

## Left Untreated, This Wasting Disease Can Lead to Organ Failure and Death

If your dog is hungry no matter how much she eats, it could be this overlooked condition. Just because the breed isn't predisposed doesn't mean you and your vet shouldn't test for this.

Analysis by [Dr. Karen Shaw Becker](#)

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### STORY AT-A-GLANCE

- Exocrine pancreatic insufficiency (EPI) in dogs is a condition in which the pancreas doesn't produce adequate digestive enzymes, with the result that food is poorly digested and absorbed
- Symptoms of EPI include constant hunger with significant weight loss, frequent pooping, coprophagia and/or pica, GI noise and gas, and intermittent diarrhea or vomiting
- Early detection and treatment of this condition is very important; undiagnosed or untreated EPI can lead to starvation, organ failure and death
- Treatment includes giving digestive enzymes, probiotics and other appropriate supplements, and transitioning from a processed to a nutritionally balanced, low-fiber fresh food diet
- Proactive management of the condition, including trial-and-error adjustments to treatment protocols, provides the best outcome and quality of life for EPI dogs

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Canine exocrine pancreatic insufficiency, which is usually shortened to EPI, is a mouthful of a name for a disorder in which the pancreas doesn't produce enough digestive enzymes. These enzymes include amylase to digest starches, lipase to digest fats and proteases to digest protein. Without sufficient quantities of these enzymes, the food that is eaten is poorly digested and poorly absorbed.

EPI is most often seen in German Shepherds, a breed predisposed to the disorder, but it can occur in any breed or mixed-breed dog. The condition is very rare in kitties, thank goodness.

When EPI develops in a young dog, it's usually the result of pancreatic acinar cell atrophy, which is a decrease in the number of enzyme-producing cells inside the pancreas. In older dogs, EPI is often secondary to chronic pancreatitis, which is inflammation of the pancreas. Chronic pancreatitis indicates the potential for diabetes as well.

## Symptoms of EPI

The severity of EPI varies from very mild to very severe. Some dogs show no symptoms for months or even years.

Common symptoms of the disorder include:

- Significant weight loss despite **constant hunger** and regardless of the amount of food the dog eats
- Pooping more frequently, and the stools are very large with a yellowish or greyish color
- Coprophagia (**poop eating**) and/or pica (eating nonfood items)
- Noisy digestion and flatulence
- Intermittent watery diarrhea or vomiting

Not all dogs have all these symptoms, and as a result, I believe veterinarians often overlook this condition. In my opinion, dogs with a few symptoms or even a single symptom that isn't resolving or is getting progressively worse should be evaluated for EPI.

The incomplete digestion that results from EPI causes the constant presence of large amounts of fermenting food in the small intestine. This can trigger a secondary condition called SIBO (small intestinal bacterial overgrowth). SIBO is also now referred to as SID (small intestinal dysbiosis), in which the population of bad bacteria overwhelms beneficial bacteria in the lining of the small intestine.

Dysbiosis can further impair nutrient absorption and also depletes the body's reserves of vitamin B12. Belly rumbling, gas, diarrhea, intermittent nausea and sometimes vomiting are common symptoms in an EPI dog and signal the likely presence of SIBO as well.

## EPI Can Cause Tremendous Damage to a Dog's Body

EPI can range from very mild to severe. In moderate to severe cases, muscle wasting is common, because the dog's body isn't absorbing the nutrients necessary for good muscle tone. These dogs often have a hard time maintaining or gaining weight.

Juvenile dogs with EPI can develop bone problems from lack of nutrient absorption that can result in developmental abnormalities, such as teeth that are smaller than average, and a higher incidence of **hip dysplasia**. Every part of the body can be damaged by malnutrition, including the nervous system and brain, which can cause abnormal behavior, including increased anxiety, fear and food aggression. Skin and coat issues are also very common, including excessive shedding, flaking and brittle, thin hair.

Because many dogs with EPI are essentially starving and constantly hungry, they can appear almost feral. They often become food-aggressive and will go to great lengths to steal food. Outdoors they may gorge on feces, grass, dirt or other inappropriate items in an attempt to ingest the nutrients their bodies are desperately seeking.

As the disease progresses, the deterioration speeds up. Some dogs eventually lose interest in all activities. They feel terrible; they want to sleep all the time or hide. This can be extremely frustrating and heartbreaking for their owners, who feel helpless as they watch their dog waste away right in front of them.

If a dog with EPI goes undiagnosed and untreated, her body from nose to tail is being deprived of the nutrients crucial for growth, renewal and maintenance. Ultimately, she'll either starve to death or die of organ failure.

## Diagnosing Exocrine Pancreatic Insufficiency

Unfortunately, since chronic loose stools are often the first symptom of EPI in dogs, most veterinarians who aren't dealing with a German Shepherd (a breed predisposed to the condition), tend to wantonly prescribe antibiotics. The loose stools usually disappear temporarily because the antibiotics knock down the bacterial overgrowth, but the underlying disease has not been addressed.

When the antibiotics are discontinued and the loose stools return and/or the dog starts losing weight, unfortunately, many veterinarians recommend putting the animal back on antibiotics permanently, assuming he may have inflammatory bowel disease (IBD), or irritable bowel syndrome (IBS).

Some patients referred to me have endured endoscopies, biopsies and other expensive, invasive tests instead of being checked for EPI. As I mentioned earlier, I believe this is a much more common disease than veterinarians are recognizing or testing for.

The confirming diagnostic test for EPI is a TLI (trypsin-like immunoreactivity) test, a blood test that measures the dog's ability to produce digestive enzymes. Most samples are sent to Texas A&M University's GI lab, which has recently revised their reference ranges. Values below 2.5 micrograms per deciliter are now considered diagnostic for EPI.

Values between 3.5 and 5.7 may suggest subclinical pancreatitis that can lead to EPI. I strongly recommend beginning gastrointestinal (GI) support when dogs fall into this grey zone, to prevent the condition from worsening. We weren't trained in veterinary school to begin treatment for EPI until dogs are below 2.5, however, as a proactive veterinarian, I disagree with that approach.

In dogs with values between 2.5 and 3.5, which means your dog is making less and less enzymes, Texas A&M recommends repeating the TLI after a month of treatment, and I agree with this approach. I also recommend running a cobalamin test to check for vitamin B12 deficiency at the same time as the TLI test.

Even when a dog tests positive for EPI, it's important to retest TLI once he's stabilized with treatment. This is because chronic inflammation can cause an otherwise healthy pancreas to reduce or stop producing digestive enzymes. The TLI comes back positive because due to the lack of enzymes, it appears the dog has EPI when he actually doesn't.

## EPI Treatment Options

Some dogs in the grey zone can recover pancreatic function by instituting treatment before acinar cell failure occurs. My recommendation is to treat dogs that are below 5.7 micrograms per deciliter. These dogs need, at a minimum, **digestive enzymes** and probiotics at every meal.

Many dogs below 5.7 who don't show immediate recovery will need enzymes for the rest of their lives. And dogs below 2.5 are absolutely candidates for lifelong enzyme supplementation. The supplement must contain pancreatin, which is an animal-based pancreatic enzyme that provides protease, lipase and amylase.

I recommend adding these enzymes to the dog's food and letting it sit at room temperature for at least 20 to 30 minutes before feeding to allow the enzymes to predigest the food. **Probiotics** are also very important for EPI dogs and should be continued long-term. In dogs with low vitamin B12 levels, cobalamin injections will be needed. Vets can easily show owners how to do injections at home. They're given once a week for six weeks, then every other week for another six weeks, and monthly thereafter.

## Best Diet for EPI Dogs

If pancreatic inflammation is being exacerbated by **highly processed kibble** or canned food, which is almost always the case, the best thing you can do is switch to a nutritionally balanced, home-cooked diet, or a commercially available, human-grade, gently cooked diet with no unnecessary fillers or preservatives.

The food should be fresh, which means you have to transition your dog away from that entirely dead, inorganic, over-processed diet and onto a fresh food diet that is low-residue and free from dyes, pesticides, genetically modified organisms (GMOs), fillers, additives and preservatives.

Ideally, working with a veterinarian who is well-versed in helping animals recover from **leaky gut** or dysbiosis is the very best option, because those of us who are functional medicine doctors have a whole arsenal of GI protocols we can use to help your dog recover.

As gut health improves, the vast majority of EPI dogs do very well on a nutritionally balanced, well-blended, raw food diet due to the natural enzymes present in the food. Anytime you cook food, digestive enzymes are killed. Well-blended raw food is important because EPI dogs can't tolerate large pieces of bone, chunks of veggies or hunks of meats. The food must be finely ground to reduce digestive stress.

So we start dogs on cooked foods, and then move them to raw foods. These dogs need intensive, reparative nutrition protocols to compensate for their maldigestion and malabsorption, so food choice really matters. Transitioning from gently cooked to raw food is often how dogs who are doing pretty well begin doing really, really well. In fact, raw food often triggers a dramatic improvement that we don't see with any other type of diet.

Fresh food diets must also be nutritionally complete, because EPI dogs are malnourished. Often they have significant zinc and vitamin E deficiencies. It's important to ensure the diet you're feeding has adequate or sufficient quantities of all the nutrients your dog requires.

Most dogs with EPI do better on a diet that's very low in fiber — less than 4% — because fiber interferes with the function of digestive enzymes. High-fiber diets can also inhibit absorption of certain nutrients. Again, this rules out highly processed commercial diets.

## Supplementation

In addition to digestive enzymes, probiotics are critical for restoring EPI dogs' microbiomes and preventing recurrences of SIBO. Once these dogs are stable, they usually benefit from additional supplements, like fish oil or **krill oil**, as a source of omega-3 fatty acids, as well as coconut oil. Coconut oil contains lauric acid, which has natural antibacterial and antiviral properties beneficial for the gut and is a good source of MCTs, which provides easily assimilable energy for animals with GI absorption issues.

Discontinuing supplements and GI support for EPI dogs means that eventually, symptoms will return. I don't recommend doing this. However, once a dog is stable and food has become medicine, supplement protocols can be reduced to the lowest possible dose necessary to maintain normal bowel health.

EPI dogs should have well-formed, normal-looking stools the color of dark chocolate that are firm enough to be picked up easily. There should be no nausea, gas, bloating or GI noises. Anything less means the dog is probably still having some digestive issues, so there's still room for improvement by altering the supplement protocol.

This is where trial-and-error protocols come in, which are best done in partnership with a functional medicine veterinarian well-versed in treating dysbiosis. The protocol is continually adjusted until all symptoms are resolved. It could be the dog needs fewer or more enzymes, or the enzymes need to sit on the food longer, or there could be something in the diet that needs to be added or removed.

EPI dogs frequently wind up with food intolerances, which can be identified on a saliva NutriScan test. If your dog eats food she can't tolerate, it can trigger a serious flare-up of her condition. Intermittent small intestinal bacteria overgrowth can also occur. Your veterinarian may recommend an annual TLI and B12 test to make sure your dog's condition is being managed effectively.

I also don't recommend that puppies or dogs with dysbiosis or EPI be vaccinated annually. It's really important to partner with a veterinarian who will check titers instead of automatically vaccinating these dogs.

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