Dr. Dorothy Laflamme: Food allergy can be a challenging condition for veterinarians to both diagnose and manage. Through this roundtable, we hope to provide practicing veterinarians with a better understanding of how to recognize food allergies and food intolerance in both cats and dogs, as well as how to help manage the condition through diet. In addition, we want to give veterinarians a better understanding of the benefits of hydrolyzed diets, for both food-allergic and other patients.

Identifying food allergy and food intolerance

Dr. Laflamme: Because a high percentage of patients with food allergy and intolerance have both gastrointestinal and dermatologic clinical signs, our panel includes specialists in both fields, as well as a feline practitioner to provide a focused perspective on food allergy in cats. Our first question for the panel: Based on your clinical experience, for which patients do you put food allergy high on your list of differential diagnoses?

Dr. Robert Kennis: For the most part, a food-allergic patient is a dog that presents with nonseasonal intense pruritus. The distribution pattern—face, feet, ears, axillae, forelegs, and inguinal area—is consistent with an atopic dog, so there is significant overlap. Age of onset is another key factor because atopic patients are usually 1 to 3 years old at onset, whereas the food-allergic patient may be very young, less than 1 year old, or much older. Recurrent infections, recurrent otitis, and a poor response to therapy suggest food allergy.

Dr. Elizabeth J. Colleran: For cats, I’ll look for a food allergy in a young patient with facial pruritus or lesions around the neck. Eosinophilic granulomas are also very common. There is certainly a different distribution pattern of skin lesions in cats.

Dr. Stanley L. Marks: From a gastrointestinal standpoint, I am suspicious of food allergy in a patient that shows either acute or chronic manifestations of gastrointestinal disease (vomiting, diarrhea, abdominal pain) in association with the feeding of a particular diet or diet component. It is challenging to differentiate food allergy from food intolerance in these animals; however, the presence of concurrent dermatologic disease manifested with pruritus in a younger animal makes food allergy more likely.

Dr. Nolie Parnell: If a dog is less than 2 years old with a history of chronic gastrointestinal disease and is otherwise stable, I’m concerned about food allergy. Often, there is some type of dermatologic abnormality.

Dr. Kenneth W. Simpson: For cats, I lump together concurrent gastrointestinal and skin signs and maybe eosinophilia. This was demonstrated in a New Zealand study involving 55 cats with pruritus and gastrointestinal...
complaints. Almost half of those cats (27) responded to food trials. Interestingly, adverse reactions to cereal were more common in these cats than adverse reactions to animal proteins. That’s been a somewhat similar experience in dogs diagnosed with food intolerance. In Karen Allenspach’s paper, of 70 dogs with chronic enteropathies, about half responded to an elimination diet, and of those, most did not relapse when challenged with the original diet. Even when the dogs were challenged with foods thought to provoke an allergic response, such as beef, chicken, and milk, none of them had adverse signs.

Dr. Parnell: Obviously if the animal comes in and has extensive hair loss, that’s a great sign. But if they are just licking their feet and you don’t ask the right questions, you may miss some subtle signs. I ask about licking of the paws, rubbing of the face, and evidence of otitis. I look interdigitally to see if there is any evidence of excessive licking or excoriation.

Dr. Kennis: If you ask your client, “Does your dog itch?” the perception is that you mean physical scratching. But licking, biting, chewing, and face rubbing are very common.

Dr. Simpson: There is no universal predictor as to which patient will be diet responsive; but if there are concurrent gastrointestinal and skin signs, food allergy is at the top of the list of possibilities.

Dr. Marks: I would be much more suspicious of food allergy in a patient with diarrhea, vomiting, or colic when that patient has a concurrent dermatopathy characterized by pruritus.

Dr. Kennis: How do we prove that it’s truly allergic? Would you say that a case that relapses with provocative challenge is allergic? Or do you still need to define it based on histopathology?

Dr. Laflamme: When we do a challenge, we don’t know if it is truly an allergy. Whether it is immune-mediated or non-immune-mediated, they can have the same clinical signs and the same response to diet. So the term “intolerance” is more appropriate. Intolerance would include allergies, but it could also include all the other unknown mechanisms that cause an adverse reaction to food.

Many practitioners send out blood samples for blood testing to try to diagnose food allergy. How well do those assays work?

Dr. Kennis: There have been several reports indicating that IgE serum testing or skin testing is worthless for ruling in a food allergy. Some laboratories even have a disclaimer that says the test has not been validated in several studies.

Role of the gastrointestinal tract

Dr. Laflamme: Food intolerance can manifest with gastrointestinal signs, dermatologic signs, or both kinds of signs. In your opinion, what is the role of the gastrointestinal tract in food allergy?

Dr. Kennis: If we are going to make the argument that this is an IgE-mediated disease, then it has to begin with these proteins being absorbed and getting through the gut in an abnormal way because of a breakdown of tolerance.

Dr. Marks: Loss of oral tolerance can lead to various types of food allergies with increased intestinal permeability and defects in regulatory T-cell activity. Increased intestinal permeability secondary to underlying intestinal disease or genetic traits (such as gluten-sensitive enteropathy in Irish setters) may precipitate increased antigen exposure; however, increased epithelial permeability is often the consequence rather than the cause of food sensitization. In cases of IgE-mediated food allergy, the large amount of IgE produced is bound to mast cells, resulting in degranulation and release of inflammatory mediators (histamine, serotonin, prostaglandins, cytokines).

Dr. Kennis: Many of my cases

“There is nothing inherently unique about venison or ostrich or rabbit that makes it hypoallergenic. In contrast, protein hydrolysates are hypoallergenic.”

Dr. Stanley L. Marks
don’t have obvious gastrointestinal problems, but there could be subclinical permeability issues. I try to rule out everything first before looking at food intolerance because it is quite challenging for clients to do a good food trial. Before asking my clients to do a food trial, I want to make sure that it is at the top of my list of differential diagnoses.

**Dr. Laflamme:** It is true that there may not be obvious gastrointestinal problems, but what are some clues that owners might observe?

**Dr. Marks:** It is fascinating what owners perceive as “normal” vs. “abnormal” feces. The inherent variability of what constitutes a normal-appearing stool can be nullified by the routine implementation of a fecal scoring chart. The use of a numerical fecal scoring system characterized by color images of different fecal consistencies and a written description of the characteristics of each score is invaluable for assessing the clinical response to dietary intervention.

Nestlé Purina has produced a useful fecal scoring chart that we can show owners to optimize the accurate description of a pet’s stool before and after dietary intervention.

**Dr. Kennis:** One of my colleagues says he has a raised index of suspicion for food allergy in dogs that have frequent bowel movements. If I am leaning toward that diagnosis, I specifically ask owners how many times a day the pet has a bowel movement. I also ask them if they perceive this as being normal or whether the frequency has changed. Soft stools or frequent bowel movements may be usual for that pet, so the owner will not identify this as an abnormality. All of these clues may raise food allergy higher on our differential diagnosis list. I try to rule out everything else first because doing a good food trial is challenging.

**Dr. Simpson:** When you look at the cat and dog studies, large bowel signs were more frequent in the patients that ultimately responded to diet, but it’s not all or nothing.

**Dr. Marks:** It’s important to emphasize that the absence of overt gastrointestinal signs of vomiting and diarrhea doesn’t rule out intestinal disease. The findings of weight loss (with or without a change in food intake), flatulence, and borborygmus are important features of intestinal disease that warrant further evaluation. A dietary trial is pursued once the clinician has ruled out extra-intestinal causes of vomiting and diarrhea, and when intestinal parasites (and other infectious agents) have been ruled out or appropriately treated.

**Dr. Laflamme:** Dr. Colleran, do you ask about gastrointestinal signs if pruritus is the presenting complaint?

**Dr. Colleran:** Absolutely. Even if pruritus is the presenting complaint, I ask, “Are you having to scoop the litter box more than usual?” and “Are you seeing any vomiting or diarrhea?” It can be extremely difficult for clients to know whether or not there is a normal litter box situation, especially in multi-cat households.

**Dr. Parnell:** On the opposite side of the coin, we gastroenterology specialists tend to focus on the chronic gastrointestinal manifestations that the owner is reporting. We can quite easily overlook dermatologic abnormalities that the owner and patient have been dealing with for a long time. It is equally important for us on the gastroenterology side to have those conversations. When an animal comes in with extensive hair loss, that’s an obvious sign. But if the animal is just licking its feet and you don’t ask the right questions, you may miss some subtle signs that would help you determine the true diagnosis.

**Dr. Simpson:** You go with a therapeutic trial once you have excluded other likely diagnoses that can cause the same clinical signs.

**Dr. Laflamme:** What is the potential role of intestinal parasites
as a risk factor for food allergies or food intolerance?

Dr. Marks: There is provocative evidence documenting altered barrier function in association with intestinal helminth infections. Specifically, infection with a murine nematode was associated with a significant increase in colonic epithelial permeability. Further studies are warranted to document the possible association between infection with intestinal parasites and increased risk of food allergy.

Food trials and complicating factors

Dr. Laflamme: What do veterinarians and clients find most frustrating about food trials and the treatment of food allergy or intolerance?

Dr. Kennis: There are many considerations. Veterinarians have to talk to clients about the importance of the elimination diet as a test. I tell clients that we are going to do it right the first time, and we are going to go all out for a minimum of eight weeks. We have to be aware of everything that is given to the patient during that time. Even some antibiotics are flavored, as are some of the new oral flea products; so we have to be careful. Because my patients tend to be pruritic, I need to treat any concurrent secondary infections even during the trial. We might choose a spot-on heartworm or flea product. We might institute bathing therapy as an adjunct to provide some relief.

Dr. Colleran: Another complicating factor is if a feline patient has to be on medication. Clients often have trouble medicating cats, so the cats are often on some sort of formulated oral medication. Discontinuing that isn’t usually an option, so we have to find another way to deliver that medication. In cats, the complicating factors are clear: multiple-pet households, cats that are allowed outdoors, and, of course, the infamous fussiness about aroma, texture, and flavor of their food.

Dr. Marks: Some owners don’t recognize the importance of being fastidious about the feeding of the elimination diet during the trial, and we are often guilty of not reminding them. This involves reminding owners about the avoidance of flavored medications that might alter the outcome of a dietary trial. Dietary trials can be challenging for many owners, particularly in multi-cat and multi-person households where the other animals are fed a different diet than the one being evaluated in the trial.

Dr. Parnell: What I struggle with the most when formulating a plan that includes diet modification is addressing the “food equals love” philosophy. Treats are barriers to compliance. Clients are willing to spend the money, change the diet, and modify their lifestyle…except when it comes to treats.

Dr. Laflamme: What solutions have you come up with for dealing with treats during the period of an elimination trial?

Dr. Parnell: There are a couple of products. Purina’s hypoallergenic treats are a good option. The old standby is creating biscuits from the prescribed diet to be used as treats. Otherwise we are limited to feeding vegetables or simply trying to convince clients to live without treats, stressing the importance of an “elimination test.”

Dr. Kennis: You mentioned vegetables. The only ones I’ve allowed during a food trial are carrots. There are some fruits and vegetables that can cross-react with pollens and could exacerbate a problem. I really try hard to stick to the elimination diet and water, and I tell the client, “Nothing else passes your dog’s lips during this period.”

Dr. Parnell: Carrots seem to be the old standby. Cooked summer squash, zucchini, and yellow squash seem to work well. Cats are my nemesis in terms of finding a treat.

Dr. Laflamme: Some dermatologists swear by

“If a dog is less than 2 years old with a history of chronic gastrointestinal disease and is otherwise stable, I’m concerned about food allergy. Often, there is some type of dermatologic abnormality.”

Dr. Nolie Parnell
homemade diets; how do they play into this?

**Dr. Kennis:** The argument has always been that a home-cooked diet is going to be the purest form of a test diet. I can’t get my clients to cook for their pets. So having the Purina Veterinary Diets® HA Hypoallergenic® formulas as an option for them is fabulous. My worry with any patient is that home cooking will be neither nutritionally balanced nor complete.

**Dr. Marks:** I prefer to feed a complete and balanced commercial diet to animals with suspected food intolerance whenever feasible, and I reserve home-cooked formulations for animals with concurrent disorders that cannot be nutritionally managed with the same commercial diet.

Specific examples include animals with suspected food-responsive enteropathy and renal disease, or suspected inflammatory bowel disease and hyperlipidemia.

**Hydrolyzed vs. novel protein diets in food allergy diagnosis and management**

**Dr. Laflamme:** While both novel protein and hydrolyzed diets have been available for some time, sales figures tell us that practitioners use more novel protein diets than hydrolyzed protein diets, in spite of the fact that the costs today are similar. To what do you attribute this?

**Dr. Kennis:** There are several reasons why novel protein diets may be used more. Early in my career, when looking at food allergy as a cause of canine pruritus, the standard recommendation was home cooking, especially lamb and rice home-cooked diets. For veterinarians, a novel protein diet that is already in a can was the natural progression. Veterinarians need to rethink the benefits of a hydrolyzed diet when compared with novel protein diets.

**Dr. Parnell:** Practitioners are often more comfortable with products from a particular company, regardless of the potential benefits other products may provide.

**“In the cases in which I’ve used Purina Veterinary Diets HA Feline, the cats have absolutely loved it. The palatability is remarkable.”**

**Dr. Robert Kennis**

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**Common manifestations of a food allergy or intolerance**

**Dogs**
- Concurrent gastrointestinal and dermatologic signs
- Intense pruritus, involving the face, feet, ears, axillae, forelegs, and inguinal area; signs similar to those of dogs with atopy
- Physical scratching; licking, biting, or chewing of paws; interdigital excoriation; rubbing of the face and ears
- Recurrent otitis
- Chronic intermittent vomiting and/or diarrhea and weight loss
- Age at onset — Patients may be very young, less than 1 year old, or much older. Atopic patients are usually 1 to 3 years old at onset.
- Peripheral eosinophilia

**Cats**
- Concurrent gastrointestinal and dermatologic signs
- Chronic intermittent vomiting and/or diarrhea and weight loss
- Facial pruritus and lesions around the head and neck
- Peripheral eosinophilia
- Eosinophilic granulomas or plaques
addition, the limited-antigen diets have been out for much longer, and veterinarians are more familiar with those products.

Dr. Colleran: One more reason: The Internet. When clients get on the Internet and look for diets that will fix a gastrointestinal or skin problem, what they find are explanations of limited-antigen diets. There is nothing out there on hydrolyzed protein.

Dr. Laflamme: There also appears to be some confusion about the hydrolyzed protein diets among veterinarians. Purina recently conducted focus groups with veterinarians on food allergy and learned that a number of practitioners are unsure of how hydrolyzed protein diets work and when they should be used. Would you explain how the hydrolyzed protein diets work?

Dr. Simpson: The proteins are smashed up so that they evade detection by whatever adverse immune response they might elicit. Stealth proteins.

Dr. Marks: The proteins have been chopped up enzymatically into protein building blocks called polypeptides. The protein modification reduces the antigenicity and renders the hydrolyzed soy protein isolate less likely to elicit an immune response. The Purina HA canine formula is a diet that contains a hydrolyzed soybean protein that is highly digestible, is moderately fat-restricted (24% fat on ME basis), and contains medium chain triglycerides.

Dr. Simpson: There are other hydrolyzed diets that aren’t soy-based and nonhydrolyzed restricted antigen diets that are reported to have similar response rates. All the hydrolyzed diets tend to have very few ingredients in them, and they all seem to be very high quality. So, another hypothesis would be that it is what’s not in these diets that is producing the beneficial response rather than what is in them.

Dr. Marks: There is a subset of dogs with biopsy-confirmed inflammatory bowel disease or chronic idiopathic enteropathy that fail to respond to elimination diets containing novel, single-protein sources; however, the response (fecal scoring, body weight, intestinal histopathology) to feeding a hydrolyzed protein diet was extremely favorable.

Dr. Kennis: I like Purina HA food as an elimination diet. Some of the “novel protein diets” may not be as novel anymore. Now, in part because of the Internet, it seems every dog has eaten lamb, venison, and rabbit before it comes to me. An advantage of Purina HA is that soybean itself is fairly novel. There was a time when people used tofu as an elimination diet. There seems to be a myth perpetuated even in dermatology textbooks that soybean is one of the most common food allergens in dogs. However, I can’t find any evidence that has been proven scientifically. I think the soybean base is an advantage of Purina HA.

Dr. Marks: The benefit of using a protein hydrolysate such as Purina HA is that it is a truly hypoallergenic diet. Many veterinarians believe that elimination diets are hypoallergenic; however, there is nothing inherently unique about venison or ostrich or rabbit that makes it hypoallergenic. In contrast, protein hydrolysates are hypoallergenic and afford the clinician the benefit of using a more optimal diet for the diagnosis and management of food intolerance. In addition, hydrolyzed protein diets are helpful for animals that have been exposed to a wide variety of diets making it challenging to find a novel protein source to which an animal has not been exposed. One of the biggest benefits of the Purina HA formula is that it is simple and minimizes the concerns and hassle of finding an appropriate elimination diet. I’ve also been impressed with the palatability of the recently launched Purina Veterinary Diets HA Feline formula. All feline patients that were offered the diet, including several that refused to eat...
another commercially available hydrolyzed diet, readily accepted the HA feline formula. Of equal importance, the formula was associated with resolution of diarrhea in some cats that failed to respond to other elimination diets.

**Dr. Laflamme:** Hypoallergenic is the right word because there is a lot of evidence that hydrolysis reduces the ability for that protein or that diet to produce an IgE or IgG response. That has been well documented.

**Dr. Simpson:** The hydrolysate takes the guesswork out of the diet history. However, such diets can be expensive, especially for large-breed dogs. There may be the question for some owners about whether or not they can afford the diet.

**Dr. Colleran:** The problem of not knowing an animal’s dietary history can be a huge argument for selecting a hydrolyzed diet, and the palatability of the Purina Veterinary Diets HA Feline formula is terrific. Out of all the cats that I’ve recommended it for, I’ve only had one turn its nose up. Also, because I have so many overweight cats in my practice, I really like the Purina HA diet because it is only 350 calories per cup. That is much more manageable than many other diets on the market. One question with using a hydrolyzed diet with cats is how to feed it in a multi-cat household, where there may be cats at risk for other health issues. You have to decide whether to feed it to all of the household cats.

**Dr. Kennis:** In the cases in which I’ve used Purina Veterinary Diets HA Feline, the cats have absolutely loved it. The palatability is remarkable.

**Dr. Laflamme:** For pickier eaters—such as small-breed dogs—would the feline HA be a reasonable option? It is a smaller kibble. It is hydrolyzed, so it would have the same benefits. It provides more than enough nutrition and protein.

**Dr. Marks:** Absolutely it would. I think it is worth looking into.

**Dr. Simpson:** In ongoing studies at my institution, the response to Purina HA in dogs with chronic enteropathies is more than 50%, including those with hypoproteinemia. If you take them out, it is more than 70%.

**Dr. Marks:** The response rate to hydrolyzed protein diets in dogs with chronic idiopathic enteropathies is impressive, and clinicians should be aware of the importance of dietary trials as a diagnostic and therapeutic tool for animals with a variety of chronic enteropathies, including inflammatory bowel disease. I have used Purina HA in dogs with intestinal lymphangiectasia, particularly when accompanied by IBD.

**Dr. Colleran:** How about for chronic pancreatitis?
Other indications for hydrolyzed diets

Hydrolyzed diets are not just for patients with a food allergy or intolerance. Depending on the nutrient profile of the specific diet, these diets may be excellent choices for patients with:

• Chronic idiopathic enteropathy
• Various gastroenteropathies
• Inflammatory bowel disease
• Lymphangiectasia
• Gut leakiness while recovering from acute enteropathy
• Chronic pancreatitis
• Canine hepatic encephalopathy
• Vascular anomalies (younger dogs)
• Protein-losing enteropathies

Dr. Marks: The diet could be used for the management of dogs with pancreatitis; however, I might choose a diet that is more fat-restricted (<20% fat on ME basis) for some of my canine patients.

Dr. Parnell: One way to demonstrate the fantastic value of a Purina HA hydrolyzed diet is in my patients with stable protein-losing enteropathies that are able to go home right after their biopsies. For treatment, I will start them on Purina HA as the sole therapy and not allow steroids to be started until they come back for a recheck. A significant proportion of those animals respond to the change in diet alone with improved clinical signs and an increase in their serum albumin concentrations. It is a great way to show the power of diet and its role in disease.

Dr. Marks: With the advent of increasing diet trials in patients with chronic enteropathies, we are biopsying fewer animals with intestinal disease following the resolution of clinical signs with dietary therapy.

Conclusion

Dr. Laflamme: We have touched on many good points with regard to food allergy and food intolerance in dogs and cats and addressed the benefits and indications for feeding hydrolyzed protein diets in a variety of patients, including food-allergic patients. We know that food allergy can be challenging for practitioners, patients, and owners; therefore, we hope that this discussion will help practitioners better understand the condition, including its diagnosis and management, and that practicing veterinarians can find ways to streamline diagnosis and management.

References