Quick Reference

Dog Normals:

Temperature (rectal): 100 F – 102.5 F
Heart Rate: 60-120 beats per minute
Respiratory rate: 12-30 breaths per minute

How to take a heart rate:
Count the number of beats of the heart or a pulse in 30 seconds and multiply by two.

The heart beat can usually be felt on the left lower side of the chest where the elbow touches chest when the arm is moved back. It can also be felt at the femoral artery.

Respiratory rate:
The respiratory rate is counted by measuring the number of breaths (an inhalation and exhalation) in 30 seconds and then multiplying by two. Ideally the respiratory rate is measured when the dog is at rest. A true respiratory rate cannot be counted when a dog is panting.

When is it an emergency?
Temperature < 97 or > 104
Heart Rate <40 or >160 (at rest)
Respiratory Rate > 40 (at rest) or any time pet is having difficulty breathing.

Wilderness First Aid for Your Dog
Presented by SAGE Veterinary Centers

First Aid Kit Supplies

- Antiseptic wipes or wound cleaner
- Antibiotic ointment
- Tweezers
- Safety pins
- Slip leash
- Bandage materials – non-stick or absorbent material (sanitary pads), Telfa, gauze, cast padding, cover material (vet wrap or co-band), tape (including porous tape), Ace bandage
- Eye wash
- Benadryl
- Thermometer
- Lubricant/Vaseline
- Styptic powder
- Razor or scissors
- Consider asking your vet for antibiotic eye ointment, NSAID pain reliever
**Do’s and Don’ts:**

*Do* know your dog’s medical history, especially any major problems, medications or supplements.

*Do* know where you can take your dog in the event of an emergency.

*Don’t* give over the counter meds without consulting a vet. Many pain medications can be toxic to pets in various doses or have an increased risk of side effects as compared to drugs designed for dogs.

*Don’t* believe everything you read on the internet – examining the source is important.

**Overall Assessment of Your Dog**

**Eyes:** Look for unequal pupils, redness, green/yellow discharge, cloudiness, squinting.

**Ears:** Check for redness inside the ear, pain when touched, itchiness, head shaking.

**Nose:** Check for persistent sneezing, opaque discharge, bloody discharge.

**Mouth:** Look for drooling, blood-tinged saliva, an inability to close the mouth. Gums/tongue should be pink (not blue/purple, very pale or white, or brick red).

**Gait/limbs:** Check to see if pet is walking abnormally, limping, showing stiffness, having difficulty rising, has pad abrasions or injuries between toes

**Rest of body:** Look for wounds, hives, swelling, discharge, distended abdomen, bruising, and redness.

**Restraint/muzzling**

All dogs can bite when scared or in pain.

**Muzzling:** You can use slip lead or gauze if you don’t have a muzzle. Here are two methods for using a slip lead to muzzle your dog. Consider practicing it with your dog so it won’t be scary.

**Restraint:** It can be easier to evaluate or bandage your dog when another person is available to help. Here are two ways to restrain. Basic obedience training and getting your dog used to being handled in unusual ways can also make it easier and less stressful in the event of an injury.
Common Injuries

Foxtails or grass awns
These are prevalent in California and may cause swellings where they penetrate and migrate through the skin.

Foxtails can also get stuck in the eyes, ears and nose or be inhaled into the lungs. Avoidance is the best method and quick removal of any foxtails on coat.

Pad or feet injuries
Abrasions or lacerations to the paw pads are common injuries and can be very painful.

Prevention: Wear dog booties or use a salve/cream when on ice/snow, hot rock/aspalt, or rough terrain. Salves such as Musher’s secret or PawZ are anecdotally reported to be effective.

Abrasions can be treated with rest, booties, cool water, and topical salve/cream.

Pad lacerations need medical attention.
Lacerations generally need to be closed with sutures (stitches) and may require a splint to take pressure off the healing pad. If left without intervention, they may close eventually, but will likely take much longer and be prone to re-opening when the dog uses the paw.

Lameness
Lameness = limping = pain

Dogs that are putting less weight on a limb are doing so because it hurts. The common reasons for lameness are injuries or wounds to the feet/pads, strains or sprains, ligament damage (most commonly this is the cruciate ligament in the knee, similar to people). Less common but more severe would be joint or bone injuries like fractures (broken bones).

Mild lameness: Dog is still using the leg and putting some weight on it. Check paw pads, between toes, and toe nails. Treatment for mild lameness is strict rest, an ice/cold pack if you can identify the site of pain, and consider an anti-inflammatory pain medication if available. Please consult with your veterinarian before starting.

Some mild lameness/stiffness is not uncommon on day 2 or 3 of trips if the terrain was rough or your dog is not at their peak fitness. Some dogs may warm up through this type of lameness, but be cautious in pushing your dog and worsening the problem.

Options when you are on the trail and your dog starts limping are to reduce/take away any weight they are packing, cut short the hike or mileage for that day, put them on the leash, carry them (depending on size).

Moderate to severe lameness: Toe touching or non-weight bearing on the limb. The hike/trip should be aborted and the dog should see a veterinarian.

Skin wounds
It’s very important to keep the dog from licking wounds as this increases the risk of infection

Mild wounds or abrasions: Clean well, try to cover, monitor 1-2x daily for worsening redness, swelling, pain or discharge.
Punctures: Higher risk of infection as they are harder to clean well and tend to seal quickly. Try to clean/flush thoroughly if possible, depending on location. Cover the wound if possible. Wash scabs off to keep wound open/draining for several days. Monitor for signs of infection.

Lacerations (through all layers of the skin): These may be gaping. Clean well, control bleeding, cover if possible, and seek veterinary care.

Insect bites
Biting flies can be bothersome or irritating to dogs’ eyes and mouths.

Ticks: Pull it out with gentle/firm pressure. It’s not a major problem if the head gets left in. Ticks can cause some local redness/irritation at the site. Please just gently clean it and monitor.

Bees/wasps: Dogs can have allergic reactions. If you can find a stinger, you can remove it using a stiff plastic edge (credit card), but they can be very hard to find within the hair.

Allergic reactions
These are generally mild; can rarely progress to difficulty breathing or anaphylaxis. Reactions can result from anything in the environment or foods. Common signs are facial swelling, hives, itching, and red skin. Some dogs may have vomiting.

Give 1mg/pound Benadryl (diphenhydramine) by mouth every 8 hours.

If the signs worsen or the dog is uncomfortable they should be seen by a veterinarian. If there are multiple episodes of vomiting, weakness, collapse, pale/white gums or a fast heart rate, then it is an emergency and may be true anaphylaxis.

Eye injuries
Signs of an eye problem include: squinting, excessive tearing, green/yellow discharge, cloudiness, rubbing/pawing at the eye, redness around the eye, swelling around the eye, or an elevated third eyelid.

Problems with the eye, particularly the cornea (the outer, clear layer of the eye), have the potential to worsen quickly and should be evaluated by a veterinarian.

Prior to seeking veterinary care, you can rinse the affected eye with an eye wash/saline solution. If you have an antibiotic eye ointment in your first aid kit, that can also be applied. If your dog is rubbing/itching at their eyes an E-collar (cone) should be used to prevent them from worsening the injury.

Basic Bandaging/Splints
What is the purpose of a bandage?
• To cover a wound
• To apply gentle pressure to control bleeding
• To provide support
• To be used in combination with a splint to immobilize a limb

Bandages generally have 3-4 layers. The first layer is a non-stick or absorbent layer (Telfa pad) used to cover any wounds. The second layer is primarily padding to provide support. The third layer is gauze and is generally used to compress and even the bandage. The outer layer can be Vet Wrap, CoFlex, or an Ace bandage and is used to help keep the bandage clean and dry.

General Bandaging Rules:
• If bandaging a limb, make sure the bandage extends all the way to the toes, even if that part of the leg is unaffected. Leaving the foot or toes unwrapped, with a bandage above them, can increase the risk of swelling and circulation damage to the foot.
• If the bandage gets wet, change it.
• If blood soaks through a bandage, do not remove it. Add more bandage on top of it.
• When a bandage is in place, check toes frequently for pain, swelling, or coldness.
## Bandaging Quick Reference

Bandaging supplies shown here:

- Telfa pads
- Tape (porous)
- Cast padding
- Gauze
- Vet wrap

### Step 1.
Start by applying porous tape stirrups to either side of the limb. The tape should hang at least 3 inches past the toes. Do not apply tape to the wound.

![Wound](image1)

### Step 2.
Apply a Telfa (non-adherent) pad to the wound.

![Telfa pad](image2)

### Step 3.
Apply the cast padding layer, starting from the toes and rolling up. Multiple layers (between 4-5) should be applied until adequate padding is achieved in a uniform fashion.

![Cast padding](image3)
### Bandaging Quick Reference

<table>
<thead>
<tr>
<th>Step 4.</th>
<th>Apply the gauze cling layer, starting from the toes and rolling up. The gauze cling layer should be secure, but not too tight. Applying the gauze too tightly can cause swelling.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 5.</td>
<td>Twist the tape stirrups from the bottom and pull up to secure on the gauze cling layer.</td>
</tr>
<tr>
<td>Step 6.</td>
<td>Apply the VetWrap (or Ace bandage), starting from the toes and working up until you have covered the cast padding and gauze layers. VetWrap should be secure, but do not pull with tension, as this can cause swelling.</td>
</tr>
</tbody>
</table>
Basic Bandaging/Splints, continued

Bandages can easily become dangerous. If they are placed too tightly, they can cut off blood supply to areas of the body. If they get wet/damp, they can cause skin damage or increase the risk of infection. If splints are placed incorrectly, they can cause pain or worsen the injury.

Splints are placed if the limb is unstable from a broken bone. Breaks to the upper arm (humerus) and upper leg (femur) cannot be splinted. Limbs can be immobilized with branches, tent poles, folded towels or blankets, and pillows. In general, if you feel you need to place a splint, the whole leg must be immobilized. That means the splint should cover the joint above and below the fracture.

Environmental Injuries – Heat

Burns: Most dogs are resistant to sunburn although it can happen to those that are hairless, shaved, or that have white hair, especially on their muzzle/nose and belly.

Thermal burns can happen from cookware, stoves or fires, or from dogs walking on sun-exposed rock. When dogs experience thermal burns, the signs are often very subtle and because of their skin thickness and hair, it can take days to weeks for significant signs to develop. They may have some redness or other color change to the skin, blistering is rare. The most common initial sign is pain and the burned area may feel thick or raised to the touch.

Hyperthermia: Elevated body temperature. This occurs when dogs are unable to dissipate heat (cool themselves) in a hot environment. The classic example is the dog that overheats when left inside a car, however it also occurs in dogs that are working/exercising. There is increased risk of hyperthermia occurring in dogs that are older, are overweight or unfit, in high heat or humidity, in areas of poor ventilation, are brachycephalic dog breeds (those with squished faces), or are dogs with underlying disease, especially airway disease.

The signs can range from mild (heat exhaustion) to severe and life-threatening (heat stroke). It is important to remember the dogs with high drive will continue to be active. They do not self-regulate and only their owners can prevent heat injury from occurring.

Mild hyperthermia (heat stress and exhaustion): Generally, these dogs have rectal temperatures between 103-105° F. Signs can include: thirst, seeking shade/cooler areas, anxiety, excessive panting that does not improve, weakness, bright red gums/tongue, decreased urination, or very dark/brown urination. For mild hyperthermia, stop exercise and cool by soaking hair with water. Encourage drinking, but do not force water orally. If available, apply a fan, move to air conditioned/cooler environment. Stop aggressive cooling when the temperature is 102° F.

Heat stroke: Severe hyperthermia will cause organ damage and mental changes; generally dogs will have temperatures greater than 106-107° F. Signs include: excessive panting, weakness, collapse, brick red gum color, high heart rate, vomiting, bloody diarrhea, or they appear dull or confused. For heat stroke, cool by soaking hair with water, apply fan and move to a cooler environment. Seek veterinary help immediately. Prognosis is dependent on the length of time the temperature is elevated and degree of organ injury, but survival can be as low as 50%.

Environmental Injuries – Cold

Hypothermia: Low body temperature. This is a less common problem in dogs. It is more likely to occur in short coated breeds, those that are underweight, or those that get wet in cold temperatures. There is a range of severity. Mild hypothermia is temperatures of 98-100° F, moderate hypothermia is 92-97° F and severe is temperatures <92° F. Signs can initially include shivering that does not stop but as hypothermia progresses, shivering goes away. Other signs include: weakness, collapse, low heart rate, pale gums. Treatment is to dry and warm them gently. Do not use electric heaters or pads.

Environmental Injuries – Altitude

Dogs can experience difficulties with altitude much like people. It is more common for this to occur at higher elevations (>6000-7000ft.) and with exercise. Signs may be fatigue, exercise intolerance, weakness, increased rate of breathing, or difficulty breathing. Rarely altitude sickness can manifest as severe difficulty breathing and brain swelling. The only effective treatment is to descend from the altitude.
Toxic Mushroom Quick Reference
A variety of species of mushrooms can be toxic to dogs (and people). The signs depend on the species of mushroom and can range from stomach upset to tremors and neurologic signs, or liver failure and death. The most toxic mushrooms are those in the Amanita group. They initially cause vomiting and sometimes diarrhea. Then, 1-3 days later, they cause liver failure, which can lead to death. There is no rapid test to tell the difference between highly toxic mushrooms and those that are not. Because the species of mushroom is usually unknown, aggressive treatment is often recommended to be “better safe than sorry.”

**Amanita Phalloides**
These mushrooms are associated with trees. They usually live near oak trees.

**Lepiota**
These mushrooms are small, with pink-brown scaly cap, white gills and spores. They can grow in lawns and in the forest and are not associated with trees.

**Galerina autumnalis**
This mushroom is a brown-spored mushroom found growing on wood, branches and woodchips with a small ring on the stipe.

**Pholiota**
This group of mushrooms are a brown-spored species. They grow in soil, and are slender, with a flat to conical cap, and ring on the stipe.
Toxicities, continued

**Human medications:** Do not give them unless advised by your veterinarian. Many medications that are safe in people can be toxic or have side effects in animals. DO NOT give any over the counter pain medications (Advil, Tylenol, Naproxen).

**Chocolate:** Chocolate can be toxic to dogs, although this is dependent on both the type of chocolate ingested and the amount. Chocolate contains substances called methylxanthines. Types of chocolate in order of increasing toxicity are: white chocolate > milk chocolate < semi-sweet < cocoa powder < Baker’s chocolate < cocoa beans.

**Grapes/raisins** are toxic in some dogs. The toxic principle is unknown and it only seems to affect some individuals. Some ingestions result in kidney failure.

**Macadamia nuts** cause neurological weakness/rear limb collapse.

**Sugarless gum or peanut butter** with Xylitol lowers glucose. Xylitol can also cause liver failure.

**Treatment:** Please contact a veterinarian or poison control before trying to make a dog vomit. It is sometimes worse to make them vomit. Vomiting can be caused at home with hydrogen peroxide at a dose of 1ml/pound. Vomiting can also be induced by a veterinarian more effectively with other medications. **Do not give multiple doses of hydrogen peroxide as this can irritate/damage the stomach.**

If you are ever concerned about a possible toxicity, you can call an animal poison control hotline for more information/advice. There is a charge for these calls.


**Marijuana**

Marijuana can be toxic to dogs, as can synthetic cannabinoids, edibles and Tetrahydrocannabinol (THC) preparations containing high concentrations of THC. Signs of marijuana toxicity include ataxia (loss of control of body movements), dilated pupils, dribbling urine, hyperesthesia, tremors, seizures and coma. The toxic dose is very small and can be ingested or inhaled. If your pet gets into marijuana, immediately contact your veterinarian or the animal poison control hotlines above.

**Wildlife**

**Snakes**

On the West Coast, the most common type of envenomation is due to rattlesnakes. Snake venoms contain a variety of enzymes that break down muscle and skin, anti-coagulate the blood, and sometimes affect the nervous system. Every snake bite is different because composition of the venom is variable between snakes and the amount of venom in each bite can vary.

Up to 20% of snakebites in people may be “dry,” meaning they contain no venom, and this is likely true in dogs. The severity of snakebites in dogs depends on the amount of venom injected and the site of the bite. Dogs that are bitten on the head and neck are most seriously affected because the venom effects breathing.

Snakebites can result in death. Treatment for snakebites depends on the signs, but is often supportive with the mainstays being IV fluids and pain control. For moderate to severe envenomation, the only proven treatment is antivenin.

The best thing you can do for a dog with a snake bite is keep them calm. If you can carry them, that may help, but don’t let them run or exert themselves. If possible, elevating the bitten area above the level of the heart (for limbs) may also
help. DO NOT apply ice, tourniquets, or suction devices. None of these have been proven to improve outcomes and they all have the potential to cause harm.

**Spiders**
Venomous spider bites are possible in animals, but challenging to diagnose as they are often not witnessed. Black widow spiders are present in California and the primary signs associated with a bite are extreme pain and, potentially, muscle cramping and paralysis. Cats are thought to be more commonly affected than dogs. Brown recluse bites can cause severe wounds as a result of tissue death, but there are no brown recluse spiders in California.

**Other wildlife:**
Other wildlife can also injure dogs. Porcupine quills can be very painful, challenging to remove, and can migrate to other areas of the body. Deer or elk can cause trauma if they kick dogs. Birds of prey can be dangerous to small dogs. Rarely, larger predators can attack dogs.

**Trauma**
Trauma can be from blunt force (such as from a fall or being hit by something) or penetrating (such as impalements). Depending on the degree of trauma and the location, these types of injuries can be life-threatening and you should seek veterinary care as soon as possible.

**Head trauma:** Fortunately, dogs are very resistant to head trauma due to the large amount of bone/muscle around their brain as compared to people. Signs of head trauma in the dog can include: mental dullness, abnormal behavior, seizures, or unequal pupils. Until you can get to a veterinarian, you can elevated the head about 30 degrees, avoid placing any pressure on the neck, and cool or ice pack the head.

**Chest trauma:** Can result in bruising to the lungs or leakage of air from the lungs (pneumothorax). Signs can include difficulty breathing, shortness of breath, rapid and shallow breathing, very pale or blue/purple gums and/or tongue. If there is an impalement injury (such as with a stick), do not remove the object if at all possible. Pack around the area for control of bleeding and place a supportive bandage. Use caution to not make chest bandages too tight as they can impede breathing.

**Abdominal trauma:** Blunt trauma can result in rupture, bleeding, or damage to internal organs. Signs can be subtle and can be delayed for hours, sometimes up to several days. Signs can range from bruising, pain, abdominal distention, shock, weakness, or collapse. Penetrating trauma to the abdomen should be treated similarly to the chest. If tissue is extruding from any wounds, apply lube to keep the tissue moist and cover the area. Any impaled objects should not be removed if possible.

**Severe bleeding:** The most common arteries lacerated are those on the feet or limbs of the dog. Arterial bleeding is characterized by spurting or pulsing blood. Bleeding from large veins is more often pooling. The mainstay in bleeding control is to apply pressure continuously for 15-20 minutes (refrain from checking). If the bleeding is arterial that cannot be controlled by compression, then consider a tourniquet. Application of a tourniquet should be used sparingly because cutting off the blood supply for greater than 20-30 minutes can result in damage to the tissue or even loss of the limb. If a bandage is placed over a site of bleeding and the wound bleeds through to the top layer of the bandage, do not remove the bandage. Simply place more padding/bandage on top of the original wrap.

**Bleeding tail:** Use a non-stick pad, cling gauze, tape, and apply pressure for 5 minutes. Tape to leg for a few hours to a day. Undo for defecation.
Ear lacerations: Place Telfa on wound, use a sock with a hole for the good ear (see photos below). It’s OK to tape it on.

Emergency Transport
Use trekking poles and zipping garment or sleeping bag.

Contact SAGE Veterinary Centers
Campbell
907 Dell Ave.
408-343-7243

Concord
1410 Monument Blvd.
925-627-7243

Dublin
7121 Amador Plaza Road
925-574-7243

Redwood City
934 Charter Street
650-417-7243

www.sagecenters.com

1-888-711-7243 (SAGE)

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