

Causes of Hair Loss (Alopecia) in Dogs

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There are many diseases and conditions which can cause a dog to lose hair. Some of these may be considered normal, others can indicate a serious disease is present. Most of the conditions which result in hair loss are included in the table below, though some of them may be rare. This extensive list helps you understand why a quick diagnosis may be difficult to make, and various diagnostic tests may need to be performed. The most common conditions causing hair loss are color-coded gray in the table (some may be more common in certain geographical areas).

Condition	Description	Symptoms	Diagnosis	Treatment
<u>Acanthosis nigricans</u>	Inherited form seen in Dachshunds; secondary form caused by friction, hormonal abnormalities, or hypersensitivities	Darkening of the skin; in secondary form see scratching and hair loss	History, physical exam; in secondary form, testing to determine underlying cause	Primary: no treatment; secondary: treat underlying disease; in some cases, steroids and Vitamin E supplementation
<u>Acral lick dermatitis (neurodermatitis)</u>	Self-licking in dogs results in self-trauma; possible causes include anxiety, boredom, stress (e.g., new member in household); licking can develop into an obsessive behavior	Red, hairless, well-circumscribed, sometimes raised lesion usually on the leg; if chronic, will drain	Exclude other causes; history important	Relieve underlying cause e.g., anxiety; restrict licking, e.g., elizabethan collar; behavior modifying medication may be necessary
Adrenal sex hormone responsive dermatosis	More common in Pomeranians, Chows, Keeshonden, and Samoyeds	Hair loss starts on neck, tail, back of thighs, and progresses to trunk; dog appears to have a 'puppy coat'; skin darkens	Biopsy; eliminate other causes	Mitotane is optional
<u>Allergic and irritant contact dermatitis</u>	An allergic reaction following exposure to antibiotics applied to the skin; metals such as nickel; materials such as rubber, wool, and plastic; and chemicals such as dyes and carpet deodorizers; or inflammation	Red skin and small bumps or blisters on the areas of skin that are sparsely haired and directly exposed to the offending substance, itching; hair loss in chronic conditions	Patch test, exclusion trials	Restrict exposure to the allergen or contact irritant in the dog's environment; steroids, antihistamines

	caused by irritating substances such as poison ivy. Generally requires multiple exposures.			
Alopecia areata	Thought to be an autoimmune disorder	Patches of hair loss especially on head, neck, and body; no itching	Microscopic examination of hairs; biopsy	Usually recover spontaneously
Atopy (allergic inhalant dermatitis)	Allergic reaction to something the dog inhales such as pollen, house dust mites, and mold	Licking of feet, inflamed ears, itching, redness, and hair loss; sometimes development of infection or hot spots	Intradermal or serologic (blood) testing for allergies	Reduce exposure to allergen (what the dog is allergic to); steroids, fatty acid supplements , biotin , antihistamines, shampoos, immunotherapy
Bacterial infection (pyoderma) <i>See Folliculitis</i>	Often occurs as a result of another condition such as a parasitic, allergic, or hormonal condition			
Black hair follicular dysplasia/alopecia/dystrophy	Rare hereditary disease in dogs with hair of multiple colors; more common in Bearded Collies, Basset Hounds, Salukis, Beagles, Dachshunds, and Pointers	Loss of dark or black hair only; symptoms appear between 3 and 6 weeks of age; sometimes scaling	Clinical signs, biopsy	Shampoos for scaling if necessary
Callus	Results from chronic pressure, especially in large breed dogs	Thickened, hairless raised areas over bony pressure points such as elbows; may become secondarily infected	History, clinical signs	Provide softer bedding and padding around affected area

Castration responsive dermatosis	More common in young unneutered dogs, and in Chows, Samoyeds, Keeshonden, Alaskan Malamutes, Miniature Poodles, and Pomeranians	Symmetrical hair loss in genital area and neck; hair loss may progress onto trunk; skin may appear darker; severe scaling; hair color may fade; coat is similar to a 'puppy coat'	Physical exam and history; eliminate other causes; blood tests for hormone levels	Castration
Chemotherapy	Loss of hair due to chemotherapy is a concern for dog owners	Dogs with continuously growing hair, e.g., Poodles and Maltese, often lose some hair; dogs may lose whiskers	History	None, hair will regrow after chemotherapy discontinued; may regrow in a different color or texture
<u>Cheyletiella (rabbit fur mite) mange</u>	Infection with the <i>Cheyletiella</i> mite	Itching, scaliness; some hair loss, if severe	Skin scraping and microscopic examination - the mite is often very difficult to find	<u>Pyrethrin, Permethrin</u> (Do NOT use permethrin on cats.)
<u>Color dilution/mutant alopecia</u>	Hereditary condition affecting dogs with blue (diluted black) or fawn coat colors; more common in Dobermans, Dachshunds, Great Danes, Yorkshire Terriers, Whippets, and Greyhounds	Hair in the blue- and fawn-colored areas starts to thin at around 6 months of age; secondary folliculitis often develops	Breed; history; and coat color	None; avoid excessive grooming or harsh shampoos; protect skin to prevent secondary bacterial infections
Congenital hypotrichosis	Congenital lack of hair	Puppies born with little or no hair; any hair they are born with is lost by 4 months of age	Physical exam; biopsy	None
<u>Cushing's disease (hyperadrenocorticism)</u>	Caused by an increase in corticosteroids in the body - either due to increased production by	Hair loss, thinning of skin, hyperpigmentation, easy bruising, seborrhea, comedones (black heads). may see	Adrenal gland function tests, urinalysis, chemistry panel, CBC	If due to glandular tumors, selegiline, o,p-DDD (Mitotane), or surgical removal

	the body or as a side effect of high doses or prolonged therapy with corticosteroids	calcinosis cutis; lethargy, increased thirst and urination, potbellied appearance		of tumor; if due to high steroid doses, withdraw use of steroids slowly
Cyclic (cicatrical) alopecia; seasonal flank alopecia	Growth cycle of hair stops at certain times of the year	Symmetrical hair loss with definite borders; usually on back and flanks; skin may become darker	History, clinical signs, biopsy	None
Demodectic mange (red mange, puppy mange)	Infection with the <i>Demodex</i> mite - occurs when the immune system is deficient	Hair loss, scaliness, redness, pustules, ulcers, sometimes itching, darkening of the skin	Skin scraping and microscopic examination	NO Steroids! Amitraz (Mitaban) dips
Dermatomyositis	Some breeds predisposed; cause unknown; aggravated by trauma and UV light	Redness, scaling, crusting, hair loss, and scarring on face, ears, and tail; atrophy of muscles involved in chewing	Skin biopsy	Minimize trauma and exposure to UV light; Vitamin E, fatty acids, short term use of prednisone, oxpentoxifylline; some severe cases do not respond to treatment, and euthanasia may be considered
Diabetes mellitus	Abnormal immunity makes diabetic dogs susceptible to infection and other skin conditions	Thin skin; some hair loss; seborrhea; recurrent bacterial infections; unregulated dogs also have many other signs of disease; may develop epidermal metabolic necrosis or xanthoma	Blood testing	Dietary changes; insulin
Drug or injection reaction	Rare skin reaction to a drug which is inhaled, given orally, or applied topically; more common with penicillins.	Can vary widely and may include itching, hair loss, redness, swelling, papules, crusts, ulcers, and draining wounds	History of being treated with a drug, symptoms, biopsy	Discontinue offending drug; treat symptomatically

	sulfonamides, and cephalosporins; usually occurs within 2 weeks of giving the drug			
Epidermal metabolic necrosis (necrolytic migratory erythema, hepatocutaneous disease)	Uncommon skin disease in older dogs; skin lesions develop in dogs with certain diseases including liver disease, diabetes mellitus, and some pancreatic tumors	Reddened, often ulcerated areas with hair loss and crusts; foot pads may be thickened	Biopsy; look for underlying disease	Treat underlying disease; supportive therapy; poor prognosis
Erythema multiforme	Hypersensitivity reaction to infections or drugs; may also be caused by cancer or other diseases	Hair loss, 'bull's-eye' lesions, and vesicles often around mouth, ears, groin, and axilla; in some instances, ulcers develop; depression, fever	History, clinical signs, rule out other diseases causing similar signs; skin biopsy	Treat or remove underlying cause
Estrogen responsive dermatosis (ovarian imbalance type II)	More common in young spayed dogs, and in Dachshunds and Boxers	Hair loss starting at the genital area and flanks and moving forward; hair color may fade; coat is similar to a 'puppy coat'	Physical exam and history; eliminate other causes; response to therapy	Estrogen replacement therapy; caution - can have severe side effects
Flea allergy dermatitis (flea bite hypersensitivity)	Severe reaction by the animal to the saliva of the flea	Intense itching, redness, hair loss papules, crusts, and scales; sometimes development of infection or hot spots	Presence of fleas; reaction to intra-dermal testing	Flea control in the environment and on the dog; steroids and antihistamines for the itching
Follicular dystrophy/alopecia/dysplasia (abnormal development or growth of hair) <i>See Congenital hypotrichosis, Color dilution/mutant alopecia, Black hair follicular dystrophy/alopecia, Follicular dysplasia (non-color linked)</i>	May be congenital (certain breeds are at increased risk) or acquired later in life from infections, hormonal abnormalities, cancer drugs, and some other diseases	Hair loss, sometimes only hair of a certain color; sometimes scaling	Clinical signs, breed, skin biopsy	In congenital disease, treatment of secondary problems such as infections or scaling; in acquired disease treat underlying cause

Follicular dystrophy/dysplasia (non-color linked)	Patchy hair loss of unknown cause seen in the Siberian Husky, Doberman Pinscher, Airedale, Boxer, Staffordshire Bull Terrier, Curly Coated Retriever, Irish Water Spaniel, and Portuguese Water Dog	In Huskies, hair loss on the body, reddish tinge to hair; in Dobermans, hair loss over lumbar area; in Boxers and Terriers, hair loss over lumbar area, skin may be hyperpigmented; in the Retrievers and Spaniels, loss of guard hairs on back and trunk and secondary hairs are dull and lighter in color	Breed, biopsy	None
Folliculitis	Infection of the hair follicles, often with staph bacteria; symptoms usually appear on skin with less hair, such as the abdomen	Pustules form in follicles and break open to form 'bull's-eye,' 'annular,' and 'target lesions,' which have crusty centers and red or darkening on the periphery, and 'epidermal collarettes,' which appear as rings of scaly skin; may itch; short-coated breeds may develop small tufts of hair, which are lost; breeds with long coats may have seborrhea	Skin scraping; culture; biopsy	Antibiotics for at least 4 weeks - continue antibiotics 10 days beyond the apparent cure; if recurs, look for underlying problem such as allergy or hormonal imbalance
Food allergies	Allergic reaction to something in the diet	Licking of feet, inflamed ears, itching, redness, and hair loss; sometimes development of infection or hot spots	Food elimination trials	Change in diet
Granulomas	May be due to infections; the body's reaction to foreign material such as plant material (e.g., foxtail)	Solid firm nodules of varying sizes; those due to foreign bodies often have draining tracts; may develop hair loss, ulcers, and	History, clinical signs, biopsy, surgical exploratory	Surgical removal of the foreign body (in the case of plant material, tracts may be extensive and

	and suture material; other constant irritation; or unknown causes	secondary infections		require major surgery); antibiotics if infected; treat any other underlying cause
Growth hormone responsive alopecia	Not well understood; thought to be caused by an enzyme deficiency or decrease of adrenal hormones, which allows certain other hormones to accumulate in the body: more common in Pomeranians, Chow Chows, Keeshonden, Samoyeds, and Poodles	Hair loss on neck, tail, and the back of the thighs; skin darkens; usually starts when dog is less than two years old	Hormonal blood testing	Neuter animal; growth hormone; hormonal supplementation
Hair loss during pregnancy and nursing ('blowing her coat,' telogen effluvium)	Excess shedding that can also occur in other stressful circumstances such as illness or surgery	Sudden and widespread hair loss	History, clinical signs	Treat any underlying condition; hair will grow back
Histiocytosis	There are several kinds of histiocytosis: malignant, which is a cancer that affects the skin and internal organs; systemic, which is a rare disease which affects skin and internal organs; and cutaneous, which is a benign disease affecting the skin	All cause nodules with hair loss; malignant and systemic also have ulcers	Biopsy, fine needle aspirate;	Malignant: none effective, may need to consider euthanasia; systemic: poor response to chemotherapy; cutaneous: corticosteroids, relapse is common, especially in Shar-Peis

Hyperestrogenism (ovarian imbalance type I)	Rare disease in which female animals have excess levels of estrogen; can be caused by cancer of the ovaries	Symmetrical loss of hair; hair pulls out easily; darkening of the skin; enlarged nipples and vulva; may rarely see seborrhea and itching	History, physical exam, rule out other causes of hair loss, measure blood estrogen levels	Spay; look for metastasis to the lungs
Hypothyroidism	Decreased production of thyroid hormone; most common hormonal disease affecting the skin in dogs	Hair loss, dry and brittle hair, seborrhea; secondary bacterial and yeast infections; lethargy, obesity, slow heart rate; changes in skin pigmentation may occur	Thyroid gland function tests, chemistry panel, CBC	Lifetime thyroid supplementation
Injection site alopecia	Hair loss at the site of an injection of a medication or vaccine; skin may become thickened; in cats, ulcers may develop	Hair loss occurs several months after injection; area may become hyperpigmented	History and physical examination	None; the condition is permanent
Interstitial cell tumor	Tumor of the testicle; may not cause any skin changes	If skin changes occur, see seborrhea, loss of hair on the trunk, enlargement of the tail gland and perianal glands; may see increased pigment in the skin	Biopsy	Castration; anti-seborrheic shampoos
Kerion	Complication of ringworm infection	Nodule with hair loss and multiple draining tracts; may not see other signs of ringworm	Culture, biopsy	Clip area and apply topical treatment and shampoos; may require systemic treatment with ketoconazole or itraconazole
Leishmaniasis	Caused by a parasite of blood cells; can be transmitted to people who develop a very severe disease	Hair loss, scaling, ulcers on nose and ears, sometimes nodules; many other nonskin-related signs	Identify the organism in blood or biopsy; blood tests	Because it causes severe disease in people, and treatment of dogs is not curative.

				euthanasia may be performed
Lice	Infection with several species of lice	Variable; itching, hair loss, crusts, rough hair coat	Finding lice or nits on skin or hair	Pyrethrin , ivermectin (off-label use*), Permethrin (Do NOT use permethrin on cats.)
Malassezia	Usually follows some other underlying disease	Itching, redness, hair loss, greasy scales; if chronic, develop hyperpigmentation	Skin scraping/smear and microscopic examination, culture	Treat underlying disease; oral ketoconazole; miconazole shampoos
Nasal solar dermatitis <i>See solar dermatitis</i>	<i>See solar dermatitis</i>			
Pattern alopecia (pattern baldness)	Three types; hair loss may occur on the ears of Dachshunds (pinnal alopecia); neck, thighs, and tail of American Water Spaniels and Portuguese Water Dogs; abdomen and the back of the thighs of Dachshunds, Chihuahuas, Whippets, and Greyhounds	Hair loss in described areas	Breed, history, biopsy	None
Pelodera dermatitis	Accidental infection with larvae from a non-parasitic worm that lives in straw and other organic material	Affects areas of skin touching ground; intense itching, redness, hair loss, papules, crusts, and scales	Skin scraping and microscopic examination	Remove bedding; mild antibacterial shampoo; steroids if necessary to control itching
Pituitary dwarfism	Hereditary condition in which the pituitary gland does not produce the necessary hormones	Young puppies fail to grow; dogs retain puppy coat and condition progresses to hair loss over much of the body; thin skin, scales, and	Special blood testing for the presence of certain hormones	Hormone replacement therapy

		secondary infections		
Post-clipping alopecia	Hair may not grow back immediately after it has been clipped; which animals may be affected can not be predicted; more common in dogs with thick undercoats e.g., Huskies and Chows	Continued lack of growth in hair that was clipped, e.g., for surgery	History	None; hair will eventually regrow, but may take up to 24 months
Pressure sores (decubital ulcers)	Lesions occur over bony prominences like elbows; common in larger recumbent dogs	Start as red, hairless areas and progress to draining ulcers; may become infected	Clinical signs, biopsy	Keep area clean and prevent contact with urine; antibiotics; apply donut bandages, which provide padding around but not over the ulcer; surgical treatment is sometimes necessary; prevent ulcers by turning the dog every 2 hours
Pyoderma-superficial (See Folliculitis)				
Ringworm	Infection with several types of fungus	Hair loss, scaliness, crusty areas, pustules, vesicles, some itching; can develop a draining nodule called a 'kerion'	Culture	Miconazole, lime sulfur dips; oral griseofulvin or itraconazole
Sarcoptic mange	Infection with the <i>Sarcoptes</i> mite	Intense itching and self-trauma, hair loss, papules, crusts, and scales	Skin scraping and microscopic examination - the mite is often very difficult to find	Amitraz (Mitaban) dips (off-label use*); ivermectin (off-label use*)

Schnauzer comedo syndrome	Uncommon; only seen in Miniature Schnauzers	Comedones (black heads) on back, mild itching; may see secondary infection, thinning of hair; small crusts may develop	Clinical signs, breed, skin biopsy	Long-term antiseborrheic shampoos; sometimes antibiotics and retinoids
Sebaceous adenitis	Sebaceous glands are destroyed, cause unknown; certain breeds more susceptible	Short-haired breeds: circular areas of hair loss with fine scale; long-haired breeds: more widespread hair loss and scale, hair mats easily; may see itching in all breeds	Clinical signs, breed, skin biopsy	Antiseborrheic shampoos, fatty acid supplements; in more severe cases, steroids, retinoids
Seborrhea	Can be primary (inherited) or secondary (resulting from other disease processes such as allergies, hypothyroidism)	Scales; depending upon the type, may have a dry or oily coat; odor; some scratching; may see hair loss	Blood tests, skin scrapings, etc., to find underlying cause	Treat underlying cause if present; antiseborrheic shampoos; fatty acid supplements
Sertoli cell tumor	Tumor of the testicles in middle-aged dogs	Male dogs take on female sexual characteristics; hair loss, increased skin pigment, reddened area on prepuce	Physical exam	Castration
Solar dermatosis	Skin reaction to sunlight, especially unpigmented skin; most common on the noses of Collies, Shelties, and similar breeds	Redness, hair loss, and scaling on nose and ears, later crusts and ulcers	History, breed, physical exam, skin biopsy	Must avoid further sun exposure, especially 9 am - 3 pm; sunblock; steroids; tattoo nose or apply black ink
Tail dock neuroma	Nerve regrowth after tail docking causes symptoms	Nodule at site of docking, itching with self-mutilation, hair loss, and hyperpigmentation	History and symptoms	Surgical removal
Tail gland hyperplasia	Dogs have a sebaceous gland on the top of the tail near its base; in this disorder, the gland	Oily area, hair loss, crusts, and hyperpigmentation on area over gland	Clinical signs; look for underlying cause	Castration may help; treat underlying cause; surgical removal

	enlarges; seen in unneutered dogs and secondary to other diseases such as hypothyroidism			
Testosterone responsive dermatosis (hypoandrogenism)	More common in old neutered dogs, and in Afghans	Dull, scaly, dry coat; seborrhea; hair loss in genital and anal areas progressing onto trunk	Physical exam and history; eliminate other causes; response to therapy	Testosterone replacement therapy
Vitamin A responsive dermatosis	May not be due to an actual deficiency of Vitamin A, but does respond to increased levels of Vitamin A in the diet; more common in Cocker Spaniels	Seborrhea; odor; hair pulls out easily; pads of feet thickened; thick scales on chest and abdomen, especially around nipples	Clinical signs, breed, skin biopsy	Lifetime treatment with Vitamin A
Zinc responsive dermatosis	Three types: I in Huskies and Malamutes; II in rapidly growing puppies of large breeds; III in English Bull Terriers	Crusting and scaling, redness, hair loss, sometimes oily skin, secondary bacterial infections common	History, breed, physical exam, skin biopsy	Correct any dietary deficiency, medicated shampoos, treat secondary infections

* off-label use: medication used to treat a condition for which it was not developed (or licensed). A large number of medications fall under this category. Research has almost always been performed to determine the effectiveness and safety of the product, but the manufacturer has not undertaken the lengthy process required for licensure.