

# Bandaging

Liza Holland

Bandaging has been done in one way or another throughout the ages. In fact, the basics of the concept have really not changed much through the centuries. Sounds simple, right? Well, if you get on the Internet to research bandaging, you will find lots of "how-to" articles that give a great description of exactly how to apply various types of bandages.

Okay, so now you have directions. What types of materials do you use? Now it gets trickier. You can choose from literally thousands of bandaging materials. To top it off, terms like "dressing" actually mean different things depending upon the product you are considering. For the beginner, it might seem a bit daunting.

So, following is a helpful guide to the terminology and uses of a variety of bandaging types and their applications.

## The Terms

For the most part, bandages are applied to horses for a few basic reasons:

1. To provide support for tendons and ligaments during work;
2. To prevent or reduce swelling;
3. To protect from injury;
4. To provide a barrier from contamination; and
5. To aid in healing.

Primarily lower legs are bandaged, so we will focus there.

"Bandages" break down into three main parts: the bandage itself, the dressing, and sometimes a poultice or wound dressing.

## The Bandage

The bandage itself is a piece of material designed to support a medical device of some sort, such as a dressing or splint. It is often made of an elastic material to offer some compression. One innovation welcomed by horse owners was the introduction of Vetrap by 3M in the 1960s. Finally, there was a bandage that offered both elasticity and adhesion. The best part was that Vetrap sticks to itself, but not to the animal you are bandaging!

Some horse owners remember using duct tape or safety pins to secure a bandage. What an improvement!

It is the application of the bandage that causes trouble for many novices who wrap it too loose, too tight, or uneven. Too loose defeats the purpose, because it will fall out of place with movement and perhaps cause problems for the area on which it rests. Wrapping too tightly can cause bandage bows (swelling in the peritendinous tissues) and cut off circulation. Finally, wrapping unevenly can apply too much pressure in one area and not enough in another, allowing fluid to pool in the area wrapped loosely (much like your ankles swell above your socks when you fly).

## The Dressing

Dressings (or paddings), for the purposes of this discussion, are of two types of material and are not to be confused with many commercially available wound care topicals, which are also called dressings.

Dressings used under bandages are applied for support and protection. The object is to provide a protective layer of padding to avoid irritation caused by the elastic bandaging material. Many horse owners still use the tried-and-true flannel or cotton leg quilts, as they provide padding and soft support on a horse's legs and are reusable. Sheet cotton or rolled cotton is also commonly used for this purpose. There are many pre-made supplies available for purchase that can be used for the dressing or padding portion of the entire bandage.

The second type of dressing is a piece of material that is used to cover a wound or stop bleeding. An ideal wound dressing is one that is sterile, breathable, and encourages a moist healing environment. This will reduce the risk of infection, help the wound heal more quickly, and reduce scarring.

The materials available for dressing wounds have come a long way over the years. Gone are the days when you had to use plain cotton or gauze to cover a wound that meant washing or picking the pieces of material out of the healing wound (delaying wound closure). These days, highly absorbent materials with a barrier to prevent adhesion to the wound are readily available. In a pinch, diapers provide excellent absorbency as a wound dressing.

## Poultice/Wound Care Preparation

Finally, we come to any and all medications that might be applied to speed healing. Here again, a huge variety of options are available, depending on what you hope to accomplish. It is a good idea to consult with your veterinarian before deciding on any course of treatment that includes this step in the process, as veterinarians are generally educated about the latest and most effective treatments available.

To give you an idea of what might be used, we'll start with a poultice. A poultice is used on horses to relieve inflammation. It usually targets treatment on tendons. Poultices are used for several reasons. Sometimes, they are applied to prevent heat and swelling after hard work, such as after a race or cross country ride. They are also used to treat wounds and abscesses, by helping draw out a pus buildup or abscess.

Poultices can be heated and placed on an area where you want to increase circulation. A hot poultice increases circulation, a cold poultice decreases inflammation. Many horse owners use a "sweating" poultice to reduce fluid buildup; these poultices commonly include ingredients such as DMSO (dimethyl sulfoxide), nitrofurazone, petroleum jelly, glycerin, Epsom salts, and/or mineral oil.

A wide variety of commercial preparations is available, or poultices can be homemade. If you make your own, it is important to dilute agents such as DMSO, as they can cause skin damage.

When using a poultice with a bandage, first, the poultice is applied, then a layer of underwrap such as soaked brown paper bags and/or a layer of plastic wrap, followed by an overlayer of soft padded dressing, and, finally, the bandage. Please note there are specific instructions on how to apply a sweat bandage and other bandage types available from the AAEP ([www.aaep.org](http://www.aaep.org)).

There are many commercial products marketed as wound "dressings" (more sources of confusion). The science in this area has really expanded from the days of applying bran mash or honey to a

wound. Many of today's topicals have been proven to significantly speed healing and reduce scarring. There is even a prototype hydrogel wound dressing being developed in England with the secretions of maggot larva that will destroy dead tissue in nonhealing wounds. That is an old trick given a new life! Consult your veterinarian if your horse has a wound that needs bandaging.

## **For Protection**

The most common type of equine bandage is the stable bandage, otherwise known as the standing bandage. It is used on the lower legs of the horse, which are the most commonly bandaged parts of a horse. It runs from below the knee or hock to the bottom of the fetlock joint, and it protects the lower tendons, cannon bone, and fetlock joint.

Standing bandages are used to protect horses' legs from damage while shipping, to secure a poultice or dressing, to keep an injury clean, and for general wound care. They are also used to prevent or reduce swelling or filling of the legs after strenuous work. They are sometimes used for protection from cuts and bruises and, in some instances, they are used for warmth.

## **When to Bandage**

Now that we know what bandages are, and that there are many reasons to use them, how do you go about assessing if and when they are needed?

Shelana Hoberg of KESMARC Inc. rehabilitation center in Lexington, Ky., is in charge of training interns in the art of bandaging. She says the most important piece of information for her students is for them to assess what it is they are bandaging. She says you will only have success if you treat each condition with the right therapy. Is the bandage to keep down swelling or to keep a wound treatment in place?

It is also important that a bandage not irritate a condition further. She tells her students to ask themselves: Is it an open wound? Is it hot and soft and is there acute swelling?

KESMARC staff members don't apply plastic wrap directly to the leg. They use an underwrap, plastic wrap, then an overwrap. They have found plastic wrap applied directly can bunch up, pull tight, and cause skin abrasions (sometimes even inflammation). Recently, they have been using Surpass (1% diclofenac sodium, a topical anti-inflammatory) on postsurgical wounds under bandages with great success.

For more severe cases or when in doubt, it is always advisable to consult with your veterinarian when determining bandaging needs. It might be that additional medications or treatments would be effective in addition to bandaging in order to speed healing. Just like the oath veterinarians take, we as horse owners should always strive to first "do no harm."

Robert Holland, DVM, PhD, a private practitioner in Central Kentucky, agrees with the need to constantly assess what and why you are bandaging. He adds that the type of bandage will often change based upon the stage of healing of the wound or injury. There are several stages of wound healing, according to *Equine Wound Management* by Ted Stashak, MS, Dipl. ACVS. The inflammatory stage comprises the first six hours after injury, the debridement phase is six to 12 hours post-injury, the repair phase--when epithelial cells begin to form and later granulation tissue forms--occurs about three days post-injury, and finally the maturation phase begins.

These stages give us different bandaging challenges. For example, in the initial stage of wound healing, adherent dressings that absorb drainage and even stick to the wound are helpful in getting

rid of toxins and dead tissues. This helps in the debridement process. Later, nonadherent dressings such as Telfa are better, as they do not interfere with the development of new tissue, but absorb the drainage.

A veterinarian constantly reassesses the wound and changes the bandaging materials accordingly. He or she changes wound medications as well.

Did you know that a wound can actually heal too fast? If the healing is too rapid, there is a danger of "proud flesh" developing, which is when there is so much growth of granulation tissue that it swells beyond the boundaries of the wound. This condition can be treated, but you actually have to treat with agents that slow or even retard normal healing.

Tendon and ligament injuries also have different stages of healing. That's why it is important to continually evaluate the healing process and customize treatment to maximize beneficial healing. A veterinarian is critical in this process.

### **Attention to Details**

Once the decision has been made to bandage and with what materials, Hoberg counsels attention to the details. It is important to be certain you are using the correct materials and wrap evenly with equal pressure. "It is not pretty, but it's practical" does not fly with her. Although looks are not the primary purpose, a well-applied bandage should look neat, even, and finished.

When a wound is involved, experienced horsewoman and Holland's mother, Pat Holland, counsels horse owners to write down carefully the directions given by their veterinarian. She recently had a horse with a rather severe leg injury. She was so rattled on the day of the incident that she remembered only part of what her veterinarian had recommended, so when faced with changing the bandage the next day, she didn't know exactly what to do. Luckily, she was able to get in touch with him, and he talked her through the process.

### **Take-Home Message**

Bandaging is a skill that you probably need to learn if you plan to work with horses. Make sure to learn from people who really know what they are doing, and don't be afraid to practice! Don't bandage unless you need to, and in order to get the most out of bandaging, customize your bandage to the need or injury you are addressing.

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## AAEP BANDAGING TIPS

Brochures are available on bandaging from your local veterinarian if he or she is a member of the American Association of Equine Practitioners (AAEP). Here are some tips from the brochure:

- Remove dirt, debris, soap residue, or moisture to prevent skin irritation and dermatitis.
- Start with clean, dry legs and bandages.
- If there is a wound, make sure it has been properly cleaned, rinsed, and dressed according to your veterinarian's recommendations.
- Use a thickness of an inch or more of soft, clean padding to protect the leg beneath the bandage.
- Apply padding so it lies flat and wrinkle-free against the skin.
- Start the wrap at the inside of the cannon bone above the fetlock joint. Do not begin or end over a joint as movement will tend to loosen the bandage and cause it to become unwrapped.
- Wrap the leg from front to back, outside to inside (counterclockwise in left legs, clockwise in right legs).
- Wrap in a spiral pattern, working down the leg and up again, overlapping the preceding layer by 50%.
- Use smooth, uniform pressure on the support bandage to compress the padding. Make sure no lumps or ridges form beneath the bandage.
- Be careful not to wrap the legs too tightly, creating pressure points.
- Avoid applying bandages too loosely. If loose bandages slip, they will not provide proper support and might endanger the horse.
- Leg padding and bandages should extend below the coronet band of the hoof to protect the area (especially important when trailering).
- Extend the bandages to within one-half inch of the padding at the top and bottom.
- Check bandages daily to make sure they are securely in place and not cutting off circulation.
- If there is a potential problem with bedding or debris getting into the bandage, seal the openings with a loose wrap of flexible adhesive bandage such as Elastikon adhesive tape.
- Rewrap the leg every one to two days to minimize the chance of circulation problems caused by slippage or skin irritation due to dirt or debris entering the bandages.
- Before rewrapping, take a few minutes to examine the legs for any signs of heat, swelling, or irritation. Problem areas are usually wet with perspiration.
- Allow the horse ample time to become accustomed to leg bandages before trailering, riding, or leaving the horse alone in a stall.

If you are looking for more detailed information, there is a series of bandaging brochures available from the AAEP that addresses specific bandaging techniques. Always consult your veterinarian for what is specifically recommended in your case. --Liza Holland