



DITCH THE ITCH

Pruritus can stem from a variety of causes, making the initial history key in achieving an accurate diagnosis.

EXAM ROOM

“Why Does My Dog Have Itchy Skin?”

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Having a pruritic pet can be frustrating, stressful, and concerning and is a common reason for clients to seek veterinary care. Dogs with itchy (pruritic) skin are seen on a daily basis and may present to emergency facilities due to the impact that itching, licking, and chewing have on their quality of life.



There are many causes of pruritus; any inflammatory dermatitis or differential that has the high potential for secondary skin infections can lead to pruritic skin. For a successful outcome to be achieved, it is important that the pruritus be treated, an underlying cause identified, and secondary infections controlled.

The most common causes of pruritus in dogs are allergic conditions: environmental hypersensitivities (atopic dermatitis); food hypersensitivities (cutaneous adverse food reaction); or parasite hypersensitivities, such as to fleas, mites, or lice (**BOX 1**).

Getting to a diagnosis can be simple in some cases—for instance, identifying a parasite at the time of the examination. A diagnosis can also be more challenging and time-consuming, requiring additional diagnostics such as elimination diet trials, cultures, blood work, and histopathology.

It is important that clients know what to expect during the initial examination of a pruritic dog, and the veterinary nurse plays a crucial role with client education, satisfaction, and compliance.

OVERVIEW OF THE VETERINARY NURSE ROLE

Owner compliance is critical for success in dermatology cases. Compliance hinges on clients understanding the condition of their pet and how the proposed treatment protocol will improve their quality of life.

Clients can expect to fill out a patient history questionnaire followed by a verbal history with the veterinary nurse. If the patient is new to the clinic, reception staff will typically obtain previous medical records, which the veterinary nurse will review. Clients appreciate knowing that the staff have reviewed their pet's previous treatments and diagnostics and tend to respond positively when these are referenced during the history process.

The veterinarian will then perform a dermatologic examination. Together, the veterinary team will collect samples from the affected areas of the skin and possibly a swab of the ear canals for in-house microscopic evaluation. Based on these results, any further diagnostics needed will then be discussed, estimates should be provided, and a treatment plan will be created.

BOX 1

Common Parasite Hypersensitivities

Fleas:

Flea bite hypersensitivity

- *Ctenocephalides felis* (most common)

Mites

- *Sarcoptes scabiei* (scabies)
- *Cheyletiella* (cheyletiellosis)
- *Otodectes cynotis* (ear mites)
- Demodicosis (*Demodex canis*, *Demodex* species “*cornei*,” *Demodex injai*)—can be pruritic if secondary infection is present

Lice:

Pediculosis

- *Linognathus setosus* (sucking lice)
- *Trichodectes canis* (chewing lice)

The client can expect a written discharge with treatment instructions and other informational handouts. Demonstrations for clients by the veterinary nurse can help with compliance with items such as topical or oral medication administration, appropriate bathing techniques, and ear flushing.

PATIENT HISTORY

Patient history will help guide the diagnostic tests that are recommended, assist with obtaining a diagnosis, and aid the veterinarian in creating a treatment plan. This is a great time for the veterinary nurse to establish a rapport with the client, and there are some specific questions that can be helpful when obtaining a history of a pruritic dog:

What is the main concern for the visit? Identifying the client's main concern with their pet and helping to ensure this is addressed at the visit can improve the client and veterinary team relationship. Typically, the main concern will be pruritus and discomfort. This information should be used when obtaining patient phone updates and for follow-up questions at the recheck examination, with the goal being improvement of the main concern.

At what age did the problem start? How long has the pruritus been an issue? If pruritus starts in a dog under 1 year of age or older than 7 years of age, adverse food



Atopic dermatitis can develop at any age; however, 1 to 3 years of age is typically when signs develop.²



reaction may be the most likely hypersensitivity.¹ Atopic dermatitis can develop at any age; however, 1 to 3 years of age is typically when signs develop.² For geriatric patients, there are more differentials to consider, such as endocrine diseases and neoplasia.

Was the onset of itching acute or progressive? For acute pruritus, follow up with questions regarding exposure history to other animals, such as at grooming or boarding facilities and parks or exposure to wildlife (e.g., foxes, coyotes). Also ask questions to determine whether this exposure correlates with the onset of signs. Was the itching noted after a dietary change, or did anything else happen around the time of onset? Are there any lesions (red bumps, crusting, scaling) present? Did the pruritus start before or after the lesions developed?

Are any other pets in the household affected with pruritus? Suspicion for transmittable conditions such as parasite hypersensitivities is higher if the answer to this question is yes. All pets in the household, including dogs, cats, and exotics, may need to be treated unless pediculosis (lice infestation) is diagnosed. Lice are species specific; therefore, only other dogs in the house will require treatment.

Do any humans in the household have issues with pruritus or any skin lesions present? Scabies (*Sarcoptes scabiei*) mites, *Cheyletiella* mites, and fleas are zoonotic and can bite humans, causing pruritus and/or skin lesions (papules most commonly). Dermatophytes (fungi) are also zoonotic, causing an erythematous circular lesion on humans.

Is the pruritus seasonal (worse certain times of the year) or nonseasonal (all year round)? Atopic dermatitis can be diagnosed quickly if the patient only has pruritus a few months out of the year consistently. However, atopic dermatitis can also start out seasonally and gradually increase to year-round signs. Adverse

food reaction cases typically have nonseasonal signs unless the offending food is fed intermittently.

How pruritic (itching, licking, and chewing) is the pet on a scale from 1 to 10? Explain to the client that 1 is a normal level of itching and 10 is the most severe itching the client could imagine. What areas of the body does the patient focus on? Cases with a high level of pruritus may have a parasitic or secondary infection.

Has your pet ever been diagnosed with a resistant skin infection? Culture and sensitivity of all bacterial skin infections may be recommended if this is the case. Employees should wear the proper protective equipment (gloves, lab coats) for the examination and initiate disinfecting protocols.

Is there any travel history? Is the pruritus the same, or does it improve or worsen with a change in location? Did the issue start before or after travel? This can be important if there is a concern for infectious diseases that could have been acquired while traveling.

What are the current diet, treats, and supplements? Some clients will change diets frequently and try out limited-ingredient over-the-counter (OTC) diets, hoping this will help with the pruritus. Knowing what OTC proteins have been tried will assist in choosing an appropriate novel protein if an elimination diet trial is indicated. Other items to question include flavored toothpaste, pill pockets, fish oil, glucosamine, or other supplements being given to the patient.

Has a therapeutic elimination diet trial been performed? Was the pet fed solely the elimination diet? Was any improvement in signs noted? Ensure that the client has not given the patient any treats, table scraps, rawhides, flavored supplements, or flavored medications such as heartworm preventives during the diet trial.

If an elimination diet trial has been previously performed appropriately, with no change in the clinical signs, then adverse food reaction may be ruled out. However, some veterinarians may repeat elimination diet trials based on their experience with the diet manufacturer and the novel protein that was used. Any previous proteins should be avoided if repeating a diet trial.

Any issues with vomiting, loose stools, flatulence, or frequent bowel movements? Was the issue noted after a change in diet or after a specific food, treat, or other



item was fed? How often does the issue occur, and has the patient been evaluated and treated with medications? A fecal score chart can be used to obtain additional information and assist in tracking improvement at recheck examinations.

Dogs with adverse food reaction can have pruritic skin as well as concurrent gastrointestinal signs such as frequent bowel movements (more than 3 a day), vomiting, flatulence, and diarrhea. Atopic dermatitis cases can also develop concurrent adverse food reaction.³

What is your pet's energy level and have there been any weight fluctuations? Any obvious triggers noted or recent changes in the patient's diet, exercise, or medications?

Dogs with endocrine diseases (e.g., hypothyroidism), immune-mediated diseases, and neoplasia may have reduction in energy level and appetite. Weight gain is common with hypothyroidism, whereas some immune-mediated or neoplastic diseases can cause weight loss. Allergic cases typically have normal energy levels and stable weight.

What treatments have been tried and what was the response? This will help guide a treatment plan, as medications that previously did not help reduce pruritus may be avoided. If oral antibiotics have been used frequently, it may be time for a culture and sensitivity if bacteria are present on cytology.



FIGURE 1. (A) Atopic dermatitis dog with erythema and *Malassezia* dermatitis of the paws. (B) Tape is being applied to the palmar aspect of the front paw. (C) Tape prep debris collected. The tape will then be stained with #2 and #3 Diff-Quik stains and applied to a slide for microscopic examination. (D) Applicator is being used to collect a sample from the ear canal for microscopic examination of an atopic dermatitis dog. (E) Debris collected from the ear canal is being rolled onto a microscopic slide for staining and microscopic examination.



Parasite treatment? What type of preventive is used: topical, oral, or collar? When was the last dose given? If dogs are kept on prevention consistently, parasite hypersensitivities can be ruled out in most cases. However, it is important to ensure that the parasite prevention being used has the appropriate spectrum of action to kill the suspected parasite.

This information is also important to know if an elimination diet trial is started because of flavoring in some of the oral parasiticide products. If a flavored oral product is being used, the specific product should be discontinued temporarily and replaced with a nonflavored oral or topical product.

DIAGNOSTIC TESTING

In-house microscopic diagnostics such as skin scrapes, tape preps, flea combing, cytology, and trichograms are baseline tests in the workup of pruritic cases and are common for the veterinarian to perform (FIGURE 1). Keeping the client informed of how these tests are

taken and what the veterinarian is looking for can assist with client understanding and could be discussed with the client before or during the sample collection.

The veterinarian is looking for parasites (FIGURE 2), bacteria, yeast (*Malassezia*), and signs of dermatophytosis (“ringworm”). They are also evaluating for other cells that can help guide further diagnostics, such as biopsy for suspected immune-mediated or autoimmune diseases.

Results of these in-house tests are immediate; however, if parasites are not found on microscopic evaluation, this does not rule out parasite hypersensitivities, and treatment trials are frequently performed.

The veterinary nurse can convey to clients that inflammation and pruritus commonly lead to secondary infections of the skin or in the ear canals, both of which require treatment and preventive therapies. Ear infections may go unnoticed by clients and are a frequent finding with allergic cases. These

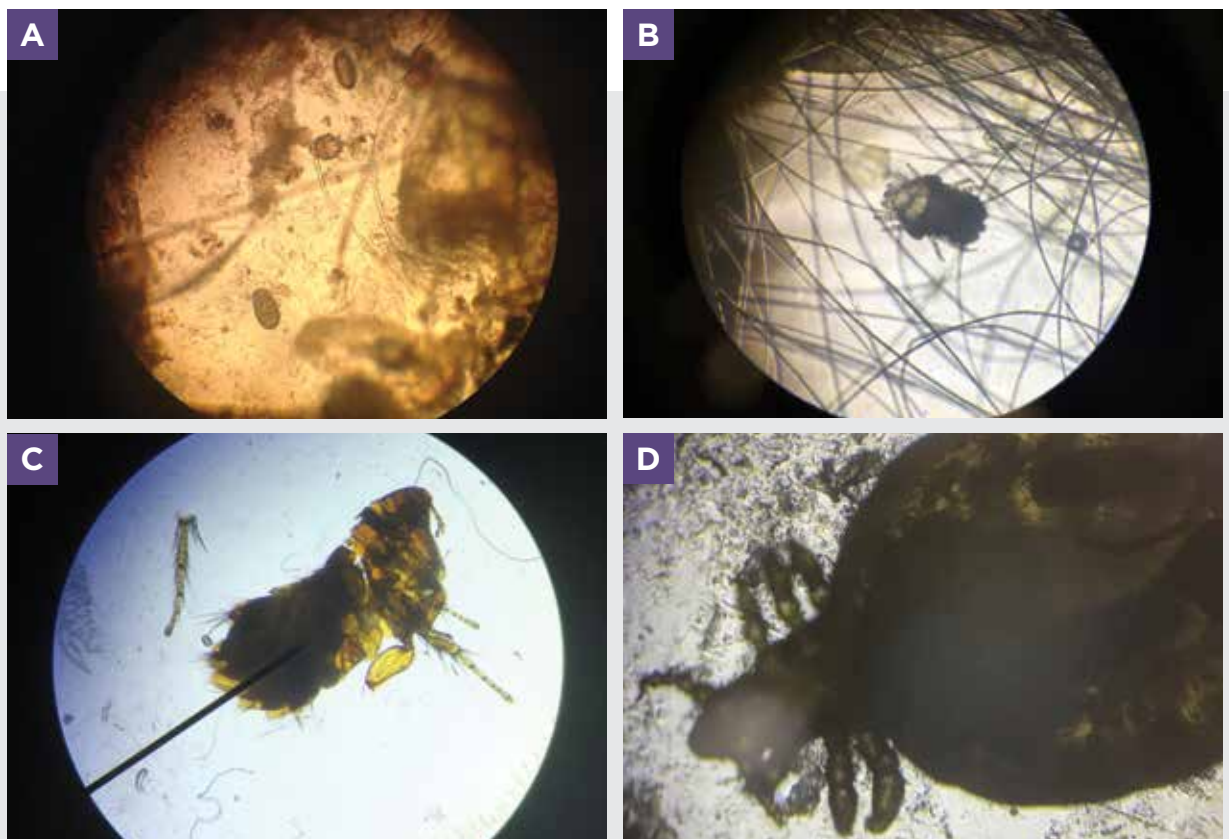


FIGURE 2. In-house microscopic diagnostics, such as superficial skin scrapings, tape preps, or flea combing, can be used to identify (A) *Cheyletiella* mites, 10× magnification; (B) *Sarcoptes scabiei* mites and eggs, 10× magnification; (C) fleas, 10× magnification; and (D) lice.



secondary infections can dramatically increase the discomfort of a patient “like gas on a fire” and can allow for breakthrough pruritus in previously controlled cases. These infections also require different treatment and cannot be identified by smell (bacteria and yeast are both malodorous), so cytology is needed. It is important for clients to understand that infections are secondary to a primary disease and can recur if the underlying problem is not identified and managed.

Blood work is commonly recommended if it has not been performed recently; the veterinarian will likely recommend a chemistry panel, a complete blood count, and thyroid values. Hypothyroidism can cause a variety of cutaneous clinical signs that may result in secondary infections and subsequent pruritus.⁴

An elimination diet trial with a therapeutic diet is the diagnostic of choice to rule out and diagnose adverse food reaction. A diet trial may be recommended if the patient history includes:

- Nonseasonal pruritus
- Pruritus that starts in a dog under 1 year of age or older than 7 years of age
- Food triggers that have been suggested by the client
- Presence of gastrointestinal signs

Serology, salivary, and hair testing for adverse food reaction have been heavily marketed to the public. Some clients may bring in results of these tests; they may be hesitant with diet trials and have concerns regarding specific ingredients in the therapeutic diets. These tests yield unreliable results.⁵

Therapeutic elimination diets are typically recommended for 6 to 12 weeks. Providing clients with the reason and expectations for a therapeutic elimination diet can help with the decision to proceed.

Typically, the pet food manufacturer has stricter facility cleaning protocols and testing of the therapeutic diets to ensure no other proteins or nonlabeled ingredients are identified. A good example is humans with a peanut allergy who need to be careful of products made in the same facility where nuts are also processed due to the risk of contamination. OTC diets can be contaminated with other protein sources if the machinery is not cleaned frequently in between diets, and testing may not be regularly performed.

Therapeutic diets have one carbohydrate source and either novel protein (e.g., rabbit, kangaroo, alligator) or

hydrolyzed proteins (proteins broken down into small particles to which the body doesn't react). Due to the production cleaning protocols between batches, the use of novel proteins, and the process of hydrolyzing, these diets may be more costly than OTC diets.

It is important for the veterinary nurse to provide client education, written instructions, and handouts to help with a successful diet trial. During this period, the patient cannot have any treats (other than prescribed treats), table scraps, rawhides, or anything flavored, including supplements, medications (such as heartworm preventives), toothpastes, or pill pockets. Topical products can be used to replace flavored preventives. Having acceptable treats and canned food options can help with owner compliance. Additionally, canned food recommended by the veterinary team may help with medication administration.

Performing frequent phone updates can help catch any issues during the trial and allows for corrective guidance sooner rather than later. A follow-up examination at the end of the diet trial is required to evaluate response and to discuss initiating a provocation challenge.

For clients who would like to try to pinpoint the offending protein source(s), a provocation challenge may be chosen. During the challenge period, the therapeutic diet is continued, and food items are introduced individually. The veterinary team and the client watch for flare-ups within 7 to 14 days after introducing each food item.

MISCONCEPTION TO AVOID WITH CLIENTS

Clients may be interested in wanting a test performed that can diagnose environmental allergies. There is no single test that can differentiate atopic dogs from nonatopic dogs.⁶ Intradermal allergen testing (**FIGURE 3**) or serum allergy testing cannot be used to diagnose atopic dermatitis, which is a common misconception with clients. These tests are only recommended once the diagnosis of atopic dermatitis (**FIGURE 4**) has been made by the patient history, clinical signs, and exclusion of other pruritic conditions such as parasite hypersensitivities and adverse food reaction.¹

The test results are used to create a recipe for allergen-specific immunotherapy injections or sublingual immunotherapy drops and require long-term client commitment, often for the life span of the patient.

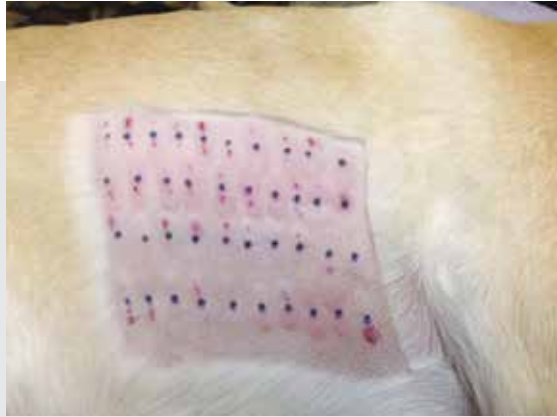


FIGURE 3. Intra-dermal allergen testing.

The veterinary nurse will need to demonstrate and teach the client how to perform subcutaneous injections or the proper administration of sublingual immunotherapy drops in the oral mucosa.

TREATMENT

Treating the pruritus and inflammation as well as the secondary infections is important and is typically started while a diagnosis is being worked up. Oclacitinib (Apoquel, zoetisus.com), lokivetmab (canine allergic dermatitis immunotherapeutic; Cytopoint, zoetisus.com), modified cyclosporine (Atopica, elanco.us), corticosteroids, and antihistamines are commonly prescribed concurrently with oral antibiotics or antifungals if indicated.

Topical antimicrobial/antifungal products such as sprays, mousses, wipes, or shampoos are beneficial in treating and preventing skin infections. Topical steroid-containing products can help with pruritus and inflammation; however, overuse can cause adverse side effects, and client education is important.

Bathing can help decrease pruritus by removing pollens, bacteria, and fungal spores from the hair coat. Medicated shampoos need to be left on the coat for a period of time before rinsing, and clients need to be instructed to follow the product labels carefully. Bathing can be a daunting task for clients, and the veterinary nurse can give tips on proper bathing technique, as well as other advice, such as providing a groomer with the prescribed shampoo or help finding a dog washing facility.

Providing demonstrations for clients in the examination room can be very beneficial and appreciated. The veterinary nurse can help by administering the first dose of medication, applying the topical products to the affected areas, and performing ear flushing.

CONCLUSION

Clients can be overwhelmed with the many causes of pruritus, the process of elimination required to achieve a diagnosis, and the treatments involved. The veterinary nurse can assist in assuring them that the patient's discomfort will be addressed during the workup. The veterinary nurse should also stress the

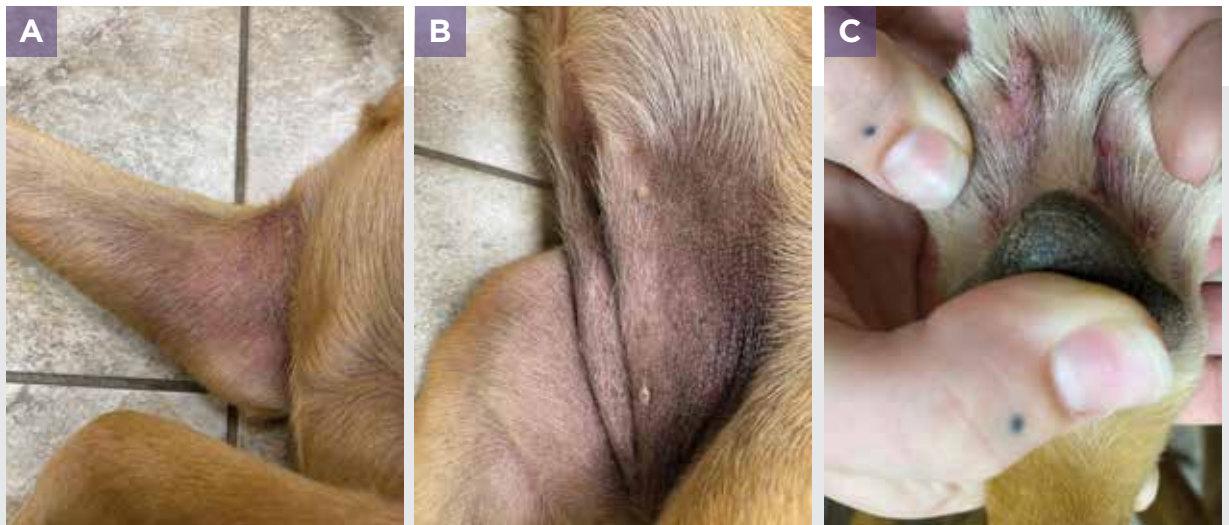


FIGURE 4. Examples of atopic dermatitis in a dog: (A) erythema of the axilla, (B) erythema and postinflammatory hyperpigmentation of the abdomen and inguinal region, and (C) erythema of the palmar aspect of the paw.



FIGURE 5. Packer (Boston terrier) and Walter (French bulldog). Packer has atopic dermatitis and adverse food reaction. Walter has atopic dermatitis. Both dogs are treated with daily sublingual immunotherapy drops, Apoquel, Cytopoint PRN, medicated topical products, and a therapeutic diet. Due to the client's commitment to their care, they are both well controlled. They were presented for Cytopoint and are patiently waiting for their prescription treats after their injection. They enjoy coming to the clinic and are staff favorites.

need for clients to contact the office for further help if the patient is not improving. Encourage clients who have many treatment recommendations that it will get easier and less cumbersome once the infection(s) are controlled and the elimination process is completed.

Recheck examinations are imperative in identifying the underlying cause of the pruritus and assessing the response to treatments. Some clients may cancel the recheck examination as soon as improvement is seen; however, this should be discouraged. Be sure to place a follow-up call to these clients as the pruritus may recur if the underlying trigger is not being managed and treatment is discontinued too quickly.

Treating the underlying condition, educating owners to improve compliance, providing patient updates, and encouraging follow-up examinations are all important in the prognosis and successful outcome for pruritic patients (**FIGURE 5**). **TVN**

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