

# EPI

## Exocrine Pancreatic Insufficiency

Untreated or misdiagnosed dogs with EPI, suffer needlessly, are put to sleep or die a painful death either by starvation or organ failure. And yet EPI is very manageable if recognized and properly treated.

*Pandy, courtesy of rescue mom, Janis*



### The Condition

Exocrine pancreatic insufficiency (EPI) is the inability of the pancreas to secrete the necessary digestive enzymes, Amylase to digest starches, Lipase to digest fats, and Trypsin and Protease to digest protein. When these enzymes are not available to help digest nutrients, the nutrients cannot be used by the body. The body in essence starts to starve.

In addition, due to the lack of proper digestion of nutrients, exocrine pancreatic insufficiency is often accompanied by structural and functional changes in the tissue lining of the small intestine that further impairs nutrient absorption. 70% of all dogs diagnosed with EPI also have this secondary condition called SIBO (small intestinal bacterial overgrowth) and/or 50% of all EPI dogs will also have B12 deficiency (low cobalamin). With EPI, it is imperative to treat the entire dog or else optimal results will not be achieved.

### Possible Symptoms

(Exhibited after 85%-95% pancreas is atrophied)

- Gradual wasting away despite a voracious appetite
- Eliminating more frequently with voluminous yellowish cow-plop feces (sometimes grayish)
- Eating their own stools, or other inappropriate substances
- Increased rumbling sounds from the abdomen
- Increased passing amounts of flatulence
- Some dogs exhibit personality changes
- Some dogs experience intermittent or watery diarrhea and/or vomiting
- Some dogs do not show any typical signs

### Testing

A trypsin-like immunoreactivity (cTLI) blood test [www.cvm.tamu.edu/gilab/assays/TLI.shtm](http://www.cvm.tamu.edu/gilab/assays/TLI.shtm) will show the dog's ability to produce digestive enzymes (lipase, protease, amylase). The normal range is between 5.75 – 45.2. A dog must fast at least 12 hours prior to blood test. The cTLI test costs approximately \$100/+. When running the TLI test, it is also recommended to run a Cobalamin (B12) & Folate blood test at the same time.

### Treatment

Treatment of EPI may be regulated after some trial and error in finding the right balance of Enzymes, Diet, Antibiotics (if needed for SIBO) and B12 (if needed). The best treatment is powdered porcine pancreatic replacement enzymes necessary for life such as (to name a few), Viokase [www.axcan.com](http://www.axcan.com) . Pancrezyme [www.virbacvet.com](http://www.virbacvet.com) , or for a reduced cost savings there is a Generic Pancreatin 6x or 8x enzyme [www.enzymediane.com](http://www.enzymediane.com) .

Most EPI dogs respond well to these enzymes administered with every meal measured per volume of food and incubated for 20 minutes to avoid possible mouth sores and to allow the food to soften for better enzyme distribution and absorption. Many will also need antibiotics (Tylan is preferred, or Metronidazole, Oxytetracycline, or Amoxicillin) for a minimum of 30 days to reduce SIBO if suspected and/or B12 shots for Cobalamin Deficiency. With an EPI dog, the Cobalamin level needs to be in the mid-high range. If in low but

normal range, it will still need to be treated

[www.epi4dogs.com/b12.htm](http://www.epi4dogs.com/b12.htm)

A change in diet to grain-free, raw (balanced) or hydrolyzed diet is also recommended. Grains (food with more than 4% fiber in it) should be avoided. Some dogs need fat reduced diets, most do not.

[www.epi4dogs.com/dogfoodoptions.htm](http://www.epi4dogs.com/dogfoodoptions.htm)

Any breed, not just German Shepherd Dogs (GSD) can have EPI. Misdiagnosed, these dogs suffer greatly and may eventually die a painful death. Many are surrendered out of frustration or euthanized because of enzyme expense. Please know there are many other reasonable alternatives! Vets can call the TAMU GI lab: 1-979-862-2861 for an EPI consultation if needed.

*Claire, courtesy of adoptive mom Susan, prior to EPI diagnosis*



*Claire, 6 months after treatment for EPI*



**For EPI Management, Resources, Updates and Support please visit: [www.epi4dogs.com](http://www.epi4dogs.com) and [www.epi4dogs.com/appsforums](http://www.epi4dogs.com/appsforums)**

### Where does EPI come from???

Previously EPI was suspected to be caused by autosomal recessive genes. In preliminary data from a 2008 research study at Texas A&M and Clemson University, and a 2010 published Helsinki study on EPI, it is now confirmed that EPI is not autosomal recessive but rather more complex. It is most likely a multiple genetic condition and may possibly have some environmental factors. A larger genetic study is currently underway at Clemson University in SC. With EPI, traits may vary in degrees of severity and symptoms may be exacerbated by physical or emotional and/or environmental stress.

### What is being done

We now suspect unidentified carriers everywhere and in all breeds. At this point in time we can only test to confirm an EPI diagnosis, so we are hoping to identify the genetic markers and stressors to eventually eliminate this horrible condition.

*Hope, courtesy of her rescue mom, Jodi*



Genetic researchers known for their expertise in EPI; Dr. Leigh Anne Clark, along with Dr. Keith Murphy, and Dr. Kate Tsai, all formerly from Texas A&M University (TAMU), currently at Clemson University in South Carolina are conducting the EPI genetic research in an effort to identify EPI genetic marker(s). They are working with the latest SNP technology to handle the complexities of multi-loci genes. Once these genes are identified, dogs may

be pre-screened prior to breeding, preventing this horrible condition.

**EPI was previously thought to only effect German Shepherd Dogs - - do not make this mistake! EPI is now surfacing at an alarming rate in all**

**breeds.** Every dog is at risk. Please be aware of and help educate others about EPI .... only then can we stop this needless suffering in our beloved companions.

For additional information on the EPI genetic research study, please contact Dr. Leigh Anne Clark at: [lclark4@clemson.edu](mailto:lclark4@clemson.edu)

*Epi4dogs would like to give a special thanks to Dr. David A. Williams, MA VetMB PhD, Diplomate ACVIM, ECVIM-CA, Illinois College of Veterinarian Clinic Medicine, honored developer of the TLI test, for his continued encouragement to us to pursue answers to the cause of EPI.*



**For complete information about EPI visit:**  
<http://www.epi4dogs.com>  
**Learn about symptoms, treatments, options and many available resources in managing this devastating condition.**

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## Exocrine Pancreatic Insufficiency

*Stop needless suffering in our canine companions*

*Recognize EPI symptoms in ALL breeds*

*Avoid misdiagnosis*

*Effectively treat and manage EPI*



*Gretchen & Brian's "Archie" ...prior to EPI treatment*



*Gretchen & Brian's "Archie" ...after EPI treatment*