Prospective Clinical Evaluation of Food Allergic Dogs and Cats

Previous recommendation of a 3-week elimination diet trial was empirical. Initial recommendation in this study was to feed a home-cooked restricted diet for 60 days.

Data Collected
Time elapsed before maximal clinical response on diet; time elapsed before return of initial clinical signs when fed previous diet; age, breed, sex, clinical signs; responsiveness to glucocorticoids; concurrent disease conditions; final treatment diets

Diets Fed
Formulated based on known past exposure; avoided any previously consumed foods Consisted of home-cooked foods

Canine Diets
Protein sources: lamb, venison, moose, elk, rabbit, duck, goose, goat, ostrich, emu, alligator, kangaroo, pinto beans Carbohydrate sources: rice, potatoes, sweet potatoes (yams), rutabagas, oats, barley

Feline Diets
Protein sources: rabbit, venison, lamb, duck, goose, ostrich, emu Carbohydrate sources: green peas, rarely rice

Results—Time Elapsed Before Maximal Clinical Response
Canine:
• 1–3 weeks: 13 dogs
• 4–6 weeks: 25 dogs
• 7–8 weeks: 10 dogs
• 9–10 weeks: 3 dogs
Feline:
• 1–3 weeks: 4 cats
• 4–6 weeks: 7 cats
• 7 weeks: 1 cat
• 9 weeks: 1 cat

Results—Time Elapsed Before Return of Initial Clinical Signs
Canine:
• 1–2 hours: 9 dogs
• 1–3 days: 32 dogs
• 7–9 days: 3 dogs
• 14 days: 1 dog
• 6 dogs never fed previous diet.
Feline:
• 15–30 minutes: 2 cats
• 24 hours: 2 cats
• 2–3 days: 4 cats
• 6–8 days: 4 cats
• 10 days: 1 cat

“Why All the Fuss about Home-Cooked Elimination Diets?”
7/13 dogs (54%) with confirmed food allergy on a home-cooked lamb and rice diet, relapsed when fed a
commercial canned lamb and rice diet.

- Rosser EJ: Diagnosis of food allergy in dogs. *JAVMA*, vol 203 (2):259–262, 1993. 51 food allergic dogs confirmed over a 2-year time while being fed a home-cooked elimination diet for 10 weeks. 3 week trial only adequate for 25% of dogs. Recent data: 25% of dogs on home-cooked elimination diets relapse when fed any form of commercial hypoallergenic dog food.

**Serologic Test for Food-Specific IgE**


**Age at Onset of Clinical Signs**

**Canine** (Range of 4 months to 11 years):
- <1 year old: 17 dogs
- 1–3 years old: 26 dogs
- 4–11 years old: 8 dogs

**Feline** (Range of 3 months to 11 years)
- <1 year old: 3 cats
- 1–2 years old: 3 cats
- 4 years old: 2 cats
- 6–11 years old: 5 cats

**Breeds Affected**

**Canine**: Soft-Coated Wheaton Terrier, Dalmatian, Collie, West Highland White Terrier, Chinese Shar Pei, Lhasa Apso, Miniature Schnauzer, Cocker and Springer Spaniels, Labrador Retriever, Golden Retriever, German Shepherd, Bichon Frise

**Feline**: Siamese, Domestic Shorthair, Domestic Longhair

**Clinical Signs—Canine**

Non-seasonal pruritus, most commonly affects the ears/pinnae, feet, inguinal region, axillary region, proximal foreleg, face, neck, perianal/perineal region. Chronic, recurrent otitis externa a common problem (Serous Otitis Media observed in 81/104 children 1–9 years of age related to food allergy in 1 study). May develop secondary staphylococcal pyoderma or Malassezia dermatitis. Possible history of seizures (Food Allergy and seizures in humans: seafoods and soybeans—increased dopamine in CNS). Concurrent diarrhea rare, may have more frequent or softer feces.

**Only Clinical Sign on Presentation**

Chronic recurrent pyoderma; seborrheic dermatitis.

**Clinical Signs—Feline**

Non-seasonal pruritus, most commonly affects the ear/pinnae, pre-aural region, neck, periorbital region, and face. Miliary type lesions most common (“Miliary dermatitis”). Eosinophilic plaques. Feline symmetrical alopecia. Severe excoriations can occur. Angioedema, urticaria, conjunctivitis.
Response to Glucocorticoids

- Complete cessation of pruritus: Dogs: 39% of cases; Cats: 64% of cases
- Partial reduction in pruritus: Dogs: 44% of cases; Cats: 9% of cases
- No reduction in pruritus: Dogs: 17% of cases; Cats: 27% of cases

Diagnosis
Treat suspected food allergy cases symptomatically for 6–12 months before recommending an elimination diet trial.

Rationale for Initial Symptomatic Therapy for 6–12 Months
51 food allergic dogs followed for 3 years: Only 3 dogs re-developed pruritus; 2 dogs became flea allergic; 1 dog became atopic. None of the dogs became pruritic due to the new hypoallergenic treatment diet. All dogs had been eating the initial sensitizing diet for 6–12 months or longer.

Dogs Started on Elimination Diet Prior to 6–12 Months of Pruritus
2 cases initially on beef/soy based diets. Placed on lamb based diets after 3 months. Pruritus controlled for 2 months. Pruritus re-developed and dogs found to be reacting to lamb.

Dogs Started on Elimination Diet Prior to 6 Months of Pruritus
1 case initially on lamb/rice based diet. Placed on venison based diet after 2 months. Pruritus controlled for 3 months. Pruritus re-developed and dog found to be reacting to venison.

Theory of an Immunologic Window
Patient is genetically programmed to become sensitized to commonly exposed antigens in the diet after a certain age. At this age, sensitization begins over a 6- to 12-month time period? After this time period of programming, the sensitizing immunologic window closes.

Elimination Diet Trial—Minimum 12 Weeks in Duration
Protein hydrolysate formulated diets: Reducing the molecular weight (Daltons) of a specific protein in the diet
Purina CNM Diet: HA-Formula; Purina Gentle Snackers
Hill’s Prescription Diets: Canine z/d Ultra, Canine/Feline z/d Low Allergen, Canine/Feline Hypoallergenic Treats
Royal Canin Veterinary Diet (Waltham): Hypoallergenic HP19 Canine, Altamino (previously Anallergenic), Hypoallergenic HP23 Feline.

Home-Cooked Elimination Diet Trial
Restricted diet fed for up to 90 days. Formulate based on known past exposure. Avoid any previously consumed foods.

Canine Diets
Protein sources: lamb, venison, rabbit, duck, goose, goat, ostrich, emu, alligator, kangaroo, elk, moose
Carbohydrate sources: rice, potatoes, rutabagas, sweet potatoes
Add nothing to the cooking water. Mix equal portions of protein and carbohydrate (50:50) to approximate the volume of the previous diet.
1 cup of the cooked mixture per 10 pounds of body weight per day.
“Nothing else is to pass the dog’s or cat’s lips for the next 60 days.”

Feline Diets
Protein sources: rabbit, lamb, venison, duck. Cook by boiling or broiling
Carbohydrate sources: green peas

Treatment Diets—Canine
Duck, venison, or salmon and potato based dry or canned diets; lamb and rice based canned diet; egg and rice based dry diet (d/d, Hill’s).
Venison, duck, rabbit, or whitefish and potato based canned and dry diets (Innovative Veterinary Diets, Royal Canin, Waltham).
Fish and potato based dry diet (Eukanuba Response Formula FP for Dogs).
Salmon, trout, and rice dry diet (Purina CNM Diet: LA-Formula); Menhaden fish meal and rice dry diet (Royal Canin Skin Support SS21).
Kangaroo and oat based dry diet (Eukanuba Response Formula KO for Dogs).
Fish and sweet potato based dry diets: Wellness Fish and Sweet Potato diet; California Natural Herring & Sweet Potato diet; Natural Balance Sweet Potato and Fish diet.
Duck and sweet potato based dry diet, Fromm Duck and Sweet Potato Formula.
Venison based dog treats, Nature’s Recipe Healthy Skin Venison Dog Treat.
Sweet potato based dog treats, Sam’s Yams Sweet Potato dog Chewz, 100% dried sweet potatoes/yams.

Treatment Diets—Feline
Rabbit and rice based canned diets (Nature’s Recipe)
Venison, duck, or rabbit and green pea based dry or canned diets (d/d, Hill’s)
Lamb and barley based canned diet (Eukanuba Response Formula LB for Cats)
Venison, lamb, duck, or rabbit and green pea based canned and dry diets (Innovative Veterinary Diet, Royal Canin, Waltham)

Home-Cooked Treatment Diets
Protein sources: lamb, venison, rabbit, chicken, turkey, beef, duck, ostrich
Carbohydrate sources: rice, potato, sweet potatoes, or rutabagas
Essential fatty acid dietary supplement: Derm Caps, EFA-Caps
Dicalcium phosphate; non-flavored, additive free multiple vitamin and mineral supplement

Foods Associated with Exacerbation of Clinical Signs
Any food items being prepared in the kitchen
Meats, cheeses, cooking oils, margarine, breads, odors from various cooked foods
People’s favorite snack foods: popcorn, pretzels, peanuts, cookies (Oreo), potato chips, corn chips, doughnuts, pizza, French fries
“The Hoover Hound”

New Dilemmas
Patients with possible food allergy that have already eaten and been exposed to everything but the kitchen sink.
Possible cross contamination of commercial diets during processing.
Prescription and non-prescription hypoallergenic diets.
Patients reacting to various ingredients used in the processing of commercial diets.

Balanced Home-Made Elimination Diet for Dogs
5 pounds cooked potatoes, sweet potatoes, or rutabagas
1 pound cooked venison, ostrich, emu, rabbit, or duck
1 teaspoon Dicalcium phosphate (www.arcatapet.com, Item 13230)
5 tablespoons safflower oil (Hollywood Brand only)
1 teaspoon salt substitute (potassium chloride).
2 tablets of Nature Made® Multi Complete Multiple Vitamin/Mineral Supplement with Iron

Feeding Guidelines
- Toy breeds (4–12 pounds): 1/3–2/3 pounds of food/day
- Small breeds (12–20 pounds): 2/3–1 pound of food/day
- Medium breeds (20–50 pounds): 1–2 pounds of food/day
- Large breeds (50–80 pounds): 2–3 pounds of food/day

Balanced Home-Made Elimination Diet for Cats
1/2 pound cooked potatoes, rice, or green peas
1 pound cooked lamb, venison, ostrich, emu, rabbit, or duck
1 teaspoon dicalcium phosphate
1/2 tablespoon safflower oil (Hollywood Brand only)
2 teaspoons light salt
2 tablets of Nature Made® Multi Complete Multiple Vitamin/Mineral Supplement with Iron
350 mg Taurine