

# Gastrointestinal Food Reactions

## (Negative Reactions to Foods that Lead to Stomach or Intestinal Problems)

### Basics

#### OVERVIEW

- The body can react negatively to substances, such as particular foods or ingredients of a food. These negative or “adverse” reactions can be due to true allergic reactions, in which the immune system develops a response to the food (known as “food allergy”). By definition, dietary allergy is an “immunologic” reaction, because the immune system responds to the particular offending substance in the food. Other negative or adverse reactions are not true allergic reactions. The body still reacts to the foods or ingredients of a food, but the immune system is not involved with the abnormal response. When the immune system is not involved, the negative responses are known as “non-immunologic reactions.” These non-immunologic reactions are called “food intolerance”
- Adverse gastrointestinal food reactions encompass disorders with an immunologic basis (that is, food allergy), non-immunologic basis (that is, food intolerance), and toxic reactions (that is, food poisoning or intoxication)
- Adverse food reactions may be associated with vomiting and/or diarrhea in dogs and cats
- In a practical sense, food allergy and food intolerance may have similar signs, diagnostic test results, and treatments, and so may not be easily distinguishable
- Food allergy is a common cause for signs related to skin problems, such as itchiness (known as “pruritus”), and may be associated with gastrointestinal signs (such as vomiting and/or diarrhea); though uncommon, both skin and digestive system signs may occur
- “Gastro-” refers to the stomach; “intestinal” refers to the intestines—these are parts of the digestive tract
- “Enteropathy” is the medical term for a disease of the intestinal tract (plural, enteropathies)
- The small intestines may be described as “small bowel,” as in “small bowel diarrhea”; the large intestines may be described as “large bowel,” as in “large bowel diarrhea”



#### GENETICS

- Specifics of a genetic basis are not well defined
- An inherited food allergy has been seen in soft-coated Wheaten terriers
- Gluten-sensitive enteropathy (specific type of intestinal disease related to the presence of wheat gluten in the diet) has been seen primarily in Irish setters
- Siamese and Siamese-cross cats may be at increased risk, as compared to other breeds of cats, to develop gastrointestinal food reactions

## SIGNALMENT/DESCRIPTION OF PET

### Species

- Dogs
- Cats—more common than in dogs

### Breed Predilections

- Inherited food allergy—suspect autosomal recessive inheritance in soft-coated Wheaten terriers
- Gluten-sensitive enteropathy (specific type of intestinal disease related to the presence of wheat gluten in the diet)—primarily in Irish setters
- German shepherd dogs are at risk for immune system-mediated inflammation of the intestine (known as “idiopathic inflammatory bowel disease”) due to inherited immune system defect; diet components (known as “antigens”) may provoke a response in dogs
- Siamese and Siamese-cross cats increased risk
- Genetic mechanisms are not well defined

### Mean Age and Range

- Any age or breed of dog or cat can be affected
- Irish setters with gluten-sensitive enteropathy—tend to display clinical signs by 4–7 months of age
- Dogs with long-term (chronic) diet-responsive intestinal diseases (known as “diet-responsive enteropathies”)—generally younger adults

## SIGNS/OBSERVED CHANGES IN THE PET

- Food intolerance commonly produces diarrhea (small or large bowel); vomiting; excessive gas formation in the stomach or intestines (flatulence); decreased appetite (known as “anorexia”); and abdomen discomfort
- Food allergy is a common cause of skin (dermatologic) changes, such as itchiness (pruritus) and hair loss, which may be associated with gastrointestinal signs (such as vomiting and/or diarrhea)
- Sudden (acute) food intolerance may accompany feeding a foodstuff to which the pet has never been exposed (known as a “novel foodstuff”; for example, feeding a food that contains “alligator” as an ingredient and the pet has never eaten anything containing alligator), a new food source, or dietary change
- Signs may cease when the pet is fasted or within days of beginning an elimination dietary trial; an “elimination dietary trial” involves feeding a diet that does not contain substances that the pet normally eats and is free of additives to see if clinical signs improve
- Physical examination findings are generally non-specific; pet may have abdominal discomfort, excessive gas formation in the stomach or intestines (known as “flatulence”), abdomen bloating, or patchy areas of hair loss along the ear flap margins and skin around the eyes, especially in cats

## CAUSES

- Reactions to food additives, where the individual pet is more likely to develop ill effects (known as “idiosyncratic reactions”)—for example, colorings, preservatives (such as butylated hydroxyanisole [BHA], monosodium glutamate, sodium nitrate, sulfur dioxide); spices; propylene glycol
- Drug reactions—substances that have an effect on the blood vessels (known as “vasoactive substances,” such as histamine); agents that have an effect on the nervous system to alter mood, anxiety or behavior (known as “psychoactive agents”); stimulants (such as theobromine, caffeine); other drugs
- Metabolic defects or deficiencies—enzyme defects in the lining of the intestinal tract (for example, lactase deficiency leading to lactose intolerance); inborn errors of metabolism, such as processing enzyme (aminopeptidase N) deficiency in gluten-sensitive enteropathy
- Toxic reactions to foods or spoiled foods—spices; oxalate toxicity; lectin toxicity; aflatoxicosis (disease caused by eating foods contaminated with aflatoxin, poison produced by certain fungi, including *Aspergillus*); ergotism (disease caused by eating ergot-contaminated grains or grain products; ergot is a fungus that infects cereal plants); botulism (food poisoning caused by eating food containing botulin, a nerve toxin produced by a particular bacteria); dietary indiscretion, where the pet eats inappropriate things (such as garbage)

## RISK FACTORS

- Genetic susceptibility suspected in soft-coated Wheaten terriers
- Young Irish setters susceptible to gluten-sensitive enteropathy (specific type of intestinal disease related to the

presence of wheat gluten in the diet) may be at greater risk to develop the disease if exposed to gluten at an early age

## Treatment

### HEALTH CARE

- Generally treat on an outpatient basis

### ACTIVITY

- No restrictions

### DIET

- Feed a protein digest (known as “hydrolysate”) or novel protein (that is, feeding a protein to which the pet has never been exposed) diet
- Cats generally are sensitive to more than one dietary ingredient
- Many high-quality, commercial diets are available for use in dogs and cats with special digestive system needs
- If this approach is used, examination of the ingredients of the various diets being fed is recommended to determine if any patterns exist that might help identify the offending ingredient(s)

## Medications

- Generally no medications are used
- Associated problems (such as antibiotic-responsive diarrhea [ARD] or inflammatory bowel disease [IBD]) may require medical therapy

## Follow-Up Care

### PATIENT MONITORING

- Assess effectiveness of the elimination dietary trial by observing improvement in clinical signs; an “elimination dietary trial” involves feeding a diet that does not contain substances that the pet normally eats and is free of additives to see if clinical signs improve
- Consider repeating evaluation for primary disease (such as inflammatory bowel disease) if the pet is unresponsive to dietary therapy

### PREVENTIONS AND AVOIDANCE

- Avoid the offending food ingredient(s)
- If no specific ingredient has been identified, adhere to a particular exclusion diet (a diet that is designed to eliminate or exclude the food ingredient[s] to which the pet most likely is intolerant)

### POSSIBLE COMPLICATIONS

- Antibiotic-responsive diarrhea and inflammatory bowel disease

### EXPECTED COURSE AND PROGNOSIS

- Prognosis for a full recovery is excellent in most affected pets, if dietary recommendations are followed completely
- Soft-coated Wheaten terriers with food allergy have a guarded prognosis for full recovery

## Key Points

- Feed a diet free of the offending ingredient(s)
- Do not feed any scraps or vary from the recommended diet
- Prognosis for a full recovery is excellent in most affected pets, if dietary recommendations are followed completely