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## Color Dilution Alopecia

**Also Known As:** Color Mutant Alopecia

**Transmission or Cause:** This is a genetic defect which affects the way pigment is distributed in the hair of affected dogs. Dogs with unusual coat coloring such as blue or fawn are affected. Abnormal pigment (melanin) clumping in the hair shaft and subsequent changes in light refraction are responsible for the unusual coloration. In severely affected animals, excessive pigment clumping causes breakage of the hair shaft and abnormal or stunted hair growth.

**Affected Animals:** Dogs with blue or fawn hair coats. Doberman pinschers, pit bull terriers, and any breed with abnormal hair coat coloring are affected. Color dilution alopecia is not seen in all dogs with blue or fawn colored coats and the frequency of occurrence varies within affected breeds.

**Clinical signs:** Hair breakage and hair loss in color dilute areas usually begins in late puppyhood or young adulthood and may progress to total hair loss over several years. The underlying skin is normal, but the hair follicles often become blocked with skin cells and small pieces of broken hairs, leading to secondary bacterial skin infections (pyoderma) and/or inflamed hair follicles (folliculitis). There is usually no itching unless secondary skin infection occurs, and there are no other signs of illness.

**Diagnosis:** It is important to first rule out other possible causes of hair loss such as hormonal disorders or skin infections. Consideration of dog breed and coloration, demonstration of hair loss only in color dilute areas, and visualization of pigment clumping and hair shaft abnormalities when the hair is viewed under the microscope are all supportive of color dilution alopecia. Skin biopsy shows abnormal hair shafts and abnormal hair follicles full of keratin and melanin.

**Treatment:** There is no cure for color dilution alopecia. Treatment is aimed at controlling secondary skin infections and avoiding harsh grooming products and abrasive brushes which can worsen hair breakage. Mild shampoos containing sulfur and salicylic acid may be helpful in reducing hair follicle plugging. In some dogs, supplementation with oral melatonin or retinoids can be helpful to stimulate partial hair regrowth.

**Prognosis:** Although the prognosis for normal hair growth is poor, this is purely a cosmetic disorder which does not interfere with the animal's quality of life.

**Prevention:** Since this is a genetic disorder, prevention involves avoidance of breeding affected or carrier dogs.