

Emergency Animal Care



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Video

Why We Do What We Do

Photo Documentation

- **Take photos of your patient every step of the way**
 - Better to have too many photos than too few
 - A picture is worth a thousand words to a jury
 - A picture is evidence
 - Date and time stamp automatically if possible
 - Even take photos of x-rays, ultrasound and other test results at the vet

Bleeding and Wounds

- **Blood loss of >50% of the blood volume over a short period of time can be life threatening**
- Blood volume is 10% of body weight in dogs and 7% in cats.
 - 50 pound dog = 22.7 kg = 22.7 L
 - Blood volume is 2.27 L
 - Blood loss of 1.135 ml (about 2 pints) is life threatening
- 10 pound cat = 4.5 kg = 4.5 L
- Blood volume is 0.45 L
- Blood loss of 227 ml (7.5 ounces) is life threatening

Bleeding and Wounds

- **Blood loss can be internal or external**
- Signs of internal bleeding
 - Swelling of the abdomen, with a palpable fluid wave
 - Pale gums
 - Legs, ears and tail cool to the touch
 - Difficulty breathing, distressed
- External bleeding is not always obvious
 - Bleeding into the urine or stool
 - Coughing up or vomiting blood

Bleeding and Wounds

Steps to stop external bleeding

1. Muzzle the dog to avoid being bitten
2. **Direct Pressure**
 - Apply a clean, absorbent material to the bleeding wound and apply firm pressure
 - Gauze, a clean cloth or feminine sanitary napkin can work well
 - If the blood strikes through, add more layers of absorbent material on top
 - Use vetrap to hold in place to free up your hands

Bleeding and Wounds

Steps to stop external bleeding

3. If that fails, add **Elevation**

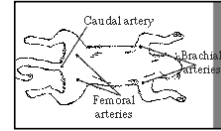
- If the wound is on an appendage, elevate it above the level of the heart
- Works better with larger animals
- Won't do much for a Chihuahua

Bleeding and Wounds

Steps to stop external bleeding

4. If that fails, put **pressure on the artery** supplying blood to the wound

- *Tail* – caudal artery
Under the tail base
- *Front leg* – brachial a.
In the armpit
- *Back leg* – femoral a., in the groin area



Bleeding and Wounds

Steps to stop external bleeding

5. If all else fails, and the bleeding is on a limb or the tail, **apply a tourniquet**

- Only if life threatening bleeding can not be stopped any other way
- Usually blood is spurting
- Wrap a 2-inch or wider piece of cloth around the limb twice and tie a half knot
- Tie a short stick into the knot (Bic pen works fine)
- Twist until the bleeding stops

Bleeding and Wounds

Steps to stop external bleeding

5. If all else fails, and the bleeding is on a limb or the tail, **apply a tourniquet**

- Secure the stick with another piece of cloth and write the time on the cloth
- Loosen the tourniquet for 15-20 seconds every 20 minutes – record these also
- Tourniquets can cause damage severe enough to require amputation

Bleeding and Wounds

Fracture Types

- **Closed Fracture**
 - Skin over the fractured bone is intact
 - There is no related external wound
- **Open Fracture (aka compound fracture)**
 - Fracture is associated with an open wound
 - You may or may not be able to see the bone

Bleeding and Wounds

Soft Tissue Injuries

- **Dislocation**
 - Tendons and ligaments that make up the joint are torn
 - The bones normally connected by a joint are no longer connected normally
- **Sprain**
 - Injury to a joint, ligament or tendon in the area of a joint
 - Partial tearing or stretching of these structures without dislocation or fracture

Bleeding and Wounds

- Cover open fractures with sterile gauze moistened with sterile fluids
- If you don't have sterile gauze and fluids, clean absorbent material and water are next best
- Keep dressing in place with vetrap
- Place the pet in a carrier to prevent them from moving around too much
- Splinting usually causes more harm than good

Bleeding and Wounds

- **DON'T flush** open fracture wounds, as this can drive contaminants deeper
- **DON'T try to push a protruding bone** back into the wound to cover it
- **DON'T give any over the counter pain medications**
 - Ibuprofen and naproxen (Aleve) are deadly to dogs
 - Tylenol can cause more moderate problems in dogs, and is very toxic to cats

Bleeding and Wounds

Eye injury

- **Signs of eye injury**
 - Won't open the eye
 - Pawing at they eye or rubbing face on the floor
 - Abnormal appearance of the eye
 - Excessive redness of the white part of the eye (sclera)
 - Eyelid can not cover the eyeball

Bleeding and Wounds

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Bleeding and Wounds

Eye injury

- **Of the eye is bulging out of the socket (proptosis)**, keep it moist with contact lens solution until you get the dog to a vet
 - KY Jelly will work, or clean water if that's all you have
 - Obviously this is an emergency if it has just happened, and shouldn't wait until the next day
 - DO NOT try to push the eye back in (this requires deep sedation to achieve without injury to the eye)

Bleeding and Wounds

Eye injury

- **If an irritating chemical gets in the eye**, gently flush with body temperature water for 15 minutes
- **Apply an e-collar** if possible to prevent self trauma during transport
- Acute injuries to the eye should always be seen right away – don't delay even a few hours
- If the injury is old and the eye is already dried out, it's probably not an emergency

Shock

condition resulting from a depressed state of many vital body functions caused by a lack of effective circulation

- Shock is life threatening and requires immediate attention to prevent organ damage
- Many causes of shock, but the most common in animals is trauma

Types of Shock

- | | |
|---|--|
| Anaphylactic Shock <ul style="list-style-type: none">• allergic reaction | Neurogenic shock <ul style="list-style-type: none">• Brain and/or spinal cord problem |
| Cardiovascular Shock <ul style="list-style-type: none">• Heart Failure | Septic Shock <ul style="list-style-type: none">• Overwhelming infection |
| Hypovolemic Shock <ul style="list-style-type: none">• Dehydration• Hemorrhage• Low blood protein | Traumatic Shock <ul style="list-style-type: none">• Due to pain |
| Hypoxic Shock <ul style="list-style-type: none">• Can't carry oxygen• Anemia• Hemoglobin problem• Respiratory failure | Toxic Shock <ul style="list-style-type: none">• Due to inflammation and toxins |

Shock

Early signs of shock

- Either excitement or lethargy
- Rapid heart rate, but pulse not difficult to find
- Gums may be normal or pale

Shock

Late signs of shock

- Gums pale or even bluish
- Pulse weak, and difficult or even impossible to find
- Heart rate is high, and then slows as death approaches
- Ears, tail and limbs cold to the touch
- Body temperature below normal (<98°F)

Shock

Late signs of shock

- Respirations can be slow or rapid, shallow or deep
- Eyes may seem glazed over
- May not be completely alert
- Mental alertness deteriorates from depression to stupor to coma

Shock

First Aid for Shock

- Start CPR if indicated and if trained
- Place IV catheter if trained to do so
 - If heart murmur, no fluids
- Treat wounds and stop bleeding
- Cover to preserve body heat
 - Apply mild heat of body temperature low
 - Take care not to burn
- Immediately transport to a vet

Shock

First Aid for Shock

- **DON'T** pour water or anything else into the animal's mouth
- **DON'T** encourage the animal to walk
- **DON'T** allow the animal to get in and out of the transport vehicle without assistance
- Movement can sometimes make internal bleeding worse

Heat Stroke

AKA = Heat Prostration, Hyperthermia

- Rectal temperature >105°F is potentially life threatening
- Risk Factors:
 - Hot humid weather (high humidity=less evaporation)
 - Lack of shade and/or water
 - Left in a vehicle, even when temp mild (70°F)
 - Obesity
 - Brachycephalic (smush faced) dogs and cats
 - Seizures, including eclampsia (milk fever)

Closed Vehicles Heat Up Fast

Temp.	10 min	20 min	30 min	1 hour	2 hours
70°F	89°F	99°F	104°F	113°F	120°F
75°F	94°F	104°F	109°F	118°F	125°F
80°F	99°F	109°F	114°F	123°F	130°F
85°F	104°F	114°F	119°F	128°F	135°F
90°F	109°F	119°F	124°F	133°F	140°F
95°F	114°F	124°F	129°F	138°F	145°F
100°F	119°F	129°F	134°F	143°F	150°F

Heat Stroke

Early Signs of Heat Stroke

- Excessive panting
- Restlessness
- Drooling

Late Signs of Heat Stroke

- Unsteady gait
- Gums turn blue, purple or bright red

Heat Stroke

First Aid for Heat Stroke

- Remove animal to a cooler environment
- Take rectal temp and record it every 5 minutes
- Apply a fan
- Ice packs or wet towels on pulse points, back of neck
- Wet ear flaps and paws with water or alcohol
- Stop cooling when temp reaches 102-103°F
- Seek veterinary attention ASAP
- Offer water to drink if no vomiting

Heat Stroke

First Aid for Heat Stroke

- **DON'T** use cold water or ice for cooling
 - ice or cold water will cause superficial blood vessels to shrink, effectively forming an insulating layer of tissue to hold the heat inside.
- **DON'T** overcool the pet – shocky animals may not regulate their body temperature well
- **DON'T** force water into the animal's mouth

Heat Stroke

After Effects of Heat Stroke

- Organ Failure – especially kidneys
- Abnormal blood coagulation
- Death and sloughing of skin over the back
- Destruction of red blood cells
- Vomiting and diarrhea (sometimes bloody)

Hypothermia

Body temperature <98°F indicates life threatening situation

- Caused by exposure to cold environment or serious illness and impending death
- Risk factors:
 - Puppies and kittens (the younger the more susceptible)
 - Short or no haircoat
 - Not accustomed to being outdoors
 - Lack of body fat

Hypothermia

Early Signs of Hypothermia

- Lethargy
- Loss of appetite
- Shivering

Late Signs of Hypothermia

- unresponsiveness
- Weakness
- Body temperature <95°F

Hypothermia

First Aid for Hypothermia

- Move the animal to a warmer environment
- Bundle in warm blankets (heat in the dryer)
- Put a hot water bottle in the blankets to add heat
- Transport to the vet ASAP

Hypothermia

First Aid for Hypothermia

- **DON'T** cause burns by applying too much heat.
 - Unresponsive animals may not consciously move away from excessive heat
 - Plenty of layers between the heating pad and the animal
- **DON'T** leave animals on heat sources unattended
- **DON'T** use excessive heat, as this can cause dilation of blood vessels in the skin and loss of heat
 - Heating pad on low to medium

Poisoning

Poisoning results from exposure to a substance that causes structural damage or functional disturbance of body tissues.

- Ingestion
- Inhalation
- Absorption
- Injection
- Application or external exposure

The poison can be a plant, a medication given in excess, a cleaning product, or other chemical or substance.

Poisoning

Call ASPCA Poison Control

- The 1-800 number on the product label often can not answer animal questions
- <http://www.aspc.org/pet-care/poison-control/>
- (888) 426-4435
- The \$40 fee is worth it in many cases

Poisoning

Indications for inducing vomiting

- Ingestion in the past 3 hours
- Hydrogen peroxide PO works well in dogs
- Save vomitus for evidence and/or diagnostics
- **DON'T** induce vomiting if animal is unconscious, seizing, not able to stand, or is having trouble breathing.
- **DON'T** induce vomiting if the poison is caustic
 - petroleum product
 - cleaning solution
 - or a strong acid or alkali (extreme pH)

Poisoning

First Aid for External Chemical Exposure

- Call poison control for the appropriate solvent – not always water
 - Some dry chemicals are activated by water
- Brush away dry chemicals first, wearing PPE
- If eyes have not been exposed, protect with ointment prior to bath
- Wash the contaminated area for 15 minutes, saving rinse fluid
- Work in a well ventilated area
- **DON'T** immerse in a bath – use flowing water

Starvation & Dehydration

Causes of Dehydration

- Lack of water intake
 - Unwillingness or inability to drink
 - No access to water
- Excessive fluid loss
 - Vomiting and diarrhea
 - Excessive urination
 - Heat stroke

Starvation & Dehydration

Assessing Hydration Status

- <4% **dehydrated** is undetectable on exam
- 4-6% **dehydrated** – dry gums
- 6-8% **dehydrated** - loss of skin moisture, increased PCV (red cells) and serum protein
- 8-10% **dehydrated** – sunken eyes
- 10-12% **dehydrated** – loss of skin elasticity, dull eyes
- >12% **dehydrated** – weak pulses, lethargic

Starvation & Dehydration

A Note about the skin turgor test to assess dehydration

- Prolonged skin tenting can have causes other than dehydration
 - Loss of skin elasticity due to advanced age or disease
 - Lack of subcutaneous fat which lubricates the SC tissues
 - Look at the moisture of the gums and eyes

Starvation & Dehydration

First Aid for Dehydration

- If due to illness rather than lack of access to water, seek veterinary attention rather than attempting to rehydrate
- If mild (<5%) and not vomiting, give frequent small amounts of water until rehydrated
 - 1 tsp – 1 tbsp at a time for cats
 - ¼ cup at a time for medium to large dog
- Vomiting can make dehydration much worse
- **DON'T** allow immediate access to large amounts of water
- **DON'T** feed until directed to do so by a veterinarian

Starvation & Dehydration

FEED STARVING ANIMAL ONLY UNDER THE DIRECTION OF A VETERINARIAN

- "Refeeding Syndrome"
- Potassium and phosphorus can drop dangerously low with refeeding after prolonged starvation
- Extremely low potassium can cause profound muscle weakness, including respiratory paralysis and death
- Extremely low phosphorus can cause destruction of the red blood cells, requiring transfusion
- Cats can have fatty liver, which requires intensive care if the cat is to survive
 - They can develop neurologic signs and seizures if fed too much

Difficulty Breathing

If not panting, more than 40 breaths per minute is too many

Signs of respiratory distress (dyspnea)

- Increased effort to breathe
- Noisy or squeaky breathing
- Bluish gums and tongue
- Inability to inhale or exhale
- **CATS DO NOT PANT UNLESS THEY ARE IN DEEP DOO DOO!!**

Difficulty Breathing

Causes of Dyspnea

- Congestive heart failure
- Asthma and chronic bronchitis
- Brachycephalic syndrome
- Lung disease
- Cancer
- Collapsed lung
- Fluid around the lungs

Difficulty Breathing

Causes of Dyspnea

- Severe pain
- Paralysis of the voice box (very noisy)
- Severe anemia
- Collapsing airways
- Foreign body in the airways
- Severe obesity

Difficulty Breathing

First Aid for Dyspnea

- Keep yourself and the pet calm
- Check temperature and treat for overheating if necessary
- If you have access to oxygen (spay-neuter clinic), provide it by mask or flow-by
- Seek veterinary assistance ASAP