

PROTOCOL FOR HANDLING AND SURVIVING AGGRESSIVE EVENTS

No one wishes to be victimized by an aggressive cat or dog, but bites are so common that more than 50% of all children 11 years of age and younger have been bitten by a cat or dog. Tables 1 and 2 contain information on developmental stages for dogs and children that can factor into bites, and warning signs in dogs that may indicate that they have concerns about children's behaviors. Table 3 is an injury scale that is an adaptation of those commonly seen in the literature.

Understanding which specific canine and feline behaviors indicate a potentially aggressive response and knowing how not to worsen an already bad situation can help people to avoid attacks by animals. If the person behaves appropriately, even if they are not able to avoid the attack, they can minimize the damage they experience during the attack. Because most serious bites to people that occur in the United States and Europe involve dogs, this handout focuses primarily on avoiding dog bites, but the information in it can be adapted to avoiding being injured by cats, too.

Everyone should know that fatal dog bites are rare, despite the amount of media attention they receive when they occur.

Regardless, for those who experience bites, injuries can be both physical and psychological, and may have long-term consequences.

- From the veterinary perspective, the most serious of these long-term consequences may involve attitudes that adversely affect people's willingness to get and care for pets.
- From the legal perspective, fear of dog bites and the accompanying public outcry has engendered a series of legislative initiatives that have nothing to do with the real risk that anyone will be bitten.

Accordingly, anything we can do to decrease the number of dog bites and to understand those that occur will help us to be better guardians of dogs, safer when we interact with dogs, and more humane in our overall approach to interactions between ourselves and dogs.

What Is Aggression?

Before we consider specific circumstances involving aggression, we should define it.

Aggression is best described as an appropriate or inappropriate, inter- or intraspecific, threat, challenge, or contest that ultimately results in either deference or combat, and in resolution.

The next few paragraphs explain each of the three parts of this definition in a way that will allow most people to evaluate whether the dog poses a risk.

1. *Aggression can be appropriate.*

- If you are attacked, you would likely want your dog to growl and protect you.
- If the dog is being tortured or injured, fighting back can be an appropriate response.

These are key considerations when dog bites are litigated and when decisions about a dog's behaviors are made. Every law regulating dogs has a provision for *biting as an appropriate behavior*. Yet people often do not consider that they are living with a carnivore who has an identical social system to theirs, but who uses her mouth in many cases where humans would use their hands. For example, the Labrador retriever who brings you the morning paper does not carry it in one

paw and hop home three-legged—the dog carries the paper in his mouth.

If people are unwilling to realize that dog bites can be both appropriate and accidental, they likely have insufficient education or understanding to humanely raise and care for a dog.

Inappropriate aggression occurs when either the context is wrong or the degree of force is excessive. For example, most dogs shouldn't and don't savagely attack people when they are surprised or startled. If a dog did so—in the absence of any history of abuse—the behavior would be inappropriate because it's out of context and because the force used would be excessive. If a dog is startled, the person startling the dog might be gently grabbed because the dog is uncertain or afraid. In this case, a gentle grab would not be inappropriate in terms of force.

Whether this behavior is inappropriate in terms of context depends very much on the previous experience of the dog. If the dog is teased frequently, his response may be perfectly contextually appropriate. If the dog is deaf, he might startle quite easily, so using his mouth to gently stop someone and get more information would be wholly appropriate.

2. *"Interspecific" means between species, and "intraspecific" means within species.*

Interactions with those of the same species (dog–dog) may have different rules than those between species (dog–human, dog–cat), so it is important to evaluate the behavior within the context of those specific rules.

For example, dogs play very roughly with their mouths and paws when playing with other dogs. They also have fur and thick skin. Such behaviors—translated to humans in an unedited form—could be injurious to humans. Dogs usually play more gently with humans than they do with other dogs unless humans have been very foolish and have encouraged rough play. Often this happens because the human thinks the rough play was cute in the 10-pound puppy. Later, although the human actively taught the dog to play roughly, he finds the same behavior problematic in the 100-pound adult dog. Unfortunately, it is usually the dog, not the human, who pays for this error in judgment.

3. *Aggression can result in threats or in a contest and either can be paths to some form of resolution.*

Finally, in any altercation, someone ultimately defers and the tone is set for some kind of negotiated truce (e.g., a rule structure by which each side knows what to expect), or there is a battle to death. Because most of our signaling as social species is about learning what the rules are and then checking to make sure this is so, behavior modification should act as a rule structure that specifies context-dependent outcomes. This is exactly what the **Protocol for Deference** and the **Protocol for Relaxation** do: They specify rules by which everyone in the interaction can become more clear and reliable. These rules both treat aggression and help to prevent it.

The Unknown or Unfamiliar Dog

When one considers the potential to be bitten, dogs who are unknown to individuals pose a different set of problems than do those who are familiar to the victim. Most dogs who bite people in public places or in their communities are **not** true strays—they are owned by someone and may be a good pet

TABLE 1

Developmental Stages for Children and Their Effects on Dogs

| Age of Child | Developmental Milestone(s) | Typical Child Behaviors Affecting Dogs | Typical "Normal" Dog Behavior | Diagnoses in Abnormal Dogs That Could Put Children at Risk |
|--------------|---|--|---|--|
| 0-6 months | Reflexive behaviors Sitting up/creeping | New noises: crying, screaming, babbling New smells Grabbing fur, body parts of dogs | Sniffing Licking Avoidance, at first | Predatory aggression Fear aggression |
| 6-24 months | Fine-motor skills improve Crawling/cruising Walking/running Curiosity-exploration | Increased noise/chaos Exploration of dog's body with hands, mouth, teeth | Freezing or avoidance Waiting for food | Fear Fear aggression Pain aggression Food-related aggression Possessive aggression |
| 2-5 years | Autonomy-tantrums Gross/fine motor coordination improves Egocentricity Magical thinking/fantasizing Animism/anthropomorphism New friends enter household | Interactions with dog: • interrupt sleep/rest • fondling • chasing games • removal of toy/food • sharing human/dog food | More distant withdrawal Avoidance Offering of toy Soliciting food | Fear aggression Pain aggression Food-related aggression Possessive aggression Protective/territorial aggression Impulse-control aggression Fear Inappropriate herding behavior |
| 5-9 years | Intense curiosity Experimentation Independence—decreased adult supervision Poor deductive/generalizing powers Desire for control | Interactions with dog: • Teasing • Reprimanding/punishing • Bossing • Roughhousing/tug of war | Curiosity Following Playing with toys Playing roughly Sleeping in specific child's room | Inappropriate play Fear aggression Pain aggression Possessive aggression Territorial/protective aggression Play aggression Impulse-control aggression Fear Inappropriate herding behavior Inappropriate play Play aggression |
| 9-12 years | Increased peer influence Increased sense of responsibility Concrete operations Problem-solving Increased deductive/generalizing powers | Interactions with dog: • may take responsibility for feeding, grooming, exercising • increased teasing/rough play • abusive interaction may begin | Accompanying specific child Aerobic play Sleeping in specific child's room | Impulse-control aggression Fear aggression Play aggression Protective/territorial aggression |

From Love M, Overall KL: *Dogs and children: how anticipating relationships can help avoid disasters*, *J Am Vet Med Assoc* 219:446-453, 2001.

TABLE 2

Warning Signs in Dogs That Can Indicate Distress Associated with Children

- Acute change in a dog's normal behavior (e.g., withdrawal or increased circling and patrol behavior; changes in amount or character of vocalization).
- Change in appetite, particularly if dog will only eat in the absence of the child, or if the dog suddenly shows food-guarding.
- Increased reactivity of pet (e.g., barking, growling, patrolling, lunging in new or lesser circumstances).
- Changes in sleeping/resting activity and locations.
- Changes in behaviors associated with behavioral diagnosis and increase in or appearance of gastrointestinal signs (vomiting, regurgitation, diarrhea) associated with stress.
- Signs of separation anxiety only when left with children (e.g., vocalization, destruction, elimination, salivation, increase or decrease in motor activity).
- Frank aggression—even without a specific diagnosis—in the presence of children.

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TABLE 3

Assessing Damage Done During Aggressive Events

The following scale is an adaptation of one widely used to assess damage caused by dogs during an aggressive event.

| Severity Level | Threat or Bite Characteristics |
|----------------|--|
| 1 | Posturing, growling, lunging, or snarling behavior occurred without teeth touching skin (i.e., mostly mild agonistic, intimidation behavior). <i>Note: These behaviors may be completely normal.</i> |
| 2 | Teeth touched skin, but no puncture wounds greater than $\frac{1}{10}$ of an inch were inflicted. Marks or minor scratches from paws and nails (minor surface abrasions) may have been incurred. Abrasions more likely to be horizontal than vertical. <i>Note: These may be normal behaviors and no-to-minor injury may be normal. The extent of injury is often associated with the amount of movement of the individuals involved and their relative masses.</i> |
| 3 | Punctures were half the length of a canine tooth and resulted in 1 to 4 holes from a single bite. No tears or slashes were incurred, and the recipient was not shaken side to side. Lacerations are in a single direction. <i>Note: Movement and mass matter here because force = mass x acceleration. This consideration should factor into all interactions with dogs, including those involving play (dog-dog and human-dog).</i> |
| 4 | One to 4 holes from a single bite, with 1 or more holes deeper than half the length of a canine tooth. Deep bruising from prolonged pressure and contact results. Contact and punctures were incurred from more than the canine teeth. Tears, slash wounds, or both resulted, and shaking—as evidenced by lacerations in multiple directions—was involved. <i>Note: The extent of damage done in this circumstance may be affected by mass and movement, but also by dog morphology. Jaw size and mass and distribution of jaw muscles matter, and should be a consideration when evaluating to what extent any inhibition could have been involved.</i> |
| 5 | Multiple bites at severity level 4 or greater incurred in a concerted, repeated attack. <i>Note: The context in which this type of bite can occur matters, and dogs who are defending people have been known to exhibit these behaviors. In the absence of any justified context, these dogs are extremely dangerous.</i> |
| 6 | Any bite that resulted in death of any individual (dog, human, cat, et cetera). <i>Note: It is important to realize that dogs will hunt if hungry, and that accidental bites can have fatal consequences. This is the best justification for evaluating the appropriateness of the behavior given the context in which it occurs.</i> |

Adapted from the Association of Professional Dog Trainers website (www.apdt.com); Dr. Ian Dunbar's dog bite scale. An assessment of the severity of biting problems based on an objective evaluation of wound pathology. www.apdt.com/veterinary/assets/pdf/Ian_Dunbar_Dog_Bite_Scale.pdf. Accessed August 3, 2011; and Wrubel KM, Moon-Fanelli A, Maranda LS, Dodman NH: Interdog household aggression: 38 cases (2006-2007), *J Am Vet Med Assoc* 238:731–740, 2011.

for their people, but they are now acting as loose and free-ranging pets.

Some general information about the behavior of free-ranging dogs can help people to avoid bites.

- Dogs in groups may be more confident and more reactive than are single dogs.
- Single dogs may be more wary, but may still bite if cornered.
- Dogs become bolder and more confident if close to their home turf. Unfortunately, if the dog is unknown to the person, knowing where their home turf is can be difficult.
- Dogs can view stares as threats. No one should ever stare at an unfamiliar dog. Oblique, downward gazes allow humans to monitor the dog's behavior while not appearing as a threat.
- Dogs will chase individuals running away from them in one of two ways: as they would chase an intruder or as they would chase prey. In both cases, four-footed animals with large shearing teeth—your basic dog—has all the advantages. Please note that breed may affect how the dog chases: herding breeds may treat running humans as they would animals they are trying to round up and grab them in the same way. Accordingly, *people should not run in the presence of dogs they do not know*. In a situation involving an unfamiliar dog, dogs will almost always pursue someone who runs either away or toward them. If people cease to act like fleeing animals, active pursuit often stops. You have a much better chance of remaining uninjured if you slowly back away from unknown dogs, talk softly, and keep the dogs only in your peripheral vision.
- Children who shriek are far more liable to elicit active pursuit and biting than those who are quiet.
- Throwing stones, sticks, or anything else, or aggressively waving your arms at a dog that is pursuing you is far more likely to intensify the dog's aggression than it is to mollify the dog.
- Young children and older people are more at risk for serious injury than are adults. Individuals in both of these age groups are less likely to be able to successfully retreat from and fend off an attack because they may not be able to move in a coordinated manner, or because they cannot anticipate the event. In fact, the mortality rate for humans in these groups is much higher than for older children and adults who are not elderly and/or debilitated.
- Although it is inappropriate and incorrect to say that certain breeds are more aggressive than others, more damage does occur when larger breeds attack. The greater the size–person mismatch, the more damage that will be done. If the person attacked is a child, the chance of serious, and often fatal, injury increases.

Concerns for Children and Dogs

Children should be encouraged to *not* play with unfamiliar dogs. *Under no circumstance should children play with dogs that are not theirs unless they are supervised by a responsible adult*. This advice is as much for the *dog's protection* as it is for the child's.

Both children and dogs can be unpredictable and the interaction can occasionally be toxic. Many dogs only respond aggressively to a child after an extended period of rough

handling or frank abuse, but the dog will never get the benefit of the doubt.

Children may also not understand that the manner in which they are interacting with the dog is unacceptable and unkind for the dog. An adult needs to teach children appropriate behavior when handling pets. All adults should have a vested interest in protecting their dogs and their children.

Some children understand that what they are doing is provocative, and continue to do so *exactly* for this reason. In such cases, those involved should evaluate the child's behaviors in other circumstances. Animal/dog abuse and child abuse are tightly linked. Children who are exposed to abusers can learn to hone their abuse skills on their pets. Those in law enforcement know that the hallmark of many criminals is early animal abuse and torture. Early recognition and redress by veterinarians, trainers, teachers, those who have dogs, public health personnel, and social service personnel is an essential part of breaking the cycle of abuse. Local humane organizations can provide guidance should one have a question about the suitability of a child–dog interaction. Should the local humane organization be unable to provide such information, the Humane Society of the United States, in Washington, DC, sponsors a program called *First Strike*, which provides guidance in such situations (www.humanesociety.org/assets/pdfs/abuse/first_strike.pdf; www.animalsheltering.org/programs_and_services/first_strike).

If an unfamiliar or at-large dog approaches a child in a public place, the child should tell an adult immediately, and the adult should tell someone responsible for the maintenance of the open space. If the dog is clearly friendly and solicitous, the adult may make the decision to take the dog home, but any dog that is exhibiting any wariness or threat should be avoided if a child is present.

Threat postures in dogs include wide-legged stances with lowered heads, growling and baring of teeth, pupil dilation and staring, and piloerection. *Dogs who wag their tails are only indicating their willingness to interact: they are not communicating that they are friendly*. People should remember that interactions can be good or bad.

How to React If You Think That the Dog Might Be Aggressive

If one is approached by a worrisome dog, one should:

- Not stare at the dog; instead, look at them obliquely out of the corner of your eye.
- Back up SLOWLY, insuring that you do not trip over anything.
- Keep arms and legs to the side—do not flail arms or make sudden bolting movements.
- Talk calmly and soothingly to the dog in a low voice *if* this seems to calm the dog; if the dog intensifies its growl, clearly this was not a good idea.
- Hold oneself as tall as possible.
- Move as directly as possible to a safe area—inside a building or car, behind a truck, et cetera.
- If the human is holding anything, the object should be moved to the front of her body—if she can do so slowly—so that the object can be used as a shield for protection, should the animal lunge. Allowing the animal to take the

object, rather than a body part, can be a survival strategy.

It is no accident that this same advice is given in wilderness situations for handling the approach of wild carnivores, including mountain lions, bears, and wolves. It is good advice and will help here.

Do not assume that because the dog stands still that you can start to run. You can only run if you can get inside a building in 1 to 2 steps—dogs are that fast. Running will trigger a chase response in a dog, and to run you must turn your back on the dog. *Don't do it.* Dogs have 4 feet on the ground and no matter the size of the dog, she can almost always outrun a human. Dogs almost always can overpower or incapacitate a human if they launch an attack.

Following Up

If you successfully avoid an aggressive dog, you cannot just go on with your life. Once you are away from the dog, call for help and wait until it comes. The dog should be evaluated. It may just be someone's scared pet, but everyone in a community will benefit from the evaluation. If the dog is a lost, scared animal, the owners will need to be educated about the risks to stray dogs and how to more humanely maintain their pet.

Practice the above strategies with children. Please remember that children can understand this intellectually far more easily than they can actually put it into action. *For children to have an appropriate "gut" response, they will either have to be older (>12 years) or have practiced the strategies a lot.* Also teach children that if the dog is jumping for them, they should fall directly and silently to the ground, curl up in a ball, and cover their head with their hands and arms. Kids should be taught to look like armadillos when threatened by advancing dogs. This is also good advice for anyone who accidentally trips during the process of getting away from the dog.

Finally, if the dog makes contact with you, stay calm, stay silent, and *do not get into a tug of war over any of your body parts.* This last piece of advice is difficult to enact, but it is important. In situations involving actual bites from dogs, the majority of the damage is done when a person tries to pull their arm or other body part from the dog's mouth. The dog's innate response is to tighten their hold with their jaws and to shake the victim. These last two behaviors are the prime culprits in profound attacks that result in debility and death. Be calm; once the dog releases her grip, follow the above instructions and try to get away.

If children are grabbed by a dog, *do not* struggle with the dog for the child as the child will be further injured. Instead, look for something to throw over (a blanket) or at (a bucket of water) the dog to get the dog to stop the behavior. Be calm and quiet. Try to distract the dog. If you are successful with this advice the outcome may still be awful, but it will always be a lot worse if you get into a physical contest with the dog.

Known Dogs

Known dogs, in this context, are defined as dogs who are known to have an aggression problem and who may pose a risk to the people who live with them. For information on teaching children appropriate behavior when interacting

with dogs who have no behavioral problems, please consider using the Blue Dog interactive DVD and booklet (www.thebluedog.org).

The first step in the treatment of any canine or feline aggression is to avoid *any* circumstances that are known to be associated with aggression. This means that you are responsible for protecting children and unsuspecting friends from your dog.

- If safety requires that the dog be banished when people come to visit, banish the dog. You will feel worse if your dog mauls a child than you will if the dog spends the day in the bedroom.
- If the visiting children are going to run free, the bedroom in which the dog is placed must be locked. The best lock is one that children cannot reach and that acts as a physical reminder to humanely protect the dog behind a locked door. This can be as simple as a hook-and-eye latch or a slip bolt placed at the very top of a door.
- Remember that kids, too, can be unpredictable. You should assume that if your dog has an aggression problem, you cannot take a chance with that aggression and with people whom the dog does not know. Dogs become more reactive when people are excited, and problem dogs, in particular, become more reactive in unfamiliar, noisy circumstances. Who cares if you never find out if the dog would have been good with the children? Minimize the cost of error and blunt your curiosity. A little common sense and a sane, disciplined approach can save a lot of heartbreak. Have an unyielding rule structure for managing and protecting your problem dog. For example, your rule might be, "When there is a child in my house the dog is always behind a locked door, the child is told not to approach the door and is monitored so that they do not do so."

You must protect yourself from your pet's aggressions by learning to give the pet cues that will encourage appropriate behavior. This means that you have to change your behavior in order to change the pet's behavior. Although it is true that you did not cause the pet's problem, you are responsible for managing it, and you are an essential part of fixing it. This means that if you know that your dog is more aggressive when he is allowed to sleep on your bed, the dog is no longer allowed to sleep on the bed unless you can ask the dog to get off the bed and lie down, **and** the dog complies willingly without complaint or threats. If you cannot ask the dog to get off the bed without being threatened, the dog cannot be in the bedroom because he will always be at risk.

If you know that the dog growls every time you groom or pet the dog, you must avoid grooming or petting until the dog can lie down and relax for this. Use of a head collar can hasten this response and render the dog safe. *Under no circumstances must you ever believe that in order to make progress in changing your pet's behavior do you have to put yourself at risk.* This is absolutely wrong.

Please remember that dogs read body language much better than we do and will pick up on any uncertainty. Whether they can smell "fear" is beside the point—aggressive dogs will exhibit aggression in the face of any uncertainty because it is scary for them. Here, it is important to really understand that almost all aggression in dogs and cats is based in underlying anxiety or uncertainty. This is not about winning or losing—it's about understanding the situation and doing as little harm as possible. So many canine

aggressive behaviors are about obtaining information from the human about whether the human is a threat. If you hesitate, the dog can view this behavior as one signaling uncertainty or a potential threat and may provoke the situation further either to get additional information or to control you so that you cannot hurt the dog. If this sounds like some kind of strange, reverse logic, that's because it is: *by definition, dogs with aggressive and anxiety disorders are not normal. Expecting them to act as they are will only cause trouble.*

If you cannot be calm, confident, and patient when working with the dog, you will have a low probability of changing the dog's behavior. Each and every time that a dog or cat with a problem behavior exhibits the inappropriate or aggressive behavior, these behaviors are reinforced and become better "learned." Whether the behavior is normal or abnormal, desirable or undesirable, the pet learns how to do the behavior better with exposure, experience, and repetition. There is now excellent molecular evidence to support this pattern, and the fact that by doing so, the basic neurochemistry surrounding the response is also altered. Hence, avoidance is key.

If you do everything right and the dog still threatens you, back off just as is described above for unknown dogs. People who have dogs with *known aggression* problems have an advantage over the situation above, though: You can keep devices like blankets, water pistols, air horns, spray canisters, full seltzer bottles, et cetera near you or in the room where you interact with the dog so you can distract the dog or protect yourself. If you ask the dog to sit, whether part of a behavior modification program or not, and the dog begins to growl or otherwise become aggressive, you should gently try to get the dog to relax using verbal request. If this does not work, release the dog without a reward and slowly back away. It is far better to ignore the dog than to struggle to "win" or "dominate" the dog. You will succeed at doing neither.

If you are consistent, the dog will ultimately approach and be willing to exhibit deferential behaviors in exchange for a request. In extreme cases, this can take days. The dog has to learn that (a) no harm will come to him—that you are not a threat, (b) that you are consistent in providing information that you are nonthreatening when threatened, and (c) that if the dog exhibits appropriate and deferential behavior, such behaviors will be rewarded.

If the dog continues to threaten you and avoidance does not elicit deference, leave the dog alone in an enclosed area. Sometimes just letting the dog into the backyard can interrupt the aggression. It's perfectly acceptable to keep the dog behind a barrier for as long as is necessary for the dog to calm. This time may also help you to acknowledge and set aside feelings of hurt, fear, mistrust, and anger. Your dog has a problem and cannot be held to some of these standards.

If you are determined that the dog will get as well as he can, understanding that you might never have a "normal" dog, the dog will improve. This isn't magic: People who understand how abnormal and distressed the dog is have unconsciously vowed to protect themselves from the dog and the dog from popular opinion, and have made the decision to find a rule structure that will help the dog improve to the extent possible.

If your dog bites you, **freeze** and do not struggle with the dog—you will lose. Go limp, look away, become small and quiet, and slowly retreat at the first opportunity. Most severe

damage is done as humans try to pull away from dogs that are biting. Most dogs do not repeatedly bite.

Remember that the term "bite" is usually poorly to un-defined. Dogs do not have hands and opposable thumbs. They cannot hold you to stop you with anything other than their teeth. Humans should not be complicit in making any injury worse than it needs to be.

It is normal to feel anger and a sense of disappointment and betrayal, but dogs with aggression problems cannot respond rationally to those feelings. Leave the dog alone to be quiet. Do not punish the dog physically no matter how angry or hurt you are—this will only make things worse. Get any required medical care, and then calmly approach the dog again using the deference and relaxation measures that the dog has been taught.

If you are either too fearful or hurt to do this, or you no longer want to work with the dog after such an event, the prognosis is poor. The vast majority of dogs can improve but there are not as many "special needs" homes as there are "special needs dogs." Please do not make any decision to relinquish the dog just after there has been a bite. Instead, if you are uncertain as to whether you can keep the dog, board the dog for a few days to see what it is like to be without the dog. Quarantine for bites—even for rabies vaccinated dogs—is 10 days. This is adequate time to observe the dog's behaviors and your feelings and capabilities, and to decide if the dog can humanely improve in your home. Interestingly, most dogs can improve, and the amount of improvement that they can experience is limited only by our understanding, ability to protect them, and investment of time and effort.

Poor prognosticators, however, include the following:

- people who want to blame the dog,
- people who have an idealized version of the dog and expect that the dog "should" behave in a specific manner,
- people who cannot or will not take the precautions recommended above or who cannot or will not learn to read the dog's signals,
- people with lots of other stressors in their life—these dogs can be, but don't have to be strains on marriages and family relationships,
- people who are caught in a cycle of anger and fighting within the family that always seems to revolve around the dog and the dog's behavior,
- people who have ill-behaved or unsupervised or unsupervisable young children,
- people who have a family member who wants the dog dead or out of the house,
- people who live in very reactive, unpredictable households and environments, and
- people who have seriously considered putting down the dog and entertain this thought in most or all discussions involving the dog.

Notice that all of these factors involve the people. One of the remarkable findings of an analysis of more than a decade of cases involving canine aggression is that no matter how awful the dog was, if the people were committed to helping the dog become less distressed, the dog improved. Furthermore, the single best indicator that the dog would be put down was that the people had seriously considered it. Dogs don't get a vote here, and these findings should give pause to everyone concerned about the well-being of dogs and the safety of their humans.

Finally, anyone who has dogs in the United States should keep a copy of their rabies certificate in a safe place. If your dog bites someone, the tag on his collar is not sufficient legal proof of definitive vaccination. That tag is important, and your dog should wear one, but it only indicates the year in which the vaccine was given. This year is imprinted on the tag, and the tags are encoded by color and shape for year, should the engraving become illegible. Different states/jurisdictions have different rules for age at first vaccination and frequency of vaccination. Additionally, there are annual and triennial vaccines. The reason the tag is not sufficient, should there be a problem, is that no one can tell if the dog had a 1- or a 3-year vaccine, and when in the calendar year that vaccine was given. This is why the certificate, which is dated and specifies the type of vaccine, is so important. The veterinarian who vaccinated your pet will almost always keep a copy of the certificate, but yours should be kept someplace safe, where you can find it if you need it. Some of the newer electronic tags will allow you to include this information, but it may still have to be verified

by your vet. If you have a dog who is aggressive for any reason—even if she exhibits aggressive behavior only when protecting your house and you think this is normal and acceptable—you may wish to make a copy of the certificate and keep it at your office, while leaving the original at home.

In addition to the problem surrounding proof of rabies, anyone with a problematic pet (and actually anyone with a dog) needs to review her insurance coverage at least annually. Umbrella or catastrophic policies can be added to most home owners' or other coverage plans at a very low price if nothing disastrous has happened. If something disastrous should happen (e.g., your dog bites and injures someone, whether the bite was appropriate or not), these plans can preserve your financial security, and can act as a buffer so that your home owners' insurance is not canceled.

Liability and legal issues are awkward to consider, but important. Treatment is not a guarantee that a dog will not bite, but what is learned by both parties in the course of treatment can humanely minimize risk for everyone.