

## ANIMAL BITES

### What Does an Animal Bite Look Like?



Bites, animal. A crush and tear type injury that occurs from a dog bite.

Bites, animal. Same injury (dog bite to the finger) from a different angle.



### What Causes Animals to Bite?

Animal bites usually are either provoked or unprovoked. A provoked bite would occur if a person teases a dog or tries to take away the dog's food while the dog is eating. An unprovoked bite may occur if the person is sitting in their backyard and a raccoon runs out of the woods and attacks them for no known reason. A stray dog that approaches a person and begins to bite them would be considered unprovoked. This type of information is very important to the healthcare professional taking care of the bite because in certain animal species "unprovoked" bites can be a sign or indicator that the animal has rabies and needs to be either captured, quarantined or very closely monitored.

### What Is the First Aid for an Animal Bite?

[First aid](#) should consist of getting away from the animal to a safe area. Next, apply pressure on the areas that are [bleeding](#), and activate the 911 system or going to an emergency department if the injury requires care.

### What Are the Symptoms of an Animal Bite?

Although most bites need to be checked by a doctor, if the person who was bitten does not seek immediate attention after the bite has occurred, watch closely for signs and symptoms of infection. These symptoms may signal there is infection or debris still in the [wound](#) (such as [teeth](#), clothes, or dirt):

- Redness at or around the bite site
- Swelling
- Pus (thick) drainage from the wound
- Increasing [pain](#)
- Localized warmth at the bite site
- Red streaks leading away from the site of the bite
- [Fever](#)

### When Should I Call the Doctor About an Animal Bite?

Most animal bites should be evaluated in a doctor's office, at a walk-in clinic, or in a hospital's emergency department for these reasons:

- The risk of infection
- Broken or embedded teeth (cats) or other foreign material in the wound (which will cause an infection)
- Possible underlying nerve and blood vessel damage
- Risk of [tetanus](#) if the person's immunizations are not up to date
- The consideration of risk of rabies, depending on the animal and circumstances of the bite

These types of bites pose the highest risk of infection and therefore require prompt evaluation:

- Dog bites because of the crushing mechanism of the bite
- Cat bites because of the puncture mechanism of the bite
- Wild animal bites (from raccoons, for example) and dog or cat bites (pets may have themselves been bitten by stray animals) because of the risk of contracting rabies

Certain bite [wounds](#) require immediate attention:

- Bite caused by a wild animal or a stray dog or cat
- Possibility of teeth, dirt, or other matter in the wound
- Excessive bleeding
- Weakness or numbness of the area or another area away from the bite
- Any other symptoms or concern that the person bitten may have regarding a bite wound

### How Is an Animal Bite Diagnosed?

The doctor will assess the risk of infection, look for other injuries, and try to minimize any scarring or deformity from an animal bite. Additional questions will help clarify if the patient needs tetanus vaccination, and if there is a risk of rabies exposure.

**Inspection:** The wound will be thoroughly examined to look for any debris such as dirt, grass, teeth, clothing, or other objects that may have become embedded into the bite area. Leaving behind any of these would increase the risk for infections significantly. Sometimes the wound will be numbed with lidocaine to decrease [pain](#) while the doctor makes a complete inspection of the area. This is not always necessary and depends on the extent of the injury.

**X-rays:** The doctor may order [X-rays](#) to look for fractures of bones or to make sure nothing remains in the wound. Although certain objects such as metal always show up on X-ray, some objects such as dirt and grass do not usually appear. That's why careful inspection and washing out the wound are key to proper care. Despite best efforts, there is always a risk that foreign material will be missed and may be in the wound.

**Irrigation:** This is very important to preventing infection as it helps clean the wound of debris. Several techniques are used but the idea is the same. The health care professional will spray irrigation solution (usually saline solution or tap water) into the wound with either an irrigation device or a syringe (without the needle) in order to wash out anything that may contaminate the wound. Despite best efforts and intentions, infections can and still do occur in animal bites.

**Debridement (tissue removal):** Dog bites are noted for being crush type injuries. This will macerate and tear apart the skin and tissue in humans. The result is that skin tears often are not repairable because of the amount of damage or the significant crushing mechanism. These areas usually have either no blood supply to them or decreased blood supply and will not survive and are considered to be dead tissue that needs to be removed. The risk of infection increases significantly in these types of crush injuries.

- In some cases, it may be necessary for the doctor to remove or debride the skin. This involves numbing the wound with lidocaine and then cutting the skin with either small scissors or a scalpel to remove the tissue.
- This not only will reduce the risk of infection but also will promote quicker healing and may even allow the doctor to obtain better wound closure.

**Closure:** Not all animal bites need to be or can be closed with [stitches](#). Some wounds are sutured (stitched) immediately after they occur (this is referred to as primary closure). Some are repaired a few days later (referred to as delayed closure). Some animal bites are never sutured.

- Relatively clean wounds or those that can be easily cleansed may be stitched immediately. Also bites to cosmetic areas (such as the face) are usually sutured immediately. The patient's health care professional will discuss the advantages and risks of primary closure with the patient.
- Delayed closure or no closure at all will most likely be used for any wound that is on an arm or leg because of decreased blood flow and increased risk of infection. Also, delayed closure is more likely if the wound is heavily contaminated (dirty) or has a significant amount of tissue damage or crushed tissue. It is important to note that

animal bites to the hand have a very high risk of infection so they are generally not sutured immediately. Bite wounds to hands are excellent candidates for delayed closure.

- Keep in mind that the potential for scarring is increased when a wound or bite is not closed or sutured at the time of the event. Unfortunately this has to be the case in some settings as the risk of an infection is too great to allow the health care professional suture the wound. Sometimes the health care professional will suture the wound, but will usually have a detailed discussion with the patient prior regarding the risks of infection and the signs and symptoms to monitor in the event that an infection does begin, and what to do in that situation.

### **What Is the Treatment for Animal Bites?**

The treatment of animal bites, after initial inspection, irrigation, debridement, and possibly closure depends on many factors, the doctor's experience, preference, and the type of wound and location of the wound.

### **Rabies Cause, Treatment, and Prevention**

According to the CDC (Centers for Disease Control and Prevention), rabies has one of the highest fatality ratios of any infectious disease. Rabies is an acute, progressive encephalitis (inflammation of the brain) caused by a virus. An animal infected with the virus may display abnormal behavior, seizures, not eating, problems swallowing, loss of muscle movements, gait abnormality and paralysis. The virus can enter a human through a bite as the virus is found in the animal's saliva. Prompt examination of animal bites is important to identify the need for immediate treatment and to secure the animal, if warranted.

The vaccination of domestic animals is an important step in prevention, as rabies is rare in vaccinated animals. Stray animals should be confined for at least three days to determine if human exposure has occurred and if the owner can be found. Methods used in rabies control include identification tags, licensure, canvassing, citations, animal control and public education.

Rabies in wildlife, however, is difficult to control, so surveillance and variant typing are essential components in control programs. Every animal submitted for rabies testing should be report to the CDC, so that the agency can track trends.

Treatment for rabies after a suspected bite is called post-exposure prophylaxis and is given as an injection of immune globulin immediately if the animal was known to be rabid or if the animal begins showing signs of the illness. Bites to the head or neck carry a higher risk, as the incubation period will be shorter due to the closeness to the central nervous system. Rabies Immune Globulin (RIG) provides immediate neutralizing antibodies until the person can develop their own antibodies in response to the administration of a rabies vaccine. The WHO recommends that the rabies vaccine be given on a four-dose schedule of intramuscular injections.

### **What Are the Home Remedies for Animal Bites?**

Thoroughly clean the wound by washing with soap and tap water as soon as possible. Never use [alcohol](#) or hydrogen peroxide on a wound. While hydrogen peroxide was used for years, medical studies have shown that it is harmful to a wound and slows or inhibits the healing process. A light scrubbing should occur during the wash. Then put a clean and dry bandage over the area. This treatment should not replace proper evaluation by a doctor.

### **Are Antibiotics Used for Animal Bite Treatment?**

If [antibiotics](#) are prescribed, it is important to recognize that they are not used to treat an infection. They are used to try to prevent infection. The trend toward prescribing and using fewer antibiotics continues, and therefore, the patient may not be given antibiotics, but instead told to monitor the wound closely for any signs or symptoms of infection.

- Bites that generally warrant antibiotics are these:
  - Cat bites with a deep puncture
  - A wound that required tissue removal (debridement)
  - A heavily contaminated wound
  - Bites to the hand
  - Bites from a human
  - Bites in elderly

- Bites in people with underlying chronic medical conditions (such as [diabetes](#))
- Those bites to areas with good blood supply (the face) generally do not require antibiotics.
- If used in the initial period, a five day course of antibiotics is generally adequate, although some recommend only three days and some seven days. These rules change if you are actively treating an infection, or if the bite was particularly dirty or contaminated.

Most bite wounds are treated with over-the-counter [pain medications](#). Occasionally, the doctor may prescribe a stronger pain medication for the short-term control of pain from the bite.

### What Is the Medical Treatment for Animal Bites?

Depending on the status of the bite wound, local [wound care](#) varies.

If the wound was sutured on the first visit, then the wound should be kept clean and dry. Showers are permitted, but the area should be dried by patting it softly to avoid disrupting the sutures. No baths or submersion of a sutured wound should occur until the stitches are removed and the patient is told it is allowed.

If the wound was left open, then the doctor may recommend daily soaks or other treatments.

### What Is the Follow-up for Animal Bites?

When the patient is discharged from the emergency department or leaves the doctor's office, they should receive instructions on how to care for the bite wound.

Most doctors will recommend a reevaluation of bites in 48 hours to look for infection.

If the wound was sutured (stitches), the doctor will tell the patient when the stitches will need to be removed.

- Typically stitches in the face are removed in 3 to 5 days.
- Stitches over major joints stay in 10 to 14 days.
- Stitches in other areas are removed in 7 to 10 days.

### How Do You Prevent Animal Bites?

With common sense, a person can lower the risk of being bitten by an animal:

- Avoid contact and interaction with unknown animals. Even animals that appear friendly can bite if provoked.
- Do not feed or try to catch or play with wild animals such as squirrels, raccoons, or rats.
- Do not disturb an animal while it is feeding or taking care of its young.
- Use great care when "aggressively" playing with an animal. Even the family dog can bite its owner by accident.
- Do not stick your fingers into animals' cages (for example, at the pet store, zoo, or dog show).

### What Is the Prognosis for Animal Bites?

The majority of animal bites heal quickly without serious complications.

### Animal Bite Risks: Who is most at risk?

- **Children:** Among children, the rate of dog bite-related injuries is highest for those ages 5 to 9 years, and children are more likely than adults to receive medical attention for dog bites than adults. Recent research shows that the rate of dog-bite related injuries among children seems to be decreasing.
- **Adult Males:** Among adults, males are more likely than females to be bitten.
- **People with dogs in their homes:** Among children and adults, having a dog in the household is associated with a higher incidence of dog bites. As the number of dogs in the home increases, so does the incidence of dog bites. Adults with two or more dogs in the household are five times more likely to be bitten than those living without dogs at home.