# Causes of Pigment & Color Changes in the Skin & Coat in Dogs

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The skin and coat of a dog may sometimes change color or become lighter or darker. This may be a normal process, or may be due to a serious disease. If the skin or coat has a color other than white, it is said to be 'pigmented.' Colors include brown, black, red, purple, and yellow. If the skin is a darker color than normal, it is said to be 'hyperpigmented.' The table below provides a list of the majority of the conditions, which are associated with pigment change. This extensive listing 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 pigment or color changes are color-coded gray in the table (some may be more common in certain geographical areas).

| Condition | Description | Symptoms | Diagnosis | Treatment |
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| Acanthosis nigricans | 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 |
| Adrenal sex hormone responsive dermatosis | More common in Pomeranians, Chows, Keeshonden, and Samoyeds | Hair loss starts on neck, tail, and back of thighs and progresses to trunk; dog appears to have a 'puppy coat'; skin darkens | Biopsy; eliminate other causes | Mitotane is optional |
| Apocrine sweat gland cyst | Common | Single, round, smooth nodules with no hair; may appear bluish; usually filled with a watery liquid; most common on head, neck, and limbs | Physical exam; biopsy | Surgical removal is optional |
| **Basal cell tumors** | Cancerous, slow-growing tumor, which rarely metastasizes; seen in older dogs | Single, sometimes fluid-filled nodules, which may ulcerate; usually on the head, neck, and chest; may be hyperpigmented | Biopsy | Surgical removal |
| 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 |



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| **Bowen's disease** | A rare type of squamous cell carcinoma in which multiple lesions develop | Lesions start out as thickened, dark, raised, and well-delineated; progress to ulcers and crusts and bleed easily; lesions found on the head, neck, shoulder, forelegs, mouth, and genital areas | Biopsy | Lesions may come and go and are not always treated; some anti-cancer drugs and radiation have been tried with mixed results |
| **Bruises** | Generally the result of trauma; may indicate abnormally low platelets, clotting problems, or hormonal problems | Areas of bluish-black discoloration of the skin | Medical history very important; blood tests, if abnormality expected | None, if the result of trauma; in other cases, treat underlying cause |
| 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 |
| **Chronic irritation/inflammation** | Chronic atopy, allergies, bacterial infections | Darkening and sometimes thickening of the skin | History, physical exam; blood tests to rule out other possible causes | Treat/remove underlying cause |
| **Color dilution/mutant alopecia** | 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 |



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| Cushing's disease (hyperadrenocorticism) | Caused by an increase in corticosteroids in the body - either due to increased production by the body or as a side effect of high doses or prolonged therapy with cortic corticosteroids | Hair loss, thinning of skin, hyperpigmer hyperpigmentation, easy bruising, seborrhea, comedones (black heads), may see calcinosis cutis; lethargy, increased thirst and urination, pot-bellied appearance | Adrenal gland function tests, urinalysis, chemistry panel, CBC | If due to glandular tumors, selegiline, o,p-DDD (Mitotane), or surgical removal 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 *Demodex* 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 |
| **Epitheliotrophic lymphoma (mycosis fungoides)** | Rare cancer of T lymphocytes seen in older dogs | Can take multiple forms: redness with itching and scale; ulcers and loss of pigment; one or more nodules; oral ulcers | Needle or other biopsy | Poor response to treatments, which include chemotherapy, surgical removal, retinoids, fatty acids |
| 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 |
| Follicular cyst | Most common cyst; may be called 'sebaceous cysts' by some veterinarians | Single round nodules on or underneath the skin; may appear bluish; may contain a thick, yellowish to gray material; usually found on the head, neck, and trunk | Biopsy | Surgical removal optional; do NOT squeeze these cysts, since a severe skin reaction will occur |



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| **Follicular 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 Retrievers and Spaniels, loss of guard hairs on back and trunk and secondary hairs are dull and lighter in color; | Breed, biopsy | None |
| **Growth hormone responsive alopecia** | Not well understood; thought to be caused by an enzyme deficiency or decrease of adrenal hormones 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 |
| Hemangiosarcoma | Malignant, invasive tumor more common on sun-damaged skin | Blue to reddish black nodule; usually on chest or abdomen; often ulcerate | Biopsy | Surgical removal; need to remove large area around the tumor; if tumor is on a leg, amputation of the leg is commonly recommended |
| Hyperestrogenism (ovarian imbalance type I) | Rare disease in which female animals have excess levels of estrogen; can be caused by | Symmetrical loss of hair; hair pulls out easily; darkening of the skin; enlarged nipples and vulva; | History, physical exam, rule out other causes of hair loss, measure blood estrogen levels | Spay; look for metastasis to the lungs |



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| | cancer of the ovaries | may rarely see seborrhea and itching | | |
| 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 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 |
| **Jaundice** | Generally results from liver disease | Yellowing of the skin, mucous membranes, and whites of the eyes | Physical exam; blood tests to assess liver function | Treatment of underlying liver disease |
| **Lentigo** | Inherited in Pugs | Circular brownish-black areas of coloration | Physical exam; skin biopsy to rule out other causes of hyperpigmentation | None |
| 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 |



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| Mast cell tumor | Common cancer which is graded from 1-4: Grade 1 is slow-growing tumors, and Grade 4 is rapidly growing malignant tumors with metastases | Tumors may be of various sizes, appearances, and numbers | Biopsy to grade the tumors, which determines treatment and prognosis | Depends upon grade; surgical removal, taking large area around tumor; chemotherapy; prednisone; radiation |
| **Melanoma** | Malignant tumor of older dogs | Usually single dark-colored nodule, which often ulcerates | Biopsy | Surgical removal, taking large area around tumor |
| **Nasal depigmentation (Dudley nose)** | Previous black nose turns chocolate brown to light pink; more common in Yellow Labs, Golden Retrievers, Poodles, and Dobermans; not associated with a disease process | Progressive fading of color of nose with no other signs such as crusting or ulceration | Physical exam | None |
| **Pemphigus foliaceus** | The most common form of pemphigus in the dog; an autoimmune disease; some breeds are at increased risk | Often affects feet and head; starts with pustules and progresses to severe crusting; depigmentation of the nose is common; itching may occur; if footpads and nails affected often see lameness; symptoms wax and wane; severely affected animals may have fever and loss of appetite | History, physical exam, skin scraping, and biopsy | Corticosteroids, other immunosuppressive therapy, gold injections |
| **Red/brown staining of hair** | Often caused by body secretions such as tears and saliva from licking | Light colored hair turns a reddish brown | Clinical signs, history | Treat underlying condition |



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| Rocky mountain spotted fever | Caused by an organism spread by ticks; skin lesions are not always present | Fever, loss of appetite, depression, pain in joints, edema, hemorrhages under the skin (appear as bruises), ulceration of mucous membranes and extremities | Special blood tests to detect the organism or antibodies to it; biopsy | Antibiotics and supportive care |
| **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 |
| **Skin cancer** | *See specific type, e.g.; Basal cell tumor, Melanoma, Mast cell tumor* | | | |
| **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 enlarges; seen in unneutered dogs and secondary to other diseases such as hypothyroidism | 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 |
| **Uveodermatologic syndrome** | Hypersensitivity to melanin (the dark pigment) in the skin and eyes | Pigment loss on nose, lips, and eyelids; occasionally footpads, scrotum, and anus can be affected; rarely see ulcers or drainage; uveitis (inflammation of the eye) may occur | History, clinical signs, biopsy | Long-term prednisone, azathiprine; appropriate eye medications |



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| **Vitiligo (Decreased Pigment)** | Can be hereditary or caused by an autoimmune reaction | Loss of pigment, which may be temporary or permanent; usually on nose, lips, and face | Clinical signs, skin biopsy | None |



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