

Epilepsy Fact Sheet

This information sheet is designed to provide you with a clear overview of your pet's condition and treatment options. We understand that receiving a diagnosis of epilepsy can be overwhelming, and our aim is to empower you with knowledge and resources to help you navigate your healthcare journey.

Nutritional Therapies for Pets with Seizures

Emerging research strongly suggests that managing epilepsy in dogs and cats can involve more than just using drugs to calm the brain down. There are now dietary strategies, ranging from targeted fats to adjustments in gut bacteria (microbiome), that are shifting from being considered a last resort to becoming a vital part of our treatment options.

Shouldn't seizures just be treated with anticonvulsants? Is there really a role for diet?

The quick answer has long been “yes, drugs first.” However, now the answer is a resounding “No, not exclusively.” To ignore nutrition is to ignore the understanding that brain health is directly related to the food consumed, and that this food can help reduce seizure activity and potentially even some brain inflammation related to the seizures.

Nutrition can also directly alter the way in which some anti-seizure drugs (ASDs) work, so it's important now to consider whether we can improve our approach to the daily meals and treats in pets with epilepsy. However, as vets, our responsibility to pet owners is to lead this conversation with science. So, let's build that evidence base from the ground up, starting with the most direct link: the bacteria within the gut, or the so-called microbiome.

What does the gut have to do with epilepsy?

The microbiome-gut-brain axis (MGBA) is a complex, 2-way communication network linking the gut, its trillions of microbes (the microbiome), and the nervous system via nerve, immune, endocrine, and metabolic pathways.

For years, the link between gut health and seizures was anecdotal. Now, robust studies provide the mechanistic missing link. In a landmark 2025 study, researchers compared the fecal microbiome of healthy dogs to those with idiopathic epilepsy (IE) (both drug-resistant [DR] and mildly affected dogs) while controlling for diet. The findings were striking: Drug-resistant epilepsy was linked to a pro-inflammatory gut state: Dogs with DR-IE showed fecal dysbiosis, which is an imbalance in gut microbes. Metabolically, their feces showed elevated histamine and 1-methylhistamine, key drivers of

inflammation. They also had lower levels of inosine, a purine with potential anti-epileptic and neuroprotective properties. This combination paints a picture of a gut environment that may be promoting whole-body, as well as nervous system, inflammation, potentiating seizures and contributing to drug resistance.

This research confirms that canine idiopathic epilepsy is consistently associated with a dysbiotic gut microbiome. This dysbiosis isn't just a bystander; it's functionally active, producing metabolites that can influence brain excitability. The gut is effectively talking directly to the brain. Managing epilepsy, therefore, may increasingly involve managing this gut ecosystem.

So let's talk about the diets to consider.

Is the classic ketogenic diet useful for dogs?

The ketogenic diet (KD), very high in fat and very low in carbohydrates, has a century-old history in human medicine, particularly for drug-resistant pediatric epilepsy through ketosis. However, dogs metabolize ketones efficiently, making it difficult to achieve sustained therapeutic ketosis. More concerning, classic KDs high in long-chain triglycerides (LCTs) carry a legitimate risk of pancreatitis in dogs. A randomized canine study using a high-fat, low-carb diet failed to show significant seizure reduction or ketosis.

Therefore, a classic LCT-based ketogenic diet is not recommended for canine epilepsy due to unproven efficacy and tangible risks. This brings us to a targeted, safer, and evidence-backed alternative: Medium-Chain Triglycerides (MCTs).

MCTs are a game-changer. They are highly ketogenic without requiring extreme carbohydrate restriction. They are rapidly absorbed and get into the brain, where they provide back-up fuel to epileptic regions, have a direct anti-seizure action, and also modify the gut microbiome in epileptic dogs. This microbiome shift may itself be part of the therapeutic mechanism. A clinical study found a diet with 5.5% MCT oil led to a $\geq 50\%$ seizure reduction in 48% of dogs, with 14% achieving seizure freedom. These diets are generally safe, well-tolerated, and show no significant interactions with commonly used anti-seizure drugs such as phenobarbital.

Therefore, MCT-enriched diets are the best-supported nutritional intervention for canine epilepsy. They represent a pragmatic, evidence-based way to provide alternative brain energy, directly inhibit seizure activity, and positively modulate the gut environment.

What about other supplements? Omega-3s? Probiotics?

Some supplements show promise for the control of seizure activity in dogs.

Omega-3 Fatty Acids: The theory is strong—they have anti-inflammatory and neuroprotective properties, potentially being anti-seizure. However, dog-specific evidence remains limited and inconclusive. A small study in epileptic dogs showed no significant benefit in seizure frequency. While

they may be considered for general anti-inflammatory support, they should not be promoted as a primary seizure-reduction strategy based on current evidence, but as they may do no harm at the right doses, they may be a useful adjunctive addition to seizure control.

Probiotics: This is an area of intense and promising research, directly targeting the dysbiosis we now know exists. The hypothesis is that supplementing with beneficial bacteria can restore microbial balance, reduce gut inflammation, strengthen the intestinal barrier, and produce beneficial metabolites that influence the MGBA. While published canine epilepsy trials with probiotics are still awaited, human pediatric studies are encouraging. A recent study in children with drug-resistant epilepsy found probiotics reduced seizure frequency and severity. However, probiotic strain, dose, and duration matter, and so we must await canine-specific studies before we can advise their use.

What about a hypoallergenic diet for refractory epilepsy?

The notion that food sensitivities could trigger seizures has circulated for a century, supported by human pediatric case reports. A pro-inflammatory, dysbiotic gut can promote whole-body inflammation; this could be treated by removing dietary triggers of inflammation or immune activation. While large-scale prospective trials on the use of hypoallergenic diets specifically for canine epilepsy are still needed, the microbiome data provides a strong scientific foundation. For the refractory epileptic patient—especially one with concurrent gastrointestinal signs (even subtle ones like occasional soft stool), historical food reactions, or other allergic manifestations—a carefully implemented 8-12 week hypoallergenic diet trial is a justifiable and rational component of a multimodal approach. Speak to your veterinarian before making this dietary change for your dog.

Final Thought

Nutrition is not a replacement for anti-seizure drugs, but it is a powerful and necessary tool in our modern treatment approach. The goal is to evolve from a reactive, drug-based model to a proactive, holistic strategy that uses diet from day one to support metabolic health, reduce neuroinflammation, and cultivate a stable gut-brain axis. By integrating an evidence-based nutritional approach, we can offer epileptic patients not just seizure control but a better foundation for long-term neurological health and quality of life.

Feeding advice for a dog on epilepsy medication

Some pets may develop an increased appetite after starting epilepsy medication, which can lead to weight gain. It's essential to monitor their weight carefully and ensure their diet is appropriate—such as low-calorie for overweight pets—and nutritionally balanced. The best approach is to feed your dog a scientifically formulated diet carefully balanced through extensive research. In addition to monitoring

calorie intake, avoid sudden diet changes without consulting your vet, as these can affect your pet's salt levels. For example, potassium bromide, a common epilepsy medication for dogs, requires stable salt levels because fluctuations can alter drug concentrations in the blood, potentially causing side effects if too high or poor seizure control if too low. Moreover, be cautious with treats and avoid giving scraps during mealtimes, especially those high in fat and salt, like meat or cheese.

This information sheet is intended for educational purposes only and does not replace professional veterinary medical advice, diagnosis, or treatment. Always consult a qualified veterinarian regarding your pet's health.