

diagnostic for EPI. Texas A & M University (TAMU), whose Gastrointestinal Laboratory analyzes the majority of cTLI tests, also offers a free telephone consultation with your veterinarian if questions arise about diagnosis and treatment. TAMU and Clemson University are the primary institutions in the U.S. researching EPI. The cause of EPI is not known, especially in younger dogs, although genetics is thought to be a factor; breeding of EPI-diagnosed dogs is discouraged. In older dogs, injury to the pancreas or recurrent pancreatitis may contribute to development of EPI.

Treatment

There are several ways to replace the digestive enzymes lacking in EPI dogs. The most commonly used method in the U.S. is a porcine-based powdered enzyme called pancreatin. The recommended starting point is 1 level teaspoon per 1 cup of dry food, or $\frac{3}{4}$ level teaspoon for 1 cup of wet or raw food. The powder is mixed with water or broth over the food, which is allowed to sit (incubate) for 30-40 minutes. This incubation period may not be mentioned by veterinarians, but lessens the possibility of mouth ulcers and allows for better digestion. Pancreatin is available from your veterinarian, or in generic form available to EPI dog owners (enzymediane.com), among other sources.

Creon is a human prescription medication approved by the FDA in the U.S. since 2009, but widely used in Europe and the Commonwealth countries for many years. This is a capsule given with the meal, and does not require incubation. A prescription is required, and costs vary widely, depending on the pharmacy or online provider.

A third method of enzyme replacement is raw pancreas, which may be available from a butcher, a slaughterhouse, or purchased online.

Regardless of the method, all enzyme replacement must be given for all meals and snacks for the rest of the dog's life. Feeding an EPI dog involves trial and error. You must find what works best for your dog. Food should have less than 4% fiber. Often grain-free food works best for EPI dogs, although not all dogs. Some dogs do better on home cooked or raw diets. Smaller portions fed more often are recommended for ease of digestion. Dogs should be fed up to 1 $\frac{1}{2}$ times the normal amount until they regain the weight they have lost.

It's all in the Poop

How do you tell if the medication and food regimen is working? The best indicator is the quality of the poop. If it is firm, dark, well-formed and occurs only 2-3 times a day, i.e., normal dog poop, you have achieved your goal. And long term, the dog regains the weight lost.

Related Conditions

Over 50% of EPI dogs are or will become vitamin B12 deficient. A blood test for that deficiency is recommended at

the time the cTLI is done. It is treated with periodic B12 injections, or with pills that contain intrinsic factor, not found in most common B12 formulations. Vitamin B12 supplementation may be lifelong.

Related to the B12 deficiency, although it may occur separately, is small intestinal bacterial overgrowth (SIBO), a bacterial overgrowth that may occur if fermented, undigested food remains in the gut. Symptoms may include gas, burping, yellowish stools, mucous coated stools, and continued loose or soft stools. It is treated with a 30-45 day course of antibiotics, usually Flagyl or Tylan. Some EPI dogs may never develop this problem and some have it chronically.

Success Stories

Many EPI dogs do well with diagnosis and treatment. I have included information about three EPI dogs who have participated in Schutzhund or related activities:

Thomas Wharry's German Shepherd Dog, Yo-E Der Begaht, now almost three years old, weighed 91 pounds prior to diagnosis with EPI in June 2011, but was only 74 pounds by the time he started treatment, and has rebounded to 84 pounds. He had received his BH, receiving the highest score of six dogs tested, slightly prior to diagnosis, and has only recently returned to full training in all three phases of Schutzhund. He is still regaining the muscle mass he lost, but has regained his energy. Yo-E has been treated for vitamin B12 deficiency and SIBO, and is getting a raw diet. Thomas reported that as long as food and treats have been enzyme-treated, Yo-E has no limits on training because of EPI.



Onza with EPI

Donna Warner's German Shepherd Dog, Onza, now six years old, came from a Schutzhund background and began training at an early age. She



Onza back in training after treatments

weighed 75 pounds prior to diagnosis in 2009, and lost 20 pounds before she was stabilized. She is now 68 pounds. Onza stopped Schutzhund training because of hip dysplasia, but once stabilized has been able to do some obedience and protection training at home. Donna reported that Onza has not lost any drive or ability because of EPI and still longs for "the sleeve." She is rewarded after training with ice cubes.