
Many chronic health problems can be traced to a yeast overgrowth.

Thirty years ago, even though the systemic yeast infection called candidiasis had already become an epidemic, practically no one knew anything about it. Even now conventional medicine tends to ignore the problem, but word has spread among health-conscious consumers. If you haven't had a candida yeast infection yourself, you know dozens of people who have and dozens of **dogs** as well.

Candida albicans, which causes candidiasis, is a single-celled organism classified as both a yeast and a fungus. It occurs naturally in the digestive and genital tracts, and in healthy bodies it is kept in check by beneficial bacteria. In humans whose beneficial bacteria have been damaged or destroyed, the organism causes or contributes to thrush (a fungus infection of the throat and mouth), diaper rash, athlete's foot, jock itch, vaginal yeast infections, digestive problems, seasonal allergies, ringworm, nail fungus, and environmental sensitivities. It also disrupts the immune system's response to agents of infection.

In **dogs** and humans, patients at highest risk are those who have taken antibiotics, which destroy the beneficial bacteria that normally keep *Candida albicans* from taking over. But the body's ecology can be disrupted by environmental conditions, diet, stress, chemotherapy drugs, steroids, and other medications as well.

Keeping candida in check

Like all yeasts, candida thrives on sugars, including those from grains, starches, and other carbohydrates. Beneficial bacteria (such as *Lactobacillus acidophilus*) metabolize sugars, which keeps candida

in check by disrupting its food supply. A shortage of beneficial bacteria results in a sugar-rich environment and an abundance of *Candida albicans*.

Once a candida overgrowth occurs, it becomes a vicious cycle. Candida cells overwhelm whatever beneficial bacteria survive in the digestive tract or are introduced as supplements, and a diet high in carbohydrates keeps the candida population strong and in control.

In 1983, William G. Crook, MD, published *The Yeast Connection*, the first of many books linking candidiasis, chronic health problems, and a high-carbohydrate diet. Since then, hundreds of anti-candida diets, drugs, herbal products, and nutritional supplements have become weapons in the war against *Candida albicans*.

Canine nutritional consultant Linda Arndt of Albany, Indiana, has studied candida for years, and her checklist of conditions linked to the organism's overgrowth is lengthy (see "Yeast Symptoms Checklist," page 14).

Candida is a formidable enemy, she explains, because its cells manufacture toxic chemicals that kill beneficial bacteria and harm the body. Candida's waste products include toxic alcohols, acetone, and the nerve poison hydrogen sulfide, all of which slow the brain, contribute to fatigue, and disrupt the immune system.

Candida symptoms are often misdiagnosed as allergies, says Arndt, manifesting as rashes or skin outbreaks on the feet, face, underarm, underbelly, or genital areas. Recurring hot spots or infections of the ears, eyes, bladder, or urinary tract can be caused by candida overgrowth.

"These conditions can be accompanied by a secondary infection, which is what gets treated," she says, "but the underlying cause is rarely addressed by conventional medicine. In addition to fatigue, lethargy, immobility, joint pain, and discomfort, all of which can be caused by yeast toxins, the infected patient may experience severe itching, which leads to endless biting, chewing, and hair loss. The dog's skin can turn black, become dry and flaky, or develop a greasy grit on the surface, and wherever candida takes over, a bad yeasty smell can develop."

Treatment with antibiotics, steroids, and other conventional drugs may bring temporary relief, but the patient soon returns with another flare-up, and symptoms progress until the veterinarian suggests allergy testing.

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A dog with continually inflamed, goopy ears is probably fighting a chronic yeast infection. She needs more than topical treatment.

"The results tell you the dog is allergic to everything from dust mites to tuna and lima beans," says Arndt. "But that's not where the problem lies. Many so-called allergy cases are nothing more than misdiagnosed systemic yeast infections from candida overgrowth."

According to holistic physician Bruce Fife, ND, the candida organism is especially insidious because it changes form. "If left unchallenged," he says, "candida converts from a single-celled form into a multi-celled or mycellial fungal form with hairy, root-like projections called rhizoids. These rhizoids penetrate the intestinal wall, which affects the intestines' ability to absorb vitamins, minerals, amino acids, and fatty acids, leading to nutritional deficiencies and leaky gut syndrome."

Leaky gut syndrome allows bacteria, toxins, and undigested food to pass through the intestinal wall into the bloodstream, where they cause chronic low-grade infections, inflammation, and allergic responses. "The immune system identifies undigested food proteins as foreign invaders," says Dr. Fife, "and its attack results in allergy symptoms. Your dog's food allergies, seasonal allergies, and environmental allergies can all be caused by an imbalance in the microbial environment of his digestive tract. It's no exaggeration to say that chronic health problems originate in the intestines."

Even without an overgrowth of *Candida albicans*, a disruption of the body's supply of beneficial bacteria poses problems. As described in "Probing Probiotics" (Whole Dog Journal August 2006), beneficial bacteria form a first line of defense against pathogens; help prevent antibiotic-associated diarrhea, traveler's diarrhea, and leaky gut syndrome; improve lactose tolerance; produce vitamins and enzymes; decrease toxins and mutagenic reactions; improve carbohydrate and protein usage; strengthen innate immunity; create a protective barrier effect in the intestinal tract; and help reduce food sensitivities and skin disorders.

It's definitely worth helping your dog become a poor host for *Candida albicans* and, instead, become a nurturing host for beneficial bacteria.

Natural remedies for candidiasis

In conventional medicine, antifungal medications clear up chronic yeast infections, fungal infections, and related symptoms. But many antifungal drugs have potentially serious side effects and they produce only temporary results. As soon as the prescription ends, surviving candida cells multiply, recolonize, and trigger a return of symptoms.

Alternative therapies, such as medicinal herbs and diet, have fewer side effects and help correct the problem's underlying causes. It's important, says Arndt, to work with a holistic veterinarian and avoid vaccinations, steroid drugs, and other conventional treatments that can disrupt the immune system. Because many (if not most) cases of canine candidiasis coincide with hypothyroidism, the patient's thyroid levels should be checked.

"Probiotics are popular treatments for candida infections, but proper timing is important," she says. "Feeding large amounts of acidophilus and other probiotics doesn't help a dog whose system is overwhelmed by candida. In fact, this kind of supplementation can make things worse. The first step in effectively treating candida is reducing its population. Two weeks after that, beneficial bacteria can be effectively added to the system."

For human patients, menu plans such as the Atkins diet, which is high in protein and fat and very low in carbohydrates, are recommended because they starve yeast cells without harming beneficial bacteria.

Wild wolves are unlikely to suffer from candida overgrowths because, as Dr David Mech explained in "What Wolves Eat" (Whole Dog Journal, March 2005) wolves in the wild consume little or no sugars, grains, starches, fruits, or other carbohydrates and very little vegetable matter. Their diet consists almost entirely of the meat, organs, blood, skin, and bones of prey animals.

Switching a candida-infected dog from grain-based kibble to a grain-free, starch-free, low-carbohydrate diet is an easy way to reduce a dog's population of *Candida albicans*.

Coconut oil

One effective anti-candida ingredient that can be added to a dog's food, whether commercial or home-prepared, is coconut oil (see "Crazy About Coconut Oil," October 2005). According to Dr. Fife, author of *Coconut Cures* and a leading expert on coconut's health benefits, the fatty acids in coconut oil kill candida and other damaging organisms without harming friendly bacteria. "Coconut oil's fatty acids are absorbed into the cells, which use them as fuel to power the metabolism," he says. "When applied topically on the skin, coconut oil promotes the healing of damaged tissue. In the same way, it speeds the healing of perforations in the intestinal wall. Coconut oil can help any dog reestablish and maintain a healthy intestinal environment."

Caprylic acid, a nutritional supplement derived from coconut oil, kills candida cells. "Caprylic acid is sold specifically for this condition," says Dr. Fife, "but it's less expensive and just as effective to use the coconut oil it's derived from. That way you ingest not only caprylic acid but lauric acid, which has also been shown to kill candida cells, along with other essential fatty acids that improve intestinal health."

The recommended dose is at least 1 teaspoon coconut oil per 10 pounds of body weight, or 1 tablespoon per 30 pounds. Dogs with candidiasis may need more, especially in the early stages of treatment. For best results, feed in divided doses, provide extra fluids and drinking water to help flush toxins from the body, and start with small amounts and build up gradually so the body has time to adjust. The side effects of too much coconut oil too soon can include greasy stools or diarrhea, fatigue, mental exhaustion, and body aches.

Dealing with die-off

Flu-like symptoms such as exhaustion, body aches, diarrhea, and nausea are caused by die-off, also known as the Herxheimer reaction. When large numbers of viruses, bacteria, parasites, yeasts, or fungi die, their physical remains and the toxins they produce overwhelm the body, and it takes days, weeks, and in some cases, months for the organs of elimination to catch up, during which symptoms such as itching or skin breakouts may increase.

Systemic enzyme supplements such as Wobenzym (discussed in "Accelerated Wound Healing," August 2006) are especially helpful during detoxification. Taken between meals, systemic enzymes circulate in the blood, breaking down inflammation and digesting dead candida cells. Wobenzym contains pancreatin, bromelain, and other digestive enzymes in enteric-coated tablets that survive stomach acid and break apart in the small intestine.

Other enzyme products like Prozyme, which contains amylase, lipase, cellulase, and protease, are taken with meals to improve the assimilation of nutrients and to compensate for the lack of live enzymes in processed food. Double the recommended dose for dogs age eight or older or for dogs switching from a high-carb food.

Seacure ("Securing Seacure," April 2003) supports anti-candida programs by providing amino acids that are essential to the liver during the second phase of detoxification. Double the recommended dose of Seacure pet powder or chewable pet tabs for the first two weeks of treatment, then follow label directions.

Herbs and supplements

Several medicinal plants are used in candida therapy. They are recommended for use by themselves, in combination, or sequentially (one after another), so that highly adaptable candida cells don't have time to mutate. Any anti-candida supplement designed for humans can be adjusted for canine use according to the dog's weight. Divide the human label dose by 2 for dogs weighing 50-70 pounds; divide label dose by 4 for dogs weighing 25-35 pounds.

The following and similar supplements are an essential first step in a candida control program.

Black walnut hulls (*Juglans nigra*), especially those harvested in early fall when the hulls are still green, repel parasites, improve skin conditions, and fight fungal and bacterial infections. Look for "green" black walnut hull extracts and tinctures.

Garlic (*Allium sativum*) strengthens immunity by aiding white blood cells, and it has shown significant antifungal activity against *Candida albicans* in animal and test tube studies. But in large amounts, garlic may cause hemolytic or Heinz factor anemia in dogs. Daily doses of up to 1 small garlic clove per 20 pounds of body weight are considered safe, as are garlic extracts given according to label directions adjusted for the dog's size. For best results, alternate garlic with other antifungal herbs. Although onions are a highly regarded prebiotic (a food that feeds beneficial bacteria), onions are not recommended for dogs in any quantity because of their high hemolytic anemia risk.

Horopito (*Pseudowintera colorata*), also known as the New Zealand pepper tree, is a traditional Maori treatment for fungal infections. In 1982, New Zealand researchers tested horopito extracts against *Candida albicans* with excellent results. The New Zealand product Kolorex is now an international best seller. Yeast and mold expert Ingrid Naiman shares Kolorex with her dog.

Olive leaf (*Olea europaea*) is a popular supplement for candidiasis. Its active ingredient, oleuropein, has antiviral, antifungal, antibacterial, and antioxidant effects in addition to lowering blood sugar and improving blood circulation.

Pau d'arco (*Tabebuia impetiginosa*, also known as lapacho or taheebo) is an Amazon rainforest tree with astringent, anti-inflammatory, antibacterial, and antifungal properties. Pau d'arco teas and extracts help treat systemic, chronic, or recurrent candidiasis, leaky gut syndrome, and related disorders.

Quebracho (*Aspidosperma quebracho-blanco*) is a tannin-rich South American tree. Its bark is used in the leading anti-candida product, Tanalbit. Its manufacturer claims quebracho does not contribute to Herxheimer (die-off) reactions. Some veterinarians have used Tanalbit for canine candidiasis for years with excellent results.

As explained in Whole Dog Journal's aromatherapy series ("Smell This, You'll Feel Better," December 2004; "Essential Information," January 2005; and "Canines in a Mist," April 2005), therapeutic-quality essential oils and hydrosols can be diluted for safe, effective canine use.

The essential oil of wild oregano (*Origanum vulgare*) has become a popular treatment for candidiasis at human doses of 1 drop once or twice per day, building up to a dose of 1 drop 4 times per day, which is considered safe for long-term use.

Dogs dislike the taste and smell of oregano oil. For canine treatment, dilute full-strength oregano oil with olive oil, then place a drop of the diluted oil in an empty 2-part gelatin capsule, which can be hidden in food. For dogs weighing 50-70 pounds, dilute ½ teaspoon oregano essential oil with ½ teaspoon olive oil; for dogs weighing 25-35 pounds, use 1 teaspoon olive oil; and for smaller dogs, use 1½ to 2 teaspoons olive oil. Start with 1 drop of the diluted oil per day and gradually build up to 1 drop 4 times per day.

Tea tree hydrosol, the water produced during steam distillation of tea tree essential oil, is a safe, effective topical treatment for ear infections, hot spots, skin breakouts, and other candida symptoms.

With antifungal, antibacterial, antiyeast, and antiviral properties, coconut oil is an excellent carrier in which to dilute essential oils. It can also be applied by itself to ringworm and other fungal breakouts. Store in a small dropper bottle for convenient application. In cold weather, melt the coconut oil by placing the bottle in hot water.

Probiotics

After two weeks of improved diet and treatment with antifungal herbs and supplements, your dog's system should be ready to support beneficial bacteria.

A few native bacteria survive even lengthy antibiotic treatment, so the odds are that your dog has a small population of beneficial bacteria that could recolonize her system if properly fed with "prebiotics."

The best prebiotics for the dog's beneficial bacteria are lactofermented vegetables (see "It's All in How You Make It," March 2001) and supplements such as inulin, whey, and fructo-oligosaccharides (FOS). Start with small amounts and gradually increase, adjusting label directions for your dog's weight. Reduce the dose if flatulence or digestive discomfort develops. Do not feed whey to dogs with an intolerance to foods containing lactose.

Acidophilus is a familiar probiotic, but there are dozens to choose from. Look for live-culture products in health food or pet supply stores, and give frequent doses to help flood the system with beneficial bacteria. Help the bacteria reproduce by combining them with prebiotics, a low-carbohydrate diet, and enzymes.

Anti-candida kits

To help dogs overcome candidiasis, Linda Arndt worked with BioPet, Inc., to design a kit containing cleansing and detoxifying products. The goal was to provide a complete kit, with clear instructions that take the mystery out of candida and detoxification. The Nzymes Yeast Kit is available in a small size for pets up to 60 pounds in weight and a large size for pets over 60 pounds.

The kit contains antifungal treats or granules, oxidizing drops that can be taken internally or applied topically, digestive enzymes, probiotics, and a combination of black walnut and olive leaf extracts for internal and topical use.

"We designed the kit for convenience, because it's hard to know what to do or where to get products that work," she says. "Candida infections are difficult to treat. They take time to develop, and it takes time as long as a year or more to get them to go away. But by improving the diet, removing candida, detoxifying the body, and flooding the system with beneficial bacteria, anyone can help candida-infected dogs get and stay well."