

Scientific Track

Diet Dilemmas: Interactive Cases with Multiple Diseases

Dr. Deborah Linder

#NAVDF2025





Diet Dilemmas: Interactive Cases With Multiple Diseases

Deborah Linder, DVM, MS, DACVIM (Nutrition)
She/her/hers

Tufts Cummings School of Veterinary Medicine



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Disclosures:

- Board Certified Veterinary Nutritionist, Cummings School of Veterinary Medicine at Tufts University
- Dr. Linder has received research funding or speaker/consulting fees from the following entities within the last 5 years:
 - Buffalo Academy of Veterinary Medicine, National Institutes of Health (NIH), NAVC/VMX, Virbac, Royal Canin, Mark Morris Institute, Nestle Purina, Clinician's Brief, American Veterinary Medical Association, Eli Lilly Foundation, Hill's Pet Nutrition, Delaware Valley Veterinary Medical Association, Fetch dvm360, Connecticut Veterinary Medical Association, Today's Veterinary Practice, Delaware Valley Veterinary Medical Association, Rhode Island Companion Animal Health Foundation, Vet Show, American Academy of Veterinary Nutrition (AAVN), Western Veterinary Conference, Fresh Pet.

Evidence-Based Recommendations

- “Follow the evidence” philosophy
- Avoid labels like ‘good’ or ‘bad’
- What information do you/your clients need to feel comfortable?
- Recommendations can (& should!) change with new information
- Goal: families feel empowered to make informed choices



Tools for Your Nutrition Toolbox

- Systematic approach to cases
 - Feed the patient not the disease
 - Utilize resources available
 - Select diets based on nutrients vs marketing
 - Evidence-based medicine
- Cases, cases, and more cases
 - Multiple diseases
 - Contradicting needs
 - Strategies for adherence/clinical tips
- Resources to make your life easier!




Systematic Approach to Cases

- Full nutritional assessment
- Nutrients of concern
- Determine priority
- Compare diets
- Monitor and adjust

Systematic Approach to Cases

- Full nutritional assessment



WSAVA
Global Nutrition
Committee

Short Diet History Form

Please answer the following questions about your pet

Pet's name: _____ Species/breed: _____ Age: _____

Owner's name: _____

Date form completed: _____

Gender male female Neutered/spayed No Yes

1 How active is your pet? Very active Moderately active Not very active

2 How would you describe your pet's weight? Overweight Ideal weight Underweight

3 Where does your pet spend most of the time? Indoors Outdoors Indoors and outdoors

Please list below the brands and product names (if applicable) and the amount of ALL foods, treats, snacks, dental hygiene product, rawhides and any other foods that your pet currently eats, including foods used to administer medications.

Food	Form	*Amount	Number	Fed since
Examples:				
• Purina Dog Chow	dry	1 ½ cups	2x/day	Jan 2010
• Science Diet Adult Gourmet Beef Entrée	moist	½ can	2x/day	Jan 2010
• 90% lean hamburger	pan-fried	3 oz (85 grams)	1x/week	May 2011
• Milk Bone medium	dry	2	3/day	Aug 2012

VETERINARY PRACTICE GUIDELINES

2021 AAHA Nutrition and Weight Management Guidelines for Dogs and Cats*

Martha G. Cline, DVM, DACVN¹; Kara M. Burns, MS, MEd, LVT, VTS (Nutrition), Jason B. Coe, DVM, PhD, Robin Downing, DVM, MS (Bioethics), DAAPM, DACVSMR, CVPP, CCRP, Tiffany Durzi, DVM, CVA, CCRT, CVPP⁵, Maryanne Murphy, DVM, PhD, DACVN, Valerie Parker, DVM, DACVIM, DACVN



Systematic Approach to Cases

- Full nutritional assessment
- **Nutrients of concern**
- Determine priority
- Compare diets
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TABLE 8

Nutrients of Concern for Diseases and Select Specific Conditions

Disease Category	Specific Conditions	Nutrients of Concern	Notes
Adverse food reaction 	Cutaneous adverse food reaction	<ul style="list-style-type: none">• Limited antigen diet<ul style="list-style-type: none">• Novel/hydrolyzed protein• Limited ingredients	<ul style="list-style-type: none">• Ingredients impact success of treatment• Noningredients may also impact success (e.g., additives, Maillard production reaction)
	Food intolerance		
	Food-responsive chronic enteropathy		
Inflammatory skin condition 	Non-food-related skin condition	<ul style="list-style-type: none">• High n-3 fatty acids<ul style="list-style-type: none">• Consider n-6:n-3 ratio• High vitamin A• High vitamin E• High zinc• Added antioxidants	<ul style="list-style-type: none">• Individual diseases may require different supplements and doses
Osteoarthritis 		<ul style="list-style-type: none">• High EPA/DHA• Added glucosamine• Added chondroitin• Added antioxidants• Low energy density if overweight/obese	<ul style="list-style-type: none">• Additional supplementation may be required to achieve optimal dose• High n-3 fatty acid supplementation may result in gastrointestinal disturbance

Systematic Approach to Cases

- Full nutritional assessment
- **Nutrients of concern**
- Determine priority
- Compare diets
- Monitor and adjust



Table 3
Information^b for assessing products with nutrient modifications

Nutrient Modification	AAFCO ^a Minimum	Low	Moderate	High
Protein: Dog (g/100 kcal)	4.5	<5	6-7	>9
Protein: Cat (g/100 kcal)	6.5	<7	7-8	>10
Fat: Dog (g/100 kcal)	1.4	<2 (ultralow)	2.5-3.5 (low)	>5
Fat: Cat (g/100 kcal)	2.3	<3	4-4.5	>5
Phosphorus: Dog (mg/100 kcal)	100	<100	<150	>200
Phosphorus: Cat (mg/100 kcal)	125	<125 (ultralow)	<160 (low)	>200
Sodium: Dog (mg/100 kcal)	20	<70 (ultralow)	<100 (low)	>250
Sodium: Cat (mg/100 kcal)	50	<70 (ultralow)	<100 (low)	>250
Combined EPA and DHA: Dog (mg/100 kcal)	NA	NA	~ 10-15	>15 (wide variation)
Combined EPA and DHA: Cat (mg/100 kcal)	NA	NA	—	15 (wide variation)



Typical nutrient ranges and AAFCO minimum levels for adult canine and feline maintenance to use as reference when selecting products with nutrient modifications to either enrich or restrict a particular nutrient.

^a AAFCO 2020 Official Publication adult maintenance minimums.

^b There are no currently established values for low, moderate, and high nutrient ranges. The specific ranges provided in this table are based on the authors' opinions and clinical experience with commercially available foods.

Systematic Approach to Cases

- Full nutritional assessment
- **Nutrients of concern**
- Determine priority
- Compare diets
- Monitor and adjust

Dietary fiber g/100 kcal				
	Crude fiber	TDF	Crude fiber	TDF
Low	< 1.0	< 2.0	< 0.5	< 0.5
Moderate	1.0–2.0	2.0–4.0	0.5–1.0	1.0–2.5
High	> 2.0	> 4.0	> 1.0	> 2.5
Range	0.1–6.8	0.1–11.0	0.1–4.9	0.2–7.5

TDF: Total Dietary fiber

Systematic Approach to Cases

- Full nutritional assessment
- Nutrients of concern
- Determine priority
 - Short/long term
 - Side effects
 - Severity of condition
 - Quality of life concerns
 - Monitoring ability
- Compare diets
- Monitor and adjust

Systematic Approach to Cases

- Full nutritional assessment
- Nutrients of concern
- Determine priority
- **Compare diets**
- Monitor and adjust

Caveat for %'s on pet food labels “as fed”:

Can't use labels to compare foods of different moisture or calories!

% As Fed is Not Ideal for Comparing Between Diet Types:

Diet Info from Company Product Guides or Websites:	Protein % As Fed	Kcal/kg	Protein gm/100 kcal
FreshPet Multi Protein Recipe Fresh Diet	14.8%	2,014	7.4
Instinct Raw Alaskan Polluck Recipe	15.3%	1,312	11.7
Hill's Prescription Diet Derm Complete Dry	15.9%	3,816	4.2
Purina Bright Minds 7+ Beef Entrée Stew	15.2%	1,075	14.1

Avoid assumptions: products can vary in calories, moisture, nutrients from all diet types!

I Hate Math Version

NUTRIENT CONVERTER

USE THIS CONVENIENT CALCULATOR TO CONVERT NUTRIENTS IN %, MG/KG (PPM), OR IU/KG INTO MG OR G/100 KCAL TO ALLOW FOR ACCURATE COMPARISONS BETWEEN FOODS

How many calories are in your food in kcal/kg?

3300

What are the units for the nutrient that you are interested in? Nutrients are typically presented as a percentage, in mg/kg (ppm), or as IU/kg.

- Percentage
- mg/kg (ppm)
- IU/kg

How much of the nutrient is in the food, as a percentage?

72

Nutrient Amount in g/100 kcal

21.82 g/100 kcal

- www.petfoodology.org
 - “Pet Food Calculator”



Where Can We Get Diet Info to Compare?

- 1. Back of bag as fed percentages (not ideal, min/max only)
- 2. Company website (sometimes...or with vet log in only)
- 3. Call the company (vet specific hotlines)
- **4. PRODUCT GUIDES!!**
 - Easiest! Quickest! Average not min/max!
 - Already converted! :D
 - Ask company or reps to keep you updated w/guides
 - Digital and/or hard copy

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- ***Brand New Resource: MMI Nutrition Guide***

MMI Nutrition Guide

← → ↻ 🏠 📄 markmorrisinstitute.org



The screenshot shows the MMI Nutrition Guide website. At the top, there is a blue navigation bar with the MMI logo, the text "MMI Nutrition Guide", and links for "HOW IT WORKS", "CONTACT", and "Nathan Lee". Below the navigation bar is a white search area with the title "MMI Nutrition Guide" and the subtitle "Review summaries of nutritional management and compare products for specific disease conditions". There are three dropdown menus labeled "Species", "Age", and "Disease Condition", each with "Select" as the current option. A blue search button with a magnifying glass icon is to the right of the dropdowns. Below the search area is a large image featuring a black and white dog's face on the left and an orange tabby cat's face on the right. At the bottom of the page, there is a dark grey footer with the copyright notice "© 2024 Mark Morris Institute. Your use of this site is subject to our Terms and Conditions" and a list of links: "Terms and Conditions | Do Not Sell My Personal Information | Privacy Policy | Cookie Policy | Contact MMI | Contact Manufacturers".

Nutrition Guide

New! For licensed veterinarians only. Read concise summaries of nutritional management strategies for common disease processes and rapidly compare therapeutic dog and cat foods across manufacturers.

[Access Nutrition Guide](#)



Quick Start for MMI Nutrition Guide

Step 1. Make a free account (<https://www.markmorrisinstitute.org/>)

Step 2. Select dog or cat, skip age (can't sort by that yet),* and pick custom.

Step 3. Set your filters based on your nutritional goals.

Step 4. Select any other nutrients to add.

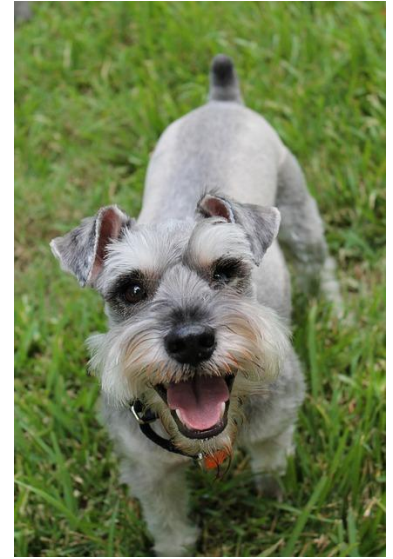
Step 5. Click first priority nutrient and it will sort low to high of all available diets.

Note: Only includes veterinary diets from Hills, Purina, & Royal Canin at this time.
Don't forget product guides for other companies or over-the-counter diets!

*To confirm if ok for puppies/kittens, click on the diet and you can see the full nutrient profile, ingredient list and AAFCO statement.

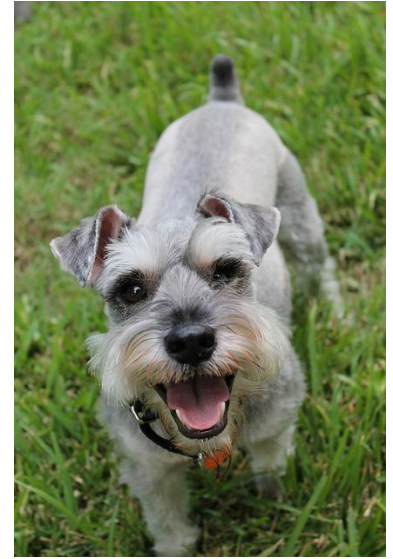
Systematic Approach: Toby

- Full nutritional assessment
- Nutrients of concern
- Determine priority
- Compare diets
- Monitor and adjust



Systematic Approach: Toby


- Full nutritional assessment
 - 3 year old male neutered Mini Schnauzer
 - History of adverse food reaction, all symptoms controlled on Royal Canin Ultamino Canine Dry
 - After 6 months on diet, 12 hr fasted labwork revealed mildly high triglycerides
 - Otherwise healthy with ideal 5/9 BCS and normal muscle condition



Systematic Approach: Toby

- Full nutritional assessment
- Nutrients of concern
 - Hydrolyzed protein diet
 - Fat

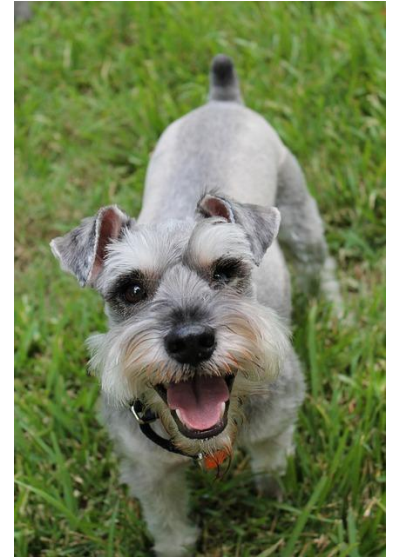



Pancreatic disease 	Endocrine	Diabetes mellitus	<ul style="list-style-type: none">• High soluble and insoluble fiber• Low carbohydrate (cats)• High protein (unless contraindicated, e.g., proteinuria)• Low energy density if overweight/obese	<ul style="list-style-type: none">• Consistency of meal timing and insulin regimen are most important
	Exocrine	Pancreatitis	<ul style="list-style-type: none">• Low fat (dogs)• Limited antigen (cats)	<ul style="list-style-type: none">• Dietary fat recommendations may depend on baseline intake and degree of hyperlipidemia
		Exocrine pancreatic insufficiency	<ul style="list-style-type: none">• Achieve optimal body condition	<ul style="list-style-type: none">• In most cases no specific diet is needed with appropriate enzyme supplementation• Assess serum cobalamin and supplement if indicated

2021 AAHA Nutrition and Weight Management Guidelines for Dogs and Cats*

Systematic Approach: Toby

- Full nutritional assessment
- Nutrients of concern
 - Hydrolyzed protein diet
 - Fat (What is 'low fat'? For **this** pet?)



Pancreatic disease 	Endocrine	Diabetes mellitus	<ul style="list-style-type: none"> • High soluble and insoluble fiber • Low carbohydrate (cats) • High protein (unless contraindicated, e.g., proteinuria) • Low energy density if overweight/obese 	<ul style="list-style-type: none"> • Consistency of meal timing and insulin regimen are most important
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Phosphorus: Dog (mg/100 kcal)	100	<100	<150	>200
Phosphorus: Cat (mg/100 kcal)	125	<125 (ultralow)	<160 (low)	>200
Sodium: Dog (mg/100 kcal)	20	<70 (ultralow)	<100 (low)	>250
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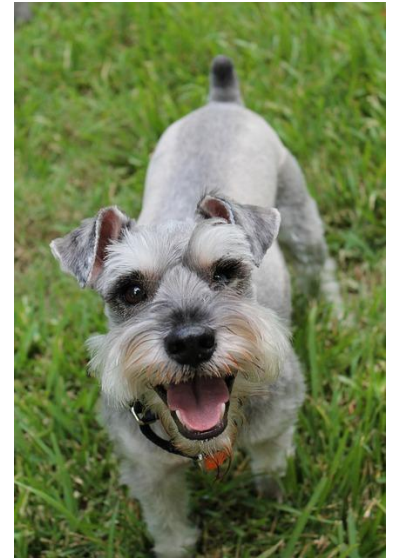
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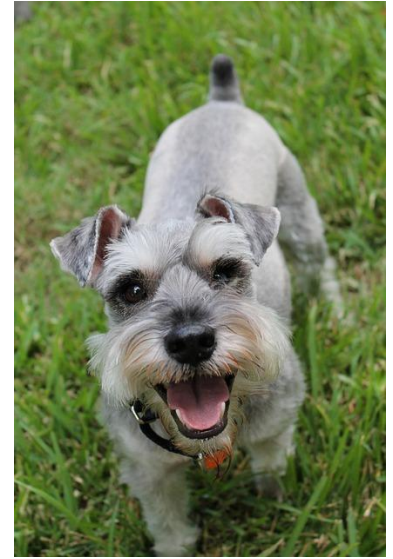
Systematic Approach: Toby

- Full nutritional assessment
 - 3 year old male neutered Mini Schnauzer
 - History of adverse food reaction, all symptoms controlled on Royal Canin Ultamino Canine Dry
 - After 6 months on diet, 12 hr fasted labwork revealed mildly high triglycerides
 - Otherwise healthy with ideal 5/9 BCS and normal muscle condition
 - *Previous adult diet was 3.0 gm/100 kcal fat (with normal TG levels)*



Systematic Approach: Toby

- Full nutritional assessment
- Nutrients of concern
 - *Hydrolyzed protein diet*
 - *Low fat <3.0 gm/100 kcal*
- Determine priority
 - *Equal*
- Compare diets
 - *Product guides*
 - *MMI Nutrition Guide*
- Monitor and adjust



MMI Nutrition Guide

Review summaries of nutritional management and compare products for specific disease conditions

Species

Canine ▾

Age

Select ▾

Disease Condition

Select ▾



- Select
- Acute gastroenteritis
- Adverse food reaction**
- Atopic dermatitis
- Calcium oxalate uroliths
- Chronic enteropathy/small bowel diarrhea
- Chronic Kidney Disease, IRIS stage 1-2
- Chronic Kidney Disease, IRIS stage 3-4
- Cognitive dysfunction
- Colitis/large bowel diarrhea
- Copper-associated hepatopathy
- Critical care/assisted feeding
- Custom
- Dental health



Add a Nutritional Filter ✕

Nutrient

Fat

Unit

Grams per 100 Kilocalories

To be able to search accurately, your values MUST be in this unit.

Greater Than

0

g/100 kcal

Less Than

3

g/100 kcal

Close

Add

Filters

Reset All

Manufacturers

- Hill's
- Purina
- Royal Canin

+ Add a Nutritional Filter

+ Add Display-only Nutrients

Start Over

only and are not valid in other regions.

Click on the nutrient name at the top of the

	CALORIC DENSITY (VOLUME - UNIT) KCAL/VOL UNIT	PROTEIN G/100 KCAL	FAT G/100 KCAL
113	429	5.80	5.22
92	315	6.64	3.30
72	340	8.26	4.13
94	405	4.70	4.00
canned			
Royal Canin Veterinary Health Nutrition Selected Protein PW dog dry	3518	313	6.51 3.80

Filters

Reset All

Manufacturers

- Hill's
- Purina
- Royal Canin

Fat



0.0 - 3.0 g/100 kcal



+ Add a Nutritional Filter

+ Add Display-only Nutrients

Start Over

5 Result(s)

Please note that product values shown are for the United States only and are not valid in other regions.

Diets are presented in random order. To sort by a specific nutrient, click on the nutrient name at the top of the column.

PRODUCT	CALORIC DENSITY (KCAL/KG) <small>KCAL/KG AF</small>	CALORIC DENSITY (VOLUME - UNIT) <small>KCAL/VOL UNIT</small>	PROTEIN <small>G/100 KCAL</small>	FAT <small>G/100 KCAL</small>	FAT <small>G/100 KCAL</small>
Royal Canin Veterinary Health Nutrition Gastrointestinal Low Fat + Hydrolyzed Protein dog dry	3280	236	7.07	1.98	1.98
Hill's Prescription Diet z/d Low Fat Hydrolyzed Soy Recipe Dog Food dry	3198	317	7.70	2.10	2.10
Hill's Prescription Diet z/d Low Fat Hydrolyzed Soy Recipe Dog Food canned	925	342	8.10	2.50	2.50
Purina Pro Plan Veterinary Diets EL Elemental dog dry	3316	411	6.97	2.65	2.65
Purina Pro Plan Veterinary Diets HA Vegetarian Hydrolyzed dog dry	3450	287	5.74	2.81	2.81


CAVEATS:
*Only 3 companies
& only vet diets!*

What About Human Foods?

- USDA Nutrient Database
- <https://fdc.nal.usda.gov/>
- Watch portion/serving
 - Unequal kcal, not fair to compare
- Convert to per 100 kcal
 - Allows for comparison to AAFCO, diets, goals
- Example: Low fat plain yogurt
 - One 6 oz container: 107 kcal
 - Fat: 2.64 grams/107 kcal
 - (= 2.5 grams/100 kcal)
 - Qualifies as low fat, ok to trial!

USDA U.S. DEPARTMENT OF AGRICULTURE
Agricultural Research Service

HOME SEARCH BROWSE RESOURCES DATA ABOUT US



FoodData Central Search Results

Yogurt, plain, low fat

SR Legacy, released in April 2018, is the final release of this data type and will not be updated.

Data Type: SR Legacy Food Category: Dairy and Egg Products FDC ID: 170886 NDI: 1129
FDC Published: 4/1/2019

Nutrients Measures

Portion: 1 container (6 oz) (170 g)

Name	Amount	Unit	Deriv. By
Water	145	g	
Energy	107	kcal	Calculated
Total lipid (fat)	2.64	g	

Rodeo Example: What's Causing the Diarrhea?

- Rodeo, 3 yr old mixed breed dog
- Chronic large bowel diarrhea
- Seasonal pruritis
- Tried LOTS of diets
- Owner says allergic to chicken
- Can't afford veterinary diet anymore
- Can they home-cook fish/potato?

- What are our next steps?



Nutritional Assessment: We need more info!!

- Diet history? What helped or worsened symptoms?
- Was a full dietary elimination trial done?
- Any patterns that may help guide nutrients of concern?

- Owner shares: “He had awful diarrhea with the hydrolyzed chicken diet, but as long as we avoid too much chicken he is great (treats with chicken are fine) – we knew it was a food allergy!”

Comparison of Rodeo's Previous Diets:



Diets Nutrients per 100 kcal:	kcal/cup	Fat (gm)	Crude Fiber (gm)	Total Fiber (gm)	Rodeo's Response
Purina HA Chicken Flavor Dry Proteins: <i>hydrolyzed</i> chicken & soy	317	3.3	0.4	1.1	☹️
Royal Canin PW Mod Calorie Dry Proteins: fish, potato	257	3.0	2.5	4.7	😊

- How many vote that this is a true “chicken allergy”?
- What might be going on instead?
- Would you recommend home-cooking?

Simplified Nutrition Plan for Rodeo

- High fiber
 - >2 gm/100 kcal
- Derm appt!
 - Seasonal pruritis
 - Medical management



Dietary fiber g/100 kcal	Dog 		Cat 	
	Crude fiber	TDF	Crude fiber	TDF
Low	< 1.0	< 2.0	< 0.5	< 0.5
Moderate	1.0–2.0	2.0–4.0	0.5–1.0	1.0–2.5
High	> 2.0	> 4.0	> 1.0	> 2.5
Range	0.1–6.8	0.1–11.0	0.1–4.9	0.2–7.5

TDF: Total Dietary fiber

When Harry met Sally (& CKD met Food Allergy...)

- Harry, 3 year old DSH, history of overgrooming, itching, alopecia, resolved on hydrolyzed diet
- Sally, 4 year old DSH, previously healthy, but recently diagnosed with IRIS stage 2 CKD
- Both have BCS 6/9, normal muscle condition, other diagnostics WNL



When Harry met Sally (& CKD met Food Allergy...)



- Harry, 3 year old DSH, history of overgrooming, itching, alopecia, resolved on hydrolyzed diet
- Sally, 4 year old DSH, previously healthy, but recently diagnosed with IRIS stage 2 CKD
- Both have BCS 6/9, normal muscle condition, other diagnostics WNL
- They are strongly bonded, rdvm switched Sally to a renal diet for now, told them to separate for meals, but family chaos has ensued...



Systematic Approach to Cases

- Nutrients of Concern
 - Hydrolyzed diet
 - “Kidney Friendly”?
 - Low phosphorus
 - (Protein: avoid high?)

2021 AAHA Nutrition and Weight Management Guidelines for Dogs and Cats*

Kidney 	Protein-losing nephropathy	<ul style="list-style-type: none"> • 25–50% protein reduction from current intake <ul style="list-style-type: none"> • Meet essential amino acid requirements • High EPA/DHA • Low phosphorus if azotemic 	<ul style="list-style-type: none"> • Protein recommendations will depend upon the degree of proteinuria • Many medications used to address proteinuria and hypertension may exacerbate hyperkalemia, and reducing dietary potassium intake may help
	Acute kidney injury	<ul style="list-style-type: none"> • Moderate protein 	<ul style="list-style-type: none"> • Consider as a critical care disease category when hypercatabolic
	Chronic kidney disease 	<ul style="list-style-type: none"> • Low phosphorus • ± potassium supplementation • High EPA/DHA • Increased energy density to maintain body and muscle condition (unless obese) 	<ul style="list-style-type: none"> • Many medications used to address proteinuria and hypertension may exacerbate hyperkalemia, and reducing dietary potassium intake may help • Consider vitamin D supplementation

Systematic Approach to Cases

- Nutrients of Concern
 - Hydrolyzed diet
 - Low phosphorus
 - <160 mg/100 kcal
 - (Protein: avoid high?)
 - <10 gm/100 kcal
 - Healthy cat
 - AAFCO Statement for adult maintenance

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Fat: Cat (g/100 kcal)	2.3	<3	4–4.5	>5
Phosphorus: Dog (mg/100 kcal)	100	<100	<150	>200
Phosphorus: Cat (mg/100 kcal)	125	<125 (ultralow)	<160 (low)	>200
Sodium: Dog (mg/100 kcal)	20	<70 (ultralow)	<100 (low)	>250
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Typical nutrient ranges and AAFCO minimum levels for adult canine and feline maintenance to use as reference when selecting products with nutrient modifications to either enrich or restrict a particular nutrient.

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Add a Nutritional Filter



Nutrient

Phosphorus



Unit

Milligrams per 100 Kilocalories

To be able to search accurately, your values MUST be in this unit.

Greater Than

125

mg/100 kcal

Less Than

160

mg/100 kcal

Close

Add

Add a Nutritional Filter



Nutrient

Protein



Unit

Grams per 100 Kilocalories

To be able to search accurately, your values MUST be in this unit.

Greater Than

6.5

g/100 kcal

Less Than

10

g/100 kcal

Close

Add

Filters

Reset All

Manufacturers

- Hill's
- Purina
- Royal Canin

Phosphorus



125.0 - 160.0 mg/100 kcal



Protein



6.5 - 10.0 g/100 kcal



+ Add a Nutritional Filter

+ Add Display-only Nutrients

Start Over

2 Result(s)

Please note that product values shown are for the United States only and are not valid in other regions.

Diets are presented in random order. To sort by a specific nutrient, click on the nutrient name at the top of the column.

PRODUCT	CALORIC DENSITY (KCAL/KG)	CALORIC DENSITY (VOLUME - UNIT)	PROTEIN G/100	PROTEIN G/100	CARBOHYDRATE (NFE)	PHOSPHORUS
	KCAL/KG AF	KCAL/VOL UNIT	KCAL	KCAL	G/100 KCAL	MG/100 KCAL
Royal Canin Veterinary Health Nutrition Gastrointestinal Hydrolyzed Protein cat dry	3870	348	7.69	7.69	7.69	150
Hill's Prescription Diet z/d Original Flavor Cat Food dry	3741	414	8.70	8.70	9.90	157

Examples of Hydrolyzed Protein Diets* *(Information Obtained from 2024-2025 Product Guides)	kcal/can or cup	Protein (gm/100 kcal)	Phosphorus (mg/100 kcal)
Royal Canin Veterinary Renal Support + Hydrolyzed Protein Dry	401	6.3	110
Royal Canin Veterinary Ultamino Dry	335	6.3	128
Royal Canin Veterinary Hydrolyzed Protein Adult HP Dry	330	6.3	148
Hill's Prescription Diet z/d Dry	408	8.8	160
Hill's Prescription Diet z/d (5.5 oz can)	173	8.3	164
Royal Canin Veterinary Urinary SO + Hydrolyzed Protein Dry	334	7.1	170
Royal Canin Veterinary Satiety + Hydrolyzed Protein Dry	221	10.8	210
Purina Veterinary Diets HA Hydrolyzed Dry	291	10.3	260
<i>AAFCO Minimum for Healthy Adult Cats</i>	--	6.5	125



Resources Reminder

2021 AAHA Nutrition and Weight Management Guidelines for Dogs and Cats*

JAVMA



Dietary fiber aids in the management of canine and feline gastrointestinal disease

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Global Nutrition
Committee

Nutrition toolkit

Senior Pet Nutrition and Management

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MMI Nutrition Guide



Food Safety and Inspection Service
U.S. DEPARTMENT OF AGRICULTURE

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