

# Hair Loss in Cats



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## **P** Profile

### Definition

- *Alopecia* is defined as loss of hair from body areas where it is normally found.
- Hypotrichosis is often used interchangeably with alopecia; also defined as less than normal amount of hair; best reserved for congenital hair loss.
- Hair loss is characterized by amount of loss, distribution, and presence or absence of inflammation.
  - Loss of individual hairs in an area can be partial or complete
  - Hair loss can vary in distribution and extent:
    - Focal, well-circumscribed areas
    - Multifocal or diffuse patchy areas

- Symmetrical
- Diffuse/generalized hair loss
- Areas of hair loss can be inflammatory or noninflammatory

### Genetic Implications

- Hairlessness at birth can occur in any cat breed and is associated with genetic mutation.
- Litters of hairless kittens often do not survive, suggesting another associated or concurrent metabolic defect; hairlessness may be caused by a recessive gene or multiple genes.
- Other ectodermal defects (eg, disorders of whiskers, claws, or teeth) can occur in these cats.

### Signalment Breed Predilection

- Breed-associated abnormalities of the hair coat are spontaneous or the result of selective breeding programs.
- Rex cats can have wavy hair coats, downy and shorter than normal hair, and no guard hair.
- Intentional breeding has resulted in hairless cat breeds, such as sphynx, elf, and dwelf.
- Congenital hypotrichosis has been reported in Birman, Burmese, Devon rex, and Siamese breed cats.
- Abyssinian cats can have structural defects of hair shafts that primarily affect whiskers and primary hair.

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## Causes

There are 3 general causes of hair loss in cats:

### 1. Alopecia due to failure of hair production

- Rare, except when intentionally driven by breeding programs (eg, sphinx, Canadian hairless)
- Cats are born without primary hairs and only a few secondary hairs and whiskers.
- Sebaceous glands open directly onto the skin surface, which is oily due to accumulation of lipids, especially in nail folds.
- Cats often do not groom skin and need frequent bathing and lifelong care.
- Skin is predisposed to secondary microbial overgrowth (eg, with *Malassezia*).

### 2. Alopecia due to loss of existing hair

- Follicular atrophy may be secondary to metabolic disorder; occurs most commonly in cats with hyperadrenocorticism.
- Hair coat effluvium can be triggered by metabolic stresses, such as gestation and lactation, surgery, and pyrexia.
  - Hair coat effluvium is probably not uncommon in debilitated young cats or kittens that acquire severe respiratory infections (**Figure 1**).
  - In effluvium, hairs are easily avulsed with minor traction and rapidly regrow with recovery.
  - Skin biopsy shows normal skin and hair in anagen phase.
- Hair and skin require large amounts of protein; diseases that result in protein deficiency or loss (eg, chronic hepatic or renal disease, malabsorption/maldigestion) may cause diffuse hair loss and brittle, dry, easily fractured hairs.
- Alopecia mucinosa, a rare disease diagnosed by skin biopsy, is a precursor of cutaneous lymphoma.
- Alopecia areata is a rare, immune-

mediated disorder characterized by focal noninflammatory hair loss. Diagnosis is via skin biopsy, which shows lymphoplasmacytic perifolliculitis/folliculitis.

- Hair loss may be due to folliculitis associated with dermatophytosis, bacterial overgrowth, or demodicosis.

### 3. Alopecia due to self-trauma, secondary to pruritus, or due to psychogenic disorders

- Hair loss associated with self-trauma secondary to pruritus is common.
- Pure psychogenic hair loss is uncommon and can be diagnosed only after exclusion of all other causes of pruritic and nonpruritic hair loss.
- Psychogenic grooming disorders can result from untreated/unresolved primary pruritic diseases.

- Kittens: Dermatophytosis and parasitic causes
- Young adults: Allergic diseases and microbial overgrowth
- Older cats: Hyperadrenocorticism, paraneoplastic syndromes, epitheliotropic T-cell lymphoma

#### • Breed

- Congenital hypotrichosis: Persian, Birman, Burmese, Devon rex, Siamese, sphinx
- Hair shaft abnormalities: Abyssinian
- Self-induced alopecia due to behavioral causes: Siamese, Abyssinian, Burmese
- Follicular dysplasia: Cornish rex

#### • Lifestyle

- Indoor-outdoor, multicat households, show cats: Fleas/flea allergy dermatitis, contagious parasites, dermatophytosis
- Anxiety/stressful situation: Self-induced alopecia due to behavior

#### • Presence of current or previous illness

- Anorexia/vomiting: Pancreatic paraneoplastic alopecia
- Polyuria/polydipsia and abdominal

## Signs History

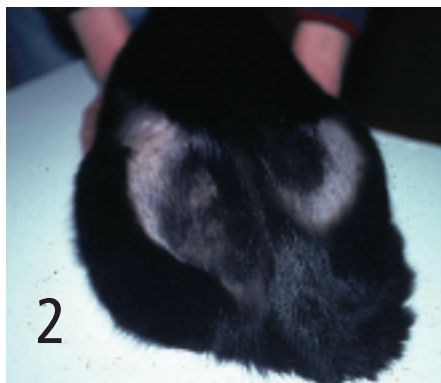
- Age
  - Birth: Congenital hypotrichosis or pili torti



Effluvium in a shelter kitten after severe upper respiratory infection Courtesy Dr. Sandra Newbury

enlargement: Hyperadrenocorticism

- Severe acute illness, especially young cats with respiratory disease: Effluvium
- Gastrointestinal signs: May suggest food allergy
- Presence of current or past injuries/trauma: Cats will often groom painful areas (eg, overgrooming of pelvic area in cats with fractures) (Figure 2).



Symmetrical hair loss over lumbosacral area in cat with fractured pelvis. (Figure 2).

- Seasonality: Atopy and flea allergy dermatitis can present seasonally.
- Evidence of contagious spread is compatible with *Demodex gato*i and other ectoparasites and dermatophytoses.
- Presence or absence of pruritus can be difficult for owners to assess; just because the owner does not report pruritus does not mean the cat is nonpruritic. Hair in feces, constipation, or vomiting due to hair impaction suggests pruritus.
- Initial distribution of skin lesions and pattern of spread should be determined because many causes of hair loss have recognized patterns of distribution.
- Response to previous therapies:
  - Response to steroid therapy suggests flea allergy and/or atopy.
  - Food allergy responds inconsistently to steroid therapy.
  - Response to flea control supports parasitic causes.
  - Focal areas of atrophic hair loss can occur at injection sites.

## Physical Examination

- *General physical examination* is necessary in all patients but particularly important in older cats presenting with symmetrical or generalized hair loss because there may be a cutaneous sign of systemic illness.
- *Dermatologic examination* should note distribution of hair loss—focal, multifocal, or symmetrical.
  - Examination of hair coat should note whether any hairs are present at sites of hair loss.
  - Broken hairs not easily plucked are compatible with self-induced hair loss; pruritus should be considered.
  - Easily epilated hairs or “excessive shedding” are common with folliculitis.
  - Large areas that are easily denuded from mild traction on hair coat occur with effluvium.
- Note whether whiskers are blunted or broken and

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whether there is hair loss or comedones on the chin or lips—these indicate pruritus.

- **Eyes:** Note presence or absence of conjunctivitis since this may be present in cats with atopy.
- **Ears:** Preauricular hair loss is normal; note any inflammation in and around the ears. Flea allergy, food allergy, and atopy can manifest with pinna pruritus.
- **Trunk:** Palpate skin for small areas of milium dermatitis and broken, stubby hairs; look for evidence of scaling—any of these may be compatible with folliculitis and pruritus.
- **Abdomen:** Note any follicular plugging on or around mammae; cytologic examination often reveals bacterial and/or yeast overgrowth.
- **Nails:** Examine for signs of chewing, and inspect the nail beds for debris under the nail folds (especially important with Devon rex cats as they tend to have *Malassezia* overgrowth in nail folds). *Malassezia* overgrowth is common in cats with pruritic skin diseases.
- **Skin:** Note the tone; thin skin is common in hyperadrenocorticism.

### Pain Index

- Pain is rare in cats with hair loss and signals an injury or other illness.
- Pruritic cats are often “twitchy” or have their itch-scratch reflex easily triggered.

## Dx Diagnosis

### Definitive Diagnosis—Acquired Focal Alopecia

- Obtain history, perform physical examination, and determine whether topical or injected medications have been used or matted hair has been clipped from the site. If medications have been used and the site is not inflamed, stop medication and watch for regrowth of hair (4–8 weeks). If no regrowth occurs or lesion worsens, perform skin biopsy.



## Differential Diagnosis of Feline Hair Loss

### Focal Lesions

Alopecia areata  
Bacterial and/or yeast overgrowth  
Cicatricial alopecia  
Demodicosis  
Dermatophytosis  
Idiopathic lymphocytic mural folliculitis  
Injection site reaction  
Local glucocorticoid reaction  
Pinna alopecia  
Pseudopelade  
Traction alopecia

### Extensive or Symmetrical Alopecia with Pruritus or Overgrooming

Atopic dermatitis  
Bacterial and yeast overgrowth  
Dermatophytosis  
Ectoparasite infestation: Fleas, lice, *Otodectes cynotis*, *Demodex*, *Cheyletiella*, fur mites  
Flea infestation/fleabite hypersensitivity  
Food hypersensitivity/food intolerance

### Extensive or Symmetrical Alopecia Without Pruritus or Overgrooming

Alopecia mucinosa  
*Cheyletiella* infestations  
Defluvium/effluvium  
Demodicosis  
Dermatophytosis  
Epitheliotropic lymphoma  
Hyperadrenocorticism  
Paraneoplastic syndrome  
Pseudopelade  
Systemic and metabolic causes: Chronic renal disease, chronic liver disease, hypothyroidism/hyperthyroidism, diabetes mellitus  
*Trichorrhexis nodosa*

- If there is no history of topical or injected medications or signs of inflammation (erythema, scaling, broken stubby hairs) are present, perform the following tests in the suggested order:
  1. Wood's lamp examination to screen for fluorescent hairs; if found, directly examine hairs
  2. Fungal culture to rule out dermatophytosis
  3. Skin cytology or tape preparation to look for bacterial or yeast overgrowth (in focal alopecia, do this before the following tests)
  4. Skin scrapings and hair pluckings to rule out demodicosis
  5. If above tests are nondiagnostic, perform skin biopsy.

## Definitive Diagnosis—Extensive or Symmetrical Alopecia

- In cats that present with dramatic or severe clinical signs (eg, alopecia mucinosa, pseudopelade), skin biopsy is the most expedient way to get a diagnosis.
  - Additional diagnostics, such as laboratory analysis, imaging, and bone marrow cytology, may be needed depending on the disease.
  - Samples should be sent to a veterinary dermatopathologist along with digital photographs.
- Cats with spontaneous hair loss due to metabolic illnesses (eg, hyperadrenocorticism, effluvium) usually have historical and physical examination findings that support a cutaneous manifestation of systemic illness.
  - These cats will require additional diagnostics, such as, but not limited to, serum biochemical profile, complete blood count, thyroid hormone measurement, diagnostic imaging.
  - *Demodex cati*, dermatophytosis, and bacterial/yeast overgrowth are not uncommon in cats with systemic illnesses. Core diagnostic tests, such as skin scrapings, skin cytology, and fungal cultures, are still indicated.
- Pruritus/overgrooming is the most common cause of extensive or symmetrical alopecia in cats.
  - Three common causes of pruritus in cats are parasites, infections, and allergies; some common causes can be ruled out during the initial visit.
  - If a condition is not diagnosed at the initial visit, a series of response-to-treatment trials is often the only way to make the diagnosis (see **Step by Step: Response to Treatment Trials**, page 12).



## Treatment

Treatment depends on a definitive diagnosis or is part of a series of response-to-treatment trials.



## Follow-Up

Unless the cause is easily diagnosed at the initial visit, careful patient follow-up is needed for accurate interpretation of response-to-treatment trials.

## Relative Cost

Cost of diagnosis can vary from \$ to \$\$\$\$ depending on the underlying cause and whether the cause is treatable and curable or a disease requiring life-long management.

## Prognosis

Good unless hair loss is a manifestation of systemic illness (eg, paraneoplastic syndrome) ■

### Cost Key

\$ = < \$100                      \$\$\$\$ = \$500–\$1000

\$\$ = \$100–\$250                \$\$\$\$\$ = > \$1000

\$\$\$ = \$250–\$500

See Aids & Resources, back page, for references, contacts, and appendices.

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## at a Glance

### Flea Control

- 6–8 weeks of adulticide (eg, selamectin); treat all animals in house
- This is also effective treatment for *Otodectes* and *Cheyletiella* mite infestations

### Feline Demodicosis

- 4–6 weeks of lime sulfur dips; alternative therapies are not as efficacious for response-to-treatment trials
- Lime sulfur is an effective parasiticide agent for all common parasites of cats except fleas

### Bacterial & Yeast Overgrowth

4 weeks of concurrent antibiotics (eg, clavulanated amoxicillin, 22 mg/kg Q 12 H; cefadroxil, 22 mg/kg Q 12 H) and systemic antifungals (eg, itraconazole, 5 mg/kg Q 24 H or week on/week off)

### Elimination Diet

8–12 weeks of complete and balanced home-cooked diet or limited-protein commercial diet. Use of antipruritic therapy can be used during first 4–6 weeks of diet trial to provide interim relief:

- Prednisolone, 0.5–2.2 mg/kg PO Q 24 H for 7 days, then every other day; recommended for short-term therapy only
- Cyclosporine A modified, 5 mg/kg PO Q 24 H for the first 30 days, then consider alternate-day dosing
- Antihistamines are of limited usefulness in cats but may be steroid-sparing:
  - Amitriptyline HCl, 5–10 mg PO Q 12 H
  - Cetirizine HCl, 5 mg PO Q 12 H
  - Chlorpheniramine, 2–4 mg/kg PO Q 12 H
  - Diphenhydramine HCl, 0.5 mg/kg PO Q 12 H
  - Fexofenadine, 1 mg/kg PO Q 12 H
  - Hydroxyzine HCl, 5–10 mg PO Q 12 H



# Step by Step: Response to Treatment Trials

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## Initial Visit

Perform fungal culture and skin scrapings, skin cytology, flea combings, and hair pluckings.

- Negative skin scrapings and flea combings may not identify an ectoparasite but do not necessarily rule it out. Note that skin scrapings are easier to do in cats by using a skin scraping spatula (Figure 1).
- Skin cytology is done more easily by using clear acetate tape in cats (Figure 2); response-to-treatment test at future visit may be needed because bacterial and yeast infections can be subtle in cats (see Follow-Up Visit 2).
- Pending fungal culture, initiate aggressive flea control program (eg, monthly spot-on treatment) for 6 to 8 weeks to rule out fleas, lice, and *Cheyletiella* infestations.
- Complete blood count may show peripheral eosinophilia in cats with fleas/flea allergy.

## Follow-Up Visit 1

The above treatment plan eliminates ectoparasites and flea allergy dermatitis from the differential diagnosis list. If there is no response to flea control, treat for feline demodicosis.

## Follow-Up Visit 2

Do 4-week trial therapy for bacterial/yeast overgrowth.

- This is a common complication of cats that present with extensive self-mutilation, miliary dermatitis, or exudative lesions.
- Unlike dogs, cats have subtle clinical signs and response-to-treatment test is often used to confirm diagnosis.
- If there is no response to treatment, ectoparasites and common skin infections/overgrowth have been eliminated from differential diagnosis list.

## Follow-Up Visit 3

Initiate strict elimination diet for 8 to 12 weeks, followed by provocative diet challenge.

- Food hypersensitivity is confirmed if pruritus and overgrooming cease with diet and condition relapses with provocative diet challenge.
- If no change occurs with diet trial and a commercial diet was used for the test, consider repeating diet trial using a home-cooked diet.
- Diet trials should be initiated only after parasitic and infectious causes of pruritus have been eliminated.

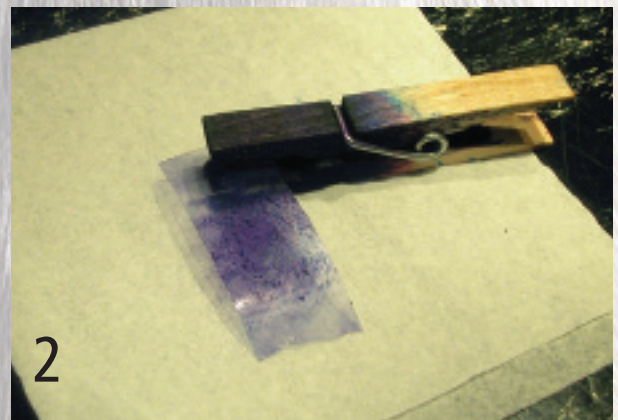
## Follow-Up Visit 4

Remaining differential diagnoses include atopy, psychogenic alopecia, or unknown cause.

- Consider allergy testing for atopy, which is strongly recommended before treating cats for psychogenic alopecia.
- Response to glucocorticoid therapy supports allergic skin disease.
- Lack of response to glucocorticoids or cyclosporine A modified is not compatible with a diagnosis of allergic skin disease and suggests psychogenic alopecia.
- Rule out "other" causes of alopecia with skin biopsy.



Skin-scraping spatula: Highly recommended over scalpel blade because risk for injury is minimized.



Stained clear acetate preparation: To examine, place sample over drop of immersion oil on glass microscope slide. Bacteria and yeast on cat skin require oil immersion magnification to be seen clearly.

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