

## BASICS

Molting is the process by which animals shed worn-out fur, feathers, skin, or exoskeleton and replace them with new growth. The timing of molting is species dependent and may occur continuously throughout the year, once each year, or twice a year.

Seasonal molting in mammals occurs twice per year to meet insulation or camouflage needs associated with changing conditions in winter and summer. Winter coats are shed in spring, and summer coats are shed in late summer.

**MAMMALS** that undergo seasonal molting include deer, elk, moose, squirrels, mink, and mice. Animals may appear scruffy as old hair is shed and replaced by new hair.

**BIRDS** replace some (partial molt) or all (complete molt) feathers in a molt.

Ducks, geese, and swans undergo a complete molt following the breeding season. Loss of flight feathers leaves them **UNABLE TO FLY**, so they avoid predators by seeking out open water or wetlands with areas of thick vegetation, depending on the species.

Other birds, such as blue jays and Northern cardinals, undergo partial molts in which they lose patches of feathers and may appear bald.

In mammals, molting is characterized by the presence of a normal coat underneath the shedding hair without exposed skin. Disease conditions can be **DISTINGUISHED** from normal molting by looking at other characteristics such as the location and pattern of hair loss, changes in skin, and presence of parasites.

In molting birds, the skin revealed by feather loss should appear normal. Presence of growths, scabs, or a color change in the skin would indicate disease.

Because molting is a normal process, **NO TREATMENT** is needed.



ALL  
ANIMALS



## DETAILS

Molting requires a lot of energy to produce new fur, feathers, or skin. The process may take longer in animals that are in poor condition. Deer in good condition tend to molt earlier and more quickly than those in poor condition. In addition, bucks and non-lactating does tend to molt earlier than lactating does and fawns who need to conserve energy. For waterfowl, nonbreeding birds molt earlier than nesting birds.

Seasonal molting is regulated by sunlight rather than temperature. For animals that molt for camouflage, such as snowshoe hare, Arctic fox, and ptarmigan, climate change may result in color changes that are not aligned with snowfall and melt. Mammals and birds may replace their summer coats with white fur or feathers for winter before snow covers the ground.

Deer grow two coats of fur each year to adapt to seasonal changes in sunlight and temperature. The red hair in the summer reflects the heat of the sun, and the darker winter coat absorbs the heat. The winter coat has special features that allow it to trap insulating air to maintain body temperature and prevent snow melting on the animal. It is thicker than the summer coat, with long guard hairs and short underfur with hollow shafts to trap air.

In the spring, deer shed their thick winter fur beginning on the head and neck and progressing back to the chest and sides. The rump and back legs are the last to shed. Hair loss is patchy, making the

deer appear scruffy until the molt is complete in a few weeks. The summer coat is typically shed in late summer and replaced with the winter coat.

Molting in waterfowl is regulated by hormonal changes following the breeding season.

In birds, molting begins as old feathers are shed. Pin feathers, also known as blood feathers, grow in to replace the old feathers. Pin feathers look like feather shafts and may give the bird a spiky appearance. As the pin feathers mature into full feathers, other feathers are shed, and the process continues.

Some species of mammals and birds undergo molting as juveniles transition to adults.

Canids undergo continuous molting; fur is shed and replaced throughout the year. Snakes periodically shed their skin completely as they grow. Arthropods, including insects and crabs, shed their exoskeletons as they grow.

**DIAGNOSIS** Disease conditions that may result in hair loss in deer include mange, winter tick, hair loss syndrome (lice), and dermatophilosis (rain rot).

In birds, abnormal feather loss can be caused by feather mites, lice, and nutritional deficiencies.



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A blue jay in the midst of a partial molt.