

# Reação adversa a alimentos

*Dra. Juliana Posselom*

Médica Veterinária

Residência em clínica médica em animais de companhia PUCPR

Especialização em Dermatologia veterinária pelo Instituto Qualittas

Aperfeiçoamento em Otologia veterinária - Anclivepa SP

Mestrado e Doutorado pela PUCPR em Ciência Animal

Sócia da Clínica Dermatovet - Curitiba

**Hipersensibilidade alimentar**

**Reação Adversa a Alimentos**

**Alergia alimentar**

**Reação Cutânea Adversa a Alimentos**

**Dermatite Atópica Induzida por Alimentos**

**Dermatite Atópica *Lato Sensu***

# Prevalência

## Veterinary Dermatology

Vet Dermatol 2022

DOI: 10.1111/vde.13055

### Combined prick and patch tests for diagnosis of food hypersensitivity in dogs with chronic pruritus

76%

Juliane Possebom , Ariane Cruz, Vanessa Cunningham Gmyterco and Marconi Rodrigues de Farias



## Veterinary Dermatology

### A prospective study on canine atopic dermatitis and food-induced allergic dermatitis in Switzerland

F. Picco\*, E. Zini†, C. Nett†, C. Naegeli‡, B. Bigler‡, S. Rüfenacht\*\*§§, P. Roosje\*\*\*, M. E. Ricklin Gutzwiller\*\*, S. Wilhelm\*, J. Pfister††, E. Meng†† and C. Favrot\*

25,1%

PESQUISA  
VETERINARIA  
BRASILEIRA  
Brazilian Journal of  
Veterinary Research  
ISSN 1518-794X (Print)  
ISSN 1678-5850 (Online)



### Efficacy of hydrolyzed soy dog food and homemade food with original protein in the control of food-induced atopic dermatitis in dogs<sup>1</sup>

Grazielle Vandresen\*\* and Marconi R. de Farias<sup>3</sup>

54%

## Veterinary Dermatology

Vet Dermatol. 2024 Feb;35(1):40-50. doi: 10.1111/vde.13198. Epub 2023 Aug 25.

### An open-label clinical trial to evaluate the efficacy of an elemental diet for the diagnosis of adverse food reactions in dogs

40%

Jeffrey Tinsley<sup>1</sup>, Craig Griffin<sup>2</sup>, Galia Sheinberg<sup>3</sup>, Joya Griffin<sup>1</sup>, Emily Cross<sup>4</sup>, Jason Gagné<sup>4</sup>, Anahi Romero<sup>3</sup>

*Dra. Juliane Possebom*

# Prevalência

Doenças gerais

Doenças dermatológicas

Cães COM PRURIDO

Doença de pele ALÉRGICA

DERMATITE ATÓPICA



RESEARCH ARTICLE

Open Access



## Critically appraised topic on adverse food reactions of companion animals (3): prevalence of cutaneous adverse food reactions in dogs and cats

Thierry Olivry<sup>1\*</sup> and Ralf S. Mueller<sup>2</sup>

Olivry and Mueller *BMC Veterinary Research* (2017) 13:51  
DOI 10.1186/s12917-017-0973-z

### Abstract

**Background:** The prevalence of cutaneous adverse food reactions (CAFRs) in dogs and cats is not precisely known. This imprecision is likely due to the various populations that had been studied. Our objectives were to systematically review the literature to determine the prevalence of CAFRs among dogs and cats with pruritus and skin diseases.

**Results:** We searched two databases for pertinent references on August 18, 2016. Among 490 and 220 articles respectively found in the Web of Science (Science Citation Index Expanded) and CAB Abstract databases, we selected 22 and nine articles that reported data usable for CAFR prevalence determination in dogs and cats, respectively. The prevalence of CAFR in dogs and cats was found to vary depending upon the type of diagnoses made. Among dogs presented to their veterinarian for any diagnosis, the prevalence was 1 to 2% and among those with skin diseases, it ranged between 0 and 24%. The range of CAFR prevalence was similar in dogs with pruritus (9 to 40%), those with any type of allergic skin disease (8 to 62%) and in dogs diagnosed with atopic dermatitis (9 to 50%). In cats presented to a university hospital, the prevalence of CAFR was less than 1% (0.2%), while it was fairly homogeneous in cats with skin diseases (range: 3 to 6%), but higher in cats with pruritus (12 to 21%) than in cats with allergic skin disease (5 to 13%).

**Conclusions:** Among dogs and cats with pruritus and those suspected of allergic skin disease, the prevalence of CAFR is high enough to justify this syndrome to be ruled-out with a restriction (elimination)-provocation dietary trial. This must especially be considered in companion animals with nonseasonal pruritus or signs of allergic dermatitis.

**Keywords:** Allergy, Atopic Dermatitis, Canine, Cat, Dog, Feline, Food Allergy, Itch, Pruritus

# Prevalência

-Raças

- Idade: < 1 ano

> 6 anos



# RAA em gatos

- Gatos RAA
  - Sinais cutâneos: 0,22 - 6%
  - Sinais gastrointestinais: 17 - 22%
- Idade média: 4 - 5 anos
  - 3 meses - 11 anos

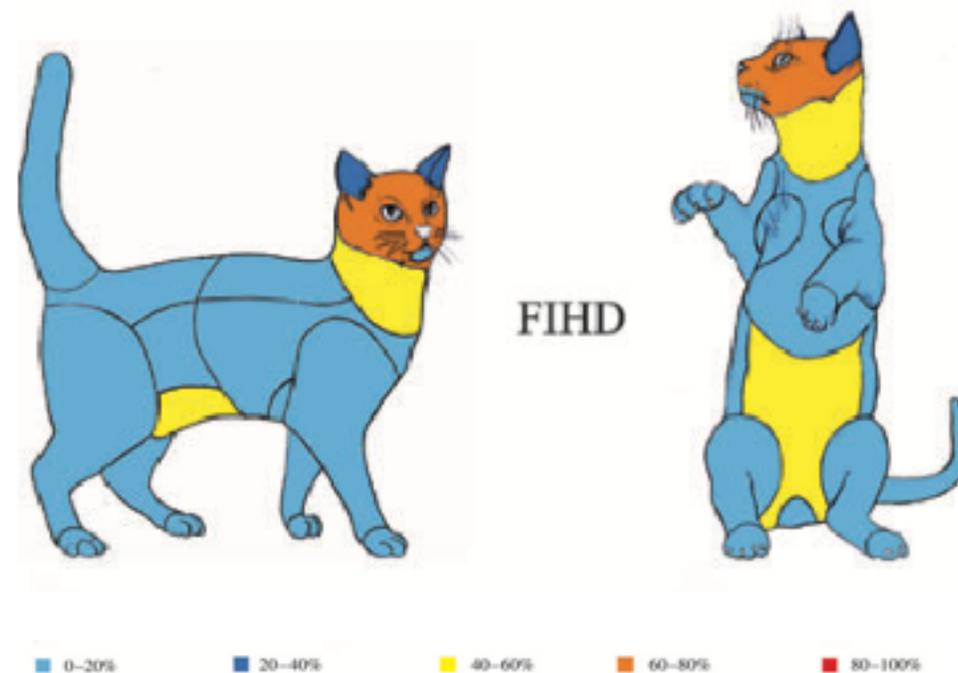




## Clinical characteristics and causes of pruritus in cats: a multicentre study on feline hypersensitivity-associated dermatoses

	(1) Nonflea HD	(2) Nonflea HD/ nonfood HD	(3) Food HD	(4) Flea HD
<i>n</i>	161	100	61	146
Miliary dermatitis (%)	30 (19)	18 (18)	12 (20)	51 (35)
Eosinophilic granuloma complex (%)	41 (25)	26 (26)	15 (25)	20 (14)
Erosions/ulcerations face and neck (%)	95 (59)	56 (56)	39 (64)	55 (38)
Symmetrical alopecia (%)	83 (52)	57 (57)	26 (43)	57 (39)
At least one of previous four presentations (%)	152 (94)	95 (95)	57 (94)	133 (91)
Multiple patterns (%)	74 (46)	46 (46)	28 (46)	41 (28)

	(1) Nonflea HD	(2) Nonflea HD/ nonfood	(3) Food HD	(4) Flea HD
<i>n</i>	161	100	61	146
Nondermatological signs (%)	67 (42)	42 (42)	25 (41)	44 (30)
Digestive signs (%)	22 (14)	9 (9)	13 (21)	17 (12)
Respiratory signs (%)	10 (6)	6 (6)	4 (7)	5 (3)
Otitis (%)	24 (15)	20 (20)	4 (7)	4 (3)
Conjunctivitis (%)	13 (8)	8 (8)	5 (8)	4 (3)



# Reação adversa a alimentos

## IMUNOLÓGICA

Efeito adverso à saúde decorrente de uma resposta imune específica que ocorre na exposição a um dado alimento

**HIPERSENSIBILIDADE /  
ALERGIA  
ALIMENTAR**

## NÃO IMUNOLÓGICA

Resposta fisiológica anormal a alimentos ou aditivos

**INTOLERÂNCIA  
ALIMENTAR**

# Reação adversa a alimentos



*Urticária, Angioedema*



*Dermatite atópica*



*Gastro-enteropatias crônicas*



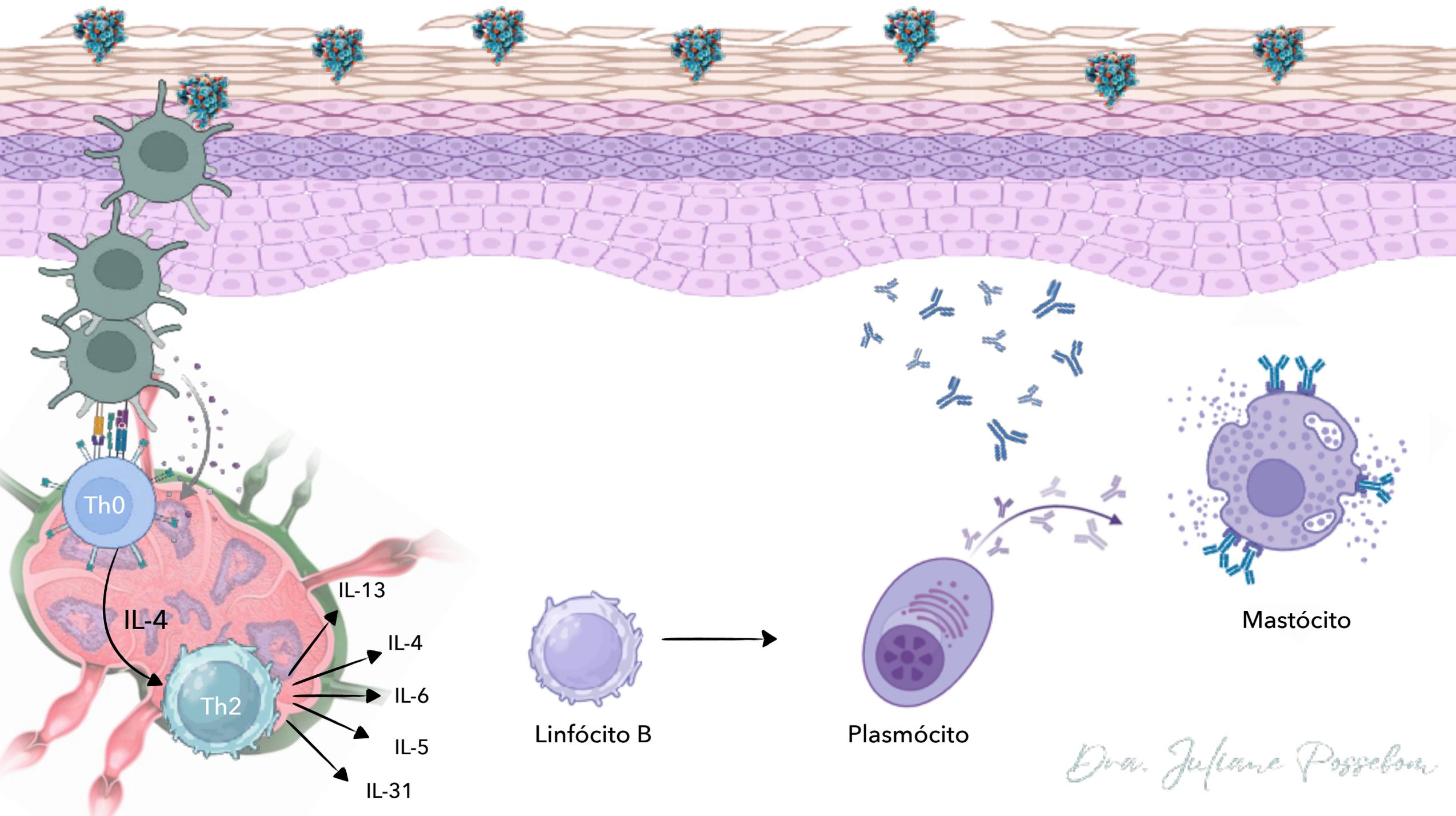
IgE mediado

Celular mediado

*zebon*

# Mediada por IgE

- Hipersensibilidade Tipo I
- Mais comum em humanos
- Resposta imediata
- 15 - 20 min
- Urticária / angioedema
- Rara em cães e gatos



*Dra. Juliana Possobom*



*Dra. Juliana Posseloni*

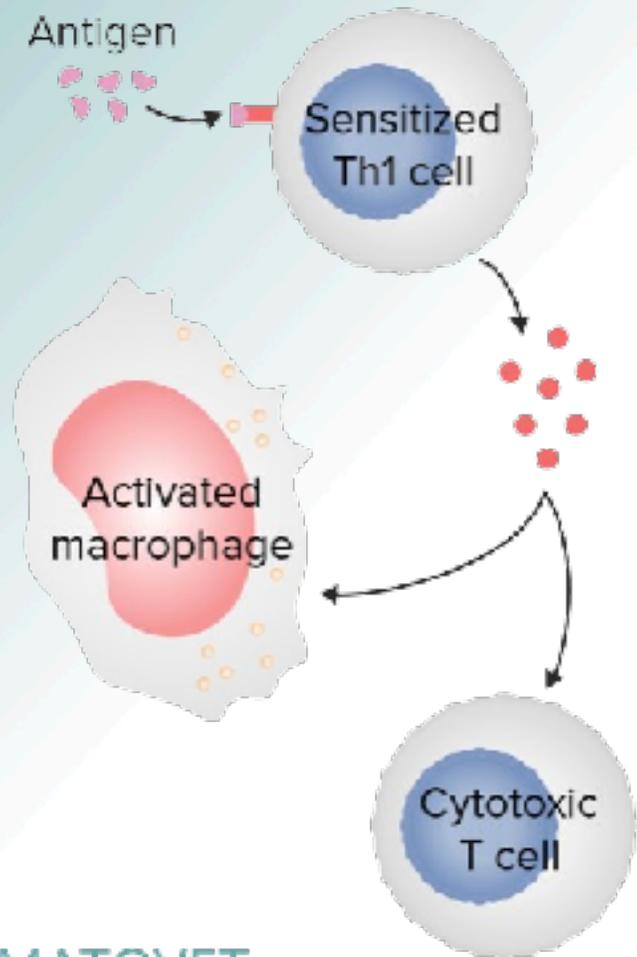


Foto: Prof. Dr. Marconi Rodrigues de Farias



Foto: Prof. Dr. Marconi Rodrigues de Farias

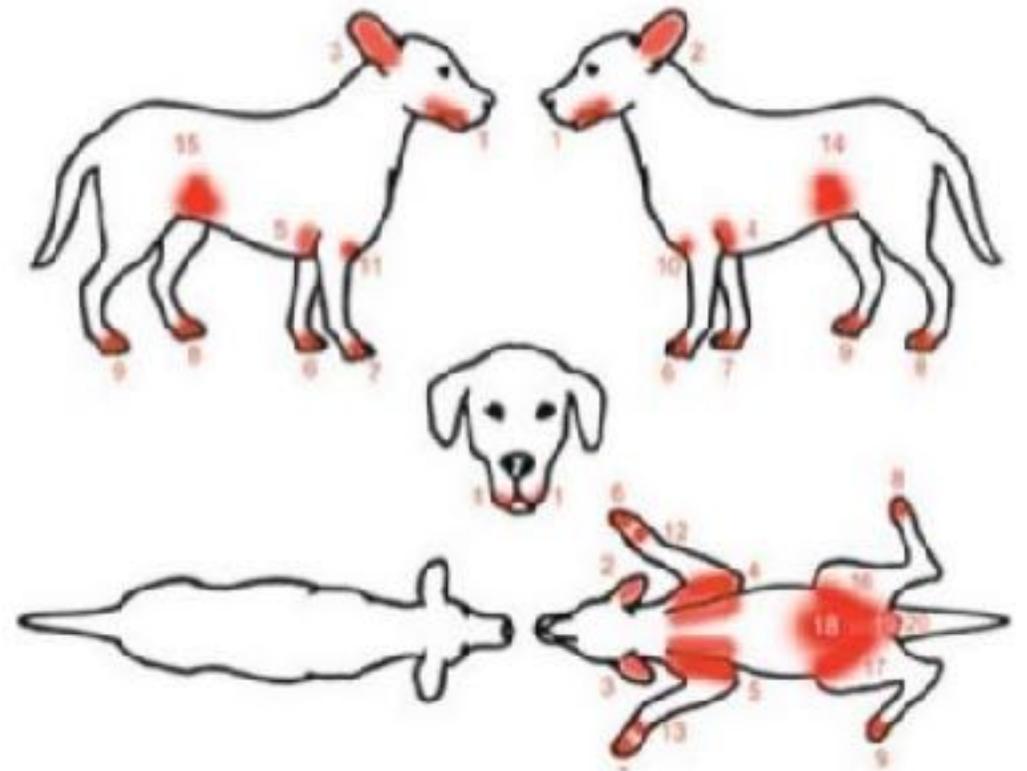
# Celular mediada

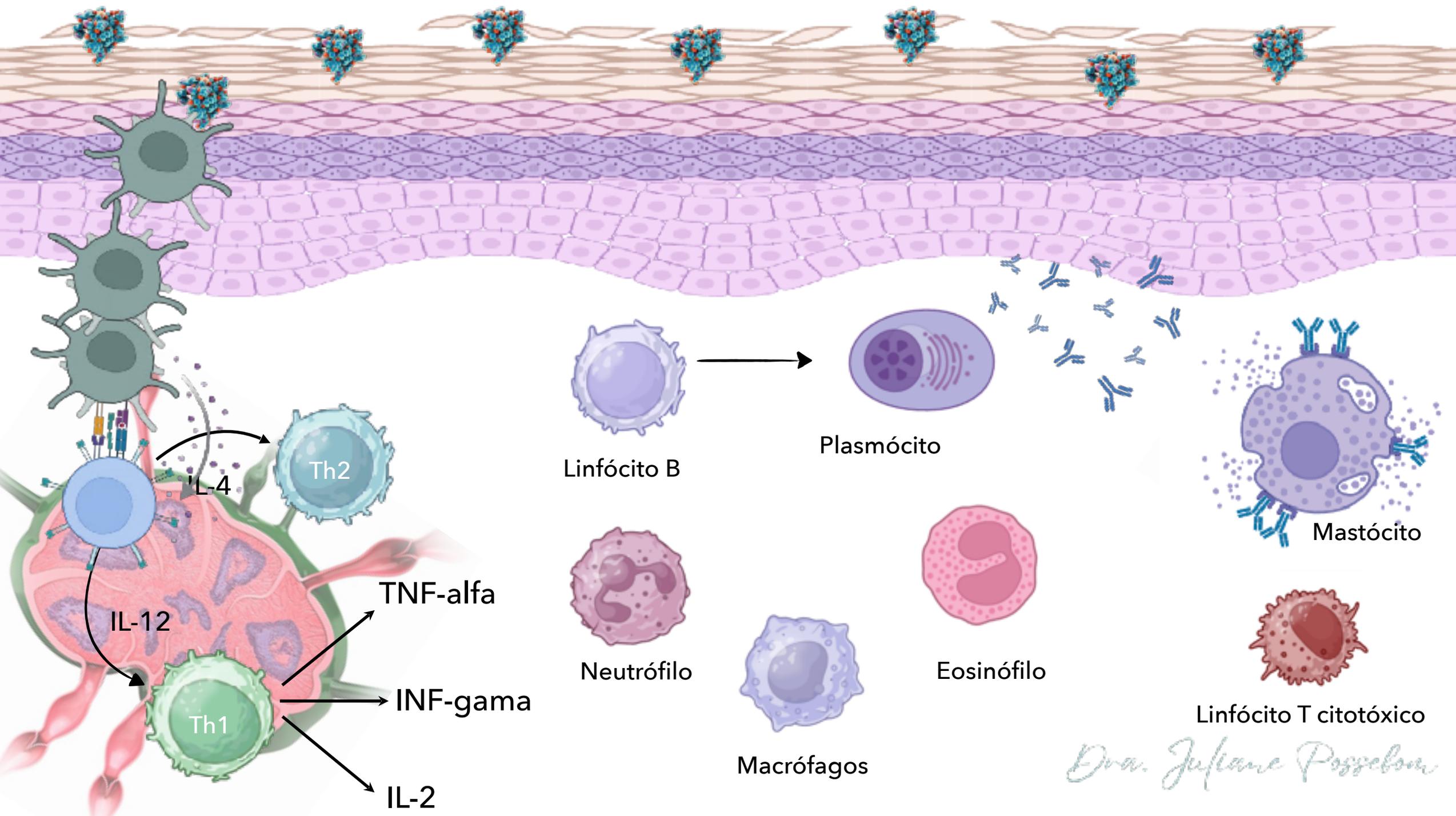


- Hipersensibilidade Tipo IV
- Afeta principalmente sistema gastrointestinal
- Resposta tardia
- Pouco descrita em cães e gatos

# Reação mista

- Pode ocorrer horas a dias após exposição
- Perfil de DERMATITE ATÓPICA!!!

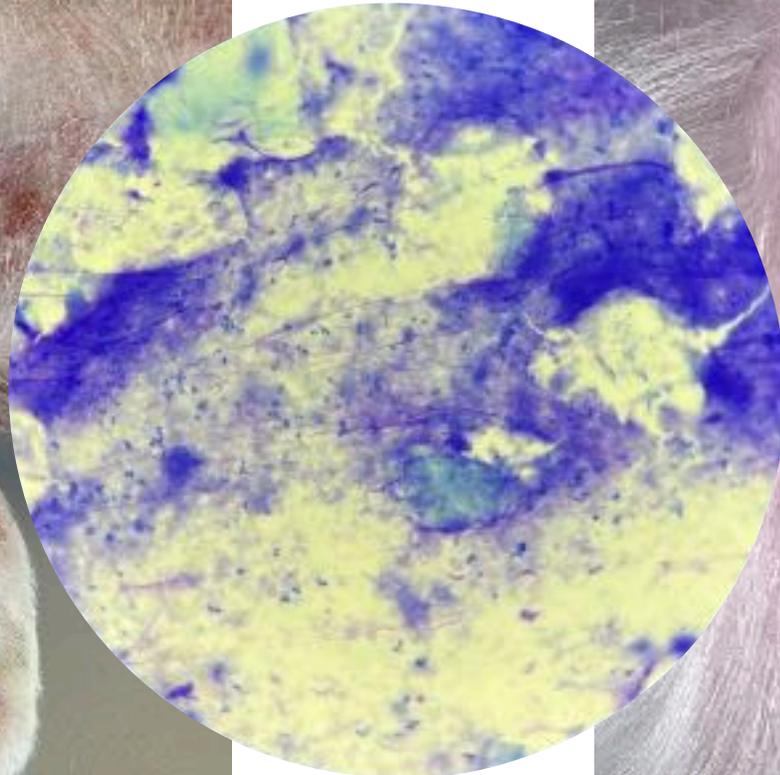




*Dra. Juliana Possobom*



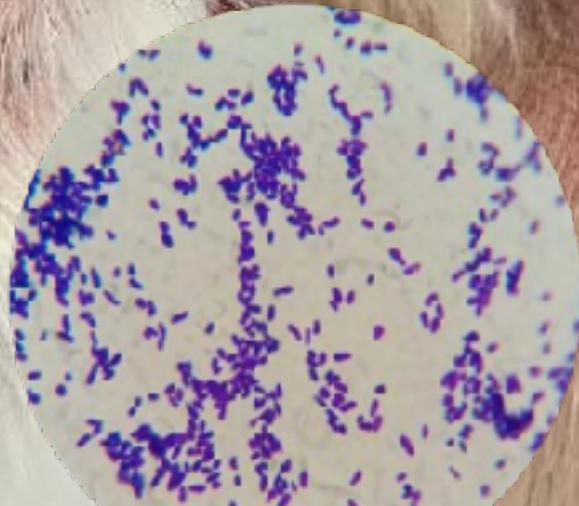
*Dra. Juliana Posseloni*



*Dra. Juliana Posseloni*



*Dra. Juliana Posseloni*



*Dra. Juliana Posseloni*



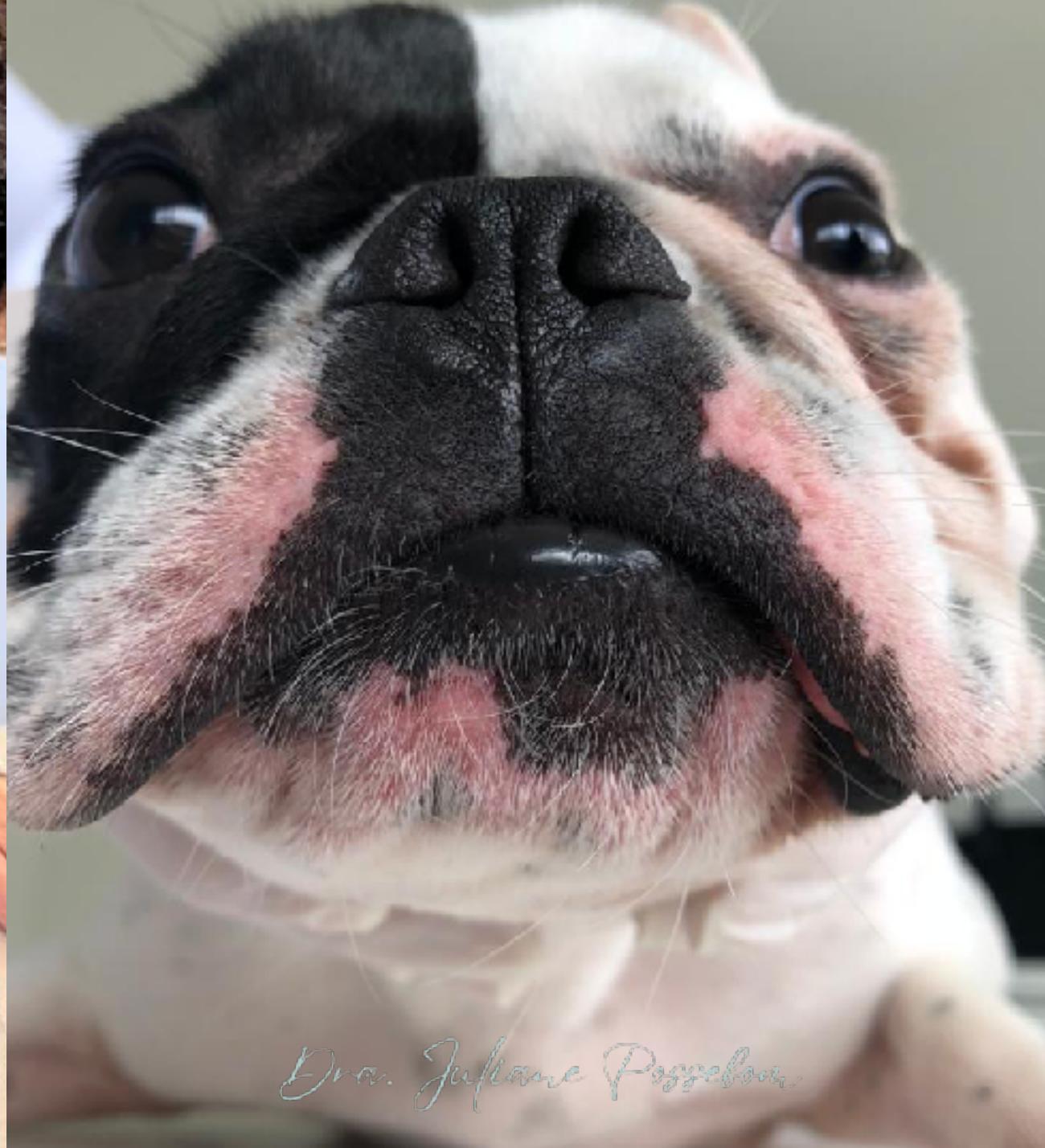
*Dra. Juliana Possobom*



*Dra. Juliana Possobom*



*Dra. Juliana Posseloni*



*Dra. Juliana Posseloni*



*Dr. Juliana Posseloni*



*Dr. Juliana Posseloni*



*Dra. Juliana Posseloni*



*Dra. Juliana Posseloni*



*Dra. Juliana Posseloni*



*Dra. Juliana Possobom*



*Dra. Juliana Possobom*



*Dra. Juliana Possobom*



*Dra. Juliana Possobom*



*Dermatite atópica*



*Alergia alimentar*



# Dermatite atópica

"Doença de pele inflamatória, pruriginosa, geneticamente predisposta e crônica"

Geralmente associado a produção de IgE

Alérgenos ambientais

Alérgenos alimentares (trofoalérgenos)

Alérgenos microbianos

**“DA *lato sensu*”** polissensibilizados a alérgenos **ALIMENTARES**  
**“DAIA”**

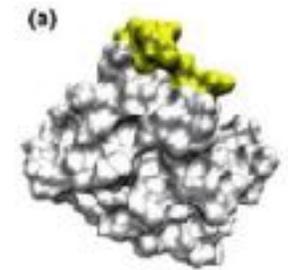
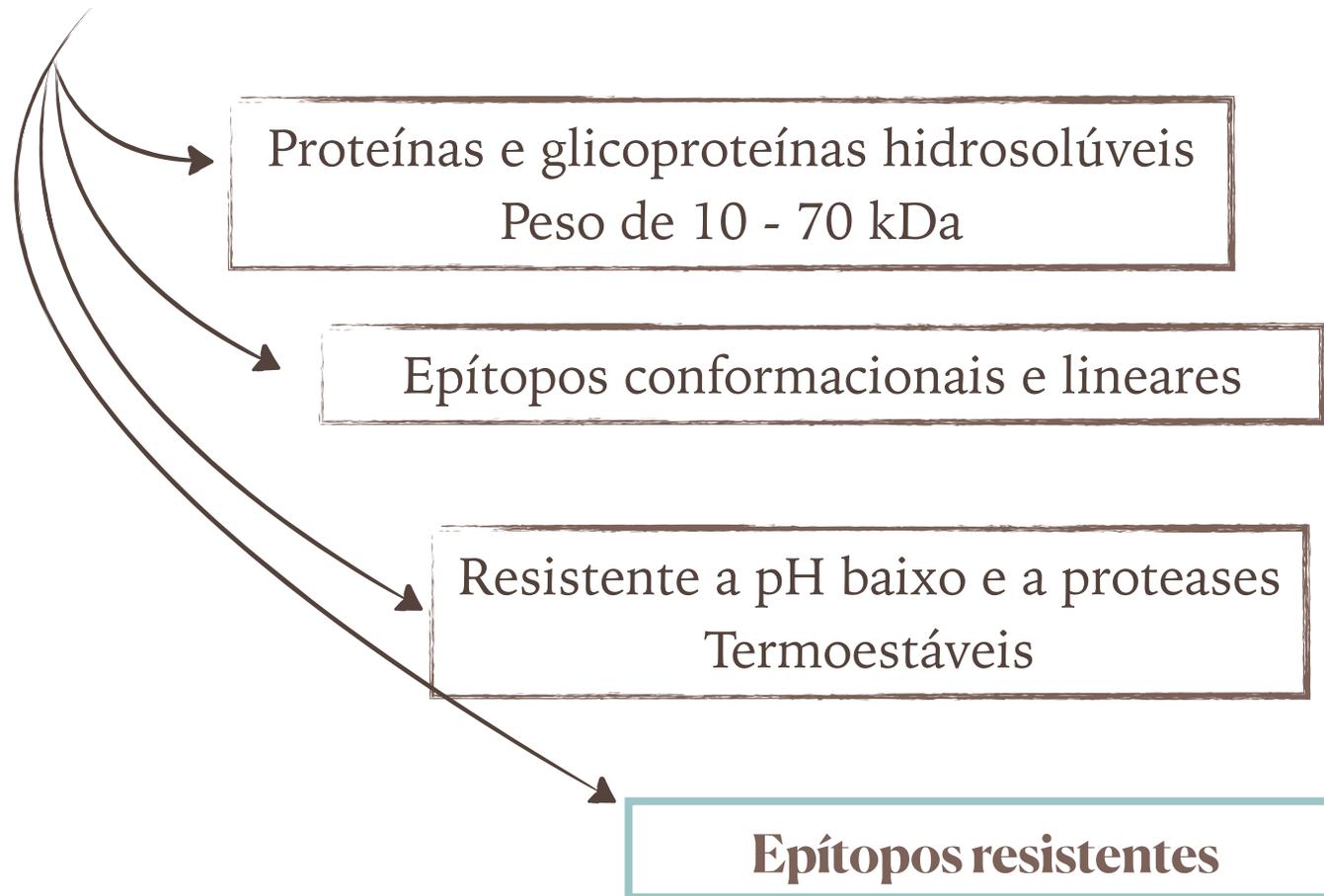
**“DA *stricto sensu*”** sensibilização a **ALÉRGENOS AMBIENTAIS**

**“DA *simili*”** **SEM** correlação com produção de IgE alérgeno.

**“Alergia alimentar”** alérgenos **ALIMENTARES** causando reação  
**(TROFOALÉRGENOS)**



# Trofoalérgeno





Letter to the Editor

## Ingredients and foods associated with adverse reactions in dogs and cats

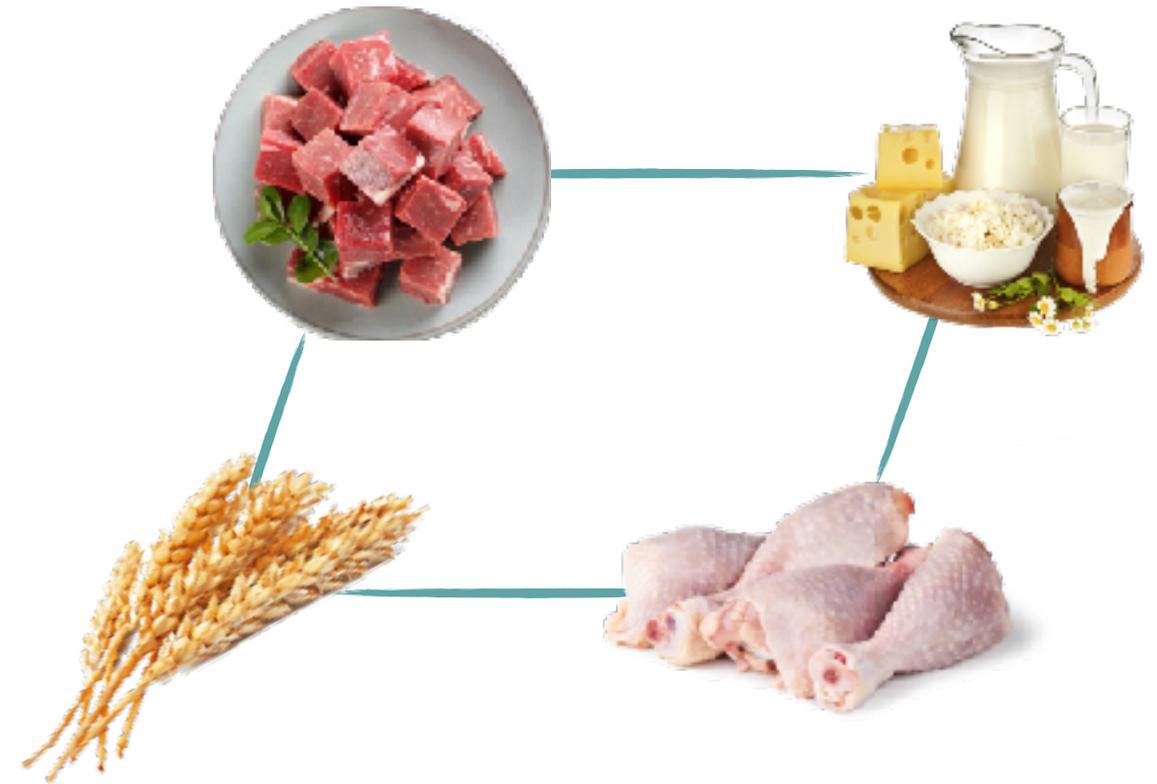
Philip Roudebush

First published: 18 February 2013 | <https://doi.org/10.1111/Avde.12014> | Citations: 20

© 2013 ESVD and ACVD, *Veterinary Dermatology*, **24**, 292–294.

**Table 1.** Foods or food ingredients reported to cause adverse reactions in dogs (330 cases)

Beef	107
Dairy	59
Chicken	50
Wheat	42
Chicken egg	24
Soy	18
Lamb	16
Pork	14
Fish	12
Corn	10
Turkey	6
Rice	5
Duck	2





Letter to the Editor

## Ingredients and foods associated with adverse reactions in dogs and cats

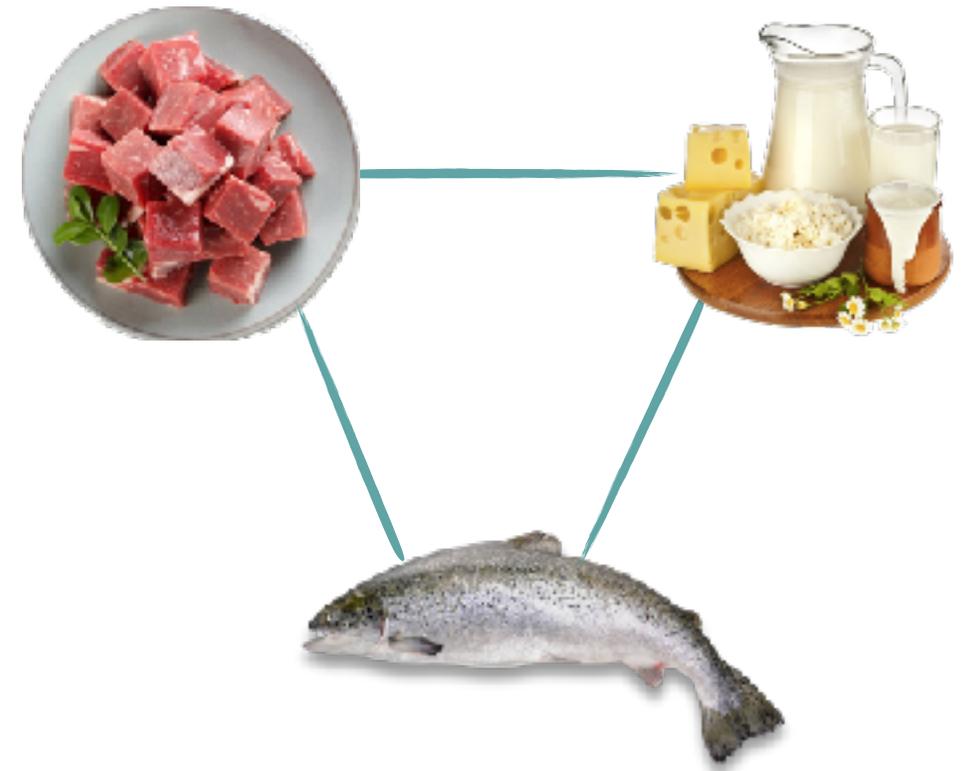
Philip Roudebush

First published: 18 February 2013 | <https://doi.org/10.1111/Avde.12014> | Citations: 20

© 2013 ESVD and ACVD, *Veterinary Dermatology*, **24**, 292–294.

**Table 2.** Foods or food ingredients reported to cause adverse reactions in cats (56 cases)

Beef	16
Dairy	16
Fish	13
Chicken	4
Corn gluten/corn	4
Lamb	4
Wheat	3
Chicken egg	2



## Combined prick and patch tests for diagnosis of food hypersensitivity in dogs with chronic pruritus

Juliane Possebom , Ariane Cruz, Vanessa Cunningham Gmyterco and Marconi Rodrigues de Farias

**Table 2.** Demonstration of the number of reactions to the different foods tested in prick and patch test in dogs with adverse food reactions

	Prick test	Patch test
Chicken	23.8%	57.1%
Soy	28.6%	52.4%
Beef	28.6%	47.6%
Fish	28.6%	47.6%
Milk	23.8%	42.8%
Pork	38.0%	38.0%
Egg	33.3%	23.8%
Wheat	28.6%	4.8%
Potato	4.8%	38.0%
Yucca	0	4.8%
Rice	14.3%	4.8%

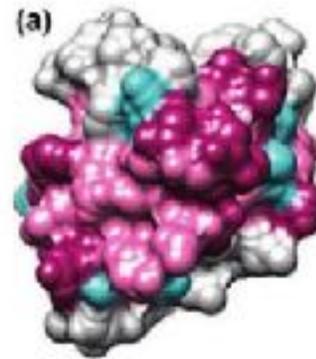
Positive prick test reactions most commonly occurred to pork protein, followed by egg, soy, fish, beef, wheat, chicken and milk. There were fewer reactions to carbohydrates (most commonly to rice, followed by potato). There were no reactions to cassava (Table 2).

Positive patch test reactions most commonly occurred to chicken, followed by soy, fish, beef, milk, pork, egg and wheat. The carbohydrate associated with the most reactivity was potato. Rice and cassava provoked the same number of reactions (Table 2).

# Reação cruzada

"As reações cruzadas ocorrem quando duas proteínas alimentares compartilham parte de uma sequência de aminoácidos que contêm um determinado **epítipo alergênico**"

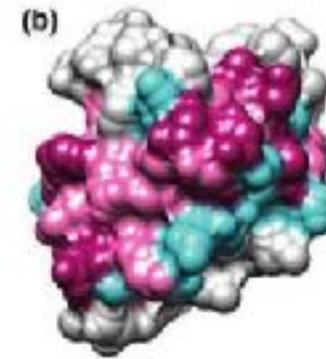
## Parvalbumina



*Gad m 1*



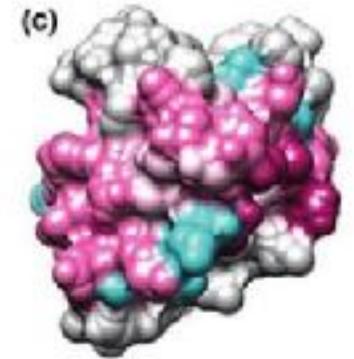
Bacalhau



*Sal s 1*



Salmão

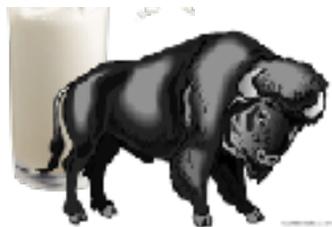


*Thu a 1*



Atum

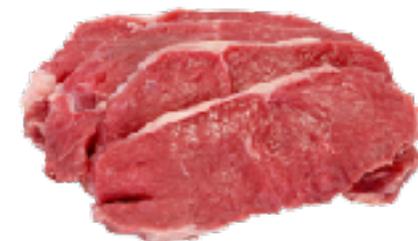
# Reação cruzada



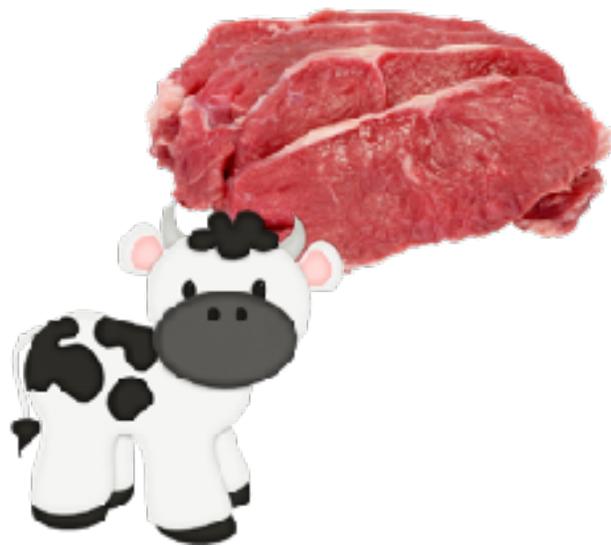
← *Caseína*



*Albumina* →



# Reação cruzada

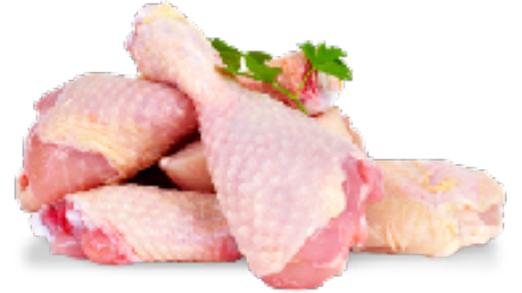
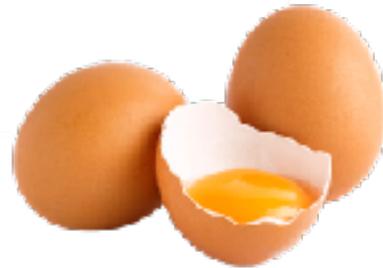
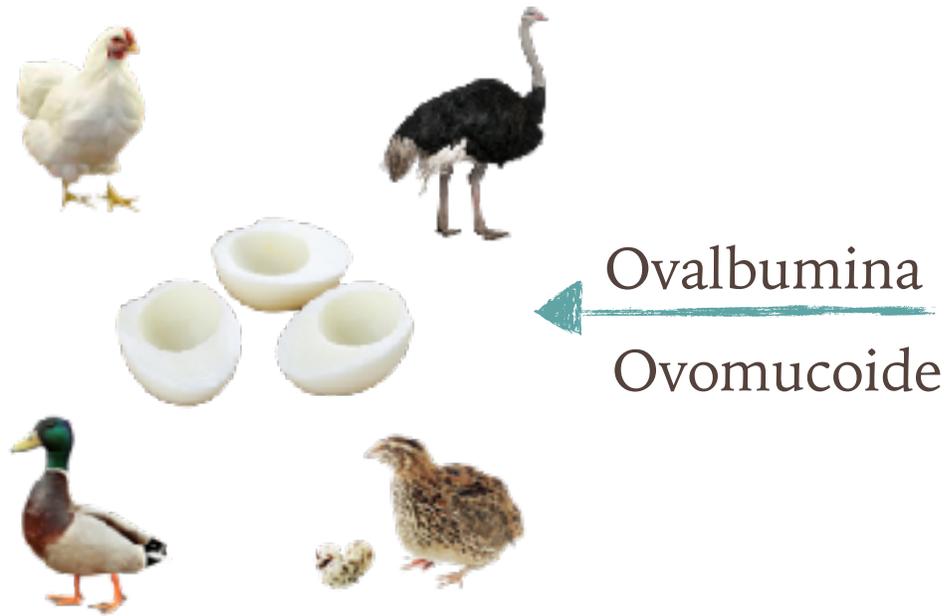


Albumina

83,3%



# Reação cruzada



# Reação cruzada

## Veterinary Dermatology

Vet Dermatol 2018

DOI: 10.1111/vde.12891

### Serum IgE cross-reactivity between fish and chicken meats in dogs

Jennifer Bexley\*, Nicola Kingswell\* and Thierry Olivry†§



## Allergy

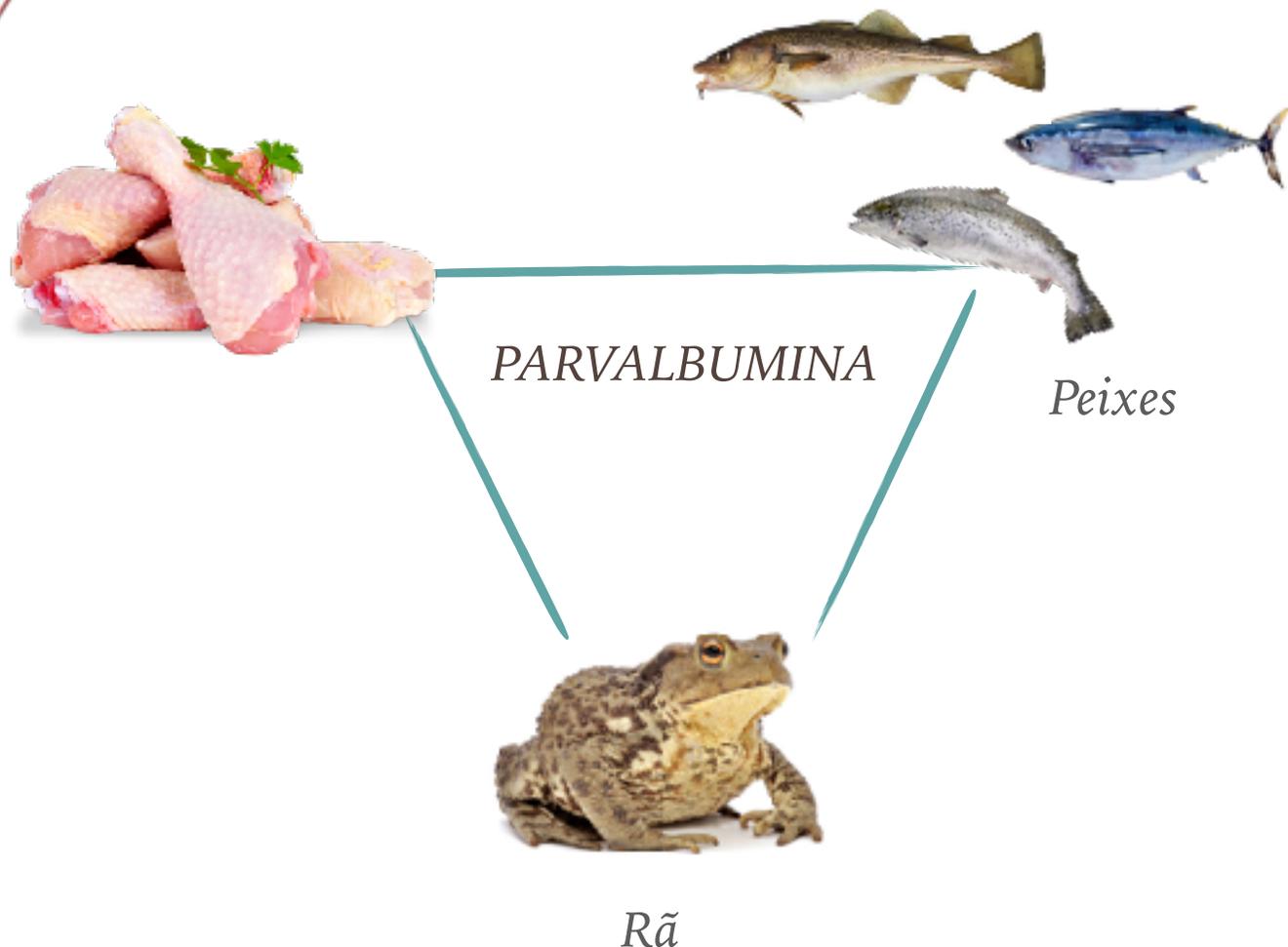
EUROPEAN JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY



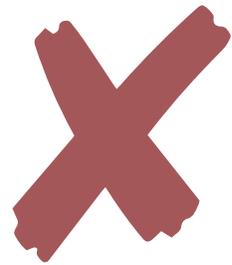
### IgE antibodies of fish allergic patients cross-react with frog parvalbumin

C. Hilger, I. Thill, F. Grigioni, C. Lehnert, P. Falagiani, A. Ferrara, C. Romano, W. Stevens, F. Herziges

First published: 14 May 2004 | <https://doi.org/10.1111/j.1398-9995.2004.00436.x> | Citations: 47



# Reação cruzada



# Relevância clínica

O diagnóstico da DA canina é baseado nas características clínicas, com exclusão de outras doenças com uma apresentação clínica semelhante. Portanto, um **diagnóstico clínico** de pode ser feito sem necessariamente empregar mais procedimentos de diagnóstico, como testes cutâneos ou sorologia de IgE, **embora** estes possam contribuir para a tomada de decisões clínicas em termos de **terapia direcionada**.

Manolis N. Saridomichelakis, Thierry Olivry' 2015

# Como fazer o diagnóstico?

## Veterinary Dermatology

Vet Dermatol. 2024 Aug;35(4):418-431. doi: 10.1111/vde.13247. Epub 2024 Feb 29.

### Establishment of clinical criteria for the diagnosis of adverse food reactions in dogs with atopic dermatitis

Evi I Sofou <sup>1</sup>, Svetlina Aleksandrova <sup>1</sup>, Manolis Chatzis <sup>1</sup>, Elise Samuel Badulescu <sup>1</sup>,  
Manolis N Saridomichelakis <sup>1</sup>

Affiliations [+ expand](#)

PMID: 38426024 DOI: 10.1111/vde.13247

- 39 cães com DA
- Dieta de eliminação com ração extensivamente hidrolisada → Teste de provocação
- 13/44,8% - RAA

**Background:** Diagnosis of canine adverse food reactions (AFRs) is based on vague criteria, such as '>50% improvement' during elimination diet trial (EDT) followed by 'deterioration' during provocation test (PT).

**Objective:** The objective of the study was to use predefined criteria to evaluate response during EDT [i.e., Owner Global Assessment of Treatment Efficacy (OGATE) = good-to-excellent] and relapse during PT [i.e., Owner Global Assessment of Challenge Deterioration (OGACD) = moderate-to-severe and/or >100% increase of lesional (Canine Atopic Dermatitis Extent and Severity Index, 4th iteration, CADESI-04) and/or of pruritus (pruritus Visual Analog Scale, PVAS) scores].

**Animals:** Twenty-nine dogs with atopic dermatitis.

**Materials and methods:** An extensively hydrolysed diet was fed to all dogs followed, in seven of 11 nonresponders, by a second home-made novel-protein EDT. Dogs responding to either EDT were challenged with their previous diet.

**Results:** Thirteen (44.8%) dogs were diagnosed with AFRs: at the end of EDT, their OGATE was good (9 of 13; 69.2%) or excellent (four of 13; 30.8%), and both CADESI-04 (46.7%) and PVAS (71.1%) had decreased significantly; at the end of PT, OGACD was moderate or severe in 12 of 13 (92.3%) dogs, and both CADESI-04 (127.9%) and PVAS (181.8%) had increased significantly. Of the 16 dogs without AFRs, 6 (37.5%) responded to the commercial (n = 5) or home-made (n = 1) diet [OGATE = good (three of six) or excellent (three of six)], with significant concurrent reduction of CADESI-04 and nonsignificant reduction of PVAS, yet they did not relapse during PT.

**Conclusions and clinical relevance:** The proposed (predefined) criteria for the evaluation of response during EDT and deterioration during PT seem reliable and are easily applicable in clinical practice and research.

# Como fazer o diagnóstico?

## Food allergy diagnosis

As of 2024 the only method to accurately identify offending food allergens is with elimination diets and provocative challenging!

**DIETA DE ELIMINAÇÃO**

**TESTE DE PROVOCAÇÃO**

# Dieta de eliminação

- Primeiro trata comorbidades, como infecções, prurido, inflamação.
- Realizar com medicação no início
- Prednisolona 0,5 - 1,0 mg/kg/SID/7-10 dias  
0,5 - 1,0 mg/kg/48h/10 dias
- Apoquel: 0,4 - 0,6 mg/kg/BID/14 dias  
0,4 - 0,6 mg/kg/SID/10 dias
- Cytoint? *(Note: the image contains a typo 'Cytoint?')*

# Dieta de eliminação

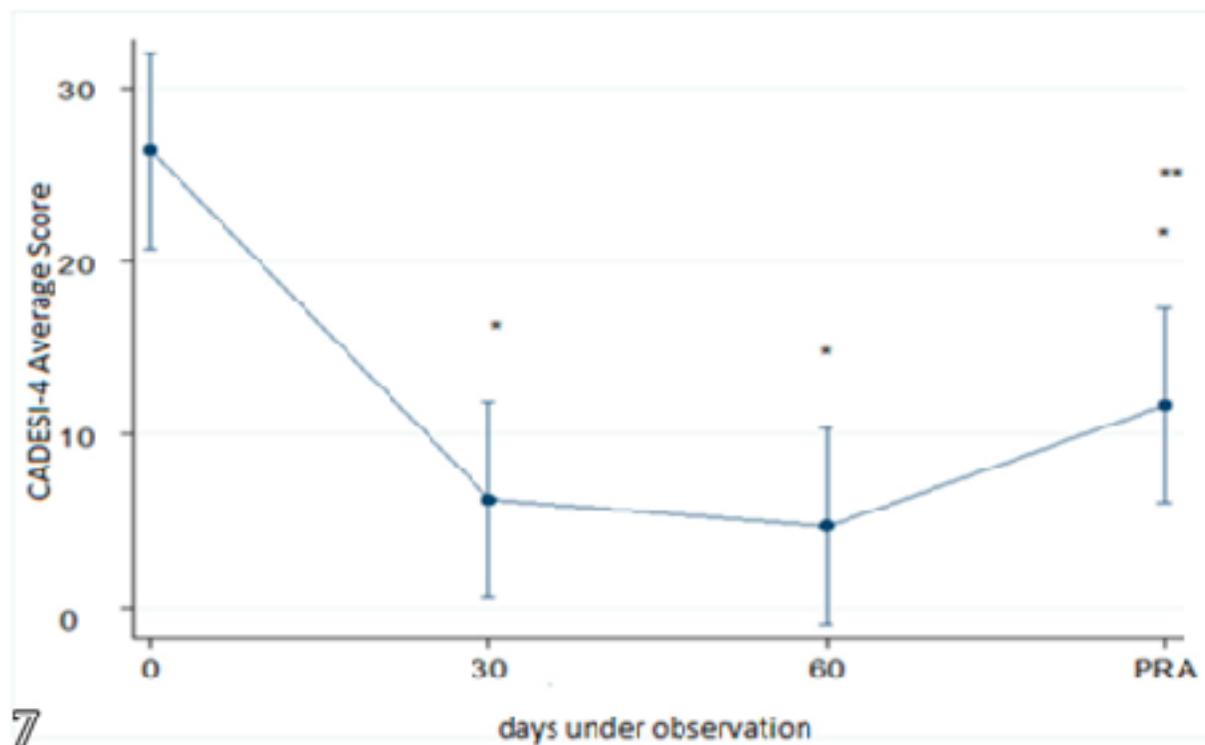
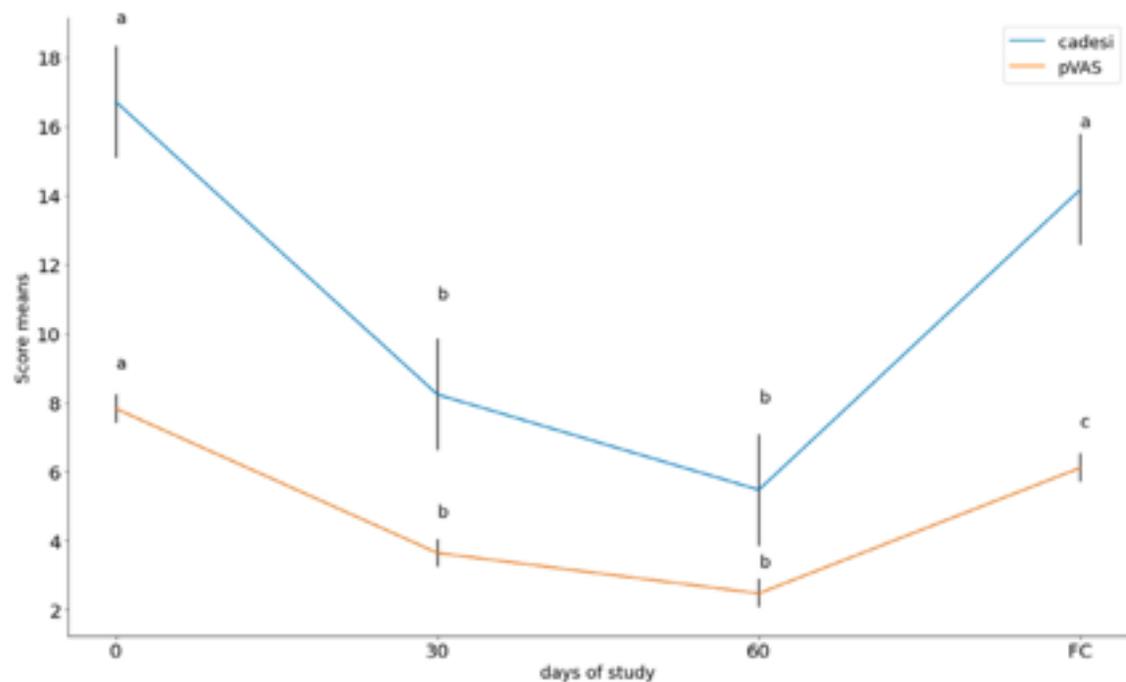
- SOMENTE a dieta, sem petiscos, mesmo que frutas, legumes...
- Cuidar com medicamentos orais com palatilizantes, inclusive anti pulgas!
- Por quanto tempo?
  - 5 - 8 semanas, podendo chegar a 12 semanas.
  - Poderia ser menos?

30 dias?



## Evaluation of skin prick test, exclusion diet and dietary challenge in the diagnosis of food allergy in dogs with chronic pruritus<sup>1</sup>

Juliane Posselbon , Ariane Cruz, Vanessa Cunningham Gmyterco and Marconi Rodrigues de Farias



# Dieta de eliminação

Ração comercial?

Dieta caseira?

Ração terapêutica?

**NÃO**



BRIEF REPORT



## Analysis of chicken and pig DNA content in commercial dry foods for adult cats

Jagoda Kępińska-Pacelik<sup>1</sup> · Wioletta Biel<sup>1</sup> · Małgorzata Natonek-Wisniewska<sup>2</sup> · Piotr Krzyściński<sup>2</sup>

As expected, the presence of chicken was confirmed in all foods from group 1. However, pig DNA was also detected in all foods from this group, even though its presence was not declared by the manufacturer. In group 2, in which foods contained only fish, both chicken and pig DNA were identified. Interestingly, C18 was the only food in this research in which pig DNA was not detected. Group 3 was characterized by the presence of both chicken and pig DNA, although the manufacturers declared only alternative sources of animal protein, such as rabbit, lamb, goat, insects.

**Table 1** Main animal components of tested foods and identified species

Item	Manufacturer's declaration		Identified species (G or S)
	Animal components	Animal fat source	
C1	chicken meat, eggs	salmon oil	G, S
C2	poultry protein, eggs	poultry fat, salmon oil	G, S
C3	chicken meat	chicken fat, fish oil	G, S
C4	chicken meat, poultry protein, eggs	animal fat, fish oil	G, S
C5	chicken meat, chicken protein, eggs, herring protein	chicken fat, herring oil	G, S
C6	poultry meat powder, greaves	poultry fat, beef fat	G, S
C7	poultry protein, animal protein	animal fat, fish oil	G, S
C8	chicken protein, animal protein	purified animal fat	G, S
C9	poultry protein, greaves, lamb protein, hemoglobin, fish, eggs, mussel meat	animal fat (including poultry), sunflower oil	G, S
C10	chicken, deer, salmon, fish	chicken fat	G, S
C11	carp fish, herring meat, salmon, fish protein	salmon oil	G, S
C12	salmon, salmon protein	salmon oil	G, S
C13	trout, fish meal, salmon	NDL	G, S
C14	salmon, salmon protein, white fish protein, sardine protein	salmon oil	G, S
C15	herring, mackerel, lake, blue whiting, flounder, redfish, cod liver	pollack oil	G, S
C16	salmon, herring, hake, rainbow trout	pollack oil, salmon oil	G, S
C17	herring, insects	herring oil	G, S
C18	sardine, hake, mackerel, flounder, redfish, sole, blue whiting, whatefish	pollack oil	G
C19	fish, salmon meal, fish meal	NDL	G, S
C20	fish	salmon oil	G, S
C21	rabbit	salmon oil	G, S
C22	offal and lamb meat	NDL	G, S
C23	beef	beef fat	G, S
C24	goat meat, wild boar meat, deer meat, Arctic char, duck meat, mutton, rainbow trout	duck fat, herring oil	G, S
C25	beef, wild boar, buffalo, lamb	beef fat, herring oil	G, S
C26	insect protein	salmon oil	G, S
C27	Hermetia illucens larvae	insect oil	G, S

G – *Callus palus domesticus*. S – *Sus domestica*. NDL – Not declared on the label

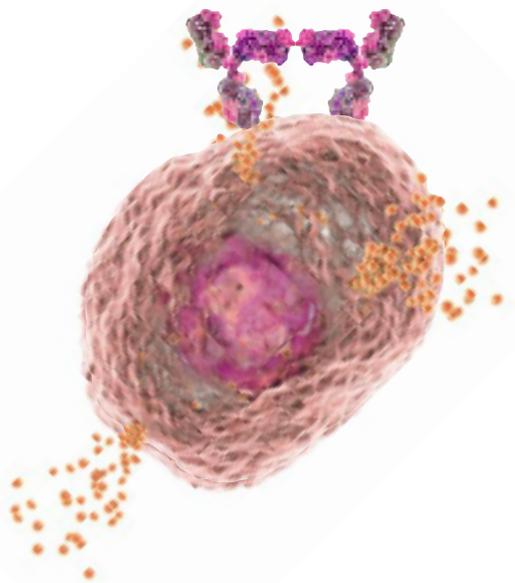
## Dieta caseira

- Anamnese
  - Pouco eficaz
- Reações cruzadas
- Carnes exóticas
- Alto custo
- Difícil acesso
- Baixa aceitação pelo tutor

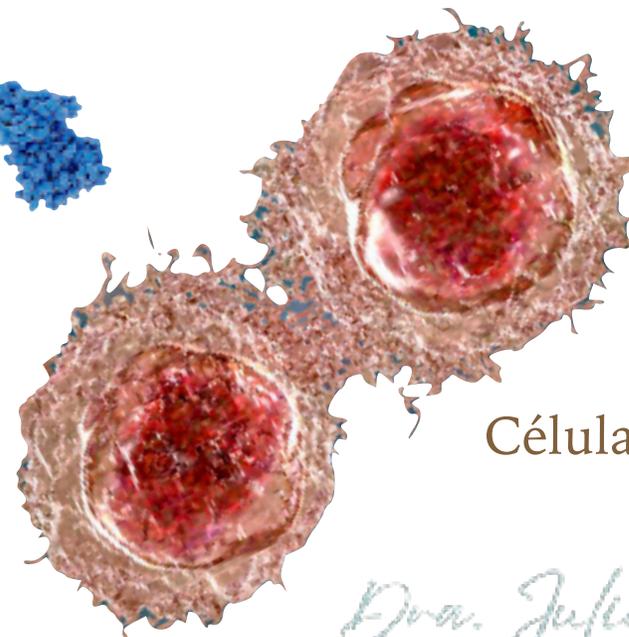
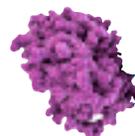
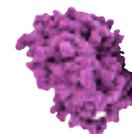
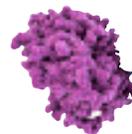
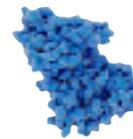
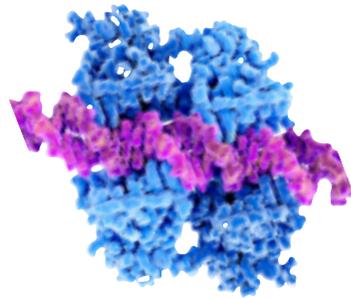
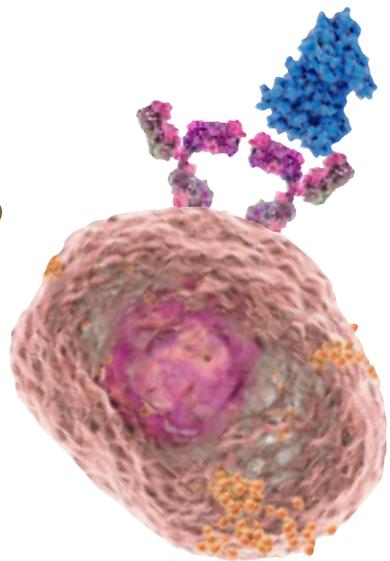
## Ração terapêutica

- Diversas rações no mercado
- Diferentes fontes proteicas
- Hidrólises





Mastócito



Célula T citotóxica



## An open label clinical trial to evaluate the utility of a hydrolysed fish and rice starch elimination diet for the diagnosis of adverse food reactions in dogs

Irina Matricoti\* and Chiara Noli†

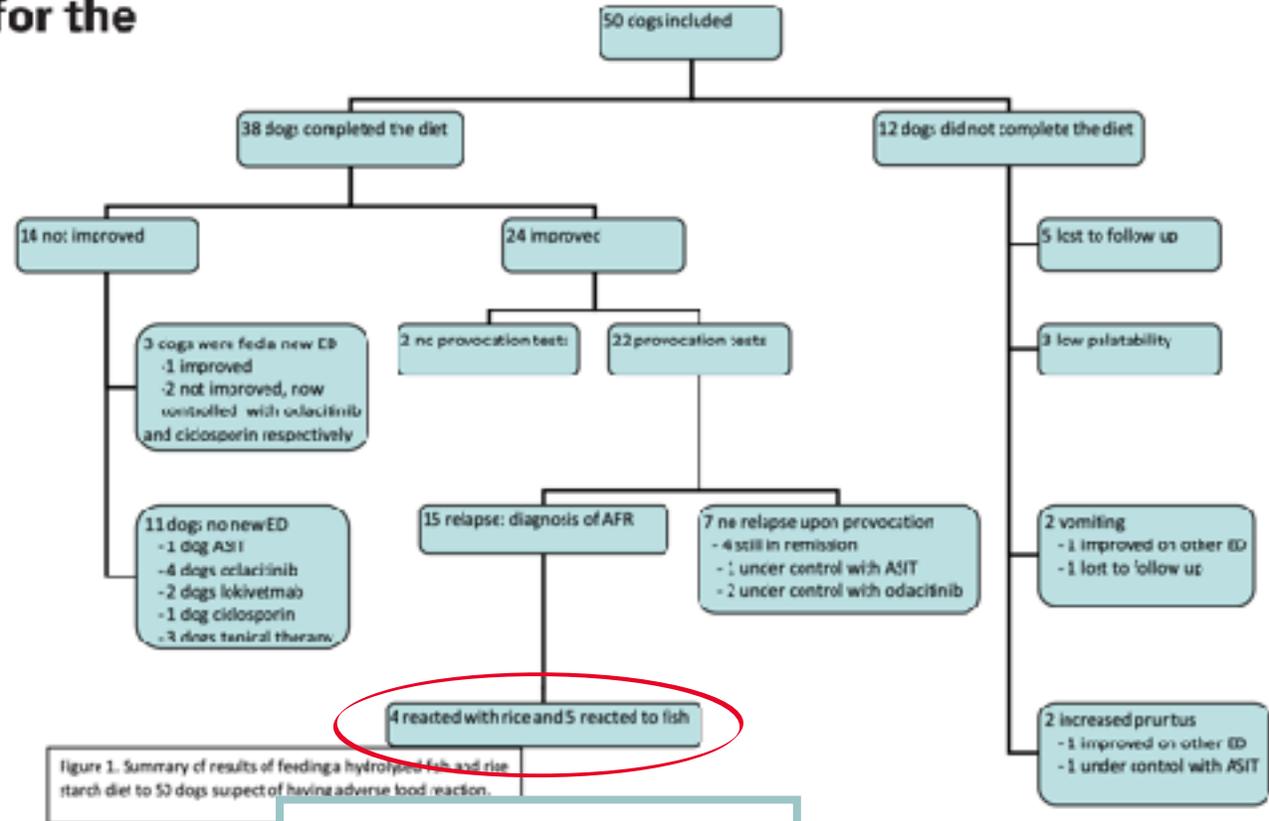


Figure 1. Summary of results of feeding a hydrolysed fish and rice starch diet to 50 dogs suspected of having adverse food reaction.

**Reação: arroz e peixe**

Figure 1. Summary of results of feeding a hydrolysed fish and rice starch diet to 50 dogs suspected of having adverse food reaction.

© 2018 ESVD and ACVD, *Veterinary Dermatology*

## Results of food challenge in dogs with cutaneous adverse food reactions

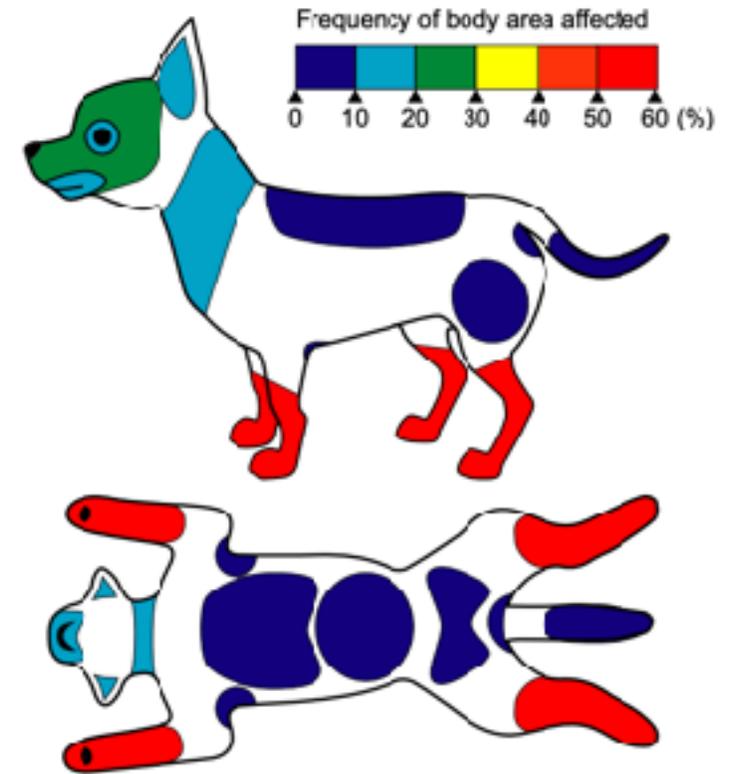
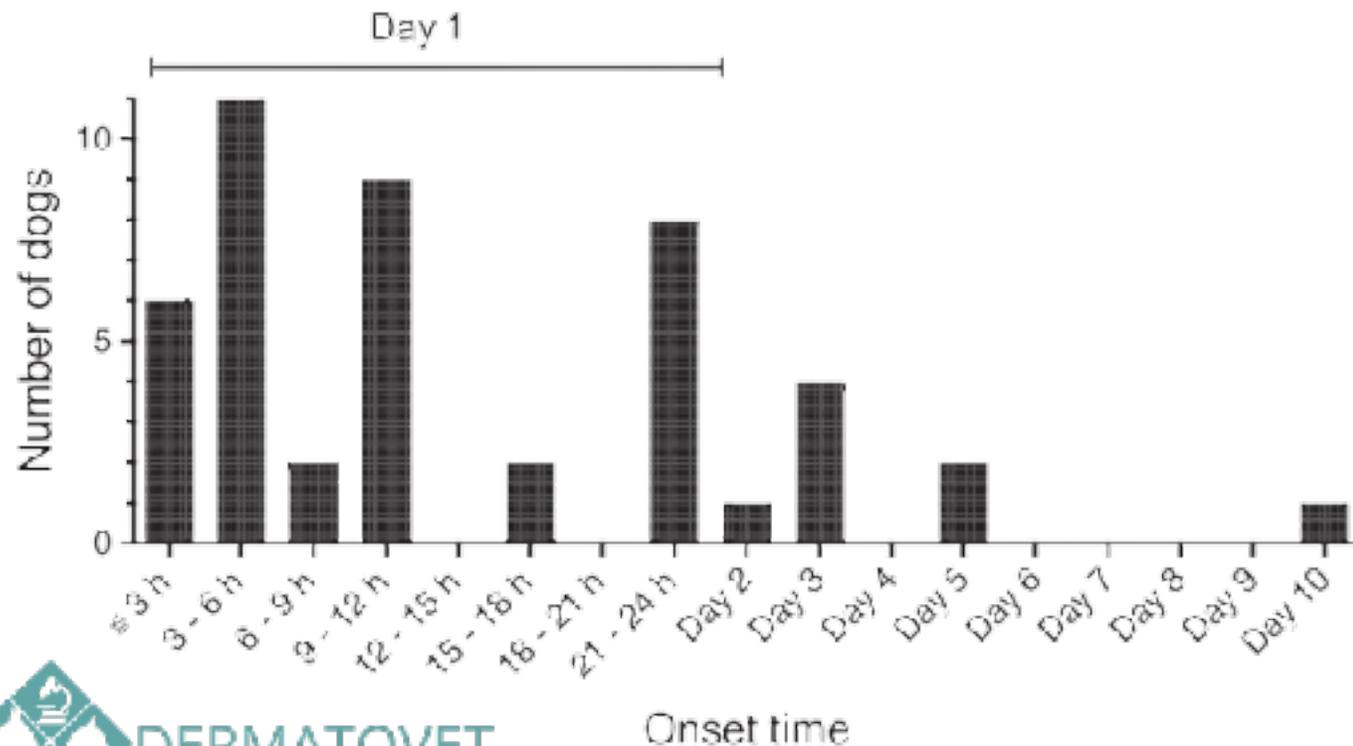
Hidekatsu Shimakura\* and Koji Kawano†‡ 

\*K, I. K. Veterinary Clinic, 5-11-5 Chuurinkan, Yamato-shi, Kanagawa 242-0007, Japan

†Tokyo Animal Allergy Center, 4-23-15 Kurihara, Adachi-Ku, Tokyo 123-0842, Japan

‡Department of Gastroenterology and Gastroenterological Oncology, Fujita Health University, 1-98 Dengakugakubo, Kutsutake-Cho, Toyoake, Aichi 470-1192, Japan

Correspondence: Koji Kawano, Tokyo Animal Allergy Center, 4-23-15 Kurihara, Adachi-Ku, Tokyo 123-0842, Japan. E-mail: cvm\_kawano@vet.ne.jp



**Figure 3.** Illustration of the body sites affected by pruritus on dogs after food challenge testing.

Each colour corresponds to the frequency of that body area being affected. Blue, <10%; light blue, >10% and <20%; green, >20% and <30%; yellow, >30% and <40%; orange, >40% and <50%; and red, >50% and <60%.

① *Tratar comorbidades*

② *Anamense  
ou  
Teste alérgico*

**DIETA DE ELIMINAÇÃO**

*Medicação  
20 - 25 dias*

**Reavaliar - 30 dias**

*piora*

*Manter dieta +  
medicação*

*melhora*

**TESTE DE PROVOCAÇÃO**

*14 dias*

*piora*

**DAIA**

*Melhora parcial*

**ALERGIA ALIMENTAR**

*Melhora TOTAL*

*melhora*

**Reavaliar - 60 dias**

*piora*

**DA**

**Nova dieta?**



*Dra. Juliana Posseloni*

- DA canina: diagnóstico **CLÍNICO**
- Prevalência RAA? - novos estudos, novas perspectivas
  - Dificuldade de realizar diagnóstico
- Reações cruzadas X importância clínica
- Novas ferramentas, testes: **auxiliar** no diagnóstico
- Quando indicar o teste?

# Obrigada!



*@dermatovetcuritiba*



*@juliane\_possebom*



*@juliane@possebom.com*