

# Probiotics

## Friendly Bacteria

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Probiotics are live microorganisms, mainly bacteria and some yeast that have been traditionally used in the production of fermented dairy products, vegetables, and soy products. Probiotics also are sold as dietary supplements or drugs.



Probiotics might provide several benefits, according to the National Institute of Health.

For a product to be called probiotics, all three of the following criteria must be present. The microorganisms must be:

- Live
- Present in sufficient concentrations
- Beneficial to the person consuming it

### How probiotics work in the body

When we think of bacteria we often think of substances that make us sick and spoil food. Seldom do we think of bacteria in terms of “good” or “friendly.” However, trillions of bacteria occur naturally and actually grow and flourish in our guts. Most of these bacteria are not harmful and do not cause illness. The number and types of bacteria depend on a person’s age, gender, and diet.

The gut contains a balance of good bacteria and harmful bacteria. This balance can be thrown off when there is an increase in harmful bacteria by the use of antibiotics, after some surgeries, and in some diseases.

The health of the body depends on the balance between good and bad bacteria. When foods containing probiotics are eaten, the bacteria present in these foods help increase the number of healthy bacteria found in the gut. In other words, they tip the scale in favor of healthy bacteria.

### Sources of probiotics

Probiotics may be present naturally in many foods that are fermented or may be added to food, beverages, and supplements (Table 1).

### Health effects

Probiotics might provide several benefits, according to the National Institute of Health. However more research is needed to confirm their effectiveness and safety. Probiotics may:

- Treat diarrhea, especially following the use of antibiotics
- Reduce symptoms of irritable bowel syndrome and inflammatory bowel syndrome such as Crohn’s disease
- Promote regularity
- Decrease lactose intolerance

**Table 1. Sources of probiotics.**

Cultured dairy products	Fermented vegetables	Fermented soy products	Others
<ul style="list-style-type: none"> <li>• Buttermilk</li> <li>• Cottage cheese</li> <li>• Kefir: A cultured or fermented milk beverage that is similar to yogurt.</li> <li>• Sour cream</li> <li>• Yogurt</li> </ul>	<ul style="list-style-type: none"> <li>• Kimchi: A Korean fermented dish made of vegetables with varied seasonings.</li> <li>• Pickled ginger</li> <li>• Pickles (Brine-cured, without vinegar)</li> <li>• Sauerkraut</li> </ul>	<ul style="list-style-type: none"> <li>• Miso: A Japanese food made by fermenting rice, barley and/or soybeans with salt and fungus.</li> <li>• Natto: Fermented soy beans.</li> <li>• Shoyu and Tamari: Types of soy sauce.</li> <li>• Tempeh: Made from partially cooked, fermented soybeans.</li> </ul>	<ul style="list-style-type: none"> <li>• Beer (microbrew)</li> <li>• Kombucha: A fermented drink made with tea, sugar, and probiotic bacteria and yeast.</li> <li>• Wine</li> <li>• Yakult: A Japanese milk-like product.</li> </ul>

- Improve serum cholesterol levels
- Decrease the risk of certain cancers
- Modify gut immune response and improve its barrier functions
- Control or reduce the development of certain allergies
- Reduce or shorten the risk of certain intestinal infections

### What amount of probiotics is needed for health effects?

There is no official dose of probiotics needed for health benefits. The amount of live microbes in a probiotic is measured in colony forming units (CFUs). Experts think a daily dose of at least 1 billion CFUs is needed to reap health benefits. Many products on the market may exceed this dose.

### Understanding names of probiotics

Probiotics are identified by their genus. This genus is like a family name. Probiotics with the same genus belong to the same family. For example, probiotics with the genus *Lactobacillus* or *Bifidobacterium* belong to the same family. You will often see “Lactobacillus” shortened as “L.” and “Bifidobacterium” as “B” (Table 2).

**Table 2. Family of probiotics.**

Lactobacilli	Bifidobacteria
<i>Lactobacillus acidophilus</i> ; <i>L. acidophilus La-1</i>	<i>Bifidobacterium bifidum</i>
<i>L. casei</i>	<i>B. breve</i>
<i>L. reuteri</i>	<i>B. infantis</i>
<i>L. rhamnosus</i>	<i>B. longum</i>
<i>L. bulgaricus</i>	
<i>L. plantarum</i>	

Each genus contains a number of species (*Lactobacillus acidophilus*, *Lactobacillus casei*, etc.) and each species contains different strains (*Lactobacillus acidophilus La-1*). Different strains of the same species of probiotics have different characteristics or benefits.

The beneficial effects of a particular probiotics may not apply to another. It is very important for consumers to pay attention to the strain, species, and amount of probiotics in products.

The type and amount of probiotics vary among products. Many will list probiotic strains for which health benefits in humans have not been shown.

Products that contain strains from the *Lactobacillus*, *Bifidobacterium*, *Streptococcus thermophilus*, and *Saccharomyces* families have been shown to be safe for healthy individuals.

## Don't be fooled

The label of some foods, including dairy, fermented vegetables, and beer and wine, contain the term “live culture.” You may also see the term “live and active culture.” This term was developed by the National Yogurt Association and is found on many refrigerated and frozen yogurts. Products with this seal have a certain amount of bacteria when the product is manufactured. Refrigerated cultures should have at least 100 million cultures per gram; frozen yogurt should contain at least 10 million cultures per gram.

Even if a product label states it contains “live cultures” or “live and active cultures,” the product might not be probiotic — that is, contains live microorganisms in adequate amounts and provides a health benefit to the host.

## Food or supplements?

Tests done by *Consumer Reports* magazine have found higher numbers of probiotics in most yogurt products than in supplements. In addition, when you eat foods containing probiotics you obtain the probiotic bacteria, the nutrients present in the food, and the beneficial bacterial compounds produced during fermentation. For example, when you eat probiotics in the form of a yogurt drink you get a range of probiotics (read the label) as well as nutrients present in dairy products such as calcium, vitamin D, vitamin B<sub>12</sub>, potassium, and protein.

When choosing probiotics:

- Check the rating of the product. Choose products that have at least 1 billion probiotics units, the minimum amount needed to provide health benefits
- Check the bacteria. Look for products with strains that are well studied such as *Lactobacillus*, *Bifidobacterium*, *Streptococcus thermophilus*, and *Saccharomyces*
- Be wary of products that claim miraculous cures and quick weight loss.

Common red flags include:

- Promises of quick and easy remedies for complex health-related problems
- Claims that are too good to be true
- Testimonials used as evidence of effectiveness
- The use of vague terms, such as “clinically tested,” “patented,” etc.
- Recommendations based on a single study

Always talk to your doctor if you are thinking about using probiotics to treat an illness. Some probiotics may cause gas and bloating and may produce other side effects in people who have underlying health conditions. Probiotics should not be used in place of seeing a health care provider.

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