

# Aggression in Dogs Overview

## Basics

### OVERVIEW

- Action taken by one dog directed against a person or another animal, with the result of harming, limiting, or depriving that person or animal
  - Affective (emotional) aggression—triggered by fear, arousal, hunger, sex drive. It can be an unprovoked response (like a bite) directed toward a person (familiar or unfamiliar) or another animal in order to control access to some resource (such as food or toys) at the expense of that person or animal; includes social status/conflict aggression, possessive aggression; intermale (that is, between two males) aggression and interfemale (that is, between two females) aggression. If it occurs in a familiar home location, to an unfamiliar person, it is termed territorial aggression. A type of aggression called “rage” which is a person-directed aggression in response to control gestures, is linked to abnormal levels of nervous system chemicals (serotonin transmitter system)
  - Predatory aggression; prey-related, may be encouraged by other dogs (pack behavior), chasing and hunting is involved with triggers of movement, high-pitched sounds, and can be misdirected towards people or objects
  - Play-related aggression; often initiated by play solicitation bows, can involve growling, biting, and the play behaviors may be redirected to other dogs or people
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- In all cases, medical factors (including pain) as the cause of, or contributing factor to aggression must be considered
  - Aggression often has a learned component where dogs learn to use aggression to manage fearful stimuli or control resources
  - Aggression in dogs is the most common reason dogs are presented to certified veterinary behaviorists in North America
  - According to a 2009 report by the Center for Disease Control and Prevention (CDC), about 4.7 million people are bitten by dogs each year in the United States, though this is considered an underestimation by many. In the US, children between 5-9 years of age are reported with the highest rate of dog bite-related injuries. It is estimated that one in five of those bitten require medical attention for their injuries.



### GENETICS

- Breed-specific aggressive tendencies and bite styles have been selected for or against in some breeding programs, although this cannot predict behavior of individual dogs
- One study in the United States linked human-directed aggressive English springer spaniels to one breeding sire, suggesting a possible inherited form of aggression
- In English cocker spaniels, human-directed aggression was more displayed in males versus females and dogs with solid coat color were more aggressive than those with parti-coat colors

## **SIGNALMENT/DESCRIPTION OF PET**

### **Species**

- Dogs

### **Breed Predilections**

- Any breed may show aggression
- Pit bull type, German shepherd dog, and Rottweilers are the most common breed types implicated in fatal dog bites in the United States, while English springer spaniels in the US are at higher risk for human-directed aggression.
- Selective breeding for certain behavioral traits may increase the likelihood that dogs will have specific types of aggression; for example, dogs of breeds bred for fighting may be aggressive toward other dogs
- English springer spaniels appear at risk for impulsive (“rage”) aggression

### **Mean Age and Range**

- Any age puppy or dog may show aggression
- Aggression commonly becomes more problematic at social maturity (1–2 years of age)

### **Predominant Sex**

- Any sex of dog may show aggression
- Males—intact or castrated most commonly are implicated in dog bites to people, intact males are more represented in fatalities
- Female dogs, both intact and spayed are most commonly seen in cases of aggression to other female dogs.

## **SIGNS/OBSERVED CHANGES IN THE PET**

- Behavioral warning signs include being motionless (immobility), growling, snarling, or snapping at air, these warnings should not be punished, but when possible the animal should be safely removed from the trigger(s) and those triggers should be addressed
  - ♦ Offensive aggression warning signs—head up, tail up with stiff wag, direct stare, face-on immobility
  - ♦ Defensive aggression warning signs—head lowered, tail down, body withdrawn, paw of front leg lifted
- Physical examination usually unremarkable, use extreme caution when handling aggressive dogs, basket or other muzzles may be used when there is a history of human-directed aggression
- Nervous system examination—abnormalities may suggest a disease process (such as rabies, pre or post seizure state, pain, blindness, liver disorder leading to nervous signs [hepatic encephalopathy]) as the cause of aggression
- Signs vary, according to the situation and the type of aggression; any dog can display aggression; temperament, previous painful or traumatic experiences, and lack of appropriate socialization may affect the expression of signs

## **CAUSES**

- Part of the normal range of dog behavior; strongly influenced by breed, sex, early socialization, handling, and individual temperament
- May be caused by a medical condition—possible but rare; medical causes of aggression should be considered in all cases

## **RISK FACTORS**

- Inadequate socialization during critical period (3–12 weeks of age)
- Traumatic or negative experiences

- Environmental conditions may lead to aggression or may increase the level of aggression—such as lack of training, associating with other dogs in a pack; harsh handling, inability of owner to safely confine or manage the dog
- Previous aggression/bite history (number of incidents, severity of aggression, unpredictable, a lack of warning signals)
- Presence of children, elderly people, or other people or animals at high risk living in or visiting household

## Treatment

### HEALTH CARE

- The first tenet of management is to prevent injury to people; environmental control, safe non-confrontational training and behavior modification, and medical management may be needed in combination
- Consult a veterinarian with experience and training in aggression management
- Manage any underlying medical conditions
- Euthanasia—appropriate solution in cases where the risk of injury is high or safe management cannot be employed
- Board the dog until a safe management plan can be undertaken
- Identify specific situations that have led to aggression in the past; use a specific plan to avoid these situations
- Improve physical control of the dog using reliable barriers (such as fences, baby gates), muzzles, leashes, and head halters, have a competent adult oversee, and provide an appropriate and safe exercise
- Calmly and safely remove dog from aggression-provoking situations
- Avoid punishment and confrontation (such as roll-overs); both punishment and confrontation promote defensive (fear) responses and escalate aggression, increasing risk of injury
- Evolve a list of previous triggers, and develop a plan to avoid these situations/locations in future
- Rehoming aggressive dogs may put those involved at liability risk; need to consider liability risks of keeping the dog.

### ACTIVITY

- Appropriate and safe exercise regimen should be incorporated into the treatment plan, since frustration and arousal may increase the incidence of aggression

### DIET

- A reduced-protein diet may be helpful in controlling territorial aggression in dogs, tryptophan (an amino acid) supplementation may enhance effect

### SURGERY

- Neuter or castrate male dogs to reduce intermale aggression

## Medications

- Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive
- No medications are approved by the federal Food and Drug Administration (FDA) for the treatment of aggression in dogs; discuss the risks and benefits of using medications with your pet's veterinarian
- No medication will eliminate the probability of aggression
- Medication should be used *only* in conjunction with a safe management plan
- Medications that increase serotonin (chemical messenger in the brain that affects mood and behavior) may be helpful to reduce anxiety, arousal, and impulsivity
- Treatment duration: minimum, 4 months; maximum, lifetime of pet
- Medications - extra-label (human medications) that have been tried include fluoxetine, paroxetine, sertraline, clomipramine
- Alternative drugs: L-tryptophan, Trazodone, Clonidine

# Follow-Up Care

## PATIENT MONITORING

- Weekly to biweekly contact—recommended in the initial phases to obtain feedback and assistance with behavior modification plans and medication management

## PREVENTIONS AND AVOIDANCE

- Avoid all situations that previously have lead to aggression
- Use extreme care when handling aggressive dogs; use safe confinement, gates, halter, collars, leashes, or muzzles and other restraints to prevent injury to people and other animals
- Reduce the risk of aggression in young dogs with positive socialization when puppies are 3–12 weeks of age
- Avoid intimidation techniques for training and negative and/or fear-inducing situations

## POSSIBLE COMPLICATIONS

- Injury to people and/or other animals
- Interdog aggression—” interdog aggression” refers to aggression between two or more dogs; people often seriously injured when interfering with fighting dogs, either by accident or by redirected or irritable aggression; owners should not reach for fighting dogs; pull apart with leashes
- Liability to the owner; human injury, bite-related lawsuits, and loss of homeowner's insurance can result from dog aggression
- Rabies is a potential cause of aggression, it can transmit to people

## EXPECTED COURSE AND PROGNOSIS

- Aggressive dogs weighing more than 40 pounds (18.5 kg) are at risk for euthanasia due to their inappropriate behavior
- Overtly aggressive dogs are never cured; depending on the situation, they may be managed successfully
- Prognosis is case-dependent due to risk factors and management of each situation

## Key Points

- Overtly aggressive dogs are never cured; depending on the situation, they may be managed successfully
- Behavioral warning signs include being motionless (immobility), growling, snarling, or snapping at air; offensive aggression warning signs include head up, tail up, direct stare, face-on immobility; defensive aggression warning signs include head lowered, tail down, and body withdrawn
- Avoid situations that lead to aggression
- Use extreme care when handling aggressive dogs; use muzzles and other restraints to prevent injury to people and other animals
- Liability to the owner; human injury, bite-related lawsuits, and loss of homeowner's insurance can result from dog aggression