants foods – molecules intentionally designed to chemically injure plant cells. Most of the microbes in your gut share the same cell machinery as true plants – cell walls, chromosomes, etc. So, herbicides on foods can damage microbe balance, too.
6. Antibiotics from doctor’s prescriptions – often requested by the patient and dispensed reluctantly by the doctor for viral infections not affected by antibiotics.
7. Antimicrobials in the meats from factory-farmed animals is a HUGE problem, unbalancing our gut microbes and spawning antibiotic-resistant “super-bugs.”
8. Teas – both black and herbal. The peppermint plant, the chamomile plant and their kin are not making those lovely oils with your cup of herbal tea in mind. Those are anti-bacterial oils made to kill bacteria before they invade the leaves and stems of the plant. I am not saying an occasional cup may not be soothing and have beneficial properties, but consumed in large amounts, they can be one more element in the daily assault on our healthy, stable, beneficial, multi-trillion organism population of gut microbes.

No wonder so many people have imbalances in their gut microbial populations, known as their “micro-biome.”

As the normal inhabitants are killed off by this modern-day onslaught, unfriendly yeast, bacteria and other microbes can set up housekeeping along and within the intestinal wall and then proceed to damage that intestinal barrier, leading to the “leaky gut” syndrome and all the inflammatory conditions that arise from that condition.

Consequently, if you subject your micro-biome to any or all of the above injurious agents on a regular basis, or if you have recently taken a course of prescribed antibiotics, ingestion of a good probiotic may well be a wise idea for you to prevent diarrhea, yeast overgrowth and a host of other problems.

Of course, before we discuss probiotics – which are edible products that contain beneficial microbes – it goes without saying that you would want to do all you can to avoid the bacteria-harming agents listed above.

If you want a healthy micro-biome – and especially if you are trying to heal a “leaky gut,” consider:

1. not drinking alcohol, soft drinks, and coffee,
2. minimizing tea-drinking
3. minimize eating herbicide-sprayed fruits and vegetables,
4. severely reducing or eliminating animal products from your diet
5. avoiding needless antibiotic prescriptions, as for viral infections,
6. eliminating chlorine from your water via distillation, evaporation/condensation, or effective filtering, like reverse osmosis. Chlorine is volatile – letting a pitcher of tap water stand overnight will allow much of the chlorine to evaporate by morning.

Once you have taken the above steps to minimize injury to your gut flora, which organisms do you want to help establish in your intestinal lining? There are a group of bacteria that are especially beneficial and I always look for these names on the label of any probiotic I purchase:

Lactobacillus acidophilus  
 Lactobacillus plantarum  
 Lactobacillus. salivarius  
 Lactobacillus. bulgaricus  
 Lactobacillus casei  
 Lactobacillus bifidus

Lactobacillus rhamnosus  
Bifidobacteria longum

Note: See the end of this article below for three probiotic products I recommend to my patients.

*Certain organisms appear to be especially beneficial for specific conditions:*

- *Lactobacillus plantarum and L. casei have anti-inflammatory properties, making them especially valuable for people with inflammatory bowel disease, like Crohn's disease or ulcerative colitis.*
- *Lactobacillus acidophilus is valuable for rebalancing the bowel after taking antibiotics, and for thwarting recurring urinary infections in women.*
- *Saccharomyces boulardii, a beneficial member of the yeast family, is effective in stopping diarrhea, either from antibiotics, radiation to the pelvis, or "travelers' diarrhea." It can be used as a preventative if one is traveling to a destination where contracting traveler's diarrhea is a strong possibility, in which case it can be started 2 to 3 days before departure and taken each day while traveling.*

### **What, exactly, are probiotics and how to use them...**

Products with an assortment of beneficial organisms, combined with nutrients such as fructo-oligosaccharides and other substances to support their growth, are called "probiotics." Many, if not most of the bacteria in these products are of the family "Acidophilus" (the "acid-loving" bacteria.) Although not scientifically accurate, through popular usage, probiotic products have often come to be known as just "acidophilus."

The growth-supporting nutrients alone are termed "pre-biotics." (If you have colitis, Crohn's disease, or another condition involving inflammation of the intestinal tract, you should purchase acidophilus without F.O.S., since these and other sugars can sometimes make these inflammatory conditions worse.)

The beneficial organisms must be put into the gut in substantial numbers. A good probiotic product has at least 5 BILLION organisms per dose. (This is often expressed as "colony forming units, or "cfu's.) For severe derangements of the intestinal flora, this dose may need to far greater, up to 100 billion cfu's per dose.

This is one reason why I think eating yogurt as a probiotic is pointless. Standard, commercial yogurt is pasteurized to kill bacteria before it is sold – so most brands are useless as a probiotic source. The "cultured" or "bacteria-fortified" yogurt products usually have a few million organisms, at best. Thus, you would need to consume dozens of tubs of yogurt to equal the bacterial numbers in a good probiotic.

Why consume all the dairy protein, gelatin, and sugar inherent in most of these products – substances known to make many medical conditions worse – when all you really want are the beneficial organisms that you can purchase purely in a good probiotic product?

### **Is your probiotic alive?**

*It is very important to be sure that the probiotic product you are paying for and ingesting really contains live, beneficial bacteria. That is, the organisms may have been quite viable when they left the factory, but if they were stored in an unrefrigerated warehouse and/or shipped on an unrefrigerated truck, by the time they get to the shelf of your neighborhood health food store, it may be dead, white powder. So, how do you tell?*

Test it!

You can determine the vitality of your probiotic product with a simple kitchen counter "experiment." Start by pouring one-quarter cup of soy milk (cow's milk will also work) into each of two small bowls or cups and then stirring in 2/3 of a teaspoon of the probiotic powder (the contents of 3-4 "vegi-caps") into one of the bowls. (The other bowl of milk is the control.)

If your probiotic comes in tablets or "enteric pearls" you must crush them up into a powder to assure adequate contact with the milk. Do not just drop an intact tablet into the bowl. Place the tablet into a plastic bag or folded paper and, using a hammer wrapped in a thin towel or

the tablet into a plastic bag or folded paper and, using a hammer wrapped in a thin towel or

the bottom of a heavy drinking glass, pound the tablet into a powder, and then add it to the milk.

Allow both bowls to sit out at room temperature overnight. When you examine the bowls in the morning, the milky contents should not look the same. Since *Lactobacillus acidophilus* is the bacteria strain that curdles milk, there should be signs of bacterial activity in the bowl containing the probiotic. You should see either (a) chunks of curdled milk, or (b) a film of yogurt, or (c) bubbles of carbon dioxide, and if you put your nose near the milk, it should smell like sour milk.

If both bowls look just the same, let them sit out on the counter one more night. The next morning, when you pour the contents of both bowls down the sink, if the physical characteristics of the white liquids appear to be the same, you have non-viable product and should get a fresh supply, a different brand – or your money back. Your probiotic product (except for pure *Saccharomyces*) should be able to curdle milk.

### *When to take probiotics...*

I believe probiotics are best consumed one-half hour before meals or one hour before bed – times when acid in the stomach is at its lowest ebb. Why? You want to have as many live bacteria as possible pass through the stomach into the small intestine as possible. When you eat a meal, your stomach fills up with potent hydrochloric acid, which would kill many of the beneficial organisms. So, to “sneak” the bacteria through the acid vat of your stomach, it is wise to ingest the probiotic 30 minutes prior to eating, before your stomach fills up with acid, or well after it has emptied.

Since modern life – with its steady stream of chlorinated drinking water, alcoholic beverages, antibiotic-laced foods, etc. – seems to be an intensive assault on our normal intestinal flora, one could make the case that everyone could probably benefit from a “freshening up” of their intestinal bacteria with a brief one to two-week course of *acidophilus*, several times per year, or, perhaps one weekend each month.

Certainly, after a course of medically-prescribed antibiotic therapy, the healthy balance of bacteria should be re-established in the intestine by consuming a probiotic preparation for two to four weeks after taking the last antibiotic dose. It is OK (and probably wise) to take the probiotic while you are taking the antibiotic, just be sure to space them out in time – that is, if you take the antibiotic morning and with dinner, take the probiotic mid-day (an hour before lunch) or an hour before retiring.

Many probiotics are better able to retain their potency when kept in the refrigerator, though not all brands require this. If there is any question about the potency of the product you have purchased – test it! Try to consume the entire product within a few weeks of purchase, so it does not lose its potency in the refrigerator or on the shelf.

Used wisely, probiotics can be a useful tool in keeping our body, and thus, our health in optimal balance.

Here are three probiotic products I recommend to my patients:

- Renew Life – [Ultimate Flora Women's Complete 90 Billion](#) (30 Veg. Capsules)
- Renew Life – [Ultimate Flora Men's Complete Diet Supplement](#) (30 Count)
- HealthRight Nutraceuticals – [ND Probiotic Dietary Supplement](#) (120 Count)

To your good health and happiness,

*Dr. Michael Klaper*

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