Probiotics for Cats – Why and Which Ones

Laurie Goldstein, updated 2016

The importance of probiotic use in cats with inflammatory bowel disease (IBD) cannot be stressed enough. We are learning that the symbiosis between host and bacteria is so deep and interdependent that bacteria affect every aspect of our being: how well our immune systems function (1), the nutrition we metabolize (2), obesity (3), allergies (4), oral health (& halitosis) (5) – even our moods (6) – all impacted by the make-up of our bacterial communities, our “microbiome.”

An imbalance of “healthy” vs “unhealthy” bacteria is called “gut dysbiosis,” or “gastrointestinal (GIT) dysbiosis.” And gut dysbiosis has been linked to at least inflammatory bowel disease, liver disease, chronic kidney disease, chronic pancreatitis, development of asthma & allergies, and cancer. Every organ in our body, our joints, our cardiovascular system - all can be affected by chronic inflammation. The more research is done, the clearer it becomes that host bacteria is key in managing inflammation, and controlling inflammation is key in prevention or management of many chronic diseases – especially IBD.

While the use of probiotics to help prevent or manage inflammatory diseases is in its infancy, recent research has made it clear that we depend on our bacteria for our health and that host bacterial balance is directly related to the health of immune system – not at all surprising as the gut accounts for 70% - 80% of immune system function. (Please see The Problem with Pepcid and Other Antacids).

According to a report published in September of 2015, the microbiome (host bacteria of mammals) is so important, it can be thought of as another vital organ: “It is comparable to the immune system in as much as it is made up of a collection of cells, it contains a 100 times more genes than the host, is host-specific, contains heritable components, can be modified by diet, surgery or antibiotics, and in its absence nearly all aspects of host physiology are affected.”

As it relates to IBD, according to Dysbiosis in the Pathogenesis of Pediatric Inflammatory Bowel Diseases, (Comito and Romano, 2012),

A condition of “dysbiosis”, with alterations of the gut microbial composition, is regarded as the basis of IBD pathogenesis. The human gastrointestinal (GI) microbial population is a complex, dynamic ecosystem and consists of up to one thousand different bacterial species. In healthy individuals, intestinal microbiota have a symbiotic relationship with the host organism and carry out important metabolic, “barrier,” and immune functions. Microbial dysbiosis in IBD with lack
of beneficial bacteria, together with genetic predisposition, is the most relevant condition in the pathogenesis of the pediatric IBD."

Since this was published in 2012, enteric pathogens and gut dysbiosis are now considered a definitive precipitating factor in the development of IBD. There are very few studies of the microbiome in cats, but the body of work is growing, and the studies examining the microflora of healthy vs IBD cats found significant differences in gut microflora, indicating the same route of pathogenesis in cats as in humans. Please see the studies provided in the Further Information section at the end of the article for more information.

**Inflammation and impaired gut motility: hairballs and vomiting are not normal.** One of the impacts of inflammation in IBD is impaired (reduced) motility (“hypomotility”). Most think of diarrhea when they think of IBD, but it can also mean constipation, hairballs, and/or vomiting. **Chronic hairballs (defined as vomiting hairballs more than twice a month in any cat, or every two months or more in a short-haired cat) are a sign of hypomotility.** This can be an “early warning sign” of IBD. Regular vomiting of hairballs should not be ignored and it should not be considered normal. Probiotics may address the healthy populations of gut bacteria, thus inflammation and work to restore improved motility, but remember: this took time to develop, and it will take time to resolve – and the cause of the gut dysbiosis (often diet and use of antibiotics being primary culprits among many potential causes) must also be addressed. Probiotics are important, but not a cure-all; they address one specific problem, but not the set of circumstances that created that problem. At a minimum, diet must also be addressed.

Many people and vets, when dealing with cats with chronic vomiting or diarrhea, take a few well-known steps to address the problem: limited ingredient diets, prescription hydrolyzed (easily digestible) diets, antibiotics, and steroids. But these address the symptoms, not the cause. These may enable a cat with impaired intestinal function to resolve the symptoms, but they do not address the underlying cause of the inflammation or motility problem – the balance of healthy vs unhealthy bacteria and how that came to be.

So how do we ensure a healthy gut flora in our cats – as this is so important to ALL cats, not just cats with IBD? How do we keep their immune systems functioning at their peak? Make sure they have the flora they need to properly metabolize the food they eat and prevent inflammation?

1) **Feed a fresh, human grade, biologically appropriate diet** to the obligate carnivore members of our family, as a proper pH throughout their entire system is the first, most important step to a healthy bacterial balance, and gut dysbiosis is precipitated by changes in the GI tract acid/alkaline (pH) environment. Diet ingredients, food processing, cooking, species-inappropriate foods (carbohydrates in particular), dry vs wet foods vs raw, protein content – all of these things impact feline gut microflora, primarily by impacting the GI tract pH. (Again, please refer to the discussion in article, The Problem with Pepcid and Other Antacids). This means feeding our cats prey model raw; balanced homemade ground (no grinder needed if using eggshell instead of bone for your source of calcium); or one of the many commercial raw foods available (if you live in the US). Yes, **raw is preferable to cooked**, as high heat can create advanced glycation end products (AGE) that cause inflammation, but **cook with low temperature options if you are not comfortable feeding raw**. At a minimum, transition from kibble to a meat-based, no grain, low carbohydrate canned food to reduce the inflammation impact of the diet.

2) **Minimize the use of antibiotics** (e.g., do not use them prophylactically). Notably, Dr. Martin Blaser of New York University’s Langone Medical Center has warned that antibiotics’ impact on gut bacteria may be permanent — and so serious in its long-term consequences that medicine should consider whether to restrict antibiotic prescribing to pregnant women and young children. “Early evidence from my lab and others hints that, sometimes, our friendly flora never fully recover [from antibiotic use]. These long-term changes to the beneficial
bacteria within people’s bodies may even increase our susceptibility to infections and disease. Overuse of antibiotics could be fueling the dramatic increase in conditions such as obesity, type 1 diabetes, inflammatory bowel disease, allergies and asthma, which have more than doubled in many populations.”

But is minimizing use of antibiotics and feeding a fresh, human grade, biologically appropriate diet enough? We don’t know, the research does not yet exist. We have seen cats fed raw from kittens develop inflammatory bowel disease, pancreatitis, and chronic kidney disease – all diseases we know are related to inflammation and gut dysbiosis. So what’s missing?

3) **Use human grade probiotics** – billions of them, so enough survive to provide the benefits where needed. Cats have one of the shortest digestive tract-to-body length in the animal world. As obligate carnivores, cats do not naturally consume anything we think of as fiber, and physiologically, they are not “built” to ferment fiber in the gut (which is how people support healthy populations of bacteria). How, then, do cats sustain healthy bacterial populations?

1) Interestingly, a [study in cheetahs](#) indicates the presence of undigested tissue, such as skin, bone and cartilage, may actually act as a kind of “fiber” in the diet of cats. The study found that whole prey consumption was associated with many changes in the gut associated with fiber fermentation in human guts.

2) I posit that in the wild, a cat essentially gets a dose of “probiotics” with every meal. By eating the guts of its prey, kitty has a constant supply of bacteria to “feed” its gastrointestinal tract, its “microbiome.” The diet we feed our cats, even those feeding fresh food, is devoid of probiotics unless we supplement them. The addition of probiotics to every cat and kitten’s diet may be an important contributor to their long term health. Given their safety, other than the expense of including probiotics from a young age, there is no reason not to provide this supplement to your pet for life. At a minimum, a course of probiotics is recommended during and for at least a month after antibiotic administration.

How do we provide species-appropriate probiotics to our cats? Unfortunately, only limited data is available about the bacterial profile of cats. A May 2015 study of the fecal microbiome in cats with diarrhea was compared to healthy cats and significant differences were found: gut dysbiosis (the balance of GI bacteria) plays a very real role in the proper function of our cats’ GI system. This study supports several others that came before it (see “Further Information,” below), and our knowledge of feline bacterial profiles is emerging with these works. Interestingly, most articles on probiotics for pets recommend using “species-specific” strains of bacteria, as every species has a microbiota that is unique to them. Ideally, we would provide bacteria derived from cats for best results. But so little is known about cat-specific species, there really is no way to do that. One of the lead researchers in the field, Jan Suchodolski D.V.M. of Texas A&M, feels that [probiotic selection for use in pets should be based on researched strains [in humans], not whether or not the probiotics are pet-specific](#), and indicates “studies have shown that human or dairy developed probiotic strains are capable of conferring health benefit across species. At this point there is no proven benefit of using a canine or feline specific strain.”

If you have tried a pet probiotic and it “didn’t work,” it was likely the wrong strain(s) or not enough colony forming units. Pet probiotics tend to have very little active colony forming units compared to human probiotics, and [the (lack of) quality in many pet probiotics](#) (apart from the low, typically ineffective quantities) is one of the main reasons we recommend human grade probiotics. As to doses? This is a very imprecise science at the VERY early stages of research. Too few colony forming units will simply do nothing: too many may cause diarrhea.

How much is too much? There is no right answer to that. This is very cat-dependent. As discussed in the presentation by Dr. Suchodolski (hyperlink above), “A substantial percentage of orally administered probiotic
bacteria will be lost through competitive exclusion by the highly complex resident microbiota. Therefore, probiotics need to be administered at high doses. Even then, probiotics will represent only a minor fraction of the total microbiota. For dogs and cats, it is difficult to provide a proper dosage for probiotics as no dose-response studies have been performed in clinical patients. Currently, we are extrapolating information from human studies to dogs and cats. Doses between $1 \times 10^8$ [100 million] and $4.5 \times 10^{11}$ [450 billion] colony forming units (CFU) of bacteria have demonstrated clinical benefits.”

The effective dose in cats ranges from 100 million CFU (very low) to 450 BILLION (very high). The typical recommendation you’ll see here for adult cats is between 10 billion and 40 billion (half these for kittens). But this is why using probiotics can take quite a bit of trial-and-error. The probiotics listed here are those that have worked well for many cats, at the doses recommended by my holistic vet, Dr. Aleda Chang, (except for S. boulardii, which dose recommendation is derived from a U.C. Davis study). It is important to note, many have used double (or more) of the listed dose to achieve results. For maintenance doses, we will likely not “see results,” but hopefully the intended benefit of improved digestion, nutrient absorption, and prevention of inflammation is achieved.

For cats with IBD (especially when diarrhea is present), the addition of a yeast-based probiotic, Saccharomyces Boulardii is an important addition to your cat’s diet given the way it functions in the intestines and its anti-inflammatory properties. It is not just for the treatment of diarrhea, it helps address the inflammation and it helps the bacterial probiotics repopulate the intestines. More information in the discussion of S Boulardii in that section and in supplemental links.

PLEASE NOTE when S boulardii will NOT work:

- If your cat’s B12 levels are low (common when there is intestinal lymphoma or inflammatory bowel disease), S. boulardii will not resolve the diarrhea. B12 must be supplemented to bring blood serum levels back to normal.
- If your cat has exocrine pancreatic insufficiency (“EPI”), S. boulardii will not resolve the diarrhea. Pancreatic enzymes must be used to treat EPI.
- If your cat has diarrhea as a result of hyperthyroidism, S. boulardii will not resolve the diarrhea, kitty needs methimazole or radioactive iodine-131 treatment.

For more information on S boulardii, please refer to the collection of scientific research on it in the “Further Information” section, below. It is one of the most studied probiotics globally and is used in hospital settings for treatment of antibiotic-resistant clostridium difficile. I personally successfully treated coccidia in kittens with S boulardii alone and am aware of successful treatment of clostridium perfrigrens in cats with ONLY S boulardii. The study that supports the use of S boulardii in cats with treatment dosage was a UC Davis case study that included treatment of (what they thought was) antibiotic-resistant Clostridium difficile in a cat with S boulardii alone.

How to Use Probiotics

Probiotics & Antibiotics: Most probiotics should be given separately from antibiotics, at least 2 hours before or after antibiotic administration. The exception is the yeast-based probiotic, Saccharomyces boulardii, which can be used as adjunct therapy with antibiotics (though the use of S. boulardii can, in some instances, replace the need for antibiotics as noted above).
Introducing Probiotics: Remember when working with cats with impaired GI systems (IBD, pancreatitis, chronic kidney disease, etc.), ANYTHING new should be discussed with your vet, and if you decided to use a probiotic, it should be introduced slowly. Start with an amount lower than the recommended dose and work up to it. The slow-introduction exception is if your kitty is in crisis, and you’re adding S. boulardii to stop diarrhea. For emergency use, see instructions below. That said, if the addition of S boulardii makes diarrhea worse, obviously stop, start over, and introduce it slowly.

Regarding Recommended Doses: As mentioned above, these are guidelines as provided by a holistic D.V.M. additionally trained in Chinese Medicine and other modalities. If the suggested dose does not provide benefit and does not create a gassy tummy or has no impact on incidence of vomiting, diarrhea, or constipation, you can safely double (or more) the suggested therapeutic dose before considering trying a new probiotic. This is a combination of art and science at this point, and you need to see how your cat reacts to determine how much is truly needed. If you see improvement, but not resolution of symptoms, try a higher dose. Of course, we again note, please consult with your vet prior to probiotic administration.

Regarding Brands: There is no need to use these particular brands and this is list is by no means exhaustive. As mentioned, any quality L. acidophilus supplement can provide benefit, as can any S. boulardii supplement. We recommend human probiotics specifically because they tend to be of higher quality (with claims of active colony forming units matching label claims, for instance) than many pet probiotics. The important things to consider are the number of colony forming units (CFU) (an adult cat dose of a human probiotic is between 2.5 billion CFU and 20–40 billion CFU daily, depending on whether use is maintenance or therapeutic. For kittens, use half the adult dose). The most proven bacterial probiotic strains in humans are L. acidophilus, L. rhamnosus (which colonize the intestines), and several strains of Bifidobacterium (which colonizes the colon). L. acidophilus is one of the few strains also studied in cats, and it did show significant benefit. So consider the mix of strains, bearing in mind that more isn’t always better, and be mindful of the “other” ingredients.

For S. boulardii, the therapeutic (treating diarrhea) adult cat dose is typically 5 billion CFU split into two daily doses of 2.5 billion CFU each and can be doubled, though even this can be adjusted up (or down) as needed. Again, this is not an exact science, it is guidelines that work for many cats. You may need to experiment to find what works best for yours.

Dairy & Gluten Free Bacterial Probiotics

International:

As far as we can ascertain, this probiotic is available across Europe, in Australia, and in NZ. It is a wonderfully balanced probiotic with the basic list of bacterial probiotics AND S boulardii.
Bioglan Dose Suggestion:

Adult Cat Daily Use for “Maintenance”:
1/2 capsule twice daily

Adult Cat Therapeutic Use:
Full capsule twice daily

Kittens Daily Use for “Maintenance”:
1/4 capsule twice daily

Kittens Therapeutic use:
1/2 capsule twice daily

In the U.S.

Renew Life Ultimate Flora 15bn CFU

Renew Life Ultimate Flora 15bn CFU suggested dose:

Adult Cat Daily Use for “Maintenance”:
½ capsule twice daily

Adult Cat Therapeutic Use:
Full capsule twice daily

Kittens Daily Use for “Maintenance”:
¼ capsule twice daily

Kittens Therapeutic use:
½ capsule twice daily
Jarro-Dophilus Allergan Free

Note: This probiotic contains maltodextrin which causes gastric upset or allergic reactions in rare cases.

![Supplement Facts](image)

Jarro-Dophilus Allergan Free

**suggested dose:**
- Adult Cat Daily Use for “Maintenance”: ½ capsule twice daily
- Adult Cat Therapeutic Use: Full capsule twice daily
- Kittens Daily Use for “Maintenance”: ¼ capsule twice daily
- Kittens Therapeutic use: ½ capsule twice daily

**Ingredients:**
- Maltodextrin, magnesium stearate (vegetable source), silicon dioxide and vitamin C. Capsule consists of hydroxypropylmethylcellulose.
- No wheat, no gluten, no soybeans, no dairy, no egg, no fish/shellfish, no peanuts/tree nuts.
- NOTE: Color of product naturally varies from white to tan.
- KEEP REFRIGERATED.
- Dairy-Free

NOW Probiotic-10

**Supplement Facts**

<table>
<thead>
<tr>
<th>Serving Size:</th>
<th>1 Veg Capsule</th>
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</thead>
<tbody>
<tr>
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</tr>
<tr>
<td><strong>Amount</strong></td>
<td><strong>% Daily Value</strong></td>
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<tr>
<td><strong>Per Serving</strong></td>
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</tbody>
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**Proprietary Blend of 10 Strains of Probiotic Bacteria:**
- Lactobacillus acidophilus (La-14), Bifidobacterium lactis (Bi-04),
- Lactobacillus plantarum (Lp-115), Bifidobacterium longum (Bl-05),
- Lactobacillus rhamnosus (Lr-32), Streptococcus thermophilus (St-21),
- Lactobacillus paracasei (Lp0-37), Bifidobacterium breve (Bb-03),
- Lactobacillus salivarius (Ls-33), Lactobacillus casei (Lc-11)

* Percent Daily Values are based on 2,000 calorie diet.
* Daily Value not established.

**Other Ingredients:**
- Cellulose Powder, Cellulose (capsule), FOS (Fructooligosaccharides), Ascorbyl Palmitate and Silica.

NOW Probiotic-10

**suggested dose:**
- Adult Cat Daily Use for “Maintenance”: 1/4 capsule twice daily
- Adult Cat Therapeutic Use: 1/2 capsule twice daily
- Kittens Daily Use for “Maintenance”: 1/8 capsule twice daily
- Kittens Therapeutic use: 1/4 capsule twice daily

Nexabiotic 21-strain

Note: the 31.5 billion CFU is in two capsules. **Also please note that this probiotic includes S. boulardii, sufficient for a maintenance dose for most kitties - already in combination with Lactobacillus and Bifidobacterium strains.** Most cats find it palatable when sprinkled on or mixed into food. This probiotic contains maltodextrin which causes gastric upset or allergic reactions in rare cases.
Natural Factors double-strength Acidophilus+Bifidus with goat milk

This is one of the more affordable basic probiotic supplements. It contains lactose and is in a goat milk base, so it will trigger any lactose-sensitive cats. It is a very basic supplement with L rhamnosus, L acidophilus and Bifidobacterium, the most important strains.

Nexabiotic-21 strain suggested dose:

Adult Cat Daily Use for “Maintenance”:
½ capsule twice daily

Adult Cat Therapeutic Use:
Full capsule twice daily

Kittens Daily Use for “Maintenance”:
¼ capsule twice daily

Kittens Therapeutic use:
½ capsule twice daily

Natural Factors suggested dose:

Adult Cat Daily Use for “Maintenance”:
½ capsule twice daily

Adult Cat Therapeutic Use:
Full capsule twice daily

Kittens Daily Use for “Maintenance”:
¼ capsule twice daily

Kittens Therapeutic use:
½ capsule twice daily
**Saccharomyces boulardii**

This yeast-based probiotic is often used in conjunction with an L. acidophilus-based probiotic and is a very important tool in resolving diarrhea and healing inflammation in IBD cats.

“A probiotic, non-colonizing yeast species closely related to Brewer’s yeast and not related to the yeast group to which Candida belongs, *Saccharomyces boulardii* taken orally supports the production of secretory IgA, and helps friendly probiotic bacteria to colonize the GI tract. It is a transitory microorganism and is eliminated after supplementation is stopped.” This probiotic has been studied extensively, and has been shown to be effective in resolving clostridium and coccidia infections, even without the use of antibiotics – the time for efficacy is one month, and then the cats should be kept on a maintenance dose. Please do not attempt to treat known bacterial/parasitic infections without vet knowledge. Finally, as a non-colonizing probiotic, S. boulardii can be used as adjunct therapy to improve efficacy of probiotics without worry about the timing of probiotic administration in relation to delivery of antibiotic. Please see Further Information at the end of the document for links on the benefits of S boulardii in managing and treating GI disease.

**EMERGENCY “STOP DIARRHEA” DOsing INSTRUCTIONS**

Jarrow Brand S. Boulardii is the most commonly locally available S. Boulardii supplement (in the U.S.). It is usually sold as S. Boulardii + MOS. “MOS” are mannan-oligosaccharides, a medium that promotes utilization of the probiotic in the intestines. It seems the MOS makes the product bitter, as most kitties will eat “plain” S. boulardii (Nutricology, A.O.R. and Renew Life brands listed here) when sprinkled on or mixed into foods - but not the S. Boulardii with MOS. This is not to say this product cannot be used, it can, but it usually needs to be syringed or pilled into the cat. If you can find an S. boulardii supplement at 5 billion CFU without MOS (there are plenty of other brand options, at least online), you may find it easier to use if your cat is not inappetent. Jarrow does have a product available in premeasured packets rather than capsules. If available, these packets will make it a little easier to use for emergency treatment if you have or can purchase small (size 3) empty capsules. Some cats eat the Jarrow S boulardii mixed into a bit of Beechnut baby food and fed as a “treat.”

For emergency “stop diarrhea” use, it is recommended to purchase size 3 empty capsules. Fill 10 or so of these, and administer them to your cat every 2 hours. This often stops diarrhea within 24 – 48 hours, other than when diarrhea is caused by another disease that requires treatment (low B12, exocrine pancreatic insufficiency, hyperthyroidism, as examples). This “loading dose” can be continued for three to four days if necessary. **It is NOT necessary to use this approach,** it can be given at “therapeutic” doses twice a day (and doubled if you see improvement in stool but diarrhea or soft cow patty stools have not resolved).

**NOTE: IF USE OF S BOULARDII MAKES DIARRHEA WORSE, STOP.** Give kitty a break for 3 days, and start over at a MUCH smaller amount, and very slowly work up to the therapeutic dose. If even the small amount makes diarrhea worse, your cat is likely sensitive to yeasts and this cannot be given.

When the diarrhea has resolved with use of the emergency stop treatment protocol, begin use of S. boulardii at the therapeutic dose level (2.5 billion CFU twice daily) and continue for at least one week and up to one month; then adjust dose to the maintenance level (half that), or use the Nexabiotic 21-strain probiotic for maintenance. If stools soften, resume use of S. boulardii at the therapeutic dose as needed. Given its role in improving performance of bacterial probiotics and its anti-inflammatory properties, the use of S boulardii at maintenance levels can be continued indefinitely along with a bacterial probiotic.
BRANDS of S boulardii

INTERNATIONAL: See Bioglan, above.

INTERNATIONAL: Biocodex (the makers of Florastor) has over 40 brand names worldwide for this same product. These include Florastor in the USA and UK, Perenterol in Germany, Reflor in Turkey, and Ultra-Levure in Asia.

In the U.S.:

Florastor. Available at Walmart and Costco. You can use their location finder (also in Canada): [http://www.florastor.com/locate-a-retailer](http://www.florastor.com/locate-a-retailer)

Note: Florastor contains lactose. The Titanium Dioxide is in the capsule which is not fed to the cat as the contents are fed with food or mixed with baby food OR water and syringed into the cat.

### Jarrow S. Boulardii + MOS

This product contains mannanoligosaccharides. This works synergistically with the S boulardii, but makes the probiotic somewhat bitter, causing some cats to reject eating food with this in it.

### Florastor suggested dose:

<table>
<thead>
<tr>
<th>Dose Type</th>
<th>Dosage</th>
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<tbody>
<tr>
<td>Adult Cat Daily Use</td>
<td>1/4 capsule twice daily</td>
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<tr>
<td>Adult Cat Therapeutic Use</td>
<td>1/2 capsule twice daily</td>
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<tr>
<td>Kittens Daily Use</td>
<td>1/8 capsule twice daily</td>
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<tr>
<td>Kittens Therapeutic use</td>
<td>1/4 capsule twice daily</td>
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### Jarrow S Boulardii suggested dose:

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<th>Dose Type</th>
<th>Dosage</th>
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<tbody>
<tr>
<td>Daily Use for “Maintenance”</td>
<td>1/8 capsule twice daily</td>
</tr>
<tr>
<td>Kittens Therapeutic Use</td>
<td>1/4 capsule twice daily</td>
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<tr>
<td>Adult Cat Daily Use for “Maintenance”</td>
<td>1/4 capsule twice daily</td>
</tr>
<tr>
<td>Adult Cat Therapeutic Use</td>
<td>1/2 capsule twice daily</td>
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</table>
Renew Life Advanced Immunity

Note: Bottle dose recommendation is two capsules. Each capsule contains 5 billion CFU.

### Supplement Facts

<table>
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<th>Serving Size: 2 Capsules</th>
<th>Servings per Container: 15</th>
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<tr>
<td><strong>Amount per Serving</strong></td>
<td><strong>% DV</strong></td>
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<tr>
<td><strong>Advanced Immunity Blend</strong></td>
<td>1,350 mg</td>
</tr>
<tr>
<td>Saccharomyces boulardii</td>
<td>***</td>
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<tr>
<td>(10 billion)</td>
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<tr>
<td>Saccharomyces cerevisiae fermentate</td>
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<td>(EpiCor®)</td>
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<tr>
<td>Larch arabinogalactan</td>
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<tr>
<td>(ResistAid®)</td>
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<tr>
<td><strong>Total Probiotic Cultures</strong></td>
<td>10 billion†</td>
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* Percent Daily Values (DV) are based on a 2,000 calorie diet.
* Daily Value not established
† At time of manufacture

Other Ingredients: Vegetable capsule (vegetable fiber and water)

Directions: Take two capsules daily with a light meal.

WARNING: Consult your physician before using this or any product if you are pregnant, nursing, trying to conceive, taking medication or have a medical condition.

### Renew Life Advanced Immunity suggested dose:

Adult Cat Daily Use for “Maintenance”:
1/4 capsule twice daily

Adult Cat Therapeutic Use:
1/2 capsule twice daily

Kittens Daily Use for “Maintenance”:
1/8 capsule twice daily

Kittens Therapeutic use:
1/4 capsule twice daily

### Nutricology S. boulardii

Each capsule contains 3 billion CFU of S. boulardii

### Nutricology S boulardii recommended dose:

Adult Cat Daily Use for “Maintenance”:
1/2 capsule twice daily

Adult Cat Therapeutic Use:
1 capsule twice daily

Kittens Daily Use for “Maintenance”:
1/4 capsule twice daily

Kittens Therapeutic use:
1/2 capsule twice daily

Other ingredients: Hydroxypropyl methylcellulose, microcrystalline cellulose, stearic acid, silicon dioxide.
A.O.R. S. boulardii

### Supplement Facts

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<tr>
<th>Serving Size: 1 Capsule</th>
<th>Amount Per Serving</th>
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<tr>
<td><em>Saccharomyces boulardii</em> DEVP 6763</td>
<td>250 mg (5 billion CFU†)</td>
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†Colony-forming units. Non-medicinal ingredients: Capsule: hypromellose.

**AOR Guarantees:** that no ingredients not listed on the label have been added to the product. Contains no wheat, gluten, corn, nuts, peanuts, sesame seeds, sulphites, mustard, soy, dairy, eggs, fish, shellfish or any animal byproduct.

**A.O.R. S. boulardii suggested dose:**

- Kittens Daily Use for “Maintenance”: 1/8 capsule twice daily
- Kittens Therapeutic use: 1/4 capsule twice daily
- Adult Cat Daily Use for “Maintenance”: 1/4 capsule twice daily
- Adult Cat Therapeutic Use: 1/2 capsule twice daily

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### Further Information

[http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0134116](http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0134116)


### Studies of the feline microbiome:


S. boulardii

Simply explained in the Biocodex FDA submission (last link), S boulardii is not digested and absorbed in the gut and does not exert its effect systemically. Instead, S boulardii acts locally in the lumen of the gut. During its passage through the intestine, S boulardii mimics the physiological effects of the digestive flora, stimulating healthy immune response and reducing inflammation.

Saccharomyces boulardii prevents enteritis from Clostridium difficile infection
[PubMed:19167842]

[PubMed:19167842]

Saccharomyces boulardii effects on gastrointestinal diseases, (Zanello et al. 2009)
[PubMed:19167842]

Review article: anti-inflammatory mechanisms of action of Saccharomyces boulardii, (Pothoulakis 2009)
[PubMed:19167842]

"Systematic review and meta-analysis of Saccharomyces boulardii in adult patients," (McFarland 2010)
[PubMed:19167842]

Anti-inflammatory effects of Saccharomyces boulardii mediated by myeloid dendritic cells from patients with Crohn’s disease and ulcerative colitis, (Thomas et al. 2011)
[PubMed:19167842]

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