



PURINA® PRO PLAN® Vet Nurse Symposium 2024

Empowering the Vet Nurse Journey

Basics of Dietary Management for Food Adverse Reactions

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Conflict of interest/disclosures

- › Independent clinical nutrition consultant
- › Consulting work for a variety of pet food companies.
- › Speaker or attendee in continuing education events sponsored or organized by pet food companies
- › Part of the scientific advisory board of FEDIAF (no fee).

AFR – Role of diet

RESEARCH ARTICLE

Open Access

Critically appraised topic on adverse food reactions of companion animals (4): can we diagnose adverse food reactions in dogs and cats with in vivo or in vitro tests?



Ralf S. Mueller^{1*} and Thierry Olivry²

Diagnostics



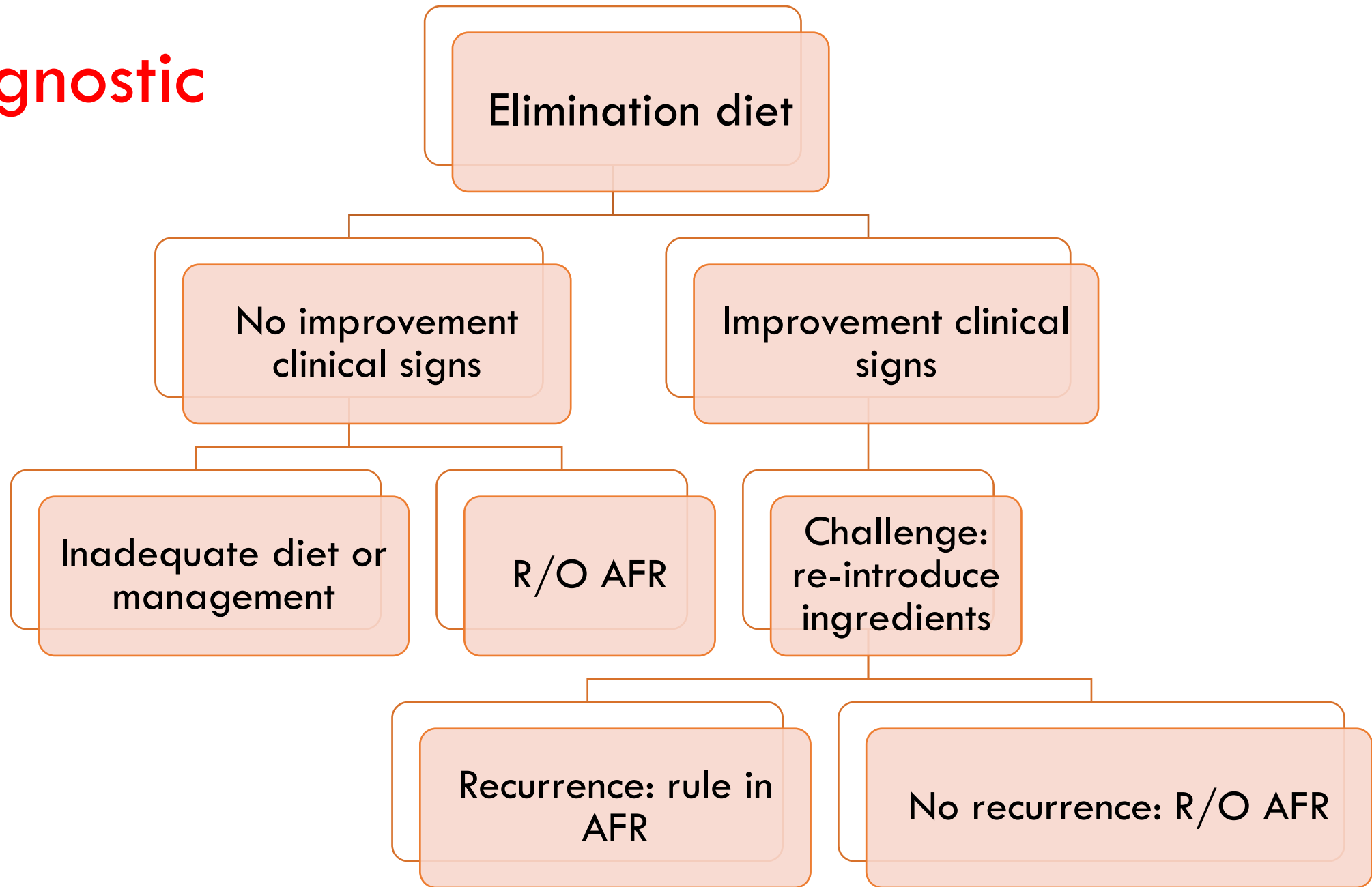
- Gold standard
- Elimination + challenge trial
- Long & challenging

Treatment



- Complete & balanced
- Avoid AFR triggers

AFR – Diagnostic



Elimination diets

Elimination diets:

- Nutritionally balanced
- Limited ingredient
- Reduced allergenicity
- No other potential antigens present

Novel ingredients

Commercial

Homemade

Both can work

Hydrolysed protein

Strategy 1: NOVEL INGREDIENTS

What is a “novel ingredient”?

One that the patient has never eaten before.

→ Relative to each patient – not always “hypoallergenic”

More common reported food allergens in the literature:

- Mueller et al 2016: Retrospective data
 - Dogs: beef, dairy, chicken, wheat
 - Cats: beef, fish, chicken



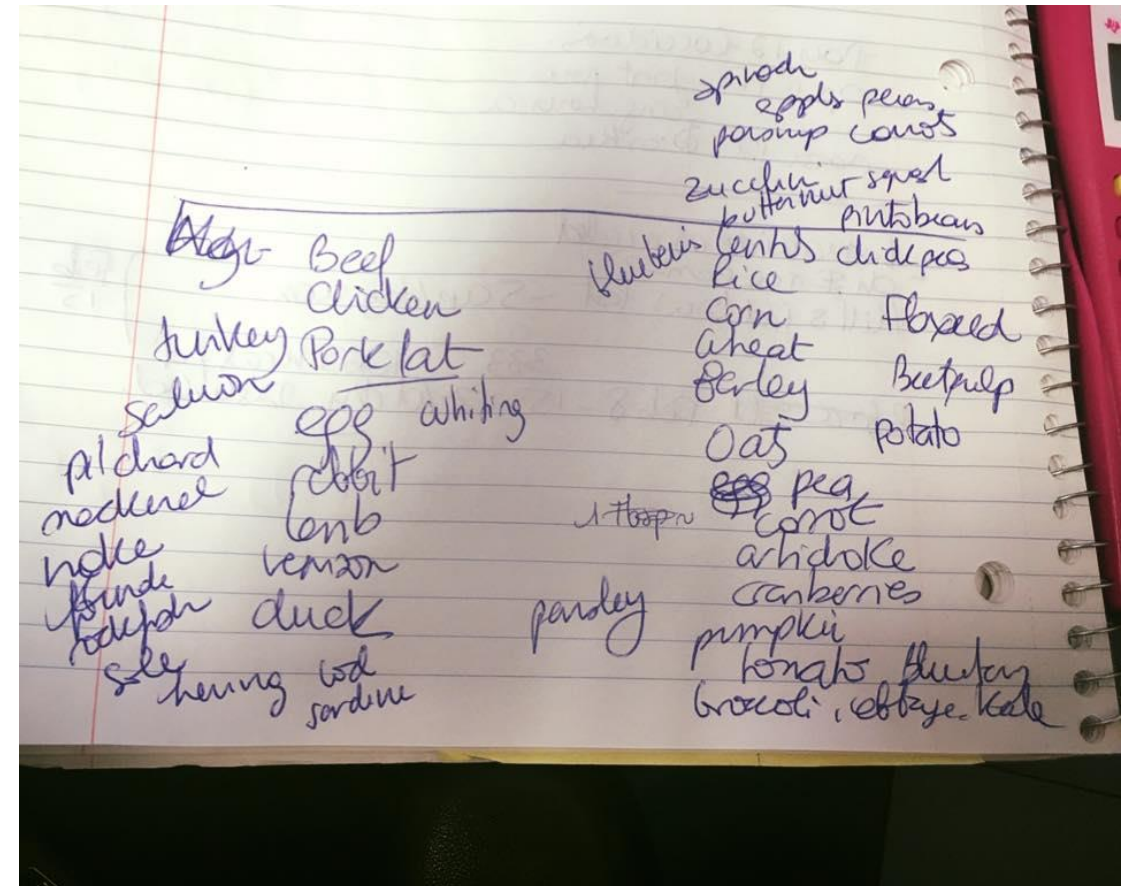
Exposure vs allergenic properties
Good starting point for ingredients to avoid

Novel ingredient diets: identify them

Perform a complete and detailed diet history

- ✓ List of all ingredients fed
- ✓ Include treats and table scraps

Time consuming
Owner recall
Sometimes impossible – EU
label!



Strategy 2: HYDROLYSED PROTEIN

Hydrolysis (protein → peptides, aa)

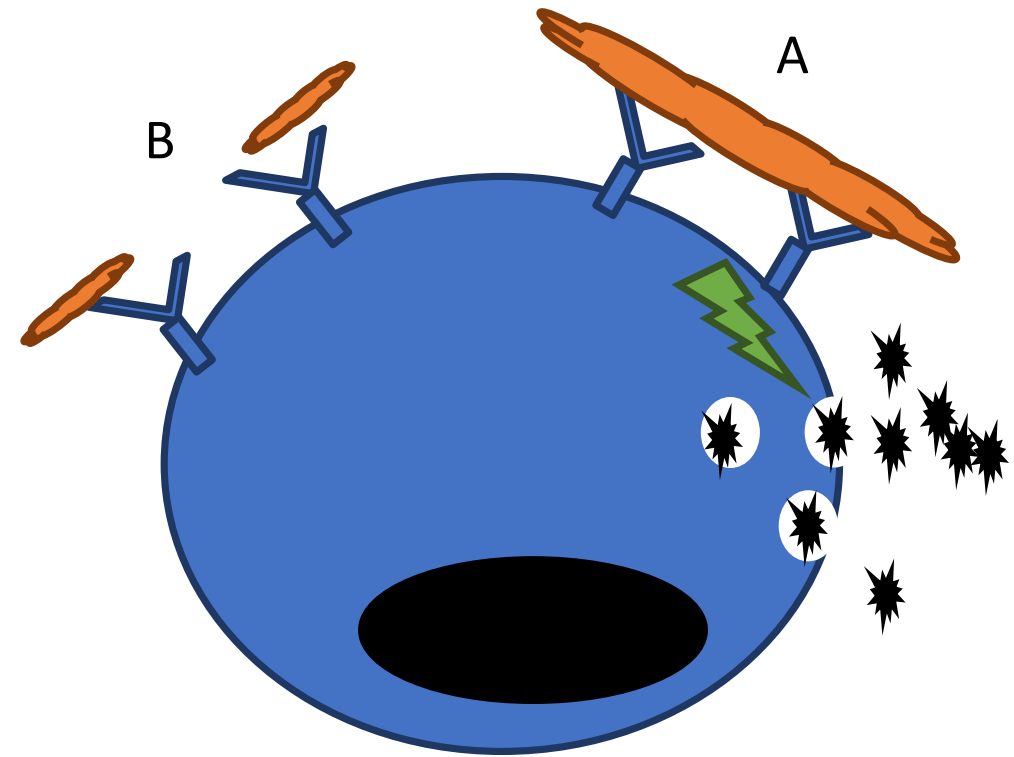
1 / destroys the 3D structure of the epitope

2 / prevents cross-linking of IgE

Average size <10 kD

Protein: soy, chicken, salmon, feather...

CHO: **starch**, rice, uncommon



Uncommon ingredients vs hydrolysed?

- **Uncommon**
- Limited commercial combinations
- Some patients - high exposure
- Requires ingredient exposure list
- Might be more palatable

› **Hydrolysed**

- › Ingredient exposure list less critical
- › Budget & palatability

Other considerations:

Life stage

Co-morbidities

Body composition

→ ID via nutritional assessment

Whatever the choice:

- ideally 1 protein source + 1 source of carbohydrate
- Always check even if “hypoallergenic” on labels or advertising!



INGREDIENTS: Rabbit, Water Sufficient for Processing, Turkey Liver, Dried Egg Product, Porcine Plasma, Montmorillonite Clay, Cod Liver Oil, Egg Shell Meal, Brewers Dried Yeast, Dried Apple, Dried Apricot, Alfalfa Meal, Dried Artichoke, Dried Blueberry, Dried Broccoli, Dried Carrot, Dried Chicory Root, Dried Cranberry, Dried Kelp, Parsley, Dried Pumpkin, Rosemary, Dried Spinach, Dried Tomato.



Ingredients:

With chicken:

Chicken (meat, liver, heart, stomach, skin) (63%), minerals.



Whistler's Chicken with Rice & Vegetables is naturally hypoallergenic and may help dogs that suffer from poor skin and coat condition, itching, scratching and hot spots. Containing a single source of meat protein for gentle digestion, natural antioxidants for health and well-being and containing no artificial colours, flavours or preservatives, Whistler's Chicken with Rice & Vegetables is a product we're hugely proud of!

ELISA testing for common food antigens in four dry dog foods used in dietary elimination trials*

D. M. Raditic, R. L. Remillard and K. C. Tater





Raditic DM et al. *J Anim Physiol Anim Nutr (Berl)* 2011; 95: 90-97.

DOI: 10.1002/vms3.125

Original Article

Determination of mammalian DNA in commercial canine diets with uncommon and limited ingredients

Cross contamination

Lara A. Fossati* , Jennifer A. Larsen[†] , Cecilia Villaverde^{†,‡}  and Andrea J. Fascetti[†] 

Detection of food antigens in commercial elimination diets for dogs using PCR

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vetmeduni
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Journal of
Animal Physiology and Animal Nutrition 

DOI: 10.1111/jpn.12045

SUPPLEMENT ARTICLE

Identification of undeclared sources of animal origin in canine dry foods used in dietary elimination trials

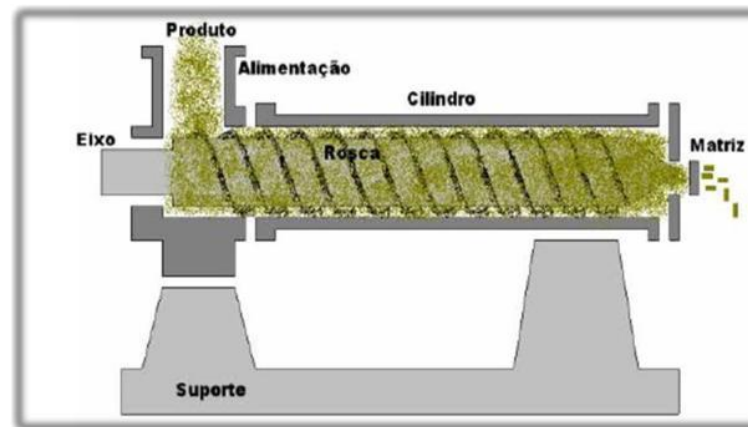
R. Ricci¹, A. Granato², M. Vascellari², M. Boscarato², C. Palagiano¹, I. Andrighetto^{1,2}, M. Diez³ and F. Mutinelli²

Abstract presented at 2014 ESVD & ESVCN congresses.



Your Pet, Our Passion.®

- Undeclared antigens can invalidate the trial
 - Clinical significance still unknown
 - Long-term use?
- Choose **veterinary therapeutic diet from reputable manufacturer** – implement strategies to avoid presence of other antigens



Elimination trial

- Perform nutritional assessment
- Choose elimination diet
- Feed exclusively for adequate time
- Discuss avoiding other antigen sources
- Encourage compliance
 - TEMPORARY
 - Diary – clinical signs
 - Check ins

Nutritional Assessment Checklist

To be completed by the pet owner. Please answer the following questions about your pet:

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

Owner's name: _____ Date form completed: _____

- 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 **Indoor** **Outdoor** **Indoor & Outdoor**

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

Food	Form	*Amount	Number	Fed since
Examples:				
• Purina Cat Chow	dry	½ cup	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
• Greenies Salmon Dental	treat	2	daily	Jan 2013

*If you feed by volume, what size measuring device do you use? _____

*If you feed tinned/canned food, what size tins/cans? _____

- 4 Do you give any dietary supplements to your pet (for example: vitamins, glucosamine, fatty acids, or any other supplements)? **No** **Yes**

If yes, please list brands and amounts: _____

<https://wsava.org/global-guidelines/global-nutrition-guidelines/>

Olivry et al. BMC Veterinary Research (2015) 11:225
DOI 10.1186/s12917-015-0541-3



RESEARCH ARTICLE

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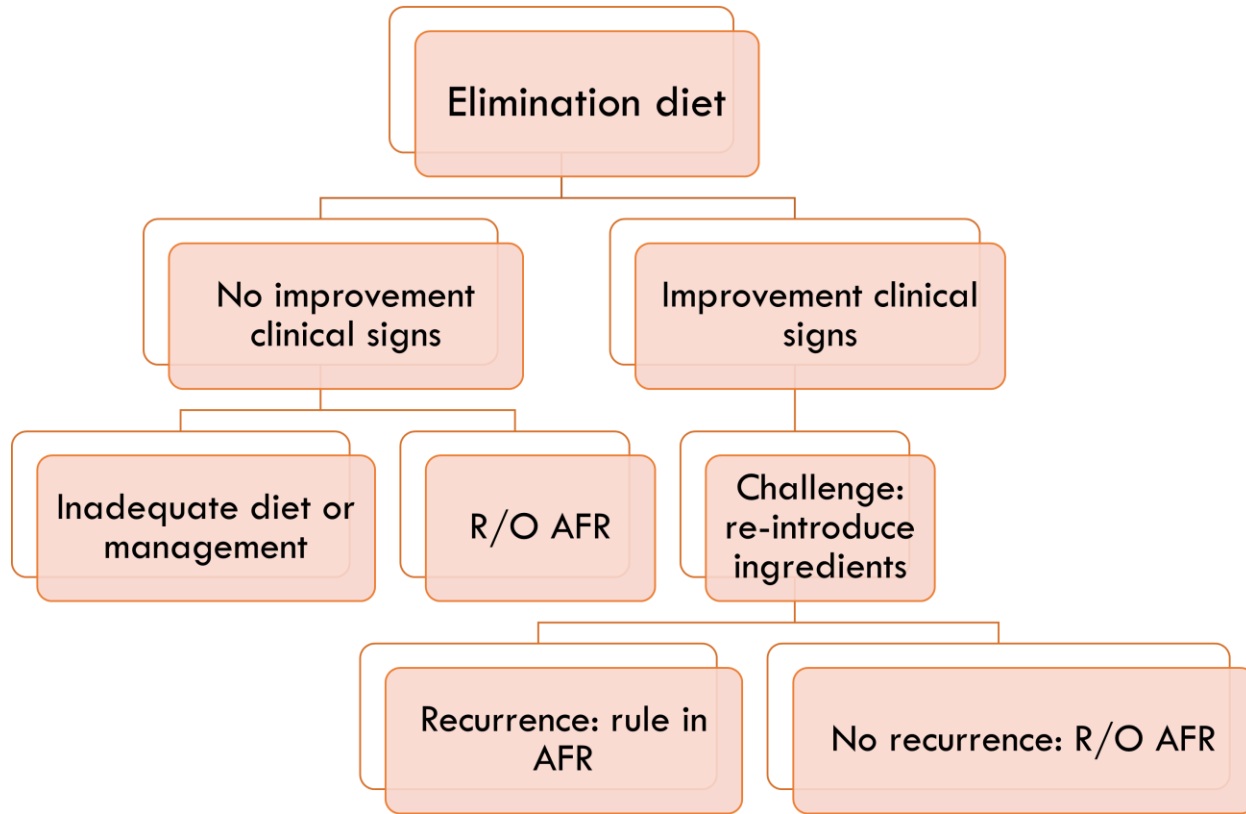


Critically appraised topic on adverse food reactions of companion animals (1): duration of elimination diets

For cAFR: min 8 weeks

Our Passion.

Thierry Olivry^{1*}, Ralf S. Mueller² and Pascal Prélud³



- If no improvement – r/o AFR

- Compliance
- Length
- Diet choice
- 2nd trial?

- If improvement → challenge

- Previous diet – confirm dx
- Individual ingredients – identify triggers (>1)

Challenge trial

INGREDIENT CHALLENGES

- 1 item every 7 -14 days (>1)
- 10% of the daily calories
- Caregiver assess response

Critically appraised topic on adverse food reactions of companion animals (9): time to flare of cutaneous signs after a dietary challenge in dogs and cats with food allergies

[Thierry Olivry](#)  & [Ralf S. Mueller](#)

[BMC Veterinary Research](#) **16**, Article number: 158 (2020) | [Cite this article](#)

Long term management

- Choose diet:
 - Complete and balanced
 - Adequate
 - Safe
 - Avoiding known triggers

› Therapeutic vs maintenance?

Therapeutic:

- Complete & balanced
- Limited ingredients
- Reduced allergenicity
- Other skin strategies?

Maintenance/OTC:

- Budget
- More choices
- + Work
- Trial and error
- Cross contamination?

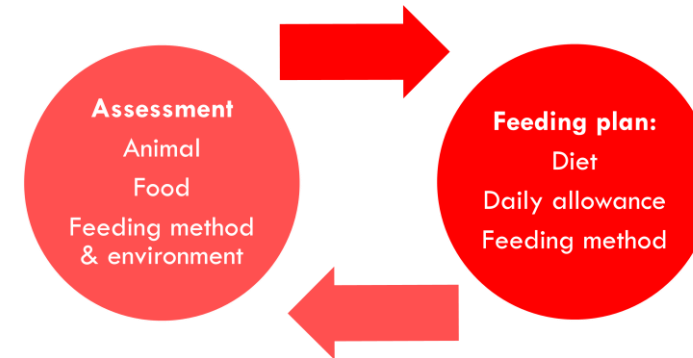
Long term management

- **Treats?**
 - Enjoyment, training, rewards...
 - Same strategies as main diet
 - Introduce one by one
 - Max 10% daily calories – diet 90%



Follow up

- ✓ Nutritional Assessment
 - ✓ Including BCS
- ✓ Clinical signs
- ✓ New ARF can develop in future



Updated on August 13, 2020
Body Condition Score

UNDER IDEAL

- Ribs very easily seen on short-haired cats. No fat pads present. Severe abdominal tuck. Lumbar vertebrae and pelvic bones easily seen and felt.
- Ribs easily seen on short-haired cats. Lumbar vertebrae obvious. Pronounced abdominal tuck. No fat pads present.
- Ribs easily felt with minimal fat covering. Lumbar vertebrae obvious. Obvious waist behind ribs. Minimal abdominal fat pads.
- Ribs felt with minimal fat covering. Noticeable waist behind ribs. Slight abdominal tuck. Minimal abdominal fat pads.

IDEAL

- Well-proportioned. Ribs felt with slight fat covering. Waist seen behind ribs, but not pronounced. Abdominal fat pad minimal.

OVER IDEAL

- Ribs felt with slight excess fat covering. Waist and abdominal fat pad present but not obvious. Abdominal tuck absent.*
- Ribs not easily felt through moderate fat covering. Waist not easily seen. Slight rounding of abdomen may be present. Moderate abdominal fat pad.
- Ribs not felt due to excess fat covering. Waist absent. Obvious rounding of abdomen with prominent abdominal fat pad. Fat deposits present over lower back area.
- Ribs not felt under heavy fat cover. Heavy fat deposits over lumbar area, face and limbs. Distention of abdomen with no waist. Severe abdominal fat deposits.

*A body condition score of 6/9 may be acceptable in some cats, especially older cats.

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Muscle Condition Score

Muscle condition score is assessed by visualization and palpation of the spine, scapulae, skull, and wings of the ribs. Muscle loss is typically first noted in the epaxial muscles on each side of the spine; muscle loss at other sites can be more variable. Muscle condition score is graded as normal, mild loss, moderate loss, or severe loss. Note that animals can have significant muscle loss if they are overweight (body condition score > 5). Conversely, animals can have a low body condition score (< 4) but have minimal muscle loss. Therefore, assessing both body condition score and muscle condition score on every animal at every visit is important. Palpation is especially important when muscle loss is mild and in animals that are overweight. An example of each score is shown below.

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Key points

- Diet is **essential** for diagnosis – a good nutritional assessment including detailed diet history is critical
- Veterinary therapeutic elimination diets from reputable manufacturers with limited ingredients and reduced allergenicity are indicated for *diagnostics*
- Diets without the triggers are indicated for long term management
 - Trial and error if using non vet diets
- Caregivers need guidance on feeding management during diagnostics and long term



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Thank you!

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