



## Should I give my pet a probiotic?



**Definition of a probiotic:** a live microorganism that when ingested in adequate amounts, confers a health benefit to the host.

**Definition of a prebiotic:** non digestible ingredients added to food to enhance the growth of native lactic acid bacteria and/or help the growth of probiotics.

**Synbiotics:** Combination of probiotics & prebiotics

**Desired effects:** The prevention and treatment of a number of gastrointestinal (GI) disorders, the stimulation of immunity, and inhibition of colonic carcinogens. Goal: to keep a healthy population of beneficial organisms so that the 70% of immune system cells that live in the intestinal tract have a normal microflora to live with, called a microbiome.

**Background:** Similar to the live organisms found in yogurt, kefir, buttermilk, sauerkraut and cheese, the health promoting qualities of these foods can now be seen in our pets, too provided the right organisms at the right levels are added. Probiotics exert their effects via the gastrointestinal tract (GI) which is the largest immune organ in the body and contains more neurons than the spinal cord!

**Existing evidence:** In people studies exist to support decreasing abdominal pain, reduction of cancer promoting enzymes, numerous gastrointestinal problems, and inflammatory diseases of gastrointestinal tract, prevention & alleviation of allergies in infants and prevention or respiratory & urogenital infections. Some probiotics have shown to affecting innate & acquired immunity in people and in pets.

**The viability and safety of these organisms and that there are an appropriate number of organisms to be effective are major issues.** Currently the American Feed Control Officials (AAFCO) regulations do not require identification to the bacteria strain level. Commercial dry & canned pet food does NOT contain any viable probiotics (even though they are listed as ingredients) as heat would completely kill these organisms. Supplementation therefore is always necessary.

### **Potential applications for probiotic therapy in dogs and cats:**

- Stress-related diarrhea (boarding, travel, working dogs, shelters)
- Weaning and soft stools in puppies and kittens
- Anti-microbial/NSAID therapy
- Dietary change or indiscretion
- Food intolerance/maldigestion
- Inflammatory Bowel Disease (IBD)

- Skin allergy, kidney disease, respiratory or recurrent urinary tract infections.
- Suppressed immune systems

**The function of Probiotics in the GI tract includes:**

**Nutritional:** synthesize B Vitamins; enhance the digestion by producing enzymes.

**Interaction with other gut bacteria:** produce products that inhibit harmful bacteria.

**Physical** Protect gut barrier, increase mucosal production, enhance cellular repair, increase enzyme activity.

**Immunologic** activates specific adaptive immune responses.

As with other nutraceutical (joint supplements and fish oils) their use in humans precedes their use in pets so there are some good guidelines already available but represent the human use perspective. Below is a table of available veterinary products.

	<b>Provable DC</b>	<b>Fortiflora</b>	<b>Vetriprobiotic Everyday</b>
<b>Veterinary Manufacturer</b>	Nutramaxx	Purina	Vetri-Science
<b>Form</b>	Capsule/Paste	Packet	Soft Chew
<b>Number of Microorganisms</b>	5 billion/Capsule 0.5 billion/gm paste	100 Million per packet	286 million CFU/gram
<b>Species of microorganisms</b>	Lactobacillus acidophilus Bifidobacterium bifidum Lactobacillus bulgaricus Lactobacillus casei Lactobacillus plantarum Enterococcus faecium Streptococcus thermophilum	Enterococcus faecium	Bacillus subtilis Bacillus coagulans Lactobacillus acidophilus Bifidobacterium thermophilum Bifidobacterium longum Lactobacillus fermentum Lactobacillus casei Bifidobacterium bifidum Enterococcus faecium
<b>Special notes</b>	Published paper	Published papers First veterinary probiotic developed	National Animal Supplement Council seal

Note: For challenging cases we have started to use a product called VSL#3 which is a human product with many of the above strains but a whopping 450 billion live organisms per packet. It has some impressive studies (all human) behind it including several done at The Mayo Clinic. Please ask us about this product if you think the standard veterinary products are not doing enough for your pet.

Probiotics may alter GI flora and decrease numbers and types of bacteria in the urogenital tract. Use a probiotic that contains multiple organisms at highest number. **-Joe Bartges DVM, PhD, DACVIM, DACVN (WVMA 2010)**

Probiotics that provide an immune modulating effect or that increase the numbers of beneficial species while competing against pathogens might be expected to be helpful [in treating inflammatory bowel disease]. **-Deb Zoran DVM, PhD, DACVIM-SAIM (WVMA 2010)**

The role of probiotics in Intestinal health. NAVC Clinicians brief April 2010 Jan S Suchodolski MedVet, DrMedVet Dept of Small Animal Clinical Sciences Texas A & M

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**Consumer Lab.com Product review** provides 18 human reference articles and 28 human and 4 pet probiotic supplement evaluations at [consumerlab.com](http://consumerlab.com) Accessed Jan 10,2012