



TOPIC SUMMARY for Healthcare Professionals

Probiotics

Overview

Probiotics are healthy bacteria that normally live in our GI tract (intestines). Our intestines typically contain trillions of these helpful bacteria. They help maintain healthy GI and immune function. They make mucin that decreases the ability of other bacteria to “stick” to the gut; they make vitamin K; they foster IgA maturation; they make the intestine less leaky and more acidic, protecting us from disease-causing bacteria.

Taking antibiotics or eating a low fiber diet can reduce the number of probiotics, and make it easier for unfriendly bacteria to multiply, causing symptoms such as constipation or diarrhea.

Prebiotics are the “foods” for probiotics, such as indigestible starches and sugars found in fruits, vegetables, whole grains and beans. One commonly used prebiotic is *inulin* which is mildly sweet plant fiber; large amounts can cause gas and bloating.

Synbiotics are combinations of probiotics and prebiotics.

Some studies suggest that probiotics can help with numerous health conditions:

- Colic
- Diarrhea associated with
 - Acute infectious diarrhea
 - Antibiotics e.g., *C. difficile diarrhea* and side effects from treatment for *H pylorii*;
 - Chemotherapy
 - Traveler’s diarrhea
- Lactose intolerance
- Irritable bowel syndrome, abdominal pain, ulcerative colitis, and pouchitis (especially *Bifidobacterium and VSL-3*)
- NEC (necrotizing enterocolitis) in premature infants
- Allergies and eczema
- Other conditions, such as cold and flu prevention, dental cavities and periodontitis, constipation, vaginal bacterial infections, and respiratory infections (colds); boosting immune response to immunizations

Which probiotics are best for which conditions? As of 2013, the data suggest:

Probiotic	At Least 1 trial suggests benefits for this condition	Products that contain it or combinations
<i>Bifidobacteria</i>	Anxiety	<i>B. longum</i> with <i>L. helveticus</i> R0052
	<i>H pylori</i> infection	With <i>Lactobacillus</i> and <i>Saccharomyces</i>
	Irritable bowel syndrome or abdominal pain	<i>B. Infantis</i> (Align), VSL#3, <i>B. lactis</i> BB-12 (YoPlus, USANA Probiotic), <i>B animalis/regularis</i> (Activia)
<i>Lactobacillus</i>	Anxiety	<i>L. helveticus</i> R0052 with <i>B. longum</i> R0185
	Colds and respiratory infections	<i>L. plantarum</i> HEAL9 (DSM 15312) and <i>L. paracasei</i> 8700:2 (DSM 13434)
	Diarrhea	<i>L. GG</i> (Culturelle); <i>L reuterii</i> ; <i>L casei</i> with <i>L bulgaricus</i> and <i>S. thermophilus</i> (Actimel)
	Irritable bowel syndrome or abdominal pain	<i>Lactobacillus</i> GG (Culturelle)
	Periodontitis (gum disease) – when used with regular dental care	<i>L. reuterii</i> DSM17938 and ATCC PTA 5289 (Prodentis/PerioBalance)
	Vaginal Infections	<i>L. rhamnosus</i> GR-1 and <i>L fermentum</i> RC-14 (Jarrow Femdophilus)
<i>Saccharomyces</i>	Diarrhea	<i>S. boulardii</i> (Florastor)
<i>Streptococcus</i>	Diarrhea	<i>S. thermophilus</i> with <i>L. casei</i> and <i>L. bulgaricus</i> (Actimel)

Strains: Our bodies contain many, diverse types of probiotic bacteria. The specific supplement strains that have been studied the most often are: *Lactobacillus (L.) rhamnosus GG*, *L. reuteri*, *Bifidobacteria*, and *Saccharomyces*. Research is still needed to determine which people with different conditions benefit most from which combination of probiotic supplements and the optimal dose for different people with different health conditions.

Sources of Probiotics

Probiotics are found in fermented foods, such as yogurt, kefir and tempeh. The amounts in food are lower than the amounts in supplements.

Yogurt products with the most testing contain dairy and require refrigeration:

Activia contains 1 billion *Bifidobacterium (B) animalis* DN-173 010 (regularis) per 100 gram serving.

DanActive (Actimel) contains 100 million *L bulgaricus*, *casei*; and *S. thermophilus* per serving.

Yakult is a Japanese probiotic drink containing 6.5 billion cfu of *L caseii* Shirota per 2.7 ounce serving

YoPlus contains 1 billion *L. bulgaricus*, *S. thermophilus*, *B. lactis* and inulin (a prebiotic).

Amounts of probiotic bacteria are claimed at the time of manufacture and may be lower by the time you eat them.

Safety

People who are very sick, who have central intravenous lines, or severely suppressed immune systems should talk with their health professional before starting probiotics. Some people experience diarrhea, constipation, or gas from one probiotic product, but not from another. Observe your own reaction carefully. Some people who initially experience bloating or gas may find that after a few days these symptoms resolve.

Allergies: Many products contain trace amounts of milk protein. Read labels to find one that is dairy free if you have milk allergies.

Product Information

Probiotic *supplements* are regulated more like food than like medications. Different products contain different amounts of different strains. Because probiotics are living organisms, there may not be as much in the purchased product as there was at the time of manufacturing. There are no RDA or minimum daily requirements for probiotics established by the FDA, the Institute of Medicine, or the American Academy of Pediatrics. Probiotics are regulated like food rather than like drugs in the US, and the FDA has not approved their use specifically to prevent or treat disease.

Doses: The number of cells per dose can vary enormously between products. For example, some BioGaia products and CVS Probiotic Acidophilus contain 100 million cells per dose whereas VSL#3 contains up to 900 billion cells per dose.

Products that Failed Testing

ConsumerLab testing found several supplements **did not** contain the labeled amount of probiotics:

- 21st Century High Potency Acidophilus Probiotic Blend (contained only 18% of its claimed amount)
- Accuflora Advanced CD Probiotic (contained only 19% of its labeled amount)
- Nature's Answer for Kids Probiotics powder contained only 24.9% of the 5 billion cells listed per ¼ tsp.
- Nature's Plus Animal Parade AcidophilKidz – berry flavor contained only 56% of the 1 billion cells listed
- Vitacost Probiotic contained only 16% of the listed 35 billion cells

Note that manufacturers often change their process or formulation, and several manufacturers that previously failed ConsumerLab testing have improved their products to pass testing. This may happen in the future with 5 products listed above.

Probiotic Supplement Products

These products have been recommended by GI specialists or integrative pediatricians. Manufacturers may change ingredients. See ConsumerLab.com to compare the quality of different products.

Product Name/Distributor	#CFU/Serving (in billions)	Organism Type B= Bifidobacter; L= Lactobacillus; S= Streptococcus; Sac = Saccharomyces;
Align by Proctor and Gamble, contains milk	1 billion	<i>B. infantis</i>
BioGaia (drops, chewable tablets, rehydration solution, straws, lozenges)- OK at room temp.	0.1 – 0.2 b (100 – 200 million)	<i>L. reuteri</i>
Culturelle. OK at room temp; gluten-free, yeast free	10 billion	<i>L. rhamnosus GG</i>
Dr. David Williams Probiotic Advantage, contains milk	2 - 4 billion	<i>L fermentum, plantarum, acidophilus, rhamnosus, salivarius; B bifidum, B. longum</i>
Dr. Mercola Complete Probiotics ,dairy free, gluten-free	70 billion	<i>L acidophilus, plantarum, casei, rhamnosus, brevis, salivarius; B lactis, longum, bifidum; S. thermophilus</i>
Femdophilus (Jarrow formula)	5 b	<i>L rhamnosus GR, L reuteri RC-14</i>
Garden of Life Raw Probiotics Ultimate Care, GMO-free, gluten-free, vegetarian	100 billion	<i>B. lactis, longum; L. acidophilus, brevis, bulgaricus, casei, fermentum, helveticus, rhamnosus, plantarum; S. unisporus, turicensis, cerevasiae</i>
iFlora 4-KIDS (powder). ConsumerLab’s 2009 review found it contained 20% of labeled amount.	4 b per ¼ tsp.	<i>B. infantis; B lactis; B longum; L acidophilus; L paracasei; L rhamnosus</i>
Florastor – OK at room temp (cap or powder).	61.6 b	<i>Sac. boulardii</i>
GNC Probiotics Ultra 75 Probiotic complex	75 b	<i>L acidophilus, B bifidum, B lactis</i>
Jarrow Formulas, enteric coated, contains milk (vegetarian, gluten-free)	5 – 20 billion	<i>L. rhamnosus, helveticus, casei, plantarum, lactis; B. longum, breve</i>
Kirkman Labs Ultra Pro-Bio (chewable). Free of gluten, casein, corn, soy, sugar, egg, fish, or nuts; no artificial flavors, colors or sweeteners. Requires refrigeration.	20 billion	<i>L rhamnosus, acidophilus, plantarum, casei; B bifidum; S thermophilus</i>
Kirkman Bifido complex. No dairy, gluten, corn, soy, yeast, sugar, starch, or gelatin. No artificial colors, flavors, preservatives, or sweeteners. Requires refrigeration.	1 billion	<i>B lactis, bifidum, longum, and breve</i>
Kyo-Dophilus, dairy-free, gluten-free	0.75 – 3 billion	<i>L. acidophilus (gasseri); B. bifidum, longum</i>

Lee Swanson Genetic Designed Nutrition Ultimate Probiotic Formula; vegetarian, dairy-free	66 billion	<i>B lactis, longum, bifidum; L. acidophilus, casei, salivarius, rhamnosus, bulgaricus,</i>
Metagenics Ultra Flora Plus; gluten-free	15 billion per ¼ tsp	<i>L acidophilus, B lactis</i>
Nature's Bounty Advanced Probiotic; contains milk; gluten-free	20 billion	<i>L acidophilus, brevis, bulgaricus, casei, rhamnosus, salivarius; B bifidum, lactis,</i>
NatureMade Digestive Health Probiotic; vegetarian, dairy-free, gluten-free	10 billion	<i>L. plantarum 299v</i>
Nature's Way Primadophilus Optima, 14 Probiotic Strains Plus NutraFlora (Enteric-Coated)	35 b	<i>L. acidophilus, bulgaricus, casei, helveticus, lactis, plantarum, rhamnosus, salivarius; B. longum, breve, bifidum, infantis;</i>
NOW Gr8-Dophilus; enteric coated, dairy-free, wheat-free	4 billion per capsule	<i>L acidophilus, casei, rhamnosus salivarius; B bifidum, longum, lactis; S. thermophilus</i>
Pharmax HLC (capsules, Mindlinkx powder, straws). No dairy, casein, wheat, gluten, soy, corn, or nuts.	8 b per ¼ tsp.	<i>L. acidophilus, crispatus, rhamnosus; B bifidum, lactis</i>
Phillips Colon Health Probiotic Caps	1.5 billion	<i>L gasseri; B. bifidum, longum</i>
Renew Life Ultimate Flora; vegetarian, dairy-free, gluten-free, delayed release	30 billion	<i>B lactis, brevis, longum; L acidophilus, casei, plantarum, paracasei, salivarius, rhamnosus, bulgaricus</i>
Schiff Digestive Advantage Daily Probiotic; gluten-free	2 billion	<i>B. coagulans GBI-30, 6086</i>
Sedona Labs iFlora Multi-Probiotics	16 billion per capsule	<i>B. bifidum, brevis, lactis, longum; L. acidophilus, brevis, bulgaricus, casei, paracasei, plantarum, rhamnosus, salivarius, lactis; S. thermophilus</i>
Solgar Advanced Multi-billion Dophilus; dairy-free, gluten-free	5 billion	<i>L acidophilus, casei, paracasei, rhamnosus GG; B. lactis</i>
Spring Valley Probiotic Acidophilus; dairy-free, gluten-free	1 billion	<i>L. acidophilus</i>
Therbiotic Complete by Klaire labs. Includes inulin. Free of milk/casein, fish, nuts, wheat, corn, and soy; no sugar, artificial colors, sweeteners, or flavors. Requires refrigeration.	25 billion	<i>B. bifidum, longum, lactis and brevis; L. rhamnosus, acidophilus, casei, plantarum, salivarius, bulgaricus, paracasei; S. thermophilus</i>
Vitamin World Probiotic 10 (similar to Puritan's Pride probiotic 10)	5 billion	<i>L. acidophilus brevis bulgaricus, plantarum; rhamnosus, salivarius; B. bifidum, lactis</i>
VSL# 3 (packets of powder). Keep refrigerated. Shipped directly from manufacturer. For use by patients with	225- 900 billion	<i>S. thermophilus; B.brevis, longum, infantis; L. acidophilus, plantarum, casei, bulgaricus</i>

ulcerative colitis, ileal pouches, or IBS. Physician supervision only.		
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Enteric coating may protect products as they proceed through the stomach. *Bifidobacterium*, *Lactobacillus*, and *Strep* species do not require this enteric coating.

Keep all supplements dry and away from heat and light to reduce decomposition and degradation.

READ LABELS carefully! For more information, see

https://www.consumerlab.com/reviews/Probiotic_Supplements_Including_Lactobacillus_acidophilus_Bifidobacterium_and_Others/probiotics/

Disclaimer: The *Herbs and Dietary Supplements Across the Lifespan Program* does not endorse products or the efficacy or safety of mentioned products.