



# Dermatology Diagnostic Guide



# about the author



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**Dr. Sara Ramos** grew up in Louisiana and graduated in 2015 from the Louisiana State University School of Veterinary Medicine. Following graduation, she completed a one-year rotating internship at the University of Georgia College of Veterinary Medicine, which is where she was inspired to pursue a career in dermatology. She then returned to LSU where she completed both a one-year dermatology internship and a three-year dermatology residency. Dr. Ramos became a board-certified Dermatologist in 2020 and now serves the dermatology needs of pets in the New Orleans and Baton Rouge area, working at Veterinary Specialists of Greater New Orleans and Capital Area Veterinary Specialists. Dr. Ramos is very passionate about continuing to learn and teaching others within the field of dermatology.



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# how to help patients with skin issues

Start diagnostics



Unknown Allergy  
or  
Suspected Atopy



**Derm Complete**  
+  
**Multimodal Therapy**  
as needed

4 wks\*  
Sufficient  
Positive  
Response

**Continue feeding**  
**Derm Complete**  
(+ Multimodal therapy  
as needed)

4 wks\*  
Insufficient  
Response

Suspected AFR  
and/or Chronic  
Enteropathy  
(and hydrolyzed  
elimination trial desired)



**Food  
Elimination Trial**

8-12 wks\*  
Insufficient  
Response,  
AFR Unlikely

(if no known  
fat sensitivity)

**z/d**

(if concurrent  
fat sensitivity  
(suspected or confirmed))

**z/d  
low fat**

8-12 wks\*  
Sufficient  
Positive Response

**AFR  
Diagnosed**  
Continue feeding  
z/d or d/d

**AFR &/or Fat  
Sensitivity  
Diagnosed**  
Continue feeding  
z/d low fat

\*Transition gradually over 7-10 days for best results.



# diagnostic path

<b>step 1 assess</b>	Thorough patient & nutritional history Physical exam Dermatologic exam, flea comb
<b>step 2 diagnostic workup</b>	Superficial and deep skin scrapes Surface cytology Dermatophytosis testing
<b>step 3 confirm Adverse Food Reaction (AFR)</b>	Begin 8-12 week elimination diet trial
<b>step 4 reassess</b>	Assess response to diet trial
<b>step 5 plan for future</b>	Discuss long-term control of AFR (with or without fat sensitivities) vs. atopic dermatitis (with or without fat sensitivities)

Use only those tests that apply based upon history and lesions



# fleas/flea allergy

## signs in dogs and cats include:

- Pruritus: Mild to severe
- Lesions: Mild to severe alopecic erythematous papular dermatitis with or without secondary pyoderma
- Location: The base of the tail and caudal dorsum (diffuse clinical signs can occur)



## flea/flea allergy management:

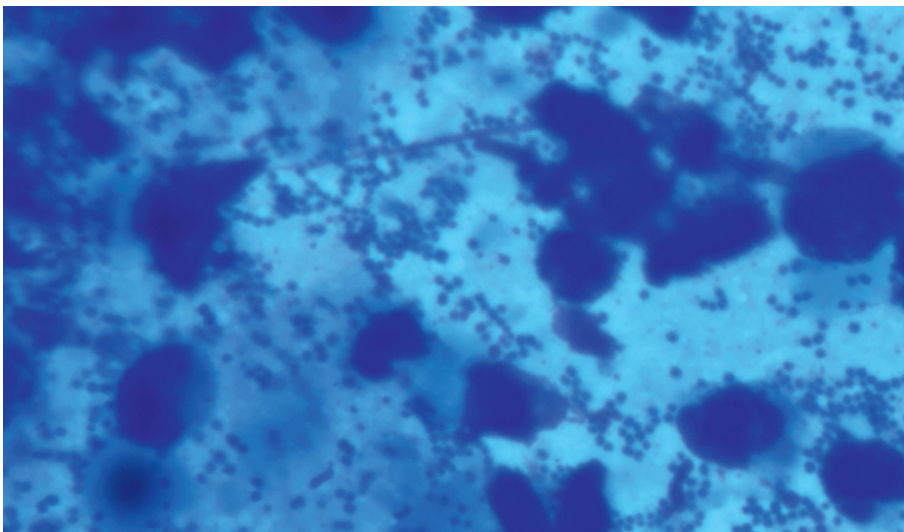
- Treat current infestation with topical or oral prescription products and prescribe antipruritic therapy
- Manage home infestation
- Prevent future infestation/exposure
- If patients continue to go outside and encounter exposure, they may need continued antipruritic therapy

**RECOMMENDED NUTRITION AS PART OF YOUR MULTIMODAL TREATMENT PLAN:**

*See pages 25-30 for details*



# cytology



## staphylococcal pyoderma

### signs in dogs and cats include:

- Pruritus: Mild to severe
- Lesions: Mild to severe
- Moth-eaten alopecia
- Epidermal collarettes
- Papules, pustules, crusting dermatitis
- Location: Truncal area is most common, but lesions can occur anywhere on the body



## staphylococcal pyoderma management:

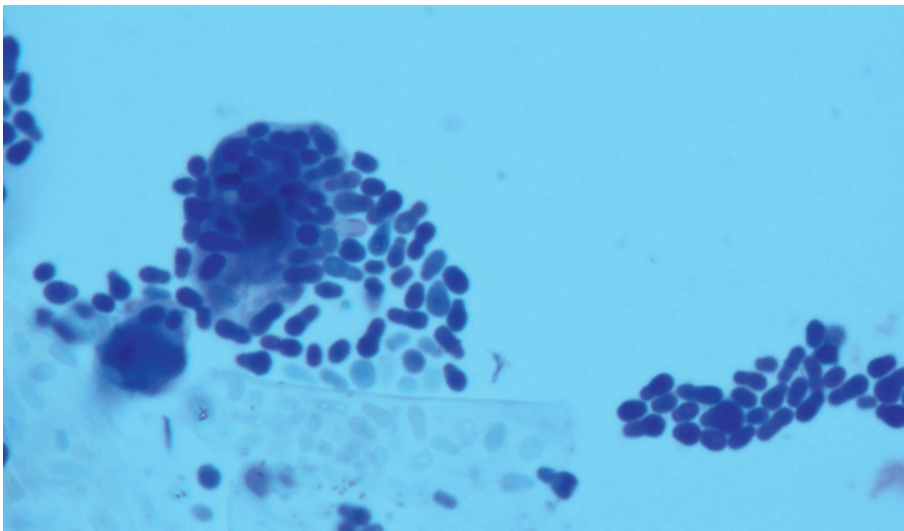
- Topical therapy is recommended for all cases and can be the sole treatment if patient/client is compliant
- If systemic treatment is indicated, consider bacterial culture to guide therapy (this diagnostic is never contraindicated). However, if there is low concern for antimicrobial resistance, empiric treatment can be started with:
  - First-generation cephalosporins (ex. cephalexin, cefadroxil) or
  - Penicillins (ex. amoxicillin-clavulanate) or
  - Lincosamides (ex. clindamycin)
- Strongly consider bacterial culture if:
  - History of multi-drug resistant infections within this patient or pets/humans of the same household
  - Intracellular rod-shaped bacteria present on cytology
  - Less than 50% reduction in extent of lesions within two weeks of prescribed systemic therapy
  - Emergence of new lesions after two weeks or more of systemic therapy
  - Lesions remain after six weeks of systemic therapy

**RECOMMENDED NUTRITION AS PART OF YOUR MULTIMODAL TREATMENT PLAN:**

*See pages 25-30 for details*



# cytology



## malassezia dermatitis

### signs in dogs and cats include:

- Pruritus: Mild to severe
- Lesions: Mild to severe
- Erythematous dermatitis
- Mixed seborrhea sicca/oleosa
- Malodor
- Lichenification
- Location: Fold areas (inguinal, axillary, cervical) are most common, but lesions can occur anywhere on the body







## malassezia dermatitis management:

- Topical therapy is recommended for all cases and can be the sole treatment if patient/client is compliant
- Systemic therapy can be considered for generalized disease

*For information on drug selection and dosing, please refer to your primary pharmaceutical reference.*

**RECOMMENDED NUTRITION AS PART OF YOUR MULTIMODAL TREATMENT PLAN:**

*See pages 25-30 for details*



# skin scraping



## skin scraping technique:

To be done with a blade or spatula at a  $<90$ -degree angle relative to the direction of scraping.

- Trim hair if needed
- Apply mineral oil to skin

### For superficial skin scrape (sarcoptes, cheyletiella):

- With light pressure, scrape affected skin at an approximate 45-degree angle broadly in the direction of hair growth
- Place contents on slide with coverslip and examine area at low power: 4x and 10x objective

### For deep skin scrape (demodex):

- Gently squeeze the skin and apply a small amount of mineral oil to the scrape area
- Hold the targeted area taught with your non-scraping hand
- With the blade at an approximate 45-degree angle, apply to skin with mild to moderate pressure and scrape in the direction of the hair
- Continue to scrape the area until capillary bleeding is noted
- Place contents on slide and place with coverslip and examine area at low power: 5x or 10x objective

# skin scraping



**demodex**

## signs in dogs and cats include:

- Pruritus: None to severe
- Lesions: Mild to severe, focal to diffuse, typically develop prior to pruritus
- Alopecia
- Papular/crusting erythematous dermatitis
- Nodular, furunculosis with erosion or ulceration
- Secondary pyoderma is likely in more severe lesions
- Location: Focal lesions are most likely to affect the feet, facial and periocular areas (though generalized lesions can occur anywhere)





## canine and feline demodex management:

Treatment must continue until two consecutive negative deep skin scrapes are obtained two weeks apart. Consider an additional four weeks of therapy for severe cases.

- Treatment with prescribed isoxazoline at recommended dosing intervals is recommended for both canine and feline patients.
- If the patient cannot tolerate isoxazoline therapy, alternative products such as moxidectin/imidacloprids, ivermectin and amitraz may be considered.

*For information on drug selection and dosing, please refer to your primary pharmaceutical reference.*

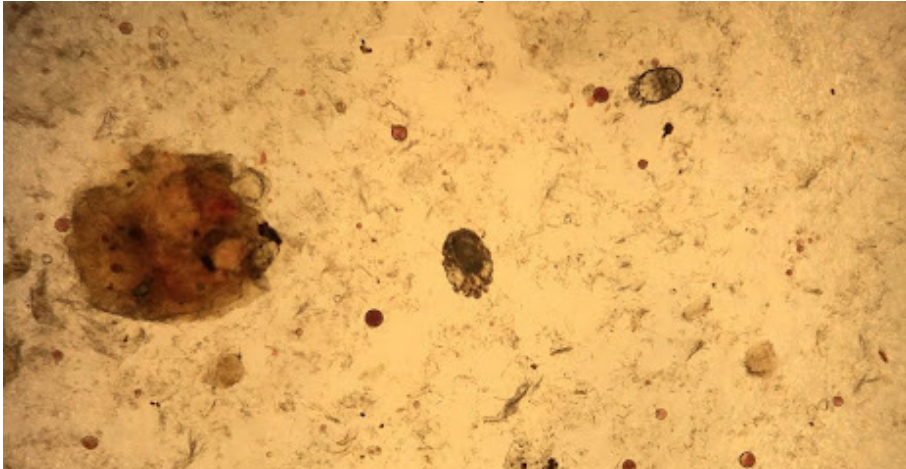
**RECOMMENDED  
NUTRITION AS PART  
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TREATMENT PLAN:**

*See pages 25-30 for details*





# skin scraping



**sarcoptes**

## signs in dogs and cats include:

### Dogs:

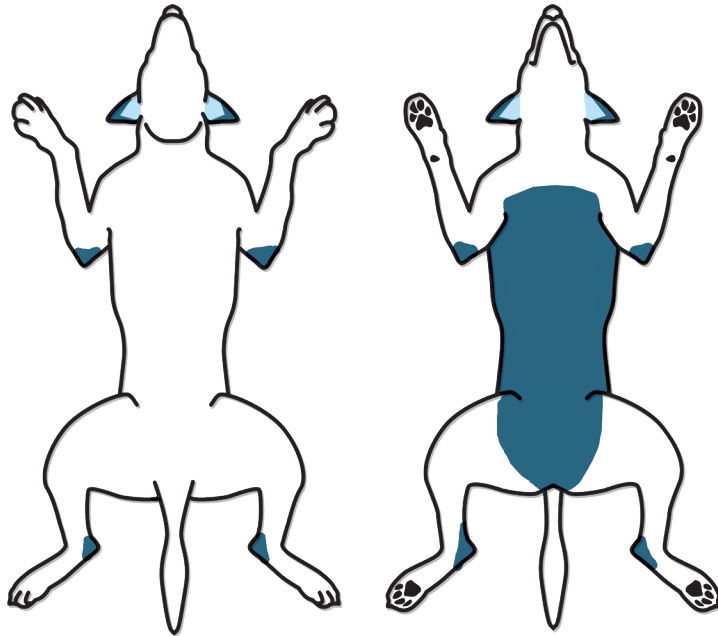
- Pruritus: Mild to severe
- Lesions: Focal to generalized
- Excessive scaling with or without excoriations
- Location: Dorsum and rump

### Cats:

- Pruritus: Severe
- Lesions: Focal to generalized
- Alopecia
- Papular/crusting erythematous dermatitis
- Location: Head, ears, neck







## sarcoptes management:

Treatment with an isoxazoline is recommended. If the patient cannot tolerate isoxazoline therapy, selamectin, ivermectin or lime sulfur therapy can be considered.

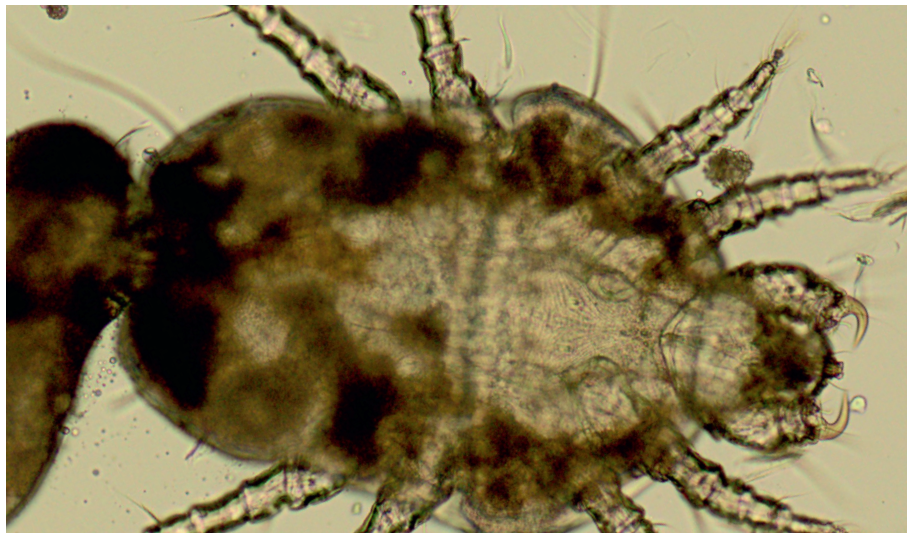
*For information on drug selection and dosing, please refer to your primary pharmaceutical reference.*

**RECOMMENDED NUTRITION AS PART OF YOUR MULTIMODAL TREATMENT PLAN:**

*See pages 25-30 for details*



# skin scraping

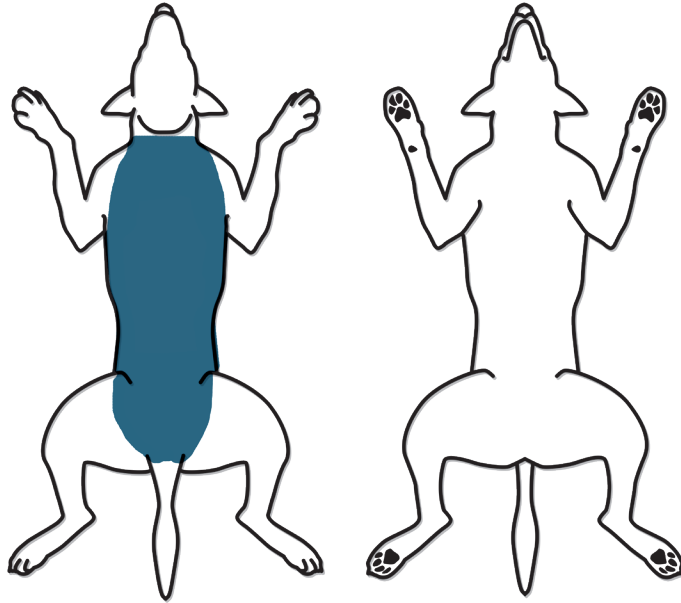


**cheyletiella**

## signs in dogs include:

- Pruritus: Mild to severe
- Lesions: Focal to generalized
- Excessive scaling with or without excoriations
- Location: Dorsum and rump





## cheyletiella management:

Treatment with an isoxazoline is recommended. If the patient cannot tolerate isoxazoline therapy, moxidectin/imidacloprid, ivermectin or lime sulfur therapy can be considered.

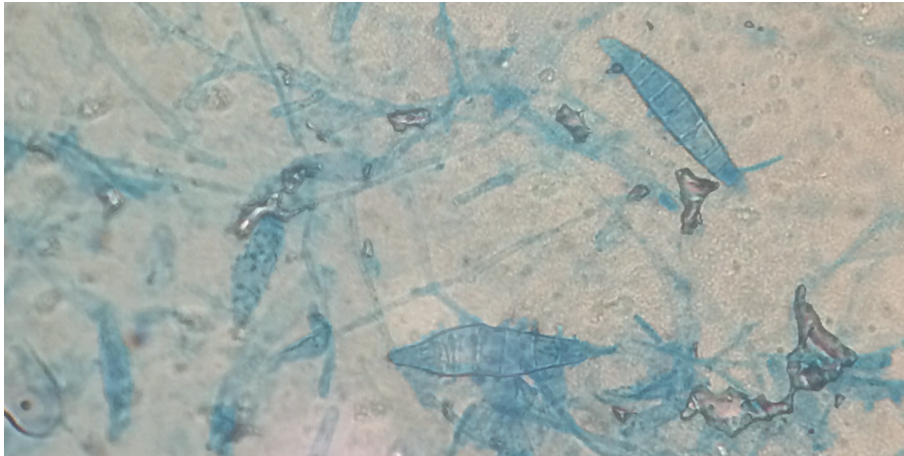
*For information on drug selection and dosing, please refer to your primary pharmaceutical reference.*

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# fungus culture

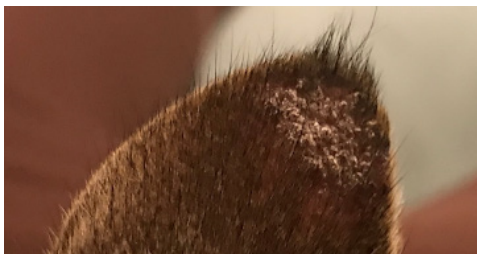


## dermatophytosis

Diagnostic testing options for dermatophytosis include: Wood's lamp, dermoscopy, cytology, culture, PCR and/or biopsy.

### signs in dogs and cats include:

- Pruritus: None to severe
- Lesions: Focal to generalized
- Variable appearance, erythematous scaling/ crusting dermatitis to nodular or ulcerative lesions with or without draining tracts
- Location: Face, feet, ears (but can affect anywhere on the body)



## dermatophytosis management:

Treat current infection with topical +/- oral antifungal prescriptions.

### Recommended topical therapy:

- Twice weekly application of miconazole/chlorhexidine shampoo or lime sulfur therapy

### Recommended oral therapy (dogs and cats):

- Itraconazole (non-compounded)
- Terbinafine
- Ketoconazole and Fluconazole\*

Reculture every 1-3 weeks to assess progress.

Clean environment thoroughly on a regular basis, removing organic material:

- Apply hypochlorite, accelerated hydrogen peroxide or benzalkonium chloride products according to label instructions
- Machine wash linens, bedding
- Frequent vacuuming of carpeted areas to help eliminate environmental spores
- Treat until two negative cultures achieved

*For information on drug selection and dosing, please refer to your primary pharmaceutical reference.*

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*See pages 25-30 for details*



\*Moriello 2017 Consensus on Dermatophytosis and with ketoconazole, cases are more prone to side effects



# food trial



## food elimination trial

Serum tests for food allergens can have both false negative and false positive results.<sup>1</sup> A well-performed elimination food trial is necessary to diagnose and differentiate food allergies from environmental allergies in dogs with non-seasonal allergic dermatitis.

### technique:

- Determine diet history to select an appropriate elimination food (z/d (original), z/d low fat (soy), d/d, Derm Complete, Derm Complete Puppy)
  - Discontinue any flavored oral medications (can switch heartworm/flea therapy to injectable or topical)
  - No outside treats are permitted unless therapeutic treats that complement food trials (if needed, vegetables such as carrots or green beans are okay to use as treats)
- Treat secondary infection based on current antibiotic use guidelines
- Antipruritic medications can be given during the initial part of the trial but provide a method for the client to administer medication to comply with diet trial guidelines

<sup>1</sup>Hardy JI, Hendricks A, Loeffler A, et al. Food-specific serum IgE and IgG reactivity in dogs with and without skin disease: lack of correlation between laboratories. *Vet Dermatol.* 2014;25(5):447-e70.

## technique (continued):

- Offer support and encouragement to clients for enhanced compliance
- Recheck the patient and contact the client periodically throughout the food trial to assess for compliance and clinical status of the pet
- Discontinue antipruritic medications prior to assessment of efficacy
- Continue to avoid/eliminate flavored medications
- Perform the food trial for a minimum of eight weeks as 90% of food-allergic patients will have significant pruritus reduction in eight weeks
- Continue the food for 12 weeks if partial pruritus reduction has occurred in eight weeks to see if complete resolution is achieved
  - If clinical remission is achieved:
    - Discuss diet challenge to confirm AFR
    - If diet challenge is declined, continue therapeutic nutrition empirically and continue to monitor
  - If minimal to no change is noted in clinical signs:
    - Discuss second food trial to further evaluate for AFR
    - Consider possibility of atopic dermatitis

# food trial

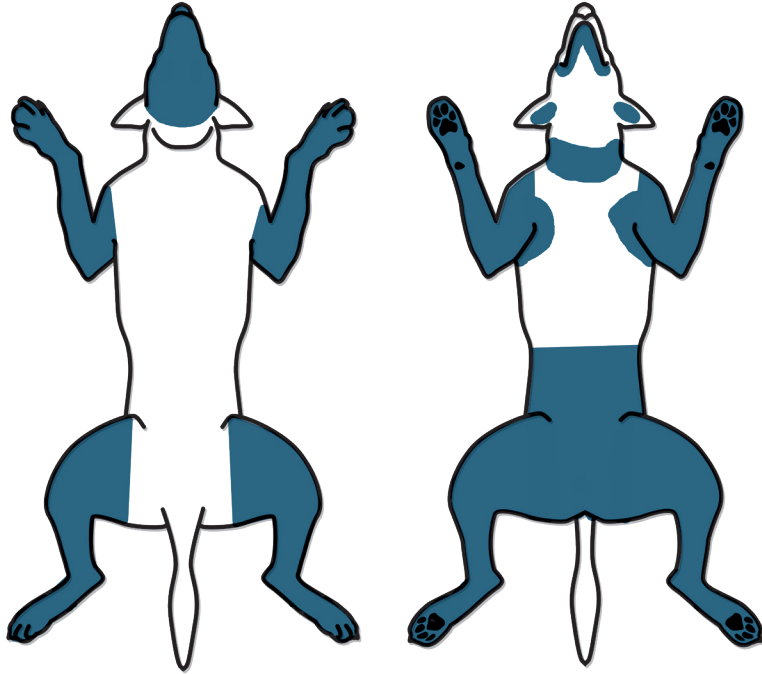


## adverse food reaction (AFR)

### signs in dogs and cats include:

- Pruritus: None to severe
- Lesions: Generalized
- Variable appearance, erythema, seborrhea, alopecia with or without secondary pyoderma or otitis
- Coat can show changes in hair quality, texture and luster
- Location: Generalized





## adverse food reaction management:

**RECOMMENDED NUTRITION AS PART OF YOUR MULTIMODAL TREATMENT PLAN:**

*See pages 25-30 for details  
Reference protocol on page 3*



# food trial



## atopic dermatitis

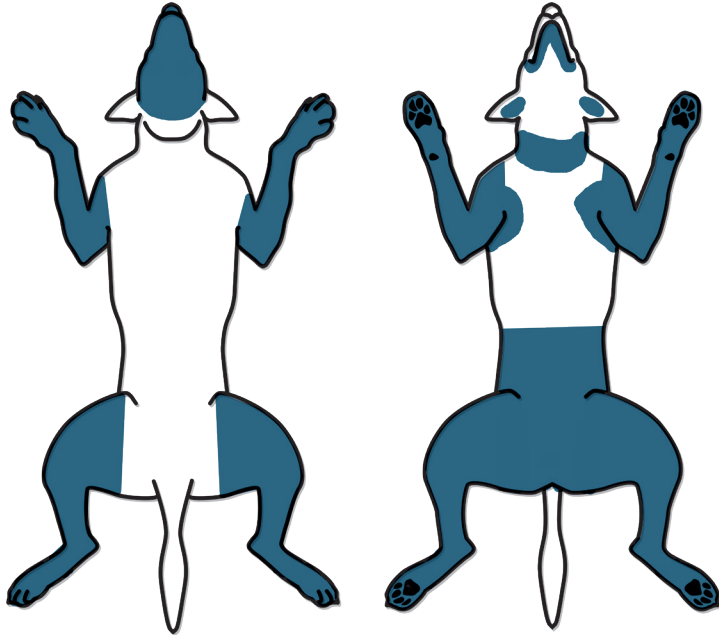
Atopic dermatitis is a diagnosis of exclusion: all other causes of dermatologic clinical signs need to be ruled out, and secondary infections addressed, prior to diagnosing.

## signs in dogs and cats include:

- Pruritus: Mild to severe
- Erythema, seborrhea, alopecia due to self-trauma, excoriations
- $\pm$  otitis externa
- Hyperpigmentation and lichenification, if chronic
- Secondary staphylococcal and *Malassezia* infections common







## atopic dermatitis management:

Nutrition is a critical part of multimodal therapy for atopic dermatitis. For information regarding medical therapy for this condition, please consult your primary dermatologic and pharmaceutical references and/or refer to a dermatologist.

**RECOMMENDED  
NUTRITION AS PART  
OF YOUR MULTIMODAL  
TREATMENT PLAN:**

*See pages 25-30 for details*



# environmental and food allergies

## Prescription Diet **Derm Complete**

**HistaGuard Complex and  
single, novel animal protein**

The go-to clinical nutrition formulated to help manage environmental & food allergies in every dog with dermatological issues. Recommending Derm Complete from the first visit onwards supports your patient's road to recovery right from the first bowl.

- **Single, novel animal protein** avoids 96% of food allergies<sup>2</sup>
- **Visible improvement in skin conditions** in as little as 21 days in dogs with food allergies<sup>3</sup>
- **HistaGuard Complex**, a proprietary blend of bioactives and phytonutrients, helps normalize the immune system reaction to environmental allergens

### Primary Indications:

- Atopic dermatitis (environmental allergy)
- Adverse food reactions (AFR) & elimination diet
- Flea allergy dermatitis (FAD)
- Otitis externa (chronic)
- Pruritic dermatitis
- Supports skin health in cases of secondary infections, other dermatoses



### Improves quality of life, alleviating:

- Painful excoriations
- Poor sleep quality
- Extreme pruritus
- Low energy levels
- Concurrent GI signs

<sup>2</sup>Mueller RS, Olivry T, Prélaud P. Critically appraised topic on adverse food reactions of companion animals (2): common food allergen sources in dogs and cats. BMC Vet Res. 2016;12:9.

<sup>3</sup>Wernimont et al. Evaluation of clinical signs related to adverse food reaction (AFR) in dogs using a new behaviour-recognition approach. Veterinary Dermatology 2020; 31:S1:103.

# adverse reactions to food

## Prescription Diet **z/d (original)**

Hydrolyzed Protein

Clinical nutrition made with highly digestible, hydrolyzed protein and a single carbohydrate source for dogs with food sensitivities.

- **Increased Vitamin E and antioxidants** for improved skin and coat, plus natural fiber for firmer stools
- **Highly hydrolyzed animal protein** & single carbohydrate source
- **Formulated without additives** known to cause food allergies

### Primary Indications:

- Adverse food reactions (AFR) & elimination diet
- Otitis externa (chronic)
- Protein-losing enteropathy (PLE) without lymphangiectasia

### Other Indications:

- Pruritic dermatitis
- Exocrine pancreatic insufficiency (EPI)
- Flatulence
- Forms of chronic enteropathy (inflammatory bowel disease): food, antibiotic and/or steroid responsive



**Prescription Diet z/d** is clinically proven to **improve GI signs in 21 days<sup>4,5</sup>** and **derm signs in 30 days<sup>4</sup>**

<sup>4</sup>Loeffler A, Lloyd DH, Bond R, et al. Dietary trials with a commercial chicken hydrolysate diet in 63 pruritic dogs. Vet Rec. 2004;154:519-522.

<sup>5</sup>Fritsch DA, MacLeay JM. Clinical study to evaluate the efficacy of Prescription Diet z/d Canine in the management of dogs with chronic diarrhoea. Data on file.

# adverse reactions to food

## Prescription Diet **z/d low fat (soy)**

Hydrolyzed Protein, Low Fat Formula

Nutrition specially formulated with hydrolyzed soy protein and low fat levels to help avoid adverse food reactions and promote healthy skin in dogs with food and fat sensitivities.

- **Highly digestible, hydrolyzed soy protein** helps avoid food sensitivities
- **Low fat formula** helps manage fat sensitivities
- **ActivBiome+ Ingredient Blend** activates the gut microbiome and promotes healthy stools

### Primary Indications:

- Forms of chronic enteropathy (inflammatory bowel disease): food, antibiotic and/or steroid responsive
- Adverse food reactions (AFR) & elimination diet
- Adverse food reaction with pancreatitis
- Adverse food reaction with hyperlipidemia
- Protein-losing enteropathy (PLE) with or without lymphangiectasia

### Other Indications:

- Pancreatitis
- Hyperlipidemia
- Otitis externa (chronic)



**Prescription Diet z/d low fat** helps **avoid allergies & promotes healthy skin** in dogs with concurrent **food & fat sensitivities**

# adverse reactions to food

## Prescription Diet

**z/d**

Hydrolyzed Protein

Clinical nutrition made with highly digestible hydrolyzed protein and a single carbohydrate for cats with food sensitivities.

- **Increased Vitamin E and antioxidants** for improved skin and coat, plus natural fiber for firmer stools
- **Highly hydrolyzed animal protein** & single carbohydrate source
- **Formulated without additives** known to cause food allergies

### Primary Indications:

- Adverse food reactions (AFR) & elimination diet
- Eosinophilic granuloma complex

### Other Indications:

- Pruritic dermatitis
- Exocrine pancreatic insufficiency (EPI)
- Flatulence
- Forms of chronic enteropathy (inflammatory bowel disease): food, antibiotic and/or steroid responsive



**Prescription Diet z/d** is clinical nutrition specially formulated to help **avoid skin and digestive signs** caused by **adverse food reactions** in cats.



# adverse reactions to food

## Prescription Diet

**d/d**

Novel Protein

Clinically tested nutrition to help avoid adverse food reactions and improve digestion and skin health.

- **Limited ingredient nutrition** with a single animal protein to avoid common allergens in dogs with food sensitivities
- **Free from** soy protein
- **High levels** of Omega-3 fatty acids
- **Clinically proven** antioxidants

### Primary Indications:

- Adverse food reactions (AFR) & elimination diet
- Atopic dermatitis (environmental allergy)
- Flea allergy dermatitis (FAD)
- Otitis externa (chronic)
- Pruritic dermatitis
- Supports skin health in cases of secondary infections, other dermatoses
- Forms of chronic enteropathy (inflammatory bowel disease): food, antibiotic and/or steroid responsive
- Protein-losing enteropathy (PLE) without lymphangiectasia



Prescription Diet d/d is clinically proven **to show visible skin and coat improvements in just 4 weeks<sup>6</sup>**

### d/d Single Protein Variants

DUCK

VENISON

SALMON

<sup>6</sup>Fritsch DA, Roudebush P, Allen TA, et al. Effect of two therapeutic foods in dogs with chronic nonseasonal pruritic dermatitis. Intern J Appl Res Vet Med. 2010;8(3):146-154.

# adverse reactions to food

## Prescription Diet

# d/d

Novel Protein

Clinical nutrition formulated to help avoid adverse food reactions, supporting digestion and skin health.

- **Limited ingredient nutrition** with a single animal protein to avoid common allergens in cats with food sensitivities
- **Free from** soy protein
- **High levels** of Omega-3 fatty acids
- **Clinically proven** antioxidants

### Primary Indications:

- Adverse food reactions (AFR) & elimination diet
- Atopic dermatitis (environmental allergy)
- Eosinophilic granuloma complex
- Flea allergy dermatitis (FAD)
- Pruritic dermatitis
- Supports skin health in cases of secondary infections or other dermatoses
- Forms of chronic enteropathy (inflammatory bowel disease): food responsive, antibiotic responsive and/or steroid responsive
- Mild to moderate stages of heart disease, including asymptomatic
- Advanced stages of heart disease, including ascites or edema from heart failure
- Primary hypertension



### d/d Single Protein Variants

DUCK

VENISON



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