

AUSTRALASIAN VETERINARY DERMATOLOGY
ADVISORY PANEL (AVDAP)

ADVANCING VETERINARY PRACTICE IN DERMATOLOGY

Summary guidelines for the diagnosis
and management of pruritus in dogs

SECOND EDITION



*Start from
Scratch*

FOR HEALTHY SKIN

Developed by the

AUSTRALASIAN VETERINARY DERMATOLOGY ADVISORY PANEL

> Page 4 of full guidelines

THE PANEL MEMBERS INCLUDE:



DR MANDY BURROWS BSc, BVMS, MANZCVS, FANZCVS
Associate Professor in Small Animal Medicine (Dermatology);
Registered Specialist in Veterinary Dermatology, Perth WA



DR SAMANTHA CROTHERS BSc, BVMS, DipACVD
Specialist in Veterinary Dermatology Melbourne, VIC



DR PETER HILL (AVDAP Chair) BVSc (Hons), PhD, DVD DipACVD, Dip ECVD, MANZCVS
Professor of Veterinary Dermatology and Immunology, Adelaide, SA



DR MIKE SHIPSTONE BVSc (Hons), MACVSc, FACVSc, DipACVD
Specialist in Veterinary Dermatology Brisbane, QLD



DR REBECCA TRAUB BSc (Vet. Biol.), BVMS (Hons), PhD
Professor in Veterinary Parasitology, University of Melbourne, VIC



DR LINDA VOGELNEST BVSc (Hons), MANZCVS, FANZCVS
Specialist in Veterinary Dermatology Sydney, NSW

CONTENTS

ABOUT THIS SUMMARY	5
Guideline objectives	5
Guideline website	5
INTRODUCTION TO PRURITUS	6
Overview of diagnosis and management	7
SECTION A: DIAGNOSTIC APPROACH	
INITIAL ASSESSMENT OF THE PRURITIC DOG	
Step 1: Take history and identify chief complaint	8
Step 2: Conduct a physical examination	9
Step 3: Use diagnostic tests to rule in/out differential diagnosis	12
PERFORMING AND INTERPRETING DIAGNOSTIC TESTS	
Outline of diagnostic procedures for infection-based causes	14
Outline of diagnostic procedures for allergy-based causes	15
SECTION B: THERAPEUTIC APPROACH	
MANAGEMENT OF PRURITUS	16
Acknowledging and managing owners' expectations	16
Managing the skin condition	17
MONITORING PRURITUS TREATMENT AND PROGRESS	18
WHEN TO OFFER REFERRAL TO A DERMATOLOGIST	19



DOWNLOAD THE FULL GUIDELINES AT:
www.zoetis.co.nz/derm



ABOUT THIS SUMMARY

This summary is a companion to the full AVDAP guidelines for the diagnosis and management of pruritus in dogs. It provides an overview of the key elements related to pruritus in dogs including diagnostic tests and their interpretation, as well as the approaches for managing the condition.

More in-depth information on each topic can be found in the corresponding section of the full guidelines. Page numbers have been provided to facilitate navigation to the relevant section of the guidelines.

GUIDELINE OBJECTIVES

The purpose of these guidelines is to assist veterinary practitioners in the diagnosis and effective management of the pruritic dog with the aim of helping dogs and their owners live a better quality of life.

GUIDELINE WEBSITE

The AVDAP guidelines provides evidence- and expert opinion-based guidance translated into practical advice on the most effective strategies in the diagnosis and management of pruritus in dogs



DOWNLOAD THE FULL GUIDELINES AT:
www.zoetis.co.nz/derm

INTRODUCTION TO PRURITUS

> **Page 9** of full guidelines

Pruritus is defined as an “unpleasant sensation that triggers a desire to scratch.”¹

Itch, like pain, is one of the body’s basic defence mechanisms that signals a potential hazard.

Itch can manifest as an acute condition, or it can develop into a chronic, self-perpetuating pathologic state that requires a thorough diagnostic work-up to identify the underlying cause so that the most appropriate management strategy can be implemented.

Acutely pruritic patients should be effectively worked up and managed.

Failure to do so may result in chronic allergic dermatitis that can be more time-consuming and costly to manage.

1. Ikoma A, Cevikbas F, Kempkes C, Steinhoff M. Anatomy and neurophysiology of pruritus, *Semin Cutan Med Surg.* 2011;30:64-70



Chronic Atopic Dermatitis
Image courtesy of Peter Hill

Diagnosis and management of the pruritic dog can be divided into two components: (A) the **diagnostic approach** and (B) the **therapeutic approach**.

A: DIAGNOSTIC APPROACH

HISTORY

- Breed, age of onset, seasonality, environment, previous medication and response, current flea control etc.

PHYSICAL EXAM

PRIORITISE DIFFERENTIAL DIAGNOSES LIST AND PLAN DIAGNOSTIC TESTS

1 PARASITES

- Fleas
- *Demodex* mite
- *Sarcoptes* mite
- Ear mites

Diagnostic tests to consider:

- Flea comb
- Wet paper
- Skin scrape
 - superficial
 - deep
- Trichogram
- Squeeze tape impression
- Flea & *Sarcoptes* therapeutic trial

2 INFECTION

- Bacteria
- Yeast

Diagnostic tests to consider:

- Adhesive tape impression
- Cotton bud
- Glass slide impression

If **parasites** and **infection** have been ruled out, and the skin condition remains, then **Allergic Dermatitis** should be investigated

3 ALLERGIES

Food, Atopic Dermatitis, Contact

FOOD

Diagnostic tests to consider:

- Dietary exclusion trial

ATOPIC DERMATITIS

Diagnostic tests to consider:

- Intra-dermal testing
- Serology

CONTACT

Diagnostic tests to consider:

- Avoidance and re-challenge
- Patch test

B: THERAPEUTIC APPROACH

STRATEGIC USE OF ANTI-PRURITIC THERAPY WHERE APPROPRIATE

May occur concurrently with diagnostic approach

FLEA AND MITE TREATMENT AND PREVENTION

ANTIBIOTICS

- Topical +/- systemic

ANTI-FUNGALS

- e.g. medicated washes, systemic anti-fungal treatment.

AVOIDANCE OF DIETARY OR CONTACT ALLERGENS

LONG-TERM ANTI-PRURITICS FOR ATOPIC DERMATITIS

- Oclacitinib • Lokivetmab • Cyclosporin • Glucocorticoids

ALLERGEN SPECIFIC IMMUNOTHERAPY

ADJUNCTIVE TREATMENTS

MANAGE SKIN BARRIER (DIET, TOPICAL)

MANAGE FLARE FACTORS E.G. PARASITES, PYODERMA, DIETARY INDISCRETION

IF NO RESPONSE TO THERAPY OR IT LOOKS UNUSUAL: BIOPSY, CULTURE AND/OR REFER

SECTION A: DIAGNOSTIC APPROACH

INITIAL ASSESSMENT OF THE PRURITIC DOG

> **Page 13** of full guidelines

The 3 key steps to diagnosis:

Step 1: Take history and identify owner's chief complaint

Step 2: Conduct a thorough physical examination

Step 3: Use diagnostic tests to rule in/out differential diagnoses

STEP 1: TAKE HISTORY AND IDENTIFY CHIEF COMPLAINT

USE A DERMATOLOGY-BASED QUESTIONNAIRE TO FACILITATE INITIAL CONSULTATION

Refer to www.zoetis.co.nz/derm for an example and printable version of a questionnaire for general practice use

Questionnaires enable efficient gathering of detailed information, especially if skin cases are chronic or recurrent. Ideally these should be completed prior to the consultation to ease time pressures.

USE A SHORTER SET OF QUESTIONS IF TIME IS LIMITED

These questions capture the minimal historical information required to assist with an accurate diagnosis:

Question	Areas of assessment:	Specific questions for owner:
1	Is the dog pruritic? Ask individually about multiple behaviours that owners may not interpret as itch	<ul style="list-style-type: none">• Does your dog lick, bite, chew, rub, roll, scratch or scoot?
2	Age of onset/duration of itch	<ul style="list-style-type: none">• At what age did you first notice the itch/how long has your dog been itchy?
3	Assess distribution of itch	<ul style="list-style-type: none">• Where on the body is the itch?
4	Pattern of itch	<ul style="list-style-type: none">• Is the itch continuous, seasonal or intermittent?
5	Development of condition	<ul style="list-style-type: none">• What came first? The itch or rash/skin changes?
6	Medications used for itch and response to treatment	<ul style="list-style-type: none">• Have you given any medications for itch or any other conditions?• Did they resolve, reduce or make no change to the itch?

STEP 2: CONDUCT A PHYSICAL EXAMINATION

Refer to **page 15** of the full guidelines for more details on how to conduct the physical assessment and to understand how lesion distribution patterns can help in the diagnosis of pruritus.

There are three major aims when performing a dermatological examination. These are to:

1. Assess coat quality and general body condition
2. Identify any lesions or parasites e.g. fleas that are present
3. Determine distribution of lesions

ASSESSMENT OF COAT QUALITY AND GENERAL BODY CONDITION

- Examine hair coat for density
- Screen body for signs of systemic disease

IDENTIFY ANY LESIONS OR PARASITES

- Look for grossly visible ectoparasites
- Clip hair to visualise subtle lesions
- Use a magnifying glass to check for small lesions
- Assess skin sensitivity with digital stimulation
- Check for abnormal odours
- Characterise and record skin lesions

MAJOR LESIONS OBSERVED IN A PRURITIC DOG > Page 17 of full guidelines

Changes in skin colour - *erythema, hyperpigmentation*

Rashes - *erythematous macules, papules, pustules and staphylococcal rings*

Alopecia - *spontaneous or secondary to pruritus*

Excessive scaling - *scale, seborrhoea, epidermal collarette*

Changes in skin thickness - *lichenification, cutaneous atrophy*

Defects in skin integrity - *self-induced (excoriations, erosions, ulcers) or spontaneous (furunculosis)*

The skin can only respond to injury in a limited number of ways. These pathological changes (or lesions) can be indicative of the type of disease process occurring.



Epidermal collarette
Image courtesy of Peter Hill



Erythematous macules
Image courtesy of Linda Vogelnest

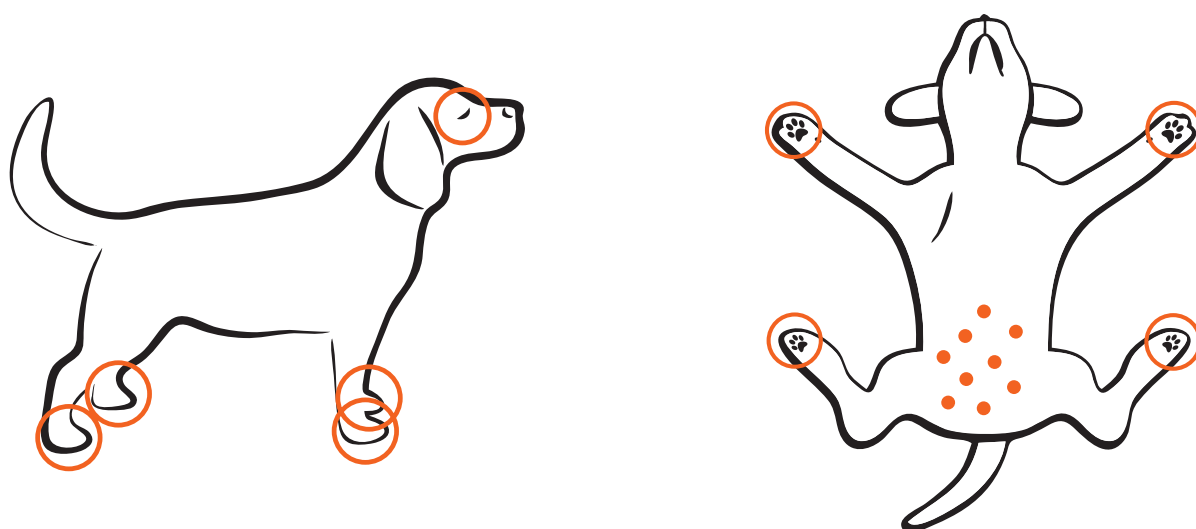


Erythematous macules
Image courtesy of Mandy Burrows

DETERMINE DISTRIBUTION OF LESIONS > Page 27 of full guidelines

- A lesion distribution diagram is quick and easy to perform
- Provides a visual reference that is useful for monitoring progress
- Valuable when cases are seen by more than one clinician

An example of a completed lesion distribution diagram is shown below:



Distribution of skin lesions is one of the most important clinical features used to prioritise the differential diagnosis list

STEP 3: USE DIAGNOSTIC TESTS TO RULE IN/OUT DIFFERENTIAL DIAGNOSES

> Page 37 of full guidelines

PRIORITISATION OF THE DIFFERENTIAL DIAGNOSES

Based on the information derived from the history and physical examination the differential diagnosis list can be prioritised.

HISTORICAL FEATURES

Some distinctive/important historical features of common pruritic diseases in dogs will aid formulation of a prioritised differential list:

- **Signalment**

- All of the differential diagnoses for pruritus can be seen in young animals. If the pruritus commences in middle or older age, parasitic or infectious causes are more likely
- Breed predispositions: recognised for atopic dermatitis, and some infections (e.g. *Malassezia* dermatitis)
 - check predispositions for the breed

- **Pattern of pruritus**

- Sudden onset of severe continuous pruritus: consider *Sarcoptes*, and flea allergy if pruritus focused on back half of body
- Intermittent or waxing/waning pruritus: most consistent with seasonal parasitoses or atopic dermatitis

- **Lesions**

- Lesions before itch: exclude parasitic and infectious causes first

- **Response to previous medications**

- Complete resolution of skin condition with oclacitinib (Apoquel®) or glucocorticoids (anti-inflammatory doses): most consistent with allergy
- Partial resolution of pruritus with oclacitinib (Apoquel®) or glucocorticoids (anti-inflammatory doses): non-specific
- Poor response to oclacitinib (Apoquel®) or glucocorticoids: exclude demodicosis, scabies and infections

PHYSICAL EXAMINATION FEATURES

Important physical examination features in pruritic dogs that provide helpful clues to aid formulation of an accurate prioritised differential list, include:

- **Lesions:**

- Papules: exclude parasites, bacterial pyoderma, flea allergy
- Pustules/epidermal collarettes: bacterial pyoderma likely
- Alopecia
 - › Complete, well-demarcated foci/regions: exclude demodicosis, pyoderma
 - › Patchy/consistent with self-trauma: any pruritic disease
 - › Partial diffuse/moth-eaten: exclude bacterial pyoderma/folliculitis

- Lichenification/hyperpigmentation: chronic, non-specific change
- Coat changes (dull, coarse hair coat/poor regrowth after clipping): common with extended glucocorticoid therapy
- **Lesion Distribution** (once infections excluded):
 - Face, ears, paws, axillae, ventral abdomen: atopic dermatitis, food allergy, *Malassezia* dermatitis, trombicula/Ixodes ticks
 - Otitis externa/pinnal lesions: atopic dermatitis, food allergy, scabies
 - Caudal trunk, caudal/medial hind limbs, ventral abdomen: flea allergy
 - Contact regions (sparsely haired muzzle, feet, ventrum): contact allergy, atopic dermatitis, food allergy

Refer to **page 37** of the full guidelines for a list of the major and less common differential diagnoses.



Pustules

Image courtesy of Mandy Burrows



Crusted papules and pustules

Image courtesy of Peter Hill

PERFORMING AND INTERPRETING DIAGNOSTIC TESTS

> **Page 41** of full guidelines

Formulating a prioritised differential list prior to reaching for diagnostic tests will guide the most important tests to perform for each patient.

Refer to **page 41** of the full guidelines for detailed instructions on the differential diagnosis and diagnostic work-up using these techniques, including the culturing of bacterial and fungal samples.

OUTLINE OF DIAGNOSTIC PROCEDURES FOR INFECTION-BASED CAUSES

Infection/Infestation	Indications
Coat combing page 44 of full guidelines	For identifying parasites: fleas, <i>Cheyletiella</i> , lice, trombiculid mites
Adhesive tape impression page 45 of full guidelines	For superficial bacterial pyoderma and <i>Malassezia</i> dermatitis; can also be diagnostic for dermatophytosis and surface dwelling mites (e.g. <i>Cheyletiella</i>), reveal inflammatory cell types (e.g. eosinophils to support parasitic or allergic disease), and may support diagnosis of immune-mediated diseases (e.g. acantholytic cells in Pemphigus foliaceus)
Glass slide impression/ear smears for microbes page 52 of full guidelines	For sampling erosive to ulcerative skin lesions, gently punctured pustules, and for ear canal cytology; helpful to evaluate for infectious organisms (bacteria, yeast, other fungi), inflammatory cells (neutrophils, eosinophils, macrophages) and neoplastic cells
Skin-scraping – superficial page 54 of full guidelines	For superficial ectoparasites, including <i>Sarcoptes</i> , <i>Otodectes</i> , environmental mites (e.g. trombiculids)
Skin-scraping – deep page 56 of full guidelines	For demodicosis due to <i>Demodex canis</i> (more typical follicular mite), or <i>Demodex injai</i> (long-tailed mite)
Squeeze-tape impression page 58 of full guidelines	Useful whenever <i>Demodex</i> is suspected, and for monitoring response to therapy Particularly useful for difficult sites e.g. around eyes, face, feet
Ear smear for otic parasites page 59 of full guidelines	When there is evidence of otitis or pruritus of the ears and/or adjacent skin, especially in younger dogs or when exposure to young dogs or cats, and with dark granular ear discharge
Trichogram page 60 of full guidelines	Allows evaluation for infectious agents (<i>Demodex</i> mites) and causes of hair loss (trauma or shedding)

OUTLINE OF DIAGNOSTIC PROCEDURES FOR ALLERGY-BASED CAUSES

Food allergies	Diagnostic approach
<p>Food-elimination diet (for up to 8 weeks)</p> <p>page 64 of full guidelines</p>	<p>Communicate with the owner the importance of this diagnostic step, including the length of the trial, how important it is to strictly adhere to the diet and how the pruritus will be managed in the interim</p> <p>Establish what food the dog has been exposed to previously</p> <p>Select an appropriate diet containing novel protein and carbohydrate (ones which the dog has never previously eaten)</p> <p>Treat the dog with antipruritics. Oclacitinib (Apoquel®) or prednisolone may be considered at the start of the diet trial depending on the severity of the pruritus</p> <p>Rechallenge with the original diet for up to two weeks whilst not receiving antipruritics to confirm diagnosis</p>

Atopic dermatitis	Diagnostic approach
<p>Intradermal allergy test</p> <p>page 67 of full guidelines</p>	<p>Tests presence of hypersensitivity to various environmental allergens based on skin reactivity</p>
<p>IgE serology test</p> <p>page 68 of full guidelines</p>	<p>Requires a blood sample to be taken and sent off to an appropriate laboratory</p> <p>The serum is assayed for allergen-specific IgE</p>

Contact dermatitis	Diagnostic approach
<p>Contact avoidance trial (10-day duration)</p> <p>page 70 of full guidelines</p>	<p>Owner advised to restrict the animal's access to certain areas. This may involve avoidance of outdoor areas where plants are present (grass, trees, weeds, poison ivy, poison oak, <i>Tradescantia</i> (Wandering jew), dandelion leaves, cedar wood)</p>

SECTION B: THERAPEUTIC APPROACH

MANAGEMENT OF PRURITUS

> Page 73 of full guidelines

The role of the veterinarian is to provide rapid, symptomatic relief of the pruritus for the dog, to determine the underlying cause, and to instigate appropriate management.

ACKNOWLEDGING AND MANAGING OWNERS' EXPECTATIONS



Poor communication is one of the main reasons why owners seek a second opinion. The importance of effective communication should not be underestimated

MANAGING THE SKIN CONDITION

Summary: management of pruritus

IDENTIFY TRIGGERS

- Implement flea and mite control
- Evaluate and treat for skin and ear infections
- Institute elimination diet if pruritus is continual/present all year round
- Identify allergens with allergy testing (note: oclacitinib and lokivetmab can be used to keep the patient comfortable whilst allergy testing is being undertaken)

TREAT PRURITUS (can be done in parallel with identifying the triggers)

- Oclacitinib, lokivetmab, cyclosporin, systemic glucocorticoids, +/- antihistamines
- Topical glucocorticoids

ALLERGEN SPECIFIC IMMUNOTHERAPY

BARRIER FUNCTION (can be done in parallel with identifying the triggers)

- Bathing
- Oral fatty acids

MONITORING PRURITUS TREATMENT AND PROGRESS

Refer to **page 99** of the full guidelines for further details on monitoring approaches.

Overview of approaches to monitoring pruritus and associated lesions

- **Pruritus visual analogue scale score (PVAS)**

Indicates the severity of pruritus a dog is experiencing

- **Photos of lesions**

A series of photographs comparing the dog's lesions to baseline photographs prior to commencing management protocols

- **Lesion distribution recording**

Whilst assessing the type of lesions, the clinician must also record their distribution

Keeping the owner informed of progress helps get their buy-in to the management protocol. It is also important for the veterinarian to monitor progress and response to different therapies, which will enable the treatment protocol to be adapted for best results

WHEN TO OFFER REFERRAL TO A DERMATOLOGIST

Refer to **page 101** of the full guidelines for further details on when to refer to a dermatologist and tips for the referral process.

Reasons for referral to a veterinary dermatologist might include:

Intradermal testing and desensitisation in the management of atopic dermatitis

Diagnosis and management of a more complex skin disease

Judicious advice for a chronic common skin problem

Biopsy/histopathological evaluation

Management of otitis, including the use of video-otoscopy and advanced imaging of the bulla (e.g. CT or MRI)

Management of autoimmune or neoplastic skin diseases

If the owner requests a second opinion or referral

A veterinary dermatologist is specialised in diseases of the skin, ears, claws, mucous membranes, hair coat and subcutaneous tissues and their aetiology



FULL GUIDELINES AVAILABLE FROM ZOETIS
www.zoetis.co.nz/derm

zoetis