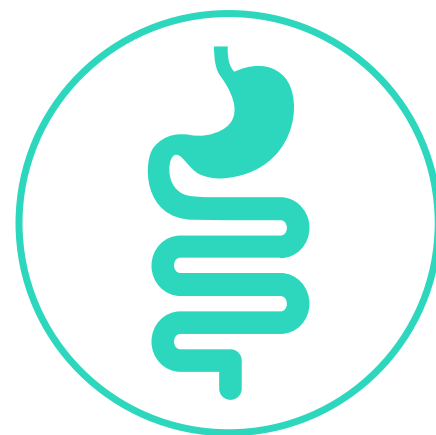


**Gastrointestinal Disorders**

# CHRONIC ENTEROPATHY IN DOGS

Chronic enteropathy in dogs is a group of complex, nonspecific gastrointestinal (GI) disorders characterized by clinical signs lasting 3 weeks or longer and for which other causes (e.g., parasites, bacterial infections, cancer, and non-GI diseases) have been excluded.<sup>1-4</sup>



One or more segments of the GI tract can be affected so that dogs with chronic enteropathy may have any combination and severity of gastrointestinal signs, including chronic intermittent or persistent diarrhea and/or vomiting, weight loss, changes in appetite, borborygmus, nausea, and abdominal pain.<sup>1,5,6</sup>

The main factors believed to play a role in chronic enteropathy development include genetics, food components, intestinal barrier integrity, gut microbiota, and intestinal immune response.<sup>5,7,8</sup> Studies in dogs have associated intestinal dysbiosis with various acute and chronic GI disorders, including chronic enteropathy.<sup>9-14</sup> However, it is unclear whether dysbiosis is a cause of the enteropathy or is a consequence of it.<sup>15</sup>

Chronic enteropathy can be grouped into four categories based on treatment response, intestinal biopsies and histopathology, or both:<sup>16</sup>

- food-responsive enteropathy
- antibiotic-responsive enteropathy
- immunosuppressant-responsive enteropathy, a term used interchangeably with steroid-responsive enteropathy and inflammatory bowel disease in veterinary medicine<sup>2,5</sup>
- nonresponsive enteropathy

Diagnosis and therapeutic management of dogs with chronic enteropathy are closely linked. Initially, dietary intervention is used as a diagnostic tool with the goals of providing complete and balanced nutrition, avoiding known allergens or ingredients that cause adverse food reactions, and resolving clinical signs. Many dogs respond well to dietary changes and nutritional therapy, eliminating the need for biopsies and histopathology. An elimination diet trial is now frequently recommended before endoscopy for most dogs with chronic GI signs of mild to moderate severity for which no other causes are identified, unless negative prognostic factors (e.g., hypoalbuminemia, hypocobalaminemia, high clinical activity index score) are present.<sup>1,2,17-20</sup>

The goals of nutritional intervention are to provide a diet that meets the dog's nutrient requirements, minimizes irritation of the GI mucosa, supports normal GI motility, and resolves or minimizes signs.

**DID YOU KNOW?**

Approximately 2/3 of dogs with chronic enteropathy presenting to referral veterinary practices may be diagnosed with food-responsive enteropathy.<sup>17,20</sup>

## Key Messages

### Nutritional management approaches to consider

- Nutritional intervention benefits many dogs with chronic enteropathy, although no single diet or approach to dietary management of chronic enteropathy works for all dogs.<sup>1,16,17,19</sup> Common dietary strategies include:<sup>4,5,17,19,21–23</sup>
  - highly digestible, low-residue (i.e., low-fiber) diets
  - diets made with hydrolyzed or novel protein ingredients
  - amino acid-based (i.e., elemental) diets
  - low-fat diets
  - fiber-enriched diets
- Identifying the intestinal origin of diarrhea as small bowel, large bowel or mixed can help guide selection of an appropriate diet.
- Studies support the use of highly digestible, commercial therapeutic gastrointestinal diets in dogs with chronic idiopathic GI signs and is a reasonable first diet selection.<sup>17,24</sup> For dogs that do not respond to a GI diet, an elimination diet (i.e., hydrolyzed protein, amino acid based, or novel protein) should be used and has been supported by randomized controlled trials.<sup>17,19,21</sup>
- Clinical response to dietary change is typically rapid, occurring within 1-2 weeks of changing the diet.<sup>16,17,25</sup>
  - Not all dogs with chronic enteropathy will respond to a particular food within 2 weeks. If no response occurs during the initial dietary trial and the dog is stable, a second dietary trial that uses a different nutritional approach (i.e., novel protein versus hydrolyzed protein diet) may be beneficial before proceeding to an antibiotic trial or intestinal biopsy.<sup>26</sup>

### Diet characteristics, nutrients of concern, and related interventions

- Diet characteristics and nutrients of concern include digestibility, energy, protein, fat, fiber, cobalamin, vitamin D, and magnesium.<sup>27–29</sup> However, not every nutrient of concern is relevant for every patient.
- A highly digestible diet is important because the ability of the GI tract to digest food and absorb nutrients, particularly protein and fat, may be compromised.<sup>27,28</sup>
  - High digestibility helps improve nutrient absorption and minimize complications associated with undigested food (e.g., osmotic diarrhea or altered colonic microbiota).
- Highly digestible protein, critical for normal GI tract function, helps dogs with compromised digestive function absorb sufficient essential amino acids. Dietary protein source may be very important to management of clinical signs, especially if adverse food reactions are suspected.<sup>28</sup>
- For dogs with reduced appetite and/or decreased digestive function, an energy-dense diet can help reduce meal size.<sup>28</sup> However, dogs with pancreatitis or lymphangiectasia will benefit from dietary fat restriction.<sup>30</sup> In these dogs, replacing some of the fat with medium chain triglycerides may be beneficial.
  - When fat digestion and absorption are compromised, an increased amount of fat may pass into the colon where it potentially may induce dysbiosis, epithelial cell damage, and fluid secretion into the colon.
  - Modifying the ratio of dietary omega-3 to omega-6 fatty acids may modulate intestinal inflammation by reducing production of proinflammatory metabolites.<sup>30,31</sup>

*(continued on next page)*

## Key Messages (continued)

### Diet characteristics, nutrients of concern, and related interventions (continued)

- Various amounts and types of dietary fiber have been suggested for dogs with chronic enteropathy.
  - In cases of vomiting and/or small bowel diarrhea, low-fiber foods are traditionally recommended to avoid delayed gastric emptying and to improve nutrient absorption.
  - For dogs with evidence of large bowel diarrhea, a high-fiber diet containing mixed fibers (e.g., soluble and insoluble) may be indicated to help reduce tenesmus and assist mucosal repair in the colon.<sup>28</sup>
- Probiotics, especially those shown to modulate the immune system or to have anti-inflammatory properties, may benefit some dogs with chronic enteropathy as part of a multimodal therapeutic approach.<sup>32</sup>
  - Different probiotic strains have varying effects on the host. Specific probiotics should be chosen based on the desired goals.

### Feeding management

- Food form and feeding frequency should be matched to the suspected problem and its location within the gastrointestinal tract to avoid inducing additional vomiting and/or diarrhea.
  - Food form (e.g., liquid, canned, or dry) influences how quickly the stomach empties. Liquid diets are the fastest to leave the stomach, followed by canned foods and finally dry kibble.
  - The increased moisture content of a wet formula or warm water added to dry food can help offset mild fluid losses while improving palatability.
- Dogs with chronic enteropathy may benefit initially from small, frequent meals (e.g., 3 to 6 meals per day) to help improve nutrient absorption and minimize adverse responses such as vomiting or diarrhea.<sup>28,29</sup>
  - If the enteropathy resolves, a gradual transition to the dog's usual diet can be attempted over a 7-day period.
  - Depending on the suspected underlying cause, some dogs may need to remain on a therapeutic diet.

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