BANDAGES AND BANDAGING TECHNIQUES

Your role as a veterinary assistant is to understand the theory behind bandaging, as bandaging is the veterinary technician’s and the veterinarian’s role. You’ll need to know what materials it requires, and why it requires them. You’ll be responsible for preparing these materials for the veterinarian. Let’s take a look at the bandaging process.

Once the injured animal is stabilized, its wound is cleaned, debrided, and sutured. Why does it need a bandage?

What Bandages Do

A bandage in its simplest form is a strip of fabric used to dress and bind up wounds. Veterinary medicine has refined and elaborated upon this basic form, combining it with casts, slings, and splints to heal all kinds of injuries. These variations, however, all perform a bandage’s four basic healing functions:

- To protect the wound from environmental bacteria
- To absorb wound secretions
- To immobilize the wound
- To exert pressure that helps prevent swelling or bleeding

The Parts of a Bandage

You can see from looking at the four healing functions of a bandage that you may need more than a simple strip of fabric to keep out bacteria, absorb secretions, exert pressure, and immobilize the wound. Bandages that cover open wounds have three layers:

1. The primary (contact) layer
2. The secondary (intermediate) layer
3. The tertiary (outer) layer
The primary layer, which touches and protects the wound’s surface, is the *wound dressing*. Closed wounds, such as a broken bone that doesn’t penetrate the skin, don’t require a wound dressing. The secondary layer absorbs fluid and harmful materials from the wound surface and also helps to pad the wound. The tertiary (outer) layer holds the other bandage layers in place.

**Bandaging Materials**

Several materials are required to properly place a bandage (Figure 7). These materials include

- Adhesive tape
- Gauze
- Cotton cast padding
- Elastikon tape
- Sterile pad (if an open wound exists)

**Adhesive Tape**

Adhesive tape, which is sticky on one side, also comes in rolls. White, porous adhesive tape is most often used to form the stirrups to which a bandage will attach. Unlike
other adhesive tapes, white adhesive tape isn’t stretchable. *Elastikon* tape is a stretchable tape applied as the tertiary layer of a bandage. Its stretchability allows it to be placed with variable degrees of compression.

**Sterile Pad**

A sterile pad often serves as a bandage’s primary layer. Open wounds require a primary layer over the wounds. Injuries that don’t involve open wounds don’t require a primary layer. This layer is either *adherent* (sticks to the wound, like a wet-to-dry bandage) or nonadherent. This layer is also either *occlusive* (water-resistant) or *nonocclusive*. Most dressings, such as petroleum-impregnated gauze or Telfa pads, are nonadherent. They’re also nonocclusive, allowing fluid from the wound to drain into the absorbent secondary layer. These dressings are appropriate for clean, open wounds without established granulation tissue.

Occlusive dressings, which keep outside moisture out and wound fluid in, are for wounds with established granulation tissue. Most prepared occlusive dressings are *hydrocolloidal*, meaning they combine with fluid (in this case wound fluid) to form a gel. Tests prove that hydrocolloidal dressing speeds wound epithelialization, though it also diminishes wound contraction.

**Cotton Cast Padding**

Cotton, because it’s pliable (flexible), compressible, and highly absorbent, is the major material of a bandage’s secondary layer. It comes prepared in smaller, thin rolls (2, 3, or 4 inches wide and about ⅛ to ⅛ inch thick), and in thicker rolls of sheet cotton. The thin-rolled cotton is called *cast padding*. The thicker sheet cotton comes in a one-pound roll. Cotton is excellent for leg bandages because it’s easy to shape to the leg.

**Gauze**

Gauze comes in rolls or square pads. Rolled gauze covers, compresses, and secures the cotton layer. Rolled gauze comes in a variety of textures and sizes. The most common
sizes for small animals are two-, three-, and four-inch widths. Large animals usually require the six-inch width. Veterinarians occasionally use square pad gauze in bandages, but they use it far more often as absorbent surgical sponges.

**Antiseptics**

An *antiseptic* is a substance that stops the growth and action of bacteria in living tissue (not to be confused with disinfectants, which are for inanimate objects like an examination table). Antiseptics function both as lavage solutions and as germicides for a healing wound. The two most popular antiseptics among veterinarians are chlorhexidine and povidone-iodine. Both solutions work against many bacteria and harmful organisms. Used properly, neither hampers wound healing. Another popular antiseptic is *triple-antibiotic ointment*. This type of ointment contains the antibiotics *bacitracin*, *neomycin*, and *polymyxin*. Large-animal wounds are often treated with the antiseptic *nitrofuracin*.

Now that you know what bandages are, what they do, and what they’re made of, turn your attention to where they go and how to put them there.

**Bandaging Small (Companion and Lab) Animals**

**Bandaging Limbs of Small Animals**

The most common bandage sites are the front and hind limbs of small animals. The two most common reasons to bandage a small animal’s leg are

- To protect wounds
- To support a leg (temporary support for a broken leg, for instance)
A leg bandage always extends from above the target site all the way down to, and including, the toes. A bandage that doesn’t extend to the toes could slip or twist, constrict the leg, and interfere with the foot’s blood flow. This constriction can cause the foot to swell if blood can’t leave it. It can also cause the foot to die if blood can’t reach it. A bandage placed down to the toenails helps avoid this complication.

The procedure to place a bandage on the leg of a small animal is shown in Figure 5. Veterinarians perform the following steps:

**Step 1:** The veterinarian places adhesive tape *stirrups*, which help hold the bandage in place, on the foot. Stirrups hold the bandage to the leg and are almost always an absolute requirement (Figure 5A).

**Step 2:** The veterinarian will then apply a sterile pad (the primary layer) over the wound (Figure 5B).
**Step 3:** The leg is wrapped snugly and evenly with a variable amount of cotton padding (Figure 5C).

![FIGURE 5C—Cotton padding is wrapped thickly around the leg.](image)

**Step 4:** Gauze is applied over the cotton padding to compress and secure the bandage (Figure 5D).

![FIGURE 5D—Gauze is applied over the cotton padding to compress and secure the bandage.](image)

**Step 5:** Elastikon tape is wrapped around the entire bandage to serve as the tertiary layer (Figure 5E).

![FIGURE 5E—The entire bandage is wrapped with Elastikon tape.](image)
**Bandaging Cat and Dog Tails**

Tails most often need bandages after surgical repair or tumor removal. A dog or cat may wag off a poorly secured tail bandage. To prevent this, the veterinarian applies the final tape layer over and above the bandage where the tape sticks directly to the tail’s skin.

**Bandaging Ears of Small Animals**

Ears most often need bandages to protect wounds or surgical incisions. Veterinarians bandage animals with floppy ears by pulling up the ear, laying it flat on the surface of the head, and placing a bandage over the whole head (behind the ears and in front of the neck) to include the ear. For animals whose ears stick up, veterinarians place a roll or wad of gauze on the inner side of the ear and secure it with adhesive tape. If only one ear is affected and needs bandaging, the other ear is usually left unbanded to allow adequate air circulation and to allow otic (ear) medications to be administered, if needed.

**Bandaging Eyes of Small Animals**

Eyes can be difficult to bandage, but veterinarians prevent animals from scratching most eye injuries by other means. An *Elizabethan collar* is a stiff cardboard or plastic cone-shaped structure that goes around the animal’s neck (Figure 6). The collar extends beyond the animal’s nose, keeping its mouth from body injuries and its claws from head injuries. If an eye needs to be bandaged, veterinarians place the bandage over the head to include the affected eye.

**Bandaging Dog and Cat Torsos**

Some dogs or cats require bandages over the abdomen or chest, usually to protect surgical sites or to secure surgically placed structures (like chest tubes and abdominal drains). Veterinarians place torso bandages by applying rolled cotton around the chest or abdomen. The cotton is covered with rolled gauze and secured with tape.
Bandaging Large Animals

Bandaging Limbs of Large Animals

Among larger animals, the horse is the most frequent recipient of lower-limb bandages. The horse may need its wounded lower leg bandaged, or may need its legs bandaged because of a condition called *stocking up*, which is swelling in the legs caused by fluid accumulation when a horse is inactive. Veterinarians apply sheet cotton to the limb, wrap it with gauze roll to conform it to the leg’s shape, and secure the two layers with elastic tape. This bandage usually extends down to the hoof and as far up the limb as necessary.

Bandaging Horse Tails

Horses most frequently need tail bandages to help keep their long tail hair clean or, if the hair is already dirty, to keep it from contaminating other body sites. Veterinarians wrap gauze around the end of the tail hair, fold the hair forward over the tail, and then wrap gauze over the tail base to hold up and cover the hair. Tape holds the gauze in place.

Bandaging Ears of Large Animals

Veterinarians follow the same procedure as that for bandaging small animals with upright ears.
Bandaging Eyes and Head Wounds of Large Animals

The orthopedic stockinette, a tube-shaped stretchable bandage, is a popular means of covering and protecting the eye of a large animal.

Veterinarians measure and cut an appropriate length of stockinette, open the tube, and place the animal’s muzzle through it. They pull the stockinette up over the head and cut holes to expose the ears and the unaffected eye. Tape holds the stockinette in place. An orthopedic stockinette can also cover other head wounds.

Bandaging Large-Animal Torsos

Some surgeons use bandages to cover incisions following abdominal surgery. The procedure is the same as that for bandaging small animals, but with thicker sheet cotton in place of roll cotton.

Bandaging Birds

Bandaging a Bird’s Wing

Fractured bones in a bird’s wing sometimes respond well to appropriate bandaging. Birds, like other species, can also be bandaged for temporary support of injuries awaiting definitive treatment. Veterinarians typically bandage a bird’s wing separately from its body, using rolled gauze and tape. They apply the gauze in a figure-eight pattern and then secure it with tape. Some wing bandages incorporate a splint, such as a tongue depressor.

Bandaging a Bird’s Leg

Veterinarians also treat some bird leg fractures with a splinted bandage. Depending on the bird’s size, either a tongue depressor or a smaller Popsicle stick can serve as splint material. Certain bird-leg fractures respond to the Schroeder-Thomas splint, a rarely used combination of aluminum rods, cotton, and tape.
Re-Dressing a Wound

When re-dressing a wound, it’s probably most important to know which primary bandage material best suits the wound’s stage of healing. A petroleum-impregnated gauze, for instance, may suit the earliest stages of open-wound healing because it’s nonadherent and nonocclusive. However, petroleum can slow down epithelialization, so a Telfa pad better suits a wound with fully formed granulation tissue.

The primary layer of the bandage may vary, but most times veterinarians reapply a bandage with the same bandaging technique they used previously, following the same bandaging principles (apply tape stirrups to the foot and then apply the three component layers of the bandage). The bandage must be placed properly. A bandage placed too tightly will cut off the leg’s blood supply. A bandage placed too loosely may slip. It takes practice to bandage properly.

How are you doing with your bandaging terms and types? We still have a few more special bandages in store before we cover casts and slings, but take a moment now to review what you’ve learned by completing Self-Check 2
Self-Check 2

1. Name three healing functions of a bandage.

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2. What are the three layers of a bandage?

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3. What are stirrups and what role do they play in bandaging?

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4. Name two reasons to bandage the lower limbs of a horse.

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5. What is an Elizabethan collar?

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Check your answers with those on page 39.