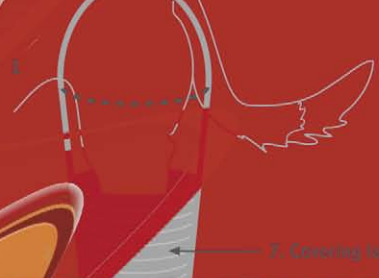


Dorsal View

# THE MILLPLEDGE BANDAGE BOOK



7. Covering layer



Figure 4

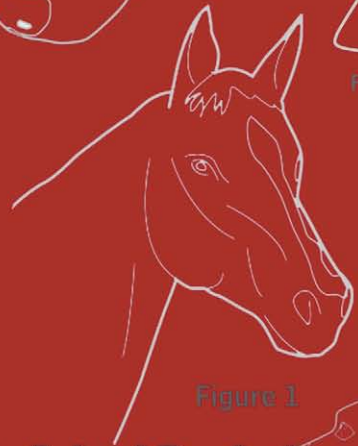


Figure 1

**Essential Guide to Animal Bandaging  
NOW WITH EQUINE BANDAGING TECHNIQUES**



This booklet has been produced as a guide only. We do appreciate that there are many different techniques for each type of bandage, all achieving the same professional result. With the introduction of conforming and cohesive bandages, the skill of bandaging has been revolutionised, therefore we hope that this up-to-date guide will be of some help when using such materials. We do however, welcome comments or criticism for improvement of future publications.

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*This book is dedicated to "Spruce" November 1991 - June 2003  
Without him, the diagrams within this book would not have been possible.*

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# Splash

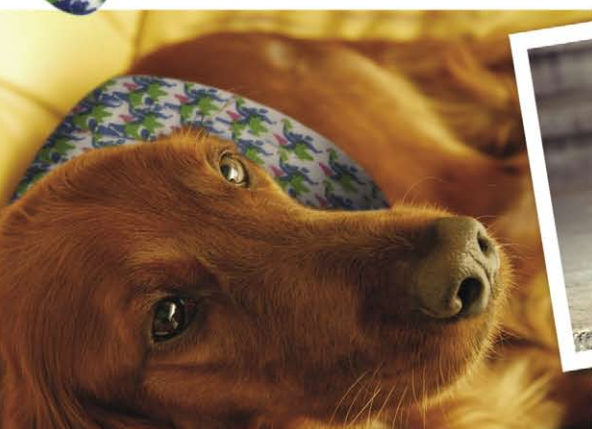
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- No increase in sub-bandage pressure.
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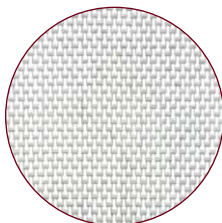


*High quality cotton water repellent elastic cloth gives superior stretch and uniform return pressure.*

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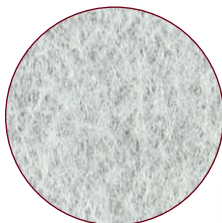
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Artificial silk hypoallergenic tape. Super soft and conforming with a strong clear adhesive. High Quality - easily torn across and down the length.



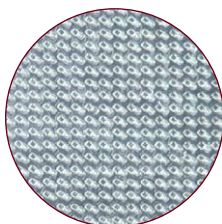
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Perforated clear plastic hypoallergenic tape. Ideal for holding needles, giving sets, cannulae, light dressings, drapes etc. at operation sites. High Quality - easily torn across and down the length.



*Translucent*



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# GOLDEN RULES FOR BANDAGING

- a) Wash hands. Be careful not to spread contamination via hair or wound debris. Remember also to wash hands thoroughly after finishing the dressing.
- b) Collect all materials together, placed within easy reach, including scissors, soapy wash if needed, new dressings, bandages and other essential equipment.
- c) If removing a soiled dressing, dispose of it quickly and safely into a clinical waste bag, likewise with all cotton wool and swabs used to clean the wound.
- d) If bandaging the lower limb, it is advisable to include the foot in the bandage. This will help prevent swelling. Pressure points and extremities should be padded out first.
- e) If bandaging extremities, start from the distal end to prevent pocketing of blood.
- f) Only unroll a small amount of bandage at a time. This will enable a more even tension to be applied throughout. It will also be easier to handle. Reverse roll bandage on to the patient wherever possible.
- g) Apply bandage firmly, with  $\frac{1}{2}$  to  $\frac{2}{3}$  overlap in a spiral action. Be careful not to apply too tightly (especially elasticated bandages) as this will impede circulation, but firmly enough to perform the desired requirement and to ensure that they will not fall off.
- h) Avoid sticking bandages to the animal's skin or hair except where bandaging tails for example, where hair may need to be included to hold the bandage on.
- i) If bandaging a fractured limb, include joints above and below fracture as appropriate. Likewise, pad out pressure points, e.g. hock and elbow, as required. This will necessitate incorporating the foot to prevent distal oedema, but will depend on the site of the fracture.
- j) Where necessary, secure ends of bandage either by splitting and tying in a reef knot, or adhesive tape. Do not use clips, pins or elastic bands.
- k) Choose your bandages carefully. Ensure the correct type for the correct usage. Similarly, choose an appropriate width. Too wide and the edges may be cumbersome and could roll over, too narrow and it may cause stringing and become uncomfortable for the patient. Likewise, it will ease your application if the correct bandage has been chosen for the appropriate job.



# REASONS FOR BANDAGING

## 1 PROTECTION

- a) To prevent simple fractures becoming more complicated e.g. a compound fracture.
- b) Protection from licking, scratching, biting and any other forms of self mutilation.
- c) From infection or further contamination.
- d) Holding wound dressings, poultices and cold compresses in place.

## 2 SUPPORT

- a) To improve mobility.
- b) To reduce pain and swelling.
- c) Extra support for internal fixation of fractures.

## 3 COMPRESSION BANDAGES

- a) Helpful as a first aid measure to stem haemorrhage.
- b) Post operatively it is useful to prevent excess swelling, therefore reducing and preventing oedema e.g. Robert Jones bandage.
- c) A tourniquet is also a form of compression bandage, used as a temporary measure whilst further prevention of haemorrhage is being carried out, or as a first aid measure to stem serious haemorrhage post traumatic accident. The maximum time a tourniquet may be left in situ is 15 minutes, after which time it must be released for at least 1 minute, thus allowing the blood to circulate and revive the tissues. Should you need to reapply the tourniquet, it must be moved in a distal direction from the original compression site, i.e. nearer the wound.

## POINTS TO REMEMBER

*A tourniquet is invaluable in such situations and when used in the correct manner as previously described. However, an animal who has a tourniquet in place **must be under constant supervision**, and **at no stage should the tourniquet be covered over** with any type of bandage or dressing.*

## 4 IMMOBILISATION

- a) Of fractured limb to prevent further trauma to damaged soft tissues.
- b) Of limbs, to aid speedy recovery of open wounds if near a joint, where excessive movement is undesirable.
- c) Of limb, if fracture repair is complicated and/or near the joint requiring complete rest.
- d) If internal fracture repair is not sufficient, an extra support in the form of a bandage is needed.
- e) Following manipulative procedures, e.g. 'figure of eight' bandage, after dislocated hips having been reduced.

## 5 STRAPPING

- a) To hold intravenous (I.V) cannulae in place.
- b) To keep limb extended for fluid lines and other such procedures.
- c) 'Stirrups' for Robert Jones and similar bandages.
- d) When necessary, to secure tail bandage to base of tail.
- e) To tape pinnae together above dogs head, for ear or head bandage.

NB. If the patient is made as comfortable as possible, it is more likely to continue eating and drinking. If the patient is able to move about (reasonably) pain free, it is more likely to urinate and defecate as and when necessary, thus speeding recovery.

## POINTS TO REMEMBER

*Do remember whatever your reasons for bandaging each patient, your ultimate goals must be:-*

- a) The bandage must serve the purpose for which it was intended.
- b) The bandage must be applied firmly, ensuring it has not been applied too tightly and circulation has not been impaired.
- c) It must be as comfortable as possible for the patient.
- d) It must look professional - take a pride in its appearance.

# TYPES OF BANDAGE

## 1 PADDING

Essential for foot bandages to pad out around the toes, pads, also dew-claws if present. Cotton wool is ideal, particularly in long strips to go between the toes. Do remember, cotton wool is a natural fibre and will absorb fluid, particularly from sweaty feet and may become quite solid. It is therefore essential to change foot dressings quite regularly to prevent any sores. Extra padding is also advisable around pressure points, such as the elbow and hock on limb bandages.

Another form of padding available is cotton wadding (a layer of cotton wool sandwiched between two layers of gauze). These are ideal for use as, or in conjunction with poultices or compresses. Cotton wool should not be applied directly to a wound, due to the nature of the product you will undoubtedly leave cotton fibres in the wound. If cotton wool is used on top of an appropriate wound dressing, it is likely to prevent the wound from being dressed too tightly and will absorb any excess exudate from the wound. Synthetic padding on a roll is ideal for undercast protection for ease of application, particularly as it will reduce moisture absorption from the cast. Another advantage of this type of padding, is that it is of even consistency and thickness throughout the roll, thus giving the finished bandage a more even surface overall.

### **Suggested Padding:**

*Millpledge Padding Materials:* Orthoband™, Cotton Wool (Vet, BP, HQ), Millsoft™, Ortho-Wool™, Zorbopad™, Zorbo-G-Padding, Poultex®.

## 2 CONFORMING

A true conforming bandage is one that can be stretched to maximum, released and then remain in much the same condition as the original bandage, without allowing holes to be poked through it.

Conforming bandages have revolutionised bandaging, due to their ability to contour easily allowing essential movement. There are many different types and weights available, depending on the degree of support required. Conforming bandages do however have some content of elastic, so it is essential not to apply too tightly, as this may interfere with circulation. Do remember, if sufficient padding has been applied, it should eliminate the possibility of bandaging too tightly and will be well tolerated by the patient.

### **Suggested Conforming Bandages:**

*Millpledge Knitted Bandages* (less slip properties): Knit-Fix™ and Knit-Firm™.



### 3 **NON CONFORMING**

Usually cotton bandages, and as the name suggests, there is no widthways or lengthways expansion. Consequently they will not conform to the animals' contours, without accurately placed twists and turns, to enable the bandage to fit snugly. For these reasons, non-conforming bandages are rarely used today, apart from holding endo-tracheal (ET) Tubes in place, holding the doors open in hot weather, muzzling stropky dogs' noses, holding Veterinary Surgeons' gowns together and other similar essential uses.

#### **Suggested Non-Conforming Bandages:**

*Millpledge Bandages:* White-Open-Wove (WOW), Vetband™.

### 4 **COHESIVE**

These are usually of a conforming nature, very easy to use and covered in a thin layer of latex which enables it to cling to itself, but not to the animals' skin or hair. Cohesives are air permeable, soft and easy to apply even to the most fidgety patient (if you let go at any stage, the bandage will remain in place and not unravel). This type of bandage is comfortable for the animal as it does not pull on hair, therefore the patient is less likely to interfere with the bandage. Due to their ease of use, cohesives are more comfortable and convenient to remove when the time comes.

The majority of cohesives are ideal for top bandages. They come in bright colours which can be used as a coding system if the patient needs re-bandaging, e.g. red - for immediately post operative, blue - for a first redress and white - for a second redress. This is particularly useful in larger practices, where more than one Veterinary Surgeon will examine the patient.

#### **Suggested Second Layer Cohesive Bandages**

*Millpledge Bandages:* Co-Form™, Co-Lastic™

#### **Suggested Third Layer Cohesive Bandages**

*Millpledge Bandages:* Co-Ripwrap, Wrapz™.

### 5 **ADHESIVE**

Not used quite so much now due to the convenience of cohesives. As the name suggests they are covered with a layer of adhesive, which is useful to hold on awkwardly positioned bandages. This is very much down to the individual choice of the Veterinary Surgeon or Veterinary Nurse. Adhesive bandages may be used as a top covering, to improve durability, but do remember it will be harder to remove. Some adhesive bandages come with a line down the centre, this is to enable you to ensure an even ½ overlap on application.

#### **Suggested adhesive bandages:**

*Millpledge Bandages:* Bandesive™, E-Band™, R-Band™.



## 6 STOCKINGETTE

These are tubular, elasticated, usually cotton composition bandages which come on a long roll. They can be 'net like' in appearance and available in various different sizes. Very useful for body bandages and to hold dressing pads in awkward places, e.g. chest, mid line dressings (post operatively). Use a suitable size, pulling over patient's body, cutting holes for patient's legs as necessary. A metal tubular applicator may be used to apply such bandages to limbs, but care does need to be taken to ensure adequate twisting while applying, or the whole bandage will slip down the limb. Stockingette bandages used on extremities will usually need a top bandage for extra protection.

## 7 TAPES

Quite a variety available from non stretch zinc oxide style, to hypoallergenic tapes. Some tear easily and are relatively transparent, ideal for holding I.V cannulae in place. Occasionally used for a temporary bandage, e.g. immediately post dew-claw removal, but would be taken off before the patient is discharged. Care needs to be taken when using spirit at site of tape application, as any type of spirit is likely to lift adhesive from the various tapes and leave a sticky mess on the patient - doesn't make for a happy owner!

Anifilm is ideal for using on birds' wings as it will hold securely, but will enable regular inspection to take place and is unlikely to harm feathers on removal. Likewise, Zinc Oxide (A-Tape) is ideal for using for Robert Jones 'stirrups'.

### **Suggested tapes:**

*Millpledge Tapes:* A-Tape (Zinc Oxide), Anifilm™, Anipore™, Anisilk™, W-Tape™.

Figure 1

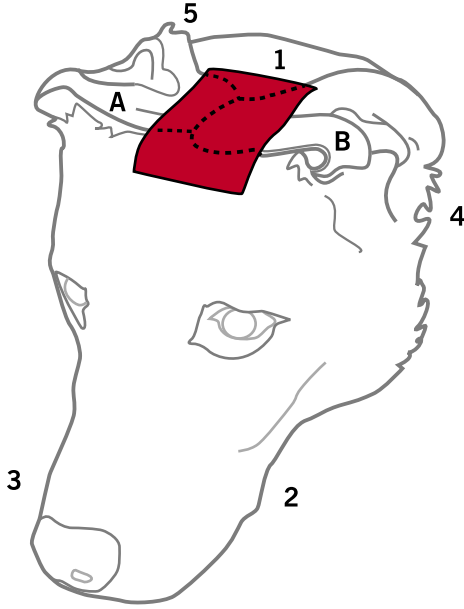
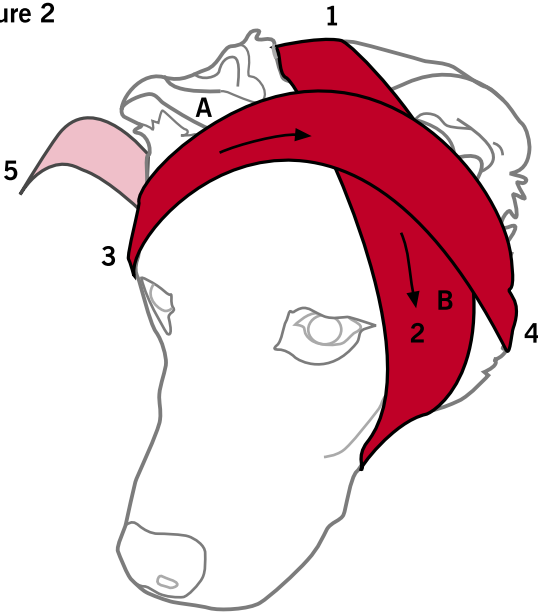


Figure 2



# EAR & HEAD BANDAGES

A head bandage may be used to secure one or both ears on top of the head. This may be used following aural resection, either single or bilateral. Another use might be after an aural haematoma has been corrected, by bandaging the treated ear to the head, it will help prevent re-occurrence of the haematoma. The animal may just be suffering from a severe case of Otitis Externa, in which ventilation is essential so putting both pinnae up on top of the head, the ear canals are held open which is ideal for ventilation and treatment.

A good way of placing the pinnae in the correct manner and position, is to pick up each pinna by the tip, using thumb and index finger, then with a sweeping movement, gently placing pinna on central cranium thus finding the most comfortable, natural and best tolerated position.

Fig 1. For an ear bandage, place padding on the top of cranium point 1, fold pinna 'A' over padding by method previously described, then place more padding e.g. a gauze swab or bandage on top of pinna 'A'. Fold pinna 'B' on top of pad. Tape pinnae together with an adhesive tape or bandage to prevent slipping.

Fig 2. For a head bandage an alternative would be to use the 'figure of eight' method. One or both pinnae may be included in this bandage. If leaving out one pinna, it will provide a good anchorage point for the bandage. (See figure 3 overleaf). Place padding on top of the cranium point 1, fold over pinna 'A', followed by further padding and pinna 'B', if being included. Padding will then be required around the patient's neck. Take an appropriate conforming bandage, starting at the centre of the cranium point 1, then roll bandage forward to cover the cheek bone, rostral to left pinna point 2, then under chin to opposite cheek bone, rostral to right pinna point 3. Then take the bandage diagonally across the centre of the cranium point 1 to point 4, caudal to left pinna, under neck to point 5, caudal to right pinna, then back to the starting point 1.

For ease of application we have numbered the significant points on the diagram as follows:

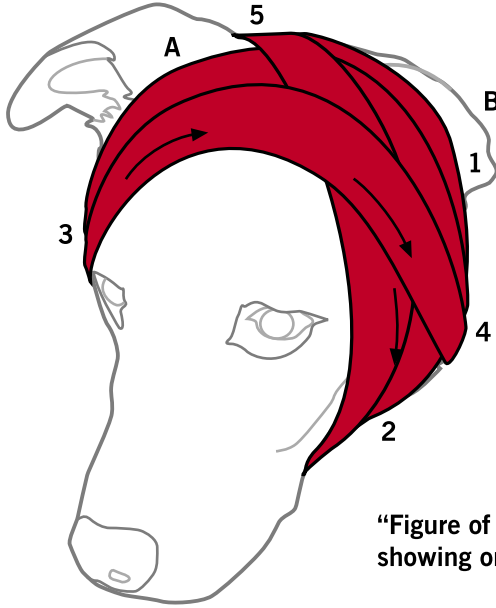
- 1        **Central Cranium**
- 2        **Rostral to left pinna**
- 3        **Rostral to right pinna**
- 4        **Caudal to left pinna**
- 5        **Caudal to right pinna**

To simplify applying head bandage from the start follow the sequence:

1 - 2 - 3 - 4 - 5 - 1

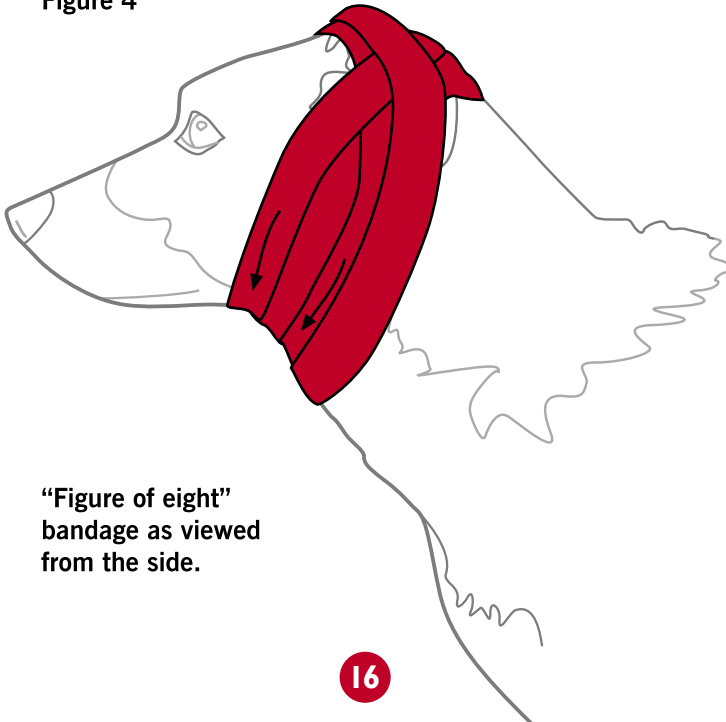
repeating in decreasing figures of 8 until desired covering is acquired. See figure 4 overleaf.

Figure 3



“Figure of eight” bandage showing one ear left out.

Figure 4



“Figure of eight” bandage as viewed from the side.



# EAR & HEAD BANDAGES

*continued*

Cohesives are ideal for this type of bandage not only due to their lightweight and porous properties, but also as they are comfortable and well tolerated by the patient and due to their cohesive properties, they tend to stay in situ.

*Ensure bandage is put on firmly but not too tightly, as this may lead to dyspnoea, so check regularly.*

**Suggested materials:**

## **Wound Dressings:**

*Millpledge Dressings:*

Zorbopad™, Mill Swabs, Grassolind, LP Dressing Pads, Poultex®.

## **Padding Layer:**

*Millpledge Padding:*

Orthoband™.

## **Conforming Layer:**

*Millpledge Bandages:*

Knit-Fix™, Knit-Firm™, Co-Form™, Co-Lastic™.

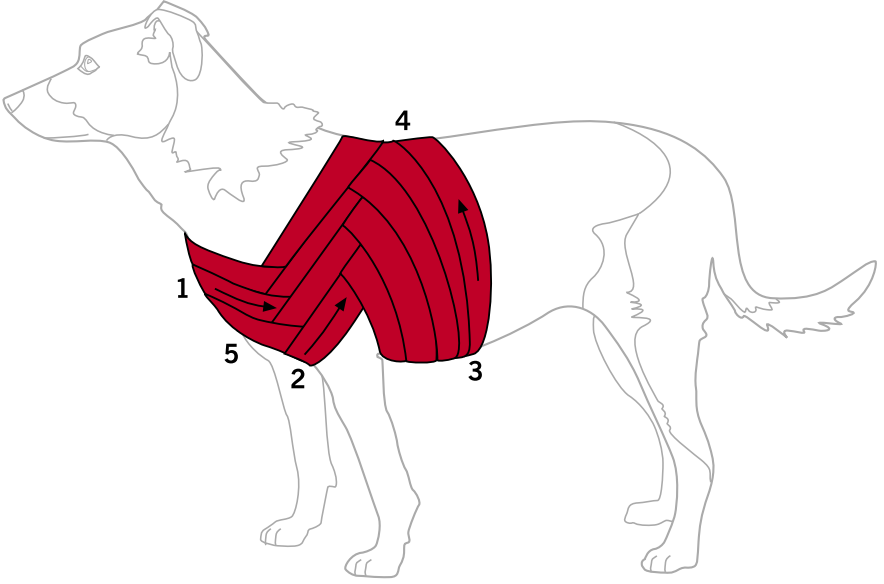
## **Top Layer:**

*Millpledge Bandages:*

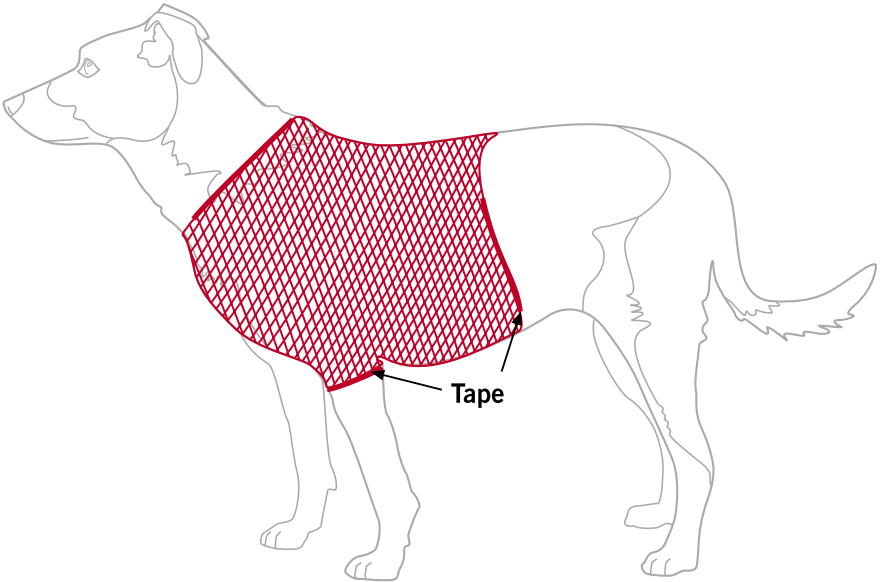
Co-Ripwrap™, Wrapz™.

**CHEST BANDAGES**

**Figure 1**



**Figure 2**



# CHEST BANDAGES

Used quite commonly mainly holding dressings in place around the chest or shoulder region, or for holding chest drains securely following surgery. Select and apply sufficient and appropriate padding. Choose an appropriate width conforming or cohesive bandage. Start your bandage at the withers point 4; take bandage down to point 1, through the fore legs point 2 and around the left axilla point 3, up over shoulder point 4, down over opposite axilla point 5, through under sternum (in a cranial direction) point 2, up over to point 4, returning down to right axilla point 5, under the chest to point 3 returning to point 4. See figure 1.

To simplify the application of the bandage, we have labelled the diagram with the following points:

- 1 Right shoulder
- 2 Sternum
- 3 Left Axilla
- 4 Top of shoulder
- 5 Right Axilla

To aid application follow points : 4 - 1 - 2 - 3 - 4 - 5 - 2 - 4 - 5 - 3

Repeat in this sequence in a 'figure of eight' style, until adequate coverage is achieved. Extra support of a further layer of a cohesive material may be applied in the same manner.

Alternatively, a stockingette bandage may be easier to apply. Pull stockingette over body, cut holes where needed for legs etc. The edges may need anchoring down with an adhesive tape to prevent slipping. See figure 2.

Do note that this type of bandage will not provide as much support, compared with the chest bandage previously described, but is ideal for holding dressings or chest drains in place.

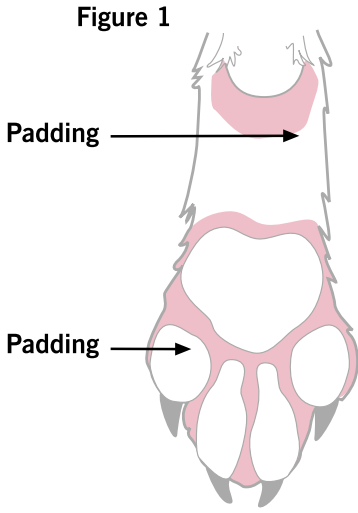
## Suggested materials:

### **Chest Bandage:**

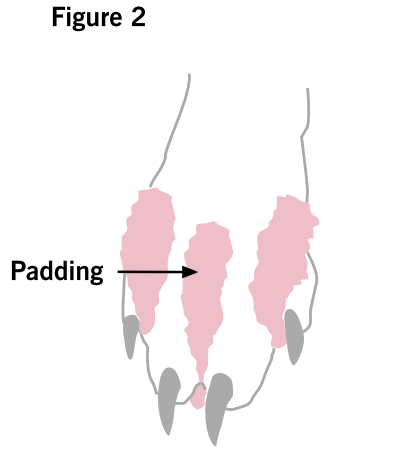
*Millpledge Bandages:*

Knit-Fix™, Knit-Firm™, Co-Form™, Co-Lastic™, Wrapz™.

Stockingette

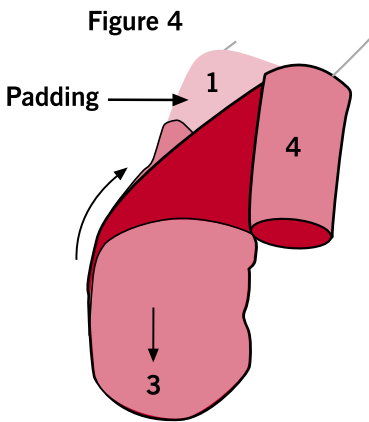
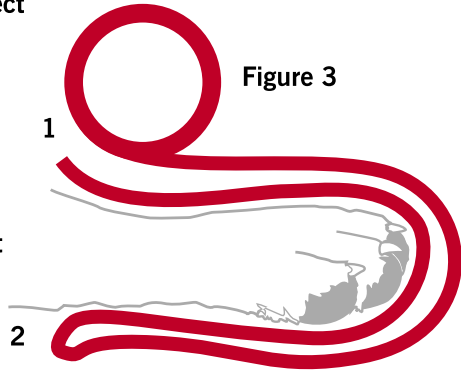


Palmar/Plantar aspect showing padding

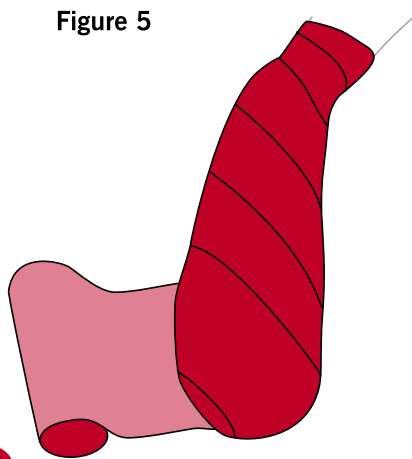


Dorsal aspect showing padding

Lateral/Medial aspect



Dorsal aspect





# FOOT & LOWER LIMB BANDAGES

Where possible it is advisable to include the foot in lower limb bandages to prevent oedema.

fig 1 and 2) Cut nails if necessary and pad out toes, including stopper pad and dew-claws if present. Pad between the toes extending to metatarsal/metacarpal region. Adequate padding will ensure the toes do not rub together as this may cause unnecessary swelling and sweating, possibly leading to excoriation.

fig 3) Apply further padding. Commencing at the top of point 1, roll your padding material longitudinally down the dorsal aspect of the limb to foot, under pads, then up palmar/plantar aspect, to top of point 2. Reverse procedure to return to starting position at point 1. It may be advisable to anchor bandage at this point around 1-2-1, then roll diagonally to point 3, around in palmar/plantar direction to point 4. Then spiral padding from distal end of foot using  $\frac{1}{2}$  to  $\frac{2}{3}$  overlap up to the proximal end of padding.

fig 4) Conforming Bandage Layer : Apply as figure 3. Secure ends of bandage with a tape, reef knot, or tuck in loose end.

fig 5) Due to the area bandaged, it is advisable to use a top covering of a suitable material to act as further protection for the bandage. A cohesive is ideal, although you may prefer to use an adhesive bandage. Either way it is advisable to place a strip of your cohesive/adhesive bandage over the distal end of the conforming layer, giving extra protection to the pads and at the same time helping the durability of the bandage.

After applying extra protection over the distal end of the conforming layer, apply third layer in a spiral motion from distal to proximal ensuring end of bandage finishes at palmar/plantar aspect

**NB:** *A ring doughnut made of cotton wool may be useful, over dew claws or other protrusions, as an alternative style of padding.*

**Suggested materials:**

## **Padding:**

Orthoband™, Cotton Wool (Vet, BP, HQ), Millsoft™, Orthowool™.

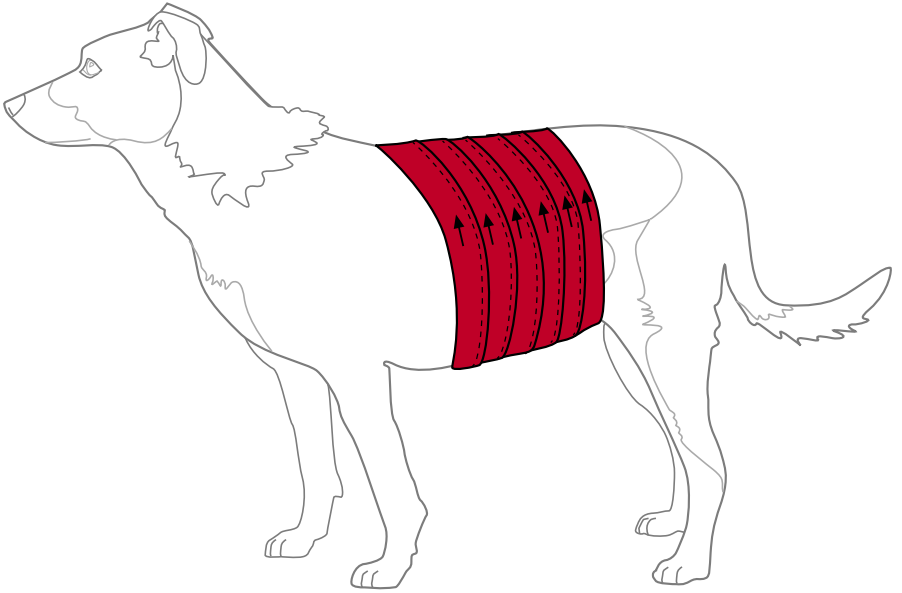
## **Conforming Layer:**

Knit-Fix™, Knit-Firm™, Co-Form™, Co-Lastic™.

## **Third Layer:**

Wrapz™, Co-Ripwrap™, Bandesive™, E-Band™, R-Band™.

# ABDOMINAL BANDAGE



# ABDOMINAL BANDAGE

This type of bandage is not used too widely. Depending on the shape of the patient and also the breed, it can be very difficult to apply, let alone keep in place. It is useful to use an abdominal bandage to hold a dressing in place after a mid-line operation, to help prevent haemorrhage, or just as an absorbent layer for a weeping wound.

*Wounds need to be dressed appropriately, choose your bandage carefully.*

Depending on the shape of the patient's abdomen, select an appropriate width conforming bandage that will hold the dressing in place, and if possible using the normal  $\frac{1}{2}$  to  $\frac{2}{3}$  overlap, bandage several centimetres either side of the dressing to prevent the bandage rolling in and putting pressure on to the wound.

With abdominal bandages, apart from rolling in, there is also a tendency for them to slip. It is therefore a good idea to use a cohesive bandage, with a strip of adhesive tape at each end to anchor it down. Alternatively, take bandage around shoulders and/or sternum to prevent bandage slipping.

Remember to keep the animal's comfort in mind, use wider bandages, and do not apply too tightly, as this may interfere with its breathing.

Alternatively you may use a stockingette bandage pulled over the animal's body with appropriate holes cut in for the limbs. Also make sure male dogs can urinate unhindered.

**Suggested materials:**

**Dressings:**

Poultex<sup>®</sup>, Zorbopad<sup>™</sup>.

**Padding:**

Orthoband<sup>™</sup>

**Conforming Layer:**

Wider widths of Knit-Fix<sup>™</sup>, Knit-Firm<sup>™</sup>, Co-Form<sup>™</sup>, Co-Lastic<sup>™</sup>.

**Third Layer (if required):**

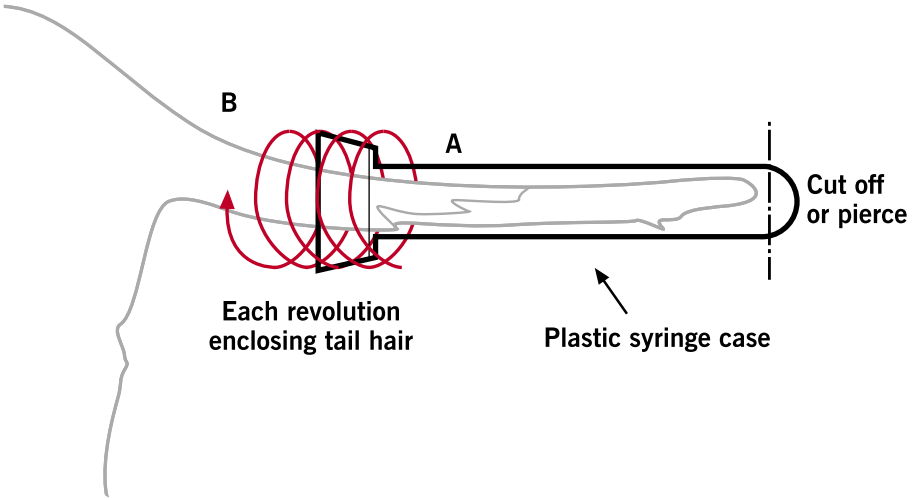
Wrapz<sup>™</sup>, Co-Ripwrap<sup>™</sup>.

**Tape (if required):**

A-Tape<sup>™</sup>, Anifilm<sup>™</sup>, Anipore<sup>™</sup>, Anisilk<sup>™</sup>.

# TAIL BANDAGES

Figure 1





# **TAIL BANDAGE**

## **with plastic cover**

An awkward bandage to apply, but very useful if the end of the tail is damaged - easily done in long tailed breeds, or even if the tip has had to be amputated. Another reason to bandage the tail, may be to protect the tail from post operative contamination of anal furunculosis, or other surgery around the animal's rear end.

Due to the shape and proximity of the tail to the body, it will always be difficult to keep the bandage on - particularly on happy dogs who may 'wag' your bandage off as soon as the owner appears! Don't despair, persevere!

There are two commonly used methods of bandaging tails. One is to use a plastic syringe case, particularly useful if covering a short and stumpy tail. The other is by spiral binding of the tail.

### **Plastic syringe case method:**

Firstly ensure syringe case is clean, then either pierce or cut away the end of the case for good ventilation. Dress the tail as appropriate to the wound.

Fix the case to the tail by enclosing some tail hair with each revolution of the bandage from the case proximally, to the base of the tail, point A to B as on Fig 1. This is one occasion in which it will be necessary to use an adhesive tape directly on to the animal's hair at proximal end of the syringe case.

### **Suggested Materials :**

#### **Wound Dressings:**

Zorbopad™, Grassolind™, Zn7™ Wound Healing Gel.

#### **Conforming Layer:**

Knit-Fix™, Knit-Firm™, Co-Lastic™, Co-Form™, VetBand™.

#### **Plastic Protective Cover:**

Syringe Case

#### **Third Layer (if required):**

Wrapz™, E-Band™, Bandesive™, R-Band™.

#### **Strapping Tapes:**

E-Band™ 2.5cm.

# TAIL BANDAGES

Figure 2

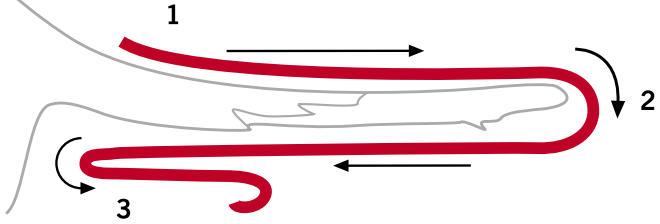


Figure 3

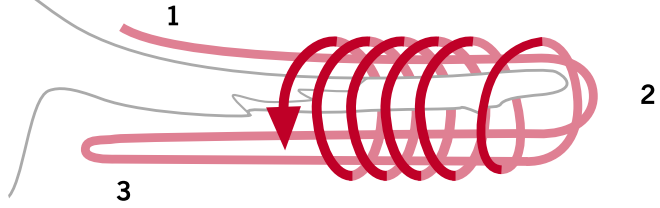
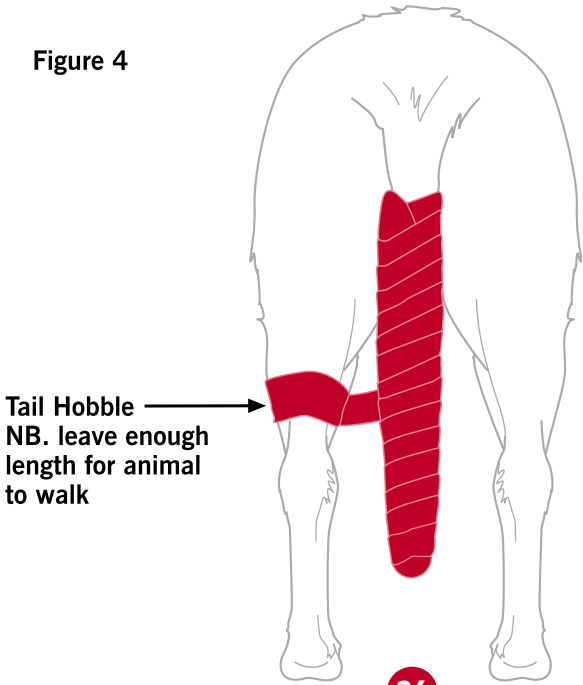


Figure 4



# TAIL BANDAGE

## Spiral Binding Method:

Dress tail wound as appropriate.

Fig 2) Use a conforming bandage to roll from dorsal base of tail point 1, to tip of tail point 2, returning on the underside to ventral base of tail point 3, back to tip point 2.

Fig 3) Spiral bandage from point 2 in a proximal direction ensuring  $\frac{1}{2}$  to  $\frac{2}{3}$  overlap to base of tail points 1 and 3, ensuring even pressure is applied. It may be useful to enclose some tail hair with each revolution, as you near the base of the tail. Secure the ends of the bandage, with reef knot or tape. It may be necessary to use adhesive strapping tape to complete the last steps of attaching bandage to tail hair at base.

Fig 4) For long tailed dogs a 'tail hobble' may be of use. This is made from tape around a stifle, and enough length to allow the animal to defecate, but not long enough to wag the tail. It is then secured around the tail and back to the stifle. Ensure sufficient padding is applied, to the area above the hock, to prevent slipping.

NB. Check daily to ensure the tape is comfortable and not causing any swelling, irritation, or any other problems.

## Suggested Materials

### Dressing:

Zorbopad™, Grassolind™, Zn7™ Wound Healing Gel.

### Padding:

Orthoband™, Millsoft™, Cotton Wool (HQ, BP, Vet).

### Conforming layer:

Knit-Fix™, Knit-Firm™, Co-Form™, Co-Lastic™, VetBand™.

### Third Layer:

Wrapz™, Co-Ripwrap™, E-Band™, Bandesive™, R-Band™.

### Hobble:

Wrapz™ 2.5cm, E-Band™ 2.5cm

**ROBERT JONES BANDAGE**

Figure 1

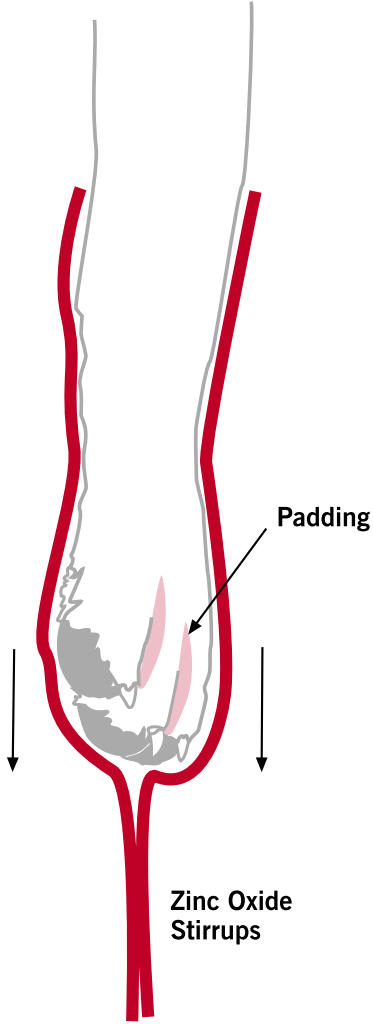
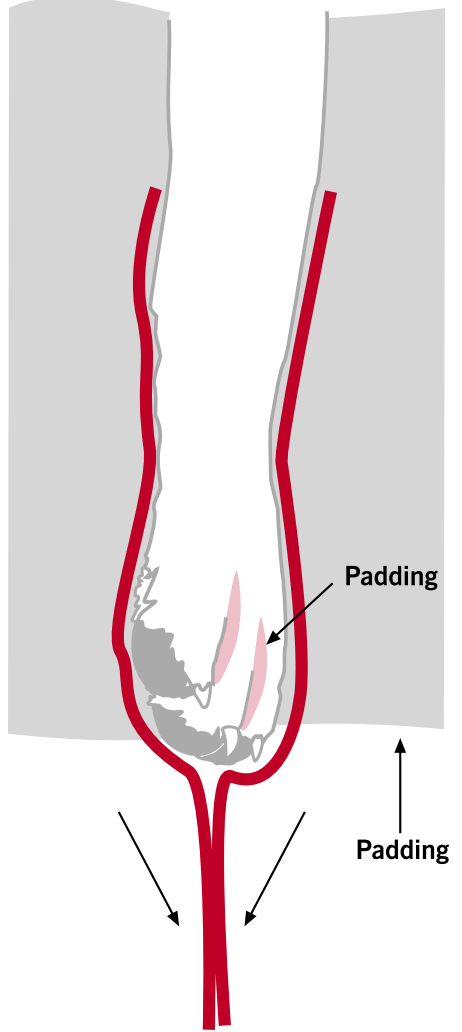


Figure 2



# ROBERT JONES BANDAGE

This bandage is very widely used but it may take a bit of practice to get it just right: Persevere! Here the two most commonly used methods are described, although there will be several variations of the Robert Jones Bandage, but the one thing in common is that the composition is of several layers bound together firmly, to produce the same neat, cylindrical bandage, providing maximum support and pain reduction. It may be used on fore and hind limbs. Robert Jones is also used for support and/or immobilisation pre and post operatively for traumatic fractures, with or without soft tissue damage.

Apart from restricting limb movement, it can also help reduce and/or prevent oedema, and the possibility of haematomas forming, merely due to the even pressure applied to the whole limb.

Another indication of where the Robert Jones bandage may be useful, is where a tumour has been excised either near or over a joint. Likewise if you have general lacerations, abrasions or even injuries following a road accident, after appropriate wound dressings have been applied. Although this will look like a very bulky bandage, it is relatively lightweight and although applied firmly, it is superb cushioning for traumatised soft tissue, and most importantly, is usually very well tolerated by the patient.

## Method 1:

1 Dress any open wounds as appropriate, pad out toes, including stopper pad and dew-claws if present, then cut two lengths of zinc oxide tape to cover at least 15 - 20cm (6 - 8 inches) up the leg and 10 - 12 cm (4 - 5 inches) overlap at the toes. Stick these to the anterior and posterior aspects of the leg respectively, ensuring coverage over and above metatarsal/metacarpal region. Stick loose ends together for the time being to prevent them sticking to anything else! These are known as the 'stirrups'. See figure 1.

2 Pad out toes as necessary. Carefully unroll the end of a complete roll of cotton wool. Position roll over leg to start  $\frac{1}{2}$  way up the toe nail - reverse roll cotton wool spirally up to proximal end of leg. (Narrow rolls of cotton wool are available for short legged dogs, called Ortho-Wool). Wrap the cotton wool around the leg at least 4 - 5 times as firmly as is possible. See figure 2.

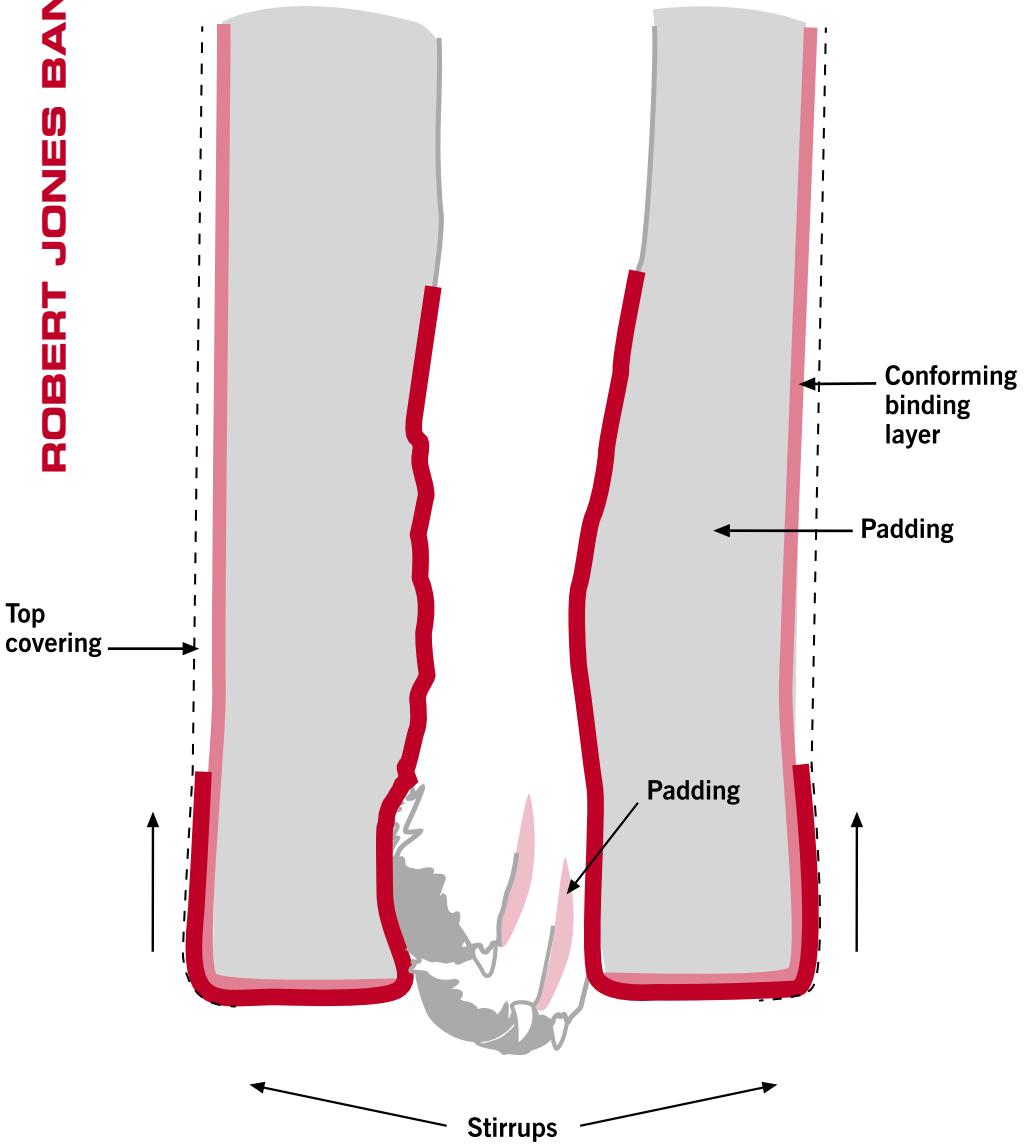
NB: A 500g roll should be sufficient for a large dog's legs.

3 Choose an appropriate width bandage, depending on personal preference a conforming bandage is ideal. The purpose of this layer is to compress the cotton wool as firmly and as evenly as possible using the normal  $\frac{1}{2}$  to  $\frac{2}{3}$  spiral binding action. This will give maximum compression and support to the limb. Bandage to completely cover the cotton wool incorporating any loose ends, by folding in at the top and bottom. It is advisable to leave two toe nails (not whole toes) exposed below cotton wool at distal end, with enough movement to allow animal to balance. If this layer has been applied with sufficient tension, the bandage will make a resonant sound, like a ripe melon, when flicked.

continued...

**ROBERT JONES BANDAGE**

Figure 3



Cross section of finished Robert Jones Bandage



# ROBERT JONES BANDAGE

*continued*

4 Unstick free ends of zinc oxide tape and fold back securing to cotton wool bound layer. These stirrups prevent the whole bandage from sliding down the animal's limb and are one of the few occasions where it is essential to stick something directly to the hair. The stirrups are then further secured by the top covering. An appropriate width cohesive bandage is ideal for this layer, working in the usual spiral action with  $\frac{1}{2}$  to  $\frac{2}{3}$  overlap starting at the distal end and working proximally. Alternatively an adhesive bandage may be used if preferred.

The end result is a bandage approximately 3 times the width of the dog's leg, and should make a sound like a ripe water melon when flicked. See figure 3 for the composition of the completed Robert Jones bandage.

The importance of leaving the two middle toe nails exposed is twofold: Firstly to enable the animal to balance and secondly to allow regular checking of the animal's circulation (which is easier in white nailed dogs) and its temperature. Extremes in temperature (too hot/cold) may also indicate possible infection, or bandage on too tightly.

## **Method 2:**

A variation of this method is to use alternate layers of cotton wool and conforming bandage followed by another layer of cotton wool and another layer of conforming bandage, repeated to give at least three layers of each. The remainder of the bandage would be applied the same as described in the previous method.

The successful result should still produce a plain cylindrical bandage with a resonant sound heard when the bandage is flicked.

**Suggested materials:**

### **For stirrups:**

A-Tape™ (zinc oxide)

### **Padding:**

Cotton Wool (Vet, BP, HQ), Millsoft™, Orthowool™, Cotton Gauze Wadding, Orthoband™.

### **Conforming Layer:**

Knit-Fix™, Knit-Firm™, Co-Lastic™, Co-Form™.

### **Third Layer:**

Wrapz™, Bandesive™, R-Band™, E-Band™.

# VELPEAU SLING

Figure 1

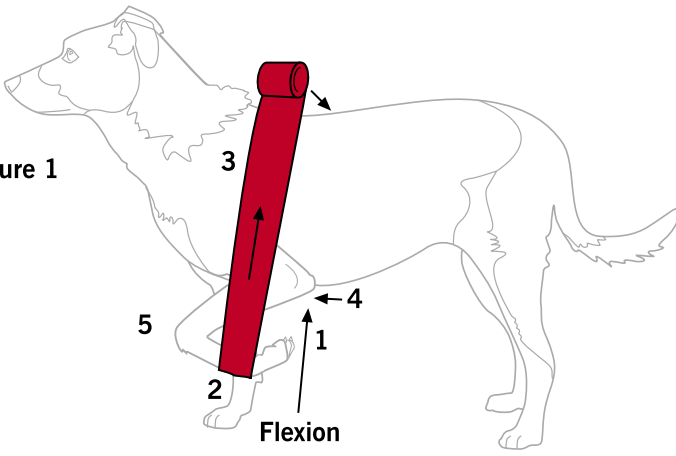


Figure 2

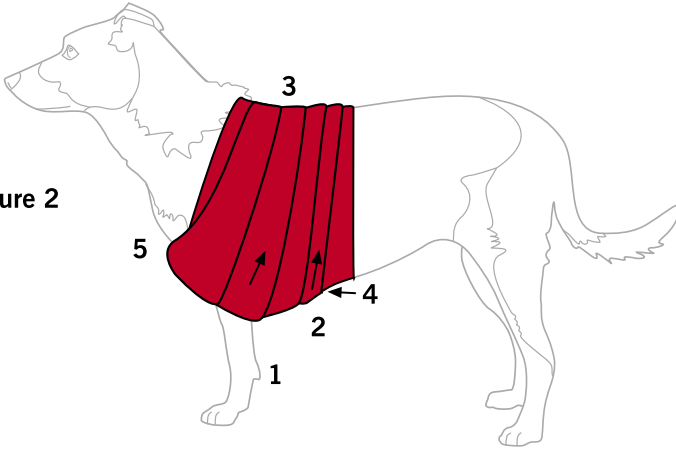
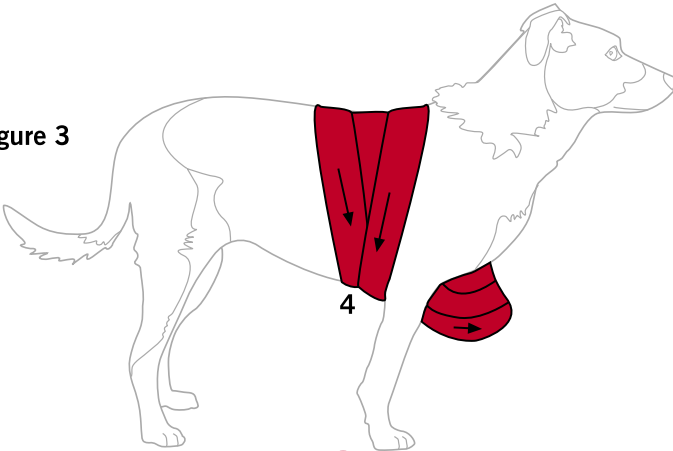


Figure 3



# VELPEAU SLING

This bandage is used specifically to immobilise the shoulder, usually as the treatment following reduction of shoulder dislocation. Although the bandage performs this task very efficiently, care must be taken when using it particularly on larger breeds, or just older dogs. The reason for this being that the restriction may cause difficulty in free movement. If the dog has arthritic joints or pain in other such joints, he is therefore less likely to move about to urinate, eat or perform other functions, thus slowing recovery.

Pad out foot as necessary with cotton wool. Using a conforming bandage, secure ends to a pre padded metacarpal region. Take bandage from lateral to medial direction points 2 to 1 over the palmar aspect of paw. Flex carpus, elbow and shoulder to maximum. Bring bandage up over lateral paw, limb and lateral aspect of shoulder, point 3, then down to opposite axilla point 4, and back under the chest to points 1 and 2. Repeat from steps 2, 3, 4 taking bandage dorsally around point 5 over lateral aspect of shoulder to point 3. See figure 1.

For ease of application we have numbered the significant points of the diagram as follows:

- |   |                                    |
|---|------------------------------------|
| 1 | <b>Medial Metacarpal</b>           |
| 2 | <b>Lateral Metacarpal</b>          |
| 3 | <b>Anterior Aspect of Shoulder</b> |
| 4 | <b>Opposite Axilla</b>             |
| 5 | <b>Knee Joint</b>                  |

To simplify the steps on how to apply the velpau sling from the start, follow this sequence:

2 - 1 - 2                      \* 3 - 4 - 5 - 3 - 4 - 2.

Repeat from asterisk \* until sufficient support for immobilisation of the elbow, thus preventing any extension of this joint. See figure 2.

For neatness and a firm support, the whole bandage can then be covered by an appropriate cohesive or adhesive bandage as preferred.

## POINTS TO REMEMBER :

*Do not use a 'figure of eight' in the construction of this type of bandage. There should be no bandage in front of opposite shoulder, all revolutions pass back under opposite axilla at point 4, See Fig 3.*

## Suggested materials:

**Padding:** Orthoband™, Cotton Wool (Vet, BP, HQ), Millsoft™.

**Conforming layer:** Knit-Fix™, Knit-Firm™, Co-Form™, Co-Lastic™.

**Third Layer:** Wrapz™, Bandesive™, R-Band™, E-Band™.

Figure 1

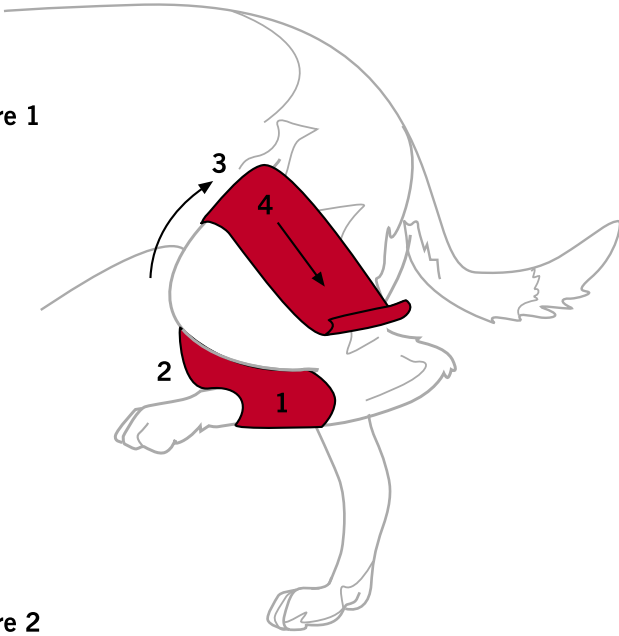
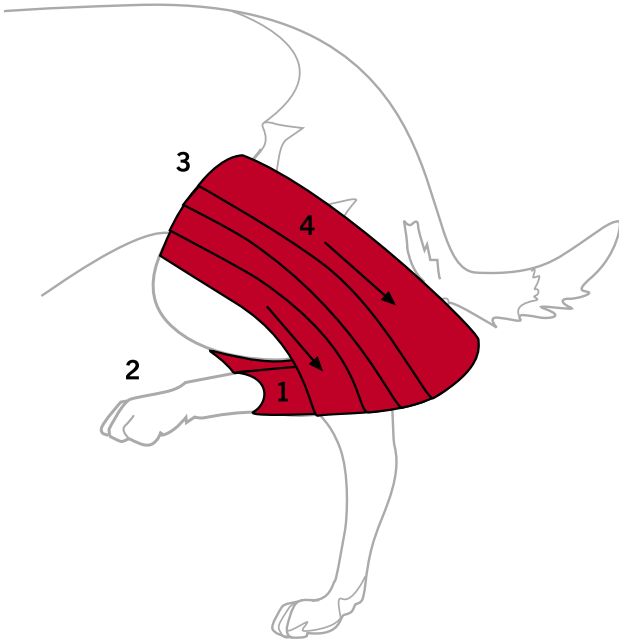


Figure 2



# EHMER SLING

The Ehmer Sling is used for immobilisation of the hip joint, usually for support post reduction of a hip dislocation, where the femoral head has luxated from the acetabulum. Likewise it may be used to prevent weight bearing on a hind limb. The ultimate aim however, is the same for both variations i.e. the foot slightly rotated inwards, the hock outwards, thus forcing the femoral head back into the acetabulum, with the leg held in extreme flexion.

The shape and size of the animal must be taken into consideration when using this bandage, particularly if the animal is either obese or heavily muscled, as this may cause the bandage to slip. Also if the animal is old or has arthritic joints, this may cause difficulty in flexing the patient's affected limb comfortably, making it less likely to move about, eat, urinate or perform other functions, thus slowing recovery.

Secure bandage around pre padded metatarsal area leaving toes exposed if preferred. Using a conforming bandage, take it from Medial Metatarsal around the lateral aspect of metatarsal point 1, up the medial aspect of the stifle point 3. The area over the femur is then padded and the bandage brought over the lateral aspect of the thigh, point 4, returning to point 1. See figure 1.

For ease of application we have numbered the significant points on the diagram as follows:

- |   |                               |
|---|-------------------------------|
| 1 | <b>Lateral Metatarsal</b>     |
| 2 | <b>Medial Metatarsal</b>      |
| 3 | <b>Medial Stifle-Anterior</b> |
| 4 | <b>Lateral Thigh Femur</b>    |

Therefore to simplify the steps needed to be taken to apply the bandage from the start is as follows:

2 - 1 - 2 - 3 - 4 to hold foot in slight inward rotation, to be followed by point 1 - 2 - 3 - 4 Repeat sequentially, until sufficient support is acquired. Secure end. See figure 2.

A final top covering of cohesive bandage may be used to help protect the underlying conforming bandage and provide extra support whilst remaining lightweight and porous. If preferred, adhesive bandages may be used in place of a cohesive, but they may be more difficult to remove.

## Suggested materials:

**Padding and strips:** Orthoband™, Cotton Wool (Vet, BP, HQ), Millsoft™, Cotton Wadding, OrthoWool™.

**Conforming layer:** Knit-Fix™, Knit-Firm™, Co-Form™, Co-Lastic™.

**Third Layer:** Wrapz™, Co-Lastic™, Co-Ripwrap™, Bandesive™, E-Band™, R-Band™.

**MODIFIED EHMER SLING**

Figure 1

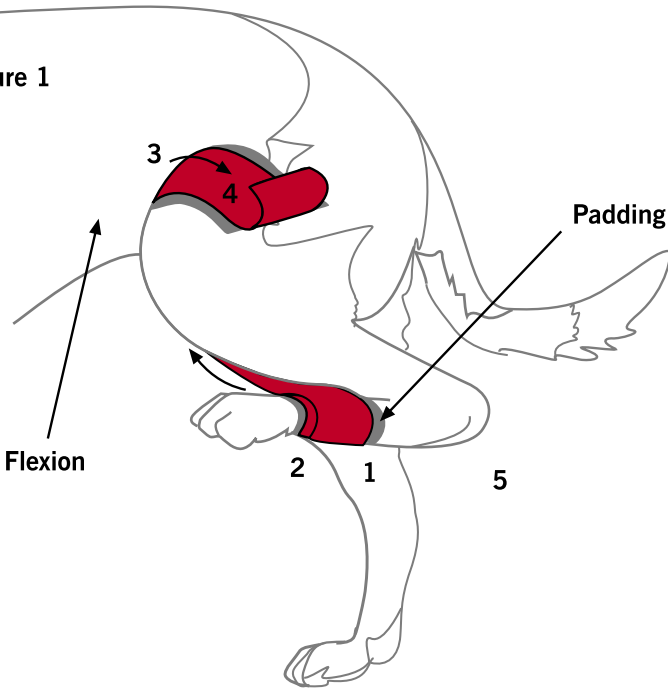
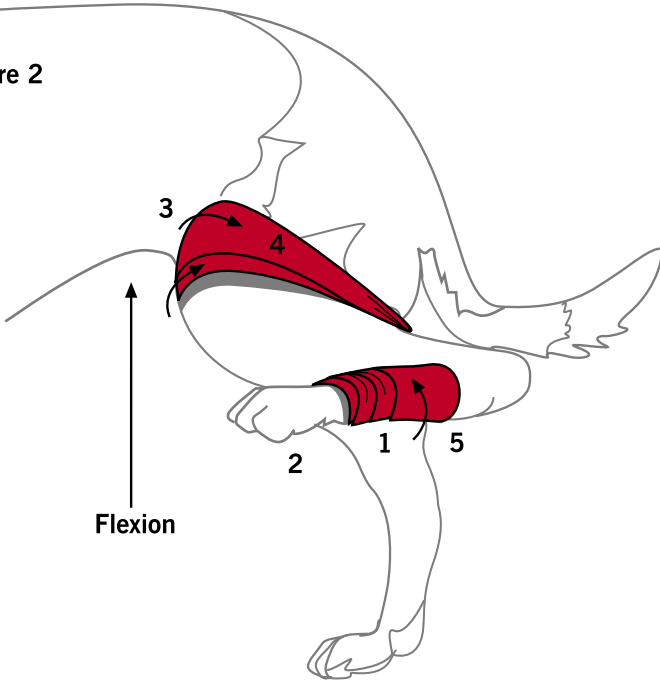


Figure 2





# MODIFIED EHMER SLING

As the name suggests, this bandage is a modified variation of the afore mentioned Ehmer Sling. This may also be described as the 'Figure of Eight' bandage or even the 'Butterfly' bandage. The ultimate aim however, is the same for both variations i.e. the foot slightly rotated inwards, the hock outwards, thus forcing the femoral head back into the acetabulum, with the leg held in extreme flexion.

Secure selected bandage to pre-padded metatarsal area, point 1 and 2. On long, slender legs a cohesive bandage is ideal. With cats and smaller dogs it may be necessary to use an adhesive bandage to hold in position. Pad anterior aspect of femur then position leg in extreme flexion. Bring bandage up medial aspect of stifle and over anterior aspect of femur, point 3, down across lateral thigh, point 4 and medial hock, point 5. See figure 1.

## POINTS TO REMEMBER:

*You may find it necessary between points 4 and 5 and points 2 and 3, to rotate your bandage through 180° to ease application and fit more comfortably.*

Again we have numbered the significant points on the diagram as follows:-

- 1 Lateral Metatarsal
- 2 Medial Metatarsal
- 3 Medial Stifle-Anterior Femur
- 4 Lateral Thigh
- 5 Medial Hock

Therefore to simplify the steps needed to be taken to apply this bandage from the start are as follows:-

1 - 2 - 3 - 4 - 5 followed by:- \* 2 - 1 - 3 - 4 - 5

Repeated in this order from the \* until sufficient support is acquired. Secure ends. A final top covering of cohesive bandage may be used to help protect the underlying conforming bandage and provide extra support whilst remaining lightweight and porous.

## Suggested materials:

**Padding and strips:** Orthoband™, Cotton Wool (Vet, BP, HQ), Millsoft™, Cotton Wadding, OrthoWool™.

**Conforming layer:** Knit-Fix™, Knit-Firm™, Co-Form™, Co-Lastic™.

**Third Layer:** Wrapz™, Co-Lastic™, Co-Ripwrap™, Bandesive™, E-Band™, R-Band™.

# THOMAS EXTENSION SPLINT

Figure 1

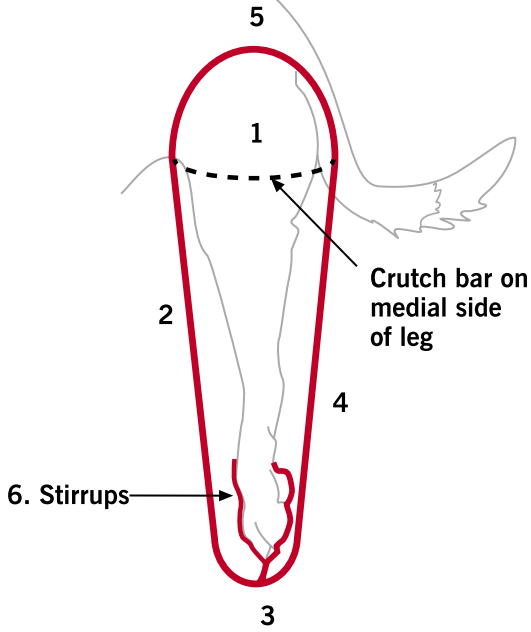
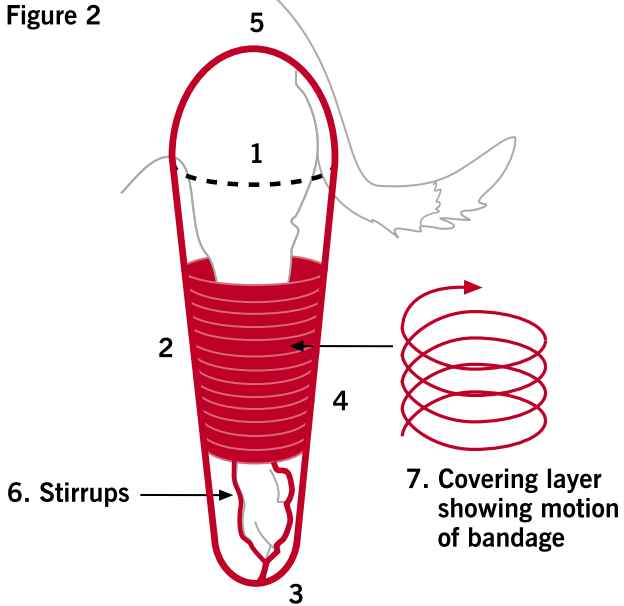


Figure 2



# THOMAS EXTENSION SPLINT

A great deal of practice is needed to master the skill of applying a Thomas Extension splint, but it is very useful for fractures of the fore or hind limbs, where other means of support are impractical. The Thomas Extension splint may be left in situ for up to six weeks, but the leg should be checked for sores frequently and the animal rested as much as possible. You should be aware that the animal may have difficulty in manoeuvring, especially trying to stand, from a lateral position.

The Thomas Extension Splint is mainly constructed of an aluminium rod, which although it is not moulded to the animal's contours, it acts as a scaffolding built around a rigidly extended leg. The limb is measured firstly from the extended toe, to the proximal aspect of the leg, points 3 + 1 on the medial side. This measurement gives you the height for the horizontal bar. This extra bar acts as the crutch of the splint allowing the animal to manoeuvre without putting any weight on the leg or toes. Point 1 on the diagram.

The second distance to be measured, is from the extended toe, point 3, then around the loose perimeter of the animal's leg, via points 4, 5, 1, 2 and back to 3 on figure 1.

The aluminium is cut to this length, then padded with cotton wool, or another such suitable material, to protect the leg from pressure sores, and to act as a cushion from any external forces. Join ends together, shaping scaffold support to make a splint around the circumference of the limb - as in figure 1.

The horizontal crutch should then be joined to the main splint at the correct height (as previously measured) on the medial aspect - point 1 in figure 1.

Any wounds should be suitably dressed, then 'stirrups' applied to the distal end of splint at point 3, having first been attached to the toes, point 6.

The 'stirrups' are used to extend the toes, and by fixing them to point 3, it will ensure stability without excess movement. A cohesive covering is then applied to cover the lower splint, and prevent lateral to medial movement of the limb, see figure 2. Adhesive bandages may be used if preferred, but may cause discomfort to the animal where it comes into contact with the animal's hair. By only partially covering the splint, good ventilation of the leg is ensured.

The points of the diagram are labelled as follows:

*Point 1: Medial Horizontal Padded Crutch*

*Point 2, 3, 4 & 5 Points around the splint*

*Point 6: 'Stirrups' attached to extended toes at the distal end of splint*

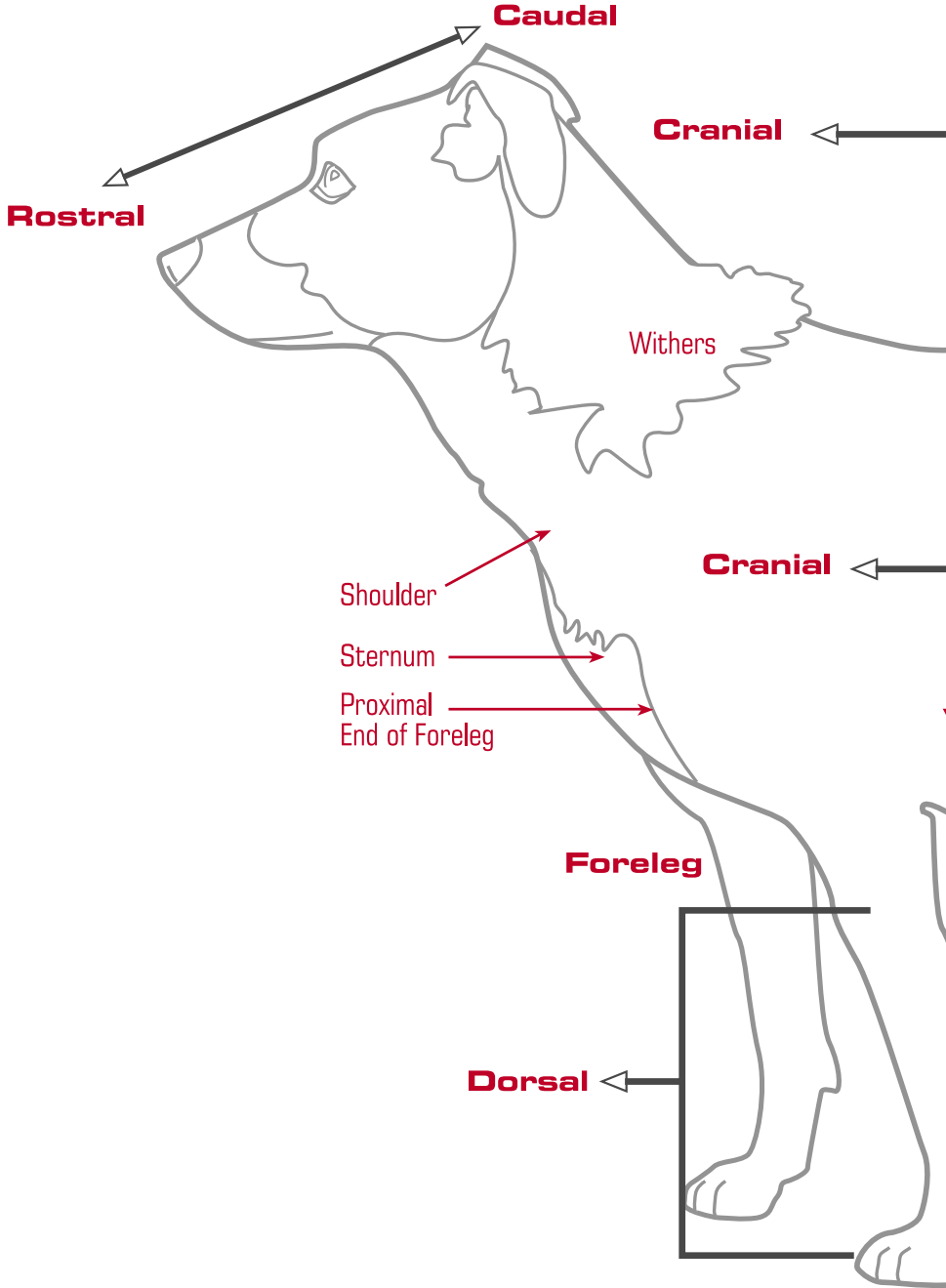
*Point 7: Adhesive or cohesive top covering*

Suitable materials:

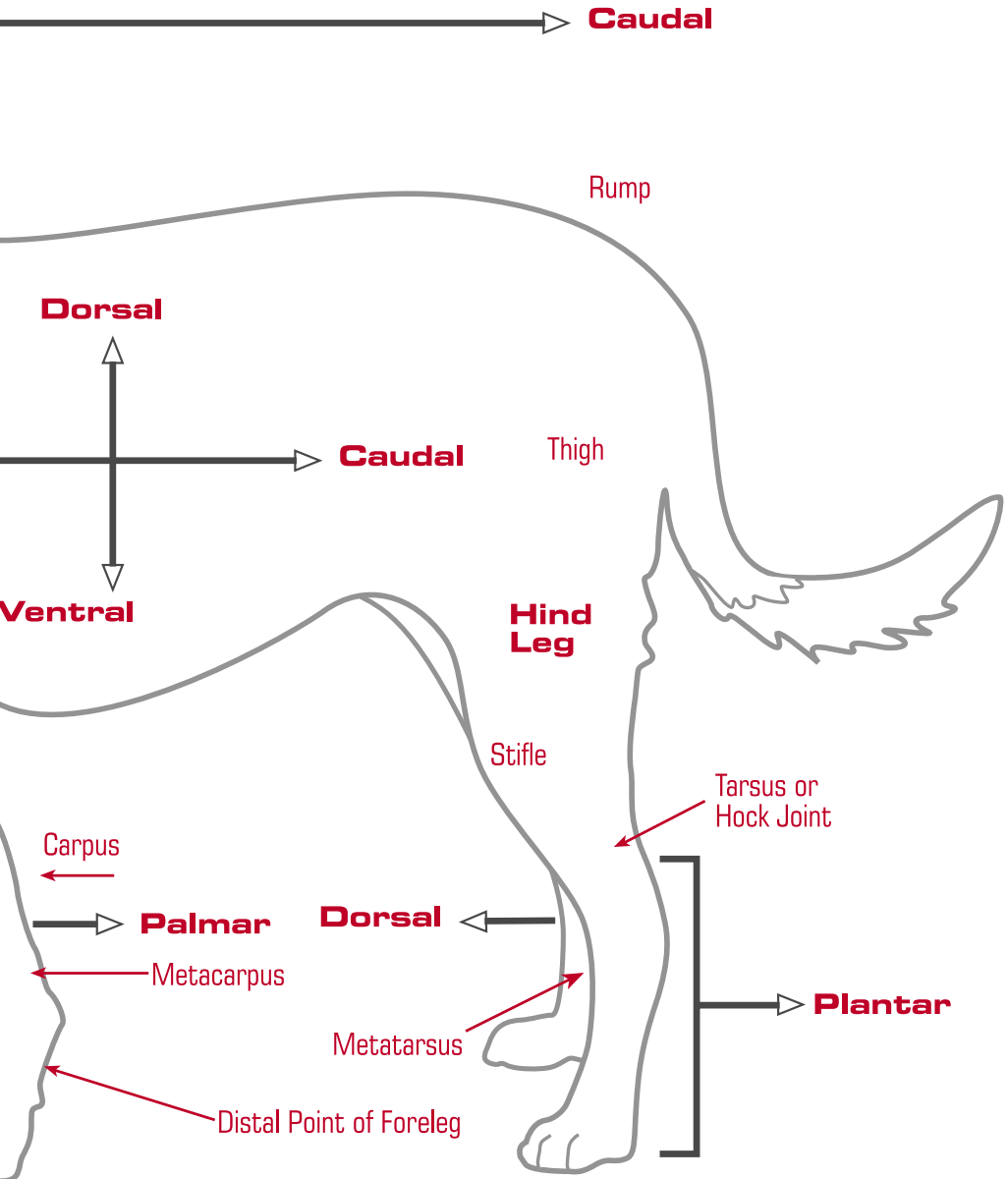
**Padding:** Orthoband™, Cotton Wool (Vet, BP, HQ), Millsoft™, Orthowool™.

**Top Covering:** Wrapz™, Co-Ripwrap™, E-Band™, Bandesive™, R-Band™.

**'Stirrups':** A Tape™ (Zinc Oxide.)

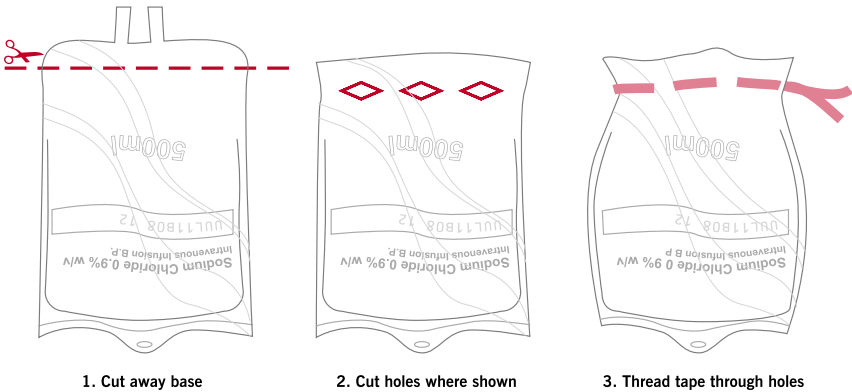


# ANATOMICAL DIRECTIONS AND SELECTED POINTS OF A DOG



# POINTS TO REMEMBER ON DISCHARGING YOUR PATIENT

- a) Ensure the owner has a follow up appointment to change or remove the bandage.
- b) Ask the owner to keep the bandage as clean and dry as possible. When walking out of doors, it is advisable for foot bandages to be temporarily covered with a plastic bag held on with tape, not pins or elastic bands. Dog and cat boots are commercially available for this purpose. Alternatively, if you have a used fluid bag available, cut off the injection ports end, wash and dry thoroughly and then make several holes around the top. Thread either Vet-Band or Knit-Firm through the holes (see the diagrams).



This enables the tape ends to be pulled in a purse string manner and neatly tied for quick and easy application and removal by the owner. These bags are ideal, due to the strength and thickness of the plastic. Instruct the owner on how to apply the bag and also **remove immediately on returning after the walk**. This is to prevent unnecessary sweating of the foot.

- c) Ask owner to look out for any swelling, discharge, pain or unpleasant smell from around the bandage. Insist on reporting back to the surgery immediately if in any doubt.
- d) If necessary, provide help and advice to prevent animal interfering with its bandage, such as using a bitter spray or an Elizabethan Collar or bucket around the head. Do impress on owners that the animal may need to be supervised whilst initially wearing such protection.
- e) If patient requires complete rest and isn't too co-operative, e.g. a boisterous puppy, it may be necessary to use mild tranquillisers such as ACP. This must, of course, be done under the Veterinary Surgeon's strict directions of dosage and length of treatment, and must be carefully explained to the owner.
- f) Finally, listen to the owner. Answer their varied and many questions, and reassure them they can telephone any time for advice, or return the animal to the surgery if they are at all concerned.

## **AND FINALLY... don't forget to check**

That the finished bandage is neat - no loose ends where the patient may be able to claw, chew or pull undone.

That the bandage is sufficient for the purpose for which it was intended; e.g. if for immobilisation of a limb, that the animal cannot actually bend that limb.

That your patient is as comfortable as possible. This will aid a speedy recovery if the patient can continue with as much normality as possible.

That it appears professional. It is very embarrassing when the patient gets home and shakes off your prized bandage!

That the bandage is applied firmly but not too tightly. Check for dyspnoea, having applied head, neck, chest or abdominal bandages.

**Bandaging techniques  
continue overleaf within the  
equine section**



# EQUINE BANDAGING

## Pressure Bandages

It may on occasions be necessary to apply an emergency pressure bandage until veterinary care can be sought. This may be done to serve a number of purposes, including:

- *To stem or control bleeding.*
- *To stabilise the limb, suspecting damage to bone, tendon or ligament.*
- *To minimise swelling.*
- *To protect a wound from further trauma or contamination.*

**A pressure bandage by its own nature has real potential to cause harm to the limb, and as such should be applied carefully, with subsequent attention paid to the horse.**

If serious haemorrhage is evident, immediate pressure should be applied to the wound. If minor venous or capillary haemorrhage is evident, it may be appropriate to clean the wound before applying the pressure bandage. Common sense should indicate the necessity of which action to take.

If cleansing is appropriate and not likely to cause further damage, cold water should be used to rinse the area. The cold water will assist in vasoconstriction, thus minimising blood flow as far as possible. Prolonged rinsing should be avoided. Sterile saline solution is preferable, but tap water is adequate, and realistically more readily available in an emergency. In some instances, it may be appropriate to apply an ice pack before bandaging.

If an open wound is present, a dressing pad should be applied. Avoid placing cotton wool onto the wound. Adequate padding material should then be applied, with even pressure around the limb, to 5cm (2 inches) thick. It is important to use a bandage with sufficient width – at least 7.5cm but preferably 10cm wide in order to avoid the bandage from creating a tourniquet effect.

### General guidelines:

- If practicable, clean the wound first.
- Cover the wound with a dressing pad.
- Apply soft absorbent padding, distributed evenly.
- Apply the support layer, beginning at the foot, working proximally.
- Apply the pressure bandage at least 12½cm (5 inches) above the point of injury.
- Ensure uniform tension is applied throughout, ensuring one finger can be placed down the inside of the bandage.
- If blood soaks through, apply another bandage over the top, taking care not to disturb the first.

# EQUINE BANDAGING

## The Hock

The hock is vulnerable to trauma, fatigue and stress. Bandaging may be recommended following surgery, to protect a wound, or to reduce oedema or heat.

Hock bandages are used to:

- *Prevent and reduce oedema.*
- *Support injured joints.*
- *Reduce joint motion.*
- *Protect open wounds from contamination or trauma.*
- *Absorb exudates.*

The hock is a difficult site to bandage due to the range of movement and the resentment the horse feels when this is restricted. The major 'danger areas' are the common calcanean tendon (Achilles tendon) region, and the dorsal aspect of the hock below the tarsometatarsal joint. The point of the hock is also potential danger point because of the thin skin cover and prominent bone of the tuber calcis.

Along with correct application, dressings applied to the hock rely on the common calcanean tendon to keep them up. There are serious risks if the bandage is placed too tight and if it is too loose it will slip.

Wounds on the point of the hock are particularly difficult to dress. A suitable shaped dressing (e.g. Poultextex<sup>®</sup>) is a useful aid, and can provide an excellent method of applying a primary dressing to these wounds. The dressing will usually remain in situ so long as the secondary conforming dressing is suitably supportive.

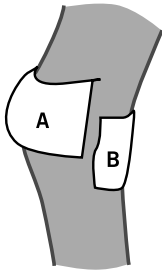
After the bandage is applied many horses will flex the hock strongly and repeatedly. During forced extension the forces are transferred to the dorsal aspect of the hock. If this occurs, the bandage must be checked again for tension over the calcanean tendon region, and entirely replaced if necessary.

The risks can be minimised by ensuring that a purpose-made soft pad, or a plug of cotton wool protects the point of the hock. A sympathetic figure-of-eight bandaging technique is generally used, and there should be no tension on the common calcanean tendon (a finger should be able to run over the tendon under the bandage at each stage). This can be supported by including a roll of 10cm (4 inches) wide cotton bandage (unopened) on either side in the hollow below the common calcanean tendon after the primary and secondary bandages have been applied. This transfers the tension to the bandage roll. If the bandages are left sealed, they can be used at the next bandage change!

*Regular checks on the comfort and stability of the bandage should be made.*

*If the dressing is obviously uncomfortable then it should be removed and replaced.*

continued...

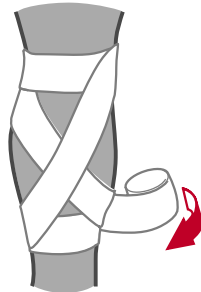


**1. Lateral View**

Apply primary dressing such as Zorbopad™ or Poultex® depending on wound being on either A or B.

**2. Dorsal View**

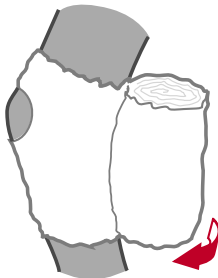
Wrap secondary dressing such as Orthoband™ starting proximally, continuing into a figure of eight.



**3. Right Lateral View**

Wrap cotton wool around and work into a figure of eight.

Remove a plug of cotton wool from over the point of the hock.



**4. Right Lateral View**

Use Wrapz™ to bandage around the cotton wool in a figure of eight. Leave point of hock free.



**5. Right Lateral View**

Begin from the inside of the leg with Wrapz™ and work distally in figure of eight. Ensure correct tension at Achilles tendon.



# EQUINE BANDAGING

## The Hock

*continued*

### Applying a hock bandage:

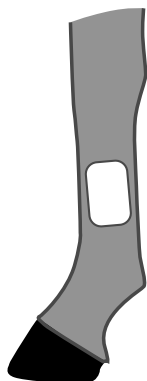
- Ensure area is clean and dry.
- If appropriate, cover wound with dressing.
- Pad to at least 5cm (2 inches) thick, and the padding layer should extend at least 12½cm (5 inches) above and below the point of hock.
- Ensure padding lies flat and wrinkle free.
- Using a figure of eight pattern, begin just below the point of hock. Wind from the medial aspect around the back of the hock to the lateral aspect then follow on, extending down medial to lateral (figure of eight).
- Begin applying the supporting bandage below the point of the hock, wrap front to back, lateral to medial, spiralling upwards, overlapping at 50% of the bandage width.
- Ensure uniform tension is applied throughout.
- Repeat the figure-of-eight until the bandage extends 10-15cm (4-6 inches) above the point of hock, 1½cm (½ inch) from the edge of the padding layer.
- Veterinary advice should be sought in order to decide whether or not to encase the hock completely – horses tend to prefer not.
- Secure the bandage at the top and bottom with an adhesive tape.

### ADDITIONAL CONSIDERATIONS:

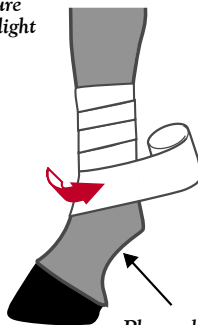
*Horses with hock bandages should be confined at rest unless specified otherwise by the veterinary surgeon. The bandage should be checked two to three times a day, with attention paid to any increase in lameness or oedema. In addition, should the bandage become wet or soiled, it should be replaced immediately.*

To put a support bandage on the lower limb of a horse, follow these steps.  
Ensure you do not over tighten the bandage during application.

1. Cover any wound with a non stick dressing such as Zorbopad™.
2. Apply Orthoband™ to hold the dressing in place. Begin on the side of the limb and wrap the bandage around the leg, before spiralling down over the dressing and back up to the starting point.



The pressure should be light and even.



Place additional padding here if the pastern is to be included.

3. Apply cotton gauze wadding or cotton wool twice around the leg. This padding must extend from just below the knee or hock to the fetlock. (Fig 3).
4. Use E-band™ or Wrapz™ as the support bandage. Apply in the same direction as the overlap of the padding. Start halfway down the cannon bone, placing the end of the bandage under the flap of the padding. (Fig 4) Spiral once around the limb, work down to the fetlock, then back up to just below the knee or hock and finally down to the starting point.
5. The pressure should be firm enough to provide support without restricting blood supply. Secure in position with tape (fig 5).



Figure 3

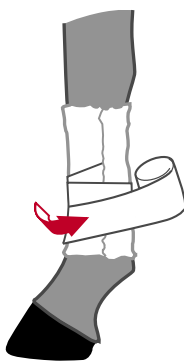


Figure 4

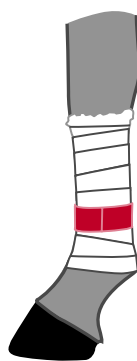


Figure 5

# EQUINE BANDAGING

## Leg Bandages

There are a number of reasons when a horse's leg may need to be bandaged. They include protection and support while:

- *Travelling.*
- *Working; supports tendons and ligaments during strenuous exercise.*
- *Recovering from injury.*
- *Resting; reduces likelihood of oedema after exercise.*

Leg bandages also protect open wounds from contamination thus speeding the healing process.

*It is important that correct bandaging techniques are used regardless of the intent for which is required. Indeed, it is preferable to leave the horse without a bandage than one that has been ineffectively applied. Bandages that are applied improperly may not do their job but more seriously, may cause discomfort, impede circulation and have the potential to damage soft tissue and tendons.*

### CAUTIONS

Fitted correctly, bandages should cause no permanent damage.

- Sufficient padding material should be used.
- Even pressure must be applied throughout, on both tertiary and intermediate layers.
- No wrinkles, creases or folds should be allowed to form during application.
- The bandage should be securely fastened on the lateral aspect of the leg.
- When removing bandages, the leg should be rubbed to stimulate blood flow.

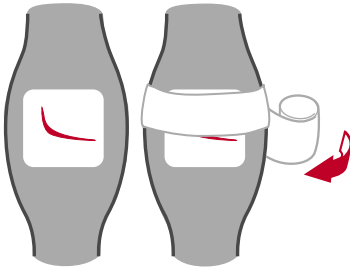
Bandages that have been applied too tightly may result in the following anomalies:

- Hair loss at the point of contact.
- White hair growth at the point of contact.
- The cannon bone may become inflamed or bruised.
- Secondary injury of tendons at the pressure point may occur.

Applying a leg bandage

- Ensure legs are clean and dry.
- Ensure bandage materials are clean and dry.
- Ensure any open wounds have been dressed according to the surgeons instructions.
- Use at least a thickness of 1 inch of padding, more if indicated.
- Ensure the bandage is applied flat and free from wrinkles.
- Do not begin to bandage over a joint as movement will encourage it to loosen and potentially unwrap. It is best to start on the medial aspect of the cannon bone, anterior to the fetlock.
- To maintain the correct alignment and weight bearing force, wrap from front to back, outside to inside, working in a spiral downwards then back up again. This means wrapping the bandage in the direction that pulls the flexor tendons towards the lateral aspect of the limb. (Anti-clockwise on the nearside, counter-clockwise on the offside).
- Ensure consistent pressure applied throughout, avoiding bumps and ridges.
- Ensure the coronet band is covered to protect this area.
- Leave 1½cm (½ inch) padding visible at both the top and bottom of the bandage.
- Check the pressure of the bandage by making sure two fingers can be slipped down between the bandage and the leg.
- If applied for exercise, bandages should be removed immediately on cessation of work.

Dorsal View



**1. Primary Dressing**

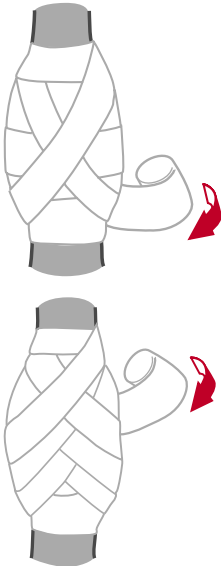
Apply primary dressing such as Zorbopad™ or Poultext® over wound.

**2. Secondary Dressing**

Use Orthoband™ as a secondary dressing to hold primary dressing in place. Continue secondary dressing in figure of eight. Avoid bandaging over accessory carpal bone. (See figure 5).

4. Bandage Wrapz™ over top of cotton wool, moving distally, then in a figure of eight.

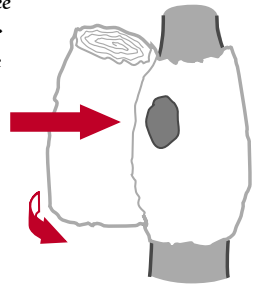
Dorsal View



**3. Wrap around knee with cotton wool.**

Remove a plug of cotton wool over accessory carpal bone.

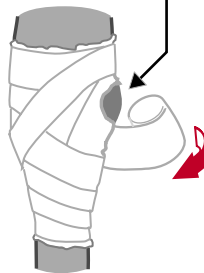
Palmar View



5. Do not bandage over accessory carpal!

6. Use Wrapz™ to bandage over the top. Work proximal to distal in figure of eight, then work back up to the top.

Left Lateral View



Dorsal View



Leave some underlying dressing showing at top and bottom.

# EQUINE BANDAGING

## The Knee

Being a high motion joint, the knee is difficult to bandage because of the downwards taper of the area, although the knee itself is wider than the radius and the metacarpus. Fortunately, horses tolerate immobilisation of this area rather better than the hock.

The skin over the palmar aspect is particularly thin and skin covering the accessory carpal bone comes under considerable pressure during flexion and extension of the carpus. The skin over the medial and lateral radial tuberosities is also thin and very closely related to the bone: it is very liable to pressure damage from bandages and therefore extreme care should be taken to sufficiently protect this area.

### General guidelines

- Surround the knee with absorbent padding material, to 2½cm (1 inch thick). This should be extended at least 12½cm (5 inches) above and below the joint.
- Wrap with support bandage as detailed on page 42 to within 1½cm (½ inch) of the edge of the padding material.

The dressing is applied using a figure-of-eight format. After the primary layer has been applied to the wound site it is retained by the secondary layer of a soft cotton wool bandage, also applied in a figure-of-eight pattern. It is common practice at this stage to avoid covering the accessory carpal bone.

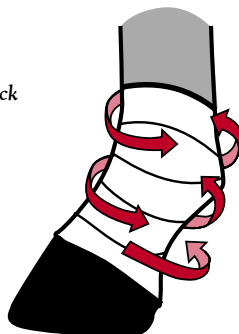
A layer of cotton wool is placed over the secondary layer in the same format (but covering the accessory carpal bone), and a plug of cotton wool is removed from over the bony prominence. A conforming bandage is now applied in the same figure-of-eight, avoiding the accessory carpal region. The next layer of cotton wool is applied in a simple overlapping way to cover the whole area, and a cotton bandage and an elasticated adhesive layer covers this finally.

*In order to avoid slippage, it may be helpful to apply a bandage to the lower limb region first and then dress the carpus. A properly applied carpal bandage will probably not slip provided that the horse is box-rested.*



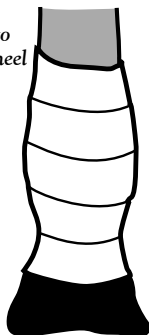
**1. Left Lateral View**

*Begin Secondary dressing below fetlock and work proximally. Continue distally and bring around under bulbs of heel.*



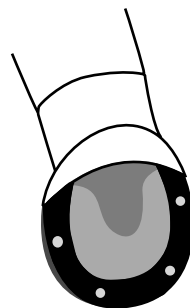
**2. Dorsal View**

*Work proximally to distally and over heel bulbs.*



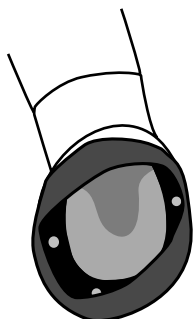
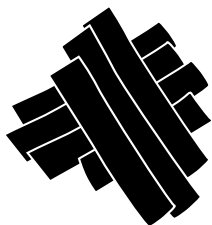
**3. Palmar View with limb flexed**

*Lift foot and bring bandage over rear of heel covering one third of the sole. Wrap tertiary dressing over bandage covering limb and underneath foot.*

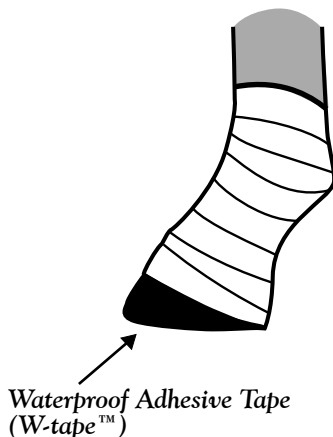


**4. Palmar View with limb flexed**

*Wrap strips of waterproof adhesive tape such as W-tape™ over hoof wall with a cross net of tape over the sole.*



**5. Left Lateral - finished appearance**



# EQUINE BANDAGING

## The Foot

The hoof is difficult to bandage because of the tendency for dressing to ride upwards onto the pastern, and because of the high 'wear-rate' of ambulatory patients. The problem of 'riding upwards' can be minimized by ensuring that the bandage is extended downwards over the heels, and taking at least several layers under the heels of the hoof.

**Hoof bandages can be indicated under a number of circumstances:**

- Prevent or reduce oedema.
- Apply medication.
- Protection for wounds, abscesses or cracks.
- Protect surgical wounds.
- Provide support for tendons, ligaments and bone.
- Immobilise joints.

It is particularly important that hoof bandages be properly applied. Being an extremity, the sole source of blood flow may be restricted if the bandage is incorrectly applied. How far up the leg is bandaged must depend on the location requiring support. It may be necessary to bandage up and over the pastern if the injury involves the coronary band, heel bulb or lower leg.

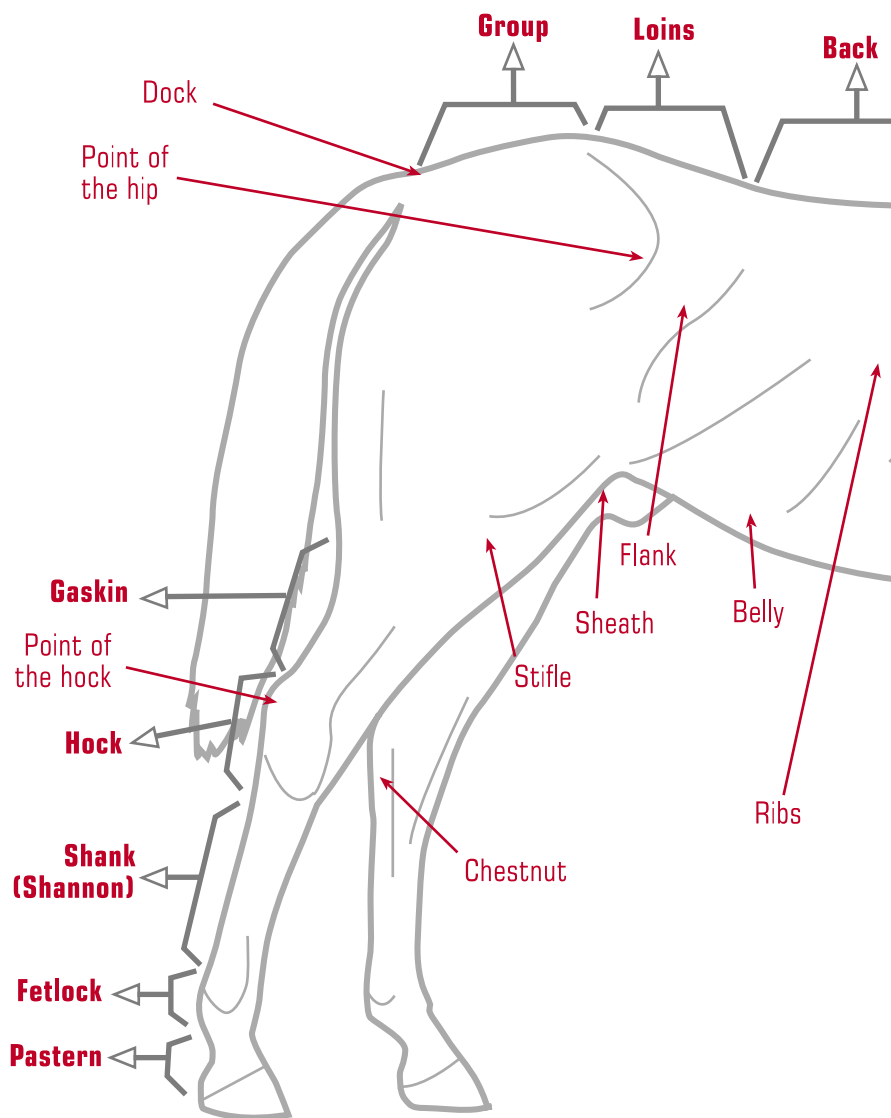
**General guidelines:**

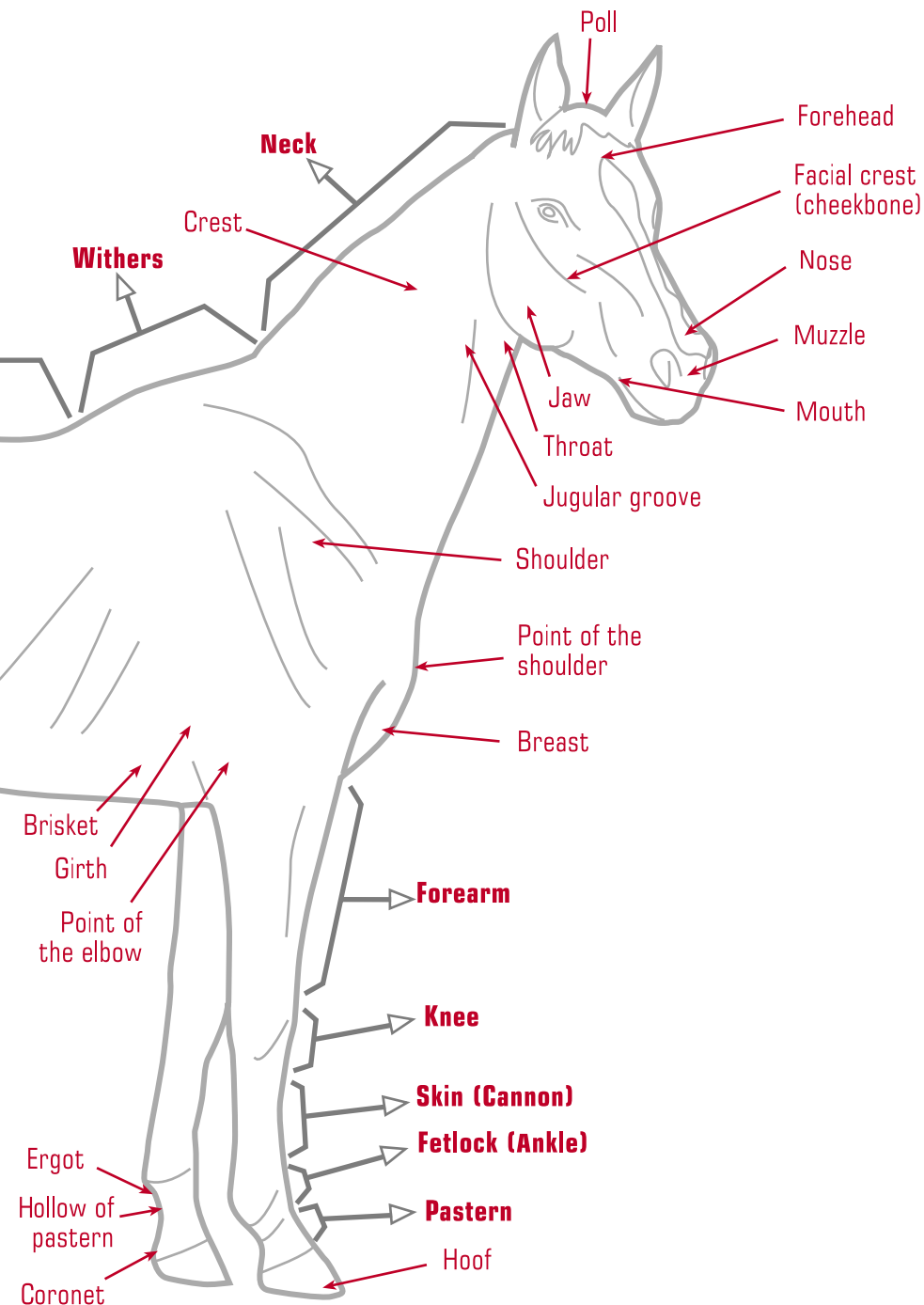
- Clean the area thoroughly.
- Cover any wounds with a suitable dressing pad.
- Use padding where needed; for laminitis, apply to the sole of the foot.
- Secure the padding with a cohesive or elastic adhesive bandage, by encircling the hoof in a figure of 8 technique. Work from the base of the foot, around the side of the hoof and pastern until all padding is covered.
- Overlap by 50% to achieve optimal results.
- Waterproof tape can be applied to the underside of the hoof. This will also improve durability. It should be applied around the solar margin of the hoof and extended onto the heels (but not onto the skin). Several layers may be needed, and it may be helpful to protect the sole with a multi-layer pad of the tape, which is then folded up onto the walls before placing the encircling tape support. Alternatively a hoof boot may be used.

On the whole, stable confinement should be considered essential if the hoof is bandaged. The bandaged should be checked several times a day for swelling or heat.

Bandages on the foot have a high tendency to become soaked with water, soiled bedding, or urine and faeces. This means that wicking effects for infection are likely under most circumstances. In some cases the dressing can be protected from wet by placing the dressed foot into a high-density polythene bag and taping the bag onto the foot. *It may be possible therefore to make the dressings waterproof but this may encourage sweating and heat and so this can be viewed as a disadvantage.*

# ANATOMICAL DIRECTIONS AND SELECTED POINTS OF A HORSE





# GLOSSARY

<b>ACETABULUM:</b>	Cup shaped socket in the pelvis, where the femoral head is normally situated.
<b>ACP:</b>	ACEPROMAZINE / ACETYLPROMAZINE - Widely used tranquilliser.
<b>AIR PERMEABLE:</b>	Layer (or bandage) allowing the free movement of air and moisture.
<b>ANTERIOR:</b>	In a forward direction of.
<b>AMPUTATE:</b>	Surgical removal of limb, tail etc.
<b>AURAL:</b>	Relating to the ear.
<b>AXILLA:</b>	Arm pit area between humerus and chest wall.
<b>BILATERAL:</b>	Relating to both sides.
<b>CARPUS:</b>	Wrist joint of fore limbs in animals.
<b>CLINICAL WASTE BAGS:</b>	Yellow plastic bags printed with 'Clinical Waste for Incineration Only' in black.
<b>COMPOUND FRACTURE:</b>	A broken bone which pierces the skin.
<b>CRANIUM:</b>	The skull covering the brain area.
<b>DISLOCATED:</b>	Displacement of a bone from its natural position.
<b>DISTAL:</b>	Situated away from centre of body (or point of origin) opposite to proximal.
<b>DORSAL:</b>	Relating to the back or backwards direction.
<b>DYSPNOEA:</b>	Difficulty in breathing.
<b>E.T. TUBE:</b>	Endo-tracheal Tube.
<b>EXCISED:</b>	The cutting out of a part e.g. tumour.
<b>EXCORIATION:</b>	A substantial abrasion to the skin, caused by rubbing etc.
<b>FEMORAL (HEAD):</b>	Ascertaining to the femur.
<b>FLEXION:</b>	The bending of joints to bring bones closer together.
<b>HAEMATOMA:</b>	Pocket of blood, or exposed to blood, usually requiring surgical intervention to rectify.
<b>I/V:</b>	Intra-venous.
<b>LACERATIONS:</b>	A torn or ragged wound - not a clean cut.
<b>LATERAL:</b>	Relating to the other side.
<b>LUXATED:</b>	Another name for dislocation.
<b>MEDIAL:</b>	Towards the midline.

# GLOSSARY

## *continued*

<b>METATARSAL:</b>	The bones and structures between the hock and digits of the hind limbs.
<b>METACARPAL:</b>	The region between the carpus (wrist) and the digits of the forelimb.
<b>MIDLINE:</b>	Line down centre of an animal longitudinally, nose to tail when viewed from above.
<b>OEDEMA:</b>	An accumulation of exudate (fluid) in one or more body cavities, or tissues.
<b>PALMAR:</b>	The backwards direction of forelimbs (see back page).
<b>PINNAE (PINNA):</b>	Both ears (one ear).
<b>PLANTAR:</b>	The backwards direction of hind limbs
<b>POSTERIOR:</b>	Towards the back.
<b>POROUS:</b>	Having pores, allowing passage of gases and liquids.
<b>PROXIMAL:</b>	The end of the limit nearest to the body. Opposite to distal.
<b>POULTICE:</b>	Soft composition applied on a cloth to the skin to reduce inflammation.
<b>RADIAL:</b>	The outer edge of the circumference of the bone.
<b>REVERSE ROLL:</b>	Unrolling bandage back around limb or body - this eliminates the need to roll out too much bandage or pulling during application.
<b>SEDATIVE:</b>	A drug to lessen excitement and reduce animal's awareness of the surroundings. Acting on the central nervous system.
<b>SPIRAL BINDING:</b>	Winding method of a bandage - usually to use a 1/2 to 2/3 overlap.
<b>STERNUM:</b>	The breastbone.
<b>TOURNIQUET:</b>	Any constrictive bandage applied to a limb to arrest serious arterial haemorrhage. NB Must be used with extreme caution to avoid permanent muscle and tissue damage. See Page 5.
<b>TRANQUILLISER:</b>	Drugs used to allay anxiety, calming the animal.

## PREFIXES

<b>DYS:</b>	Painful or difficult.
<b>HAEMA/HAEMO:</b>	Relevant to blood.
<b>HYPER:</b>	Indicates excess (above normal).
<b>HYPO:</b>	Indicates deficiency (below normal).
<b>PRE:</b>	Before the item or event.
<b>POST:</b>	After or behind.



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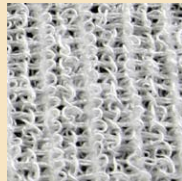
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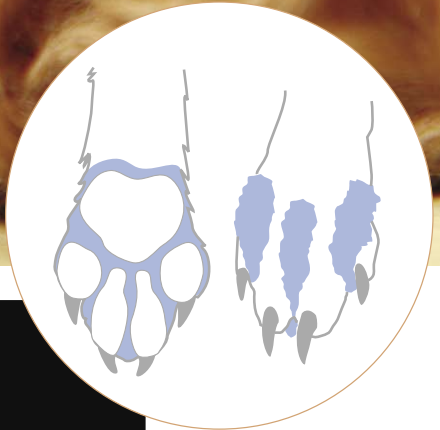


Illustration of **ORTHOBAND<sup>®</sup>** applied to the foot and lower limb.



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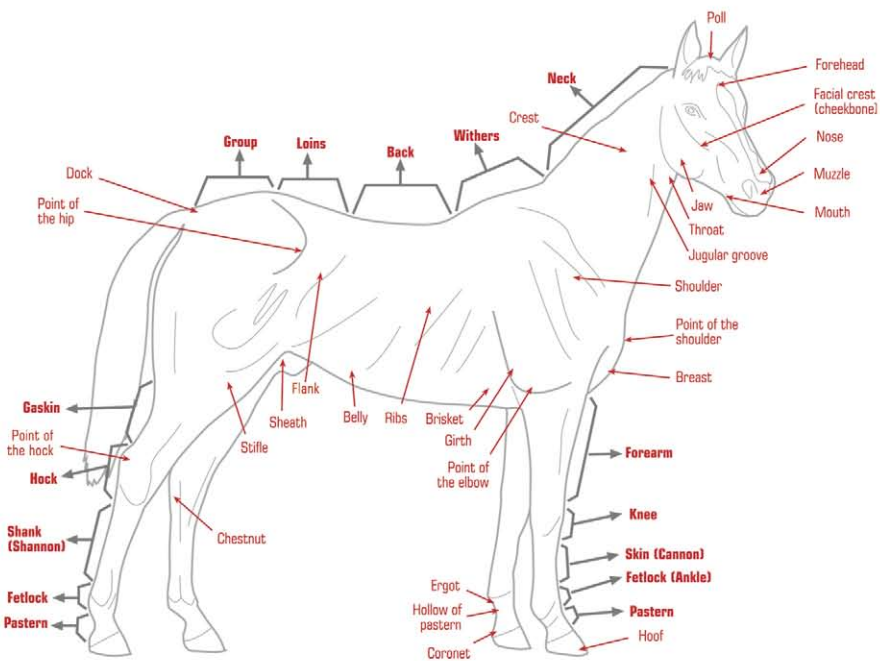
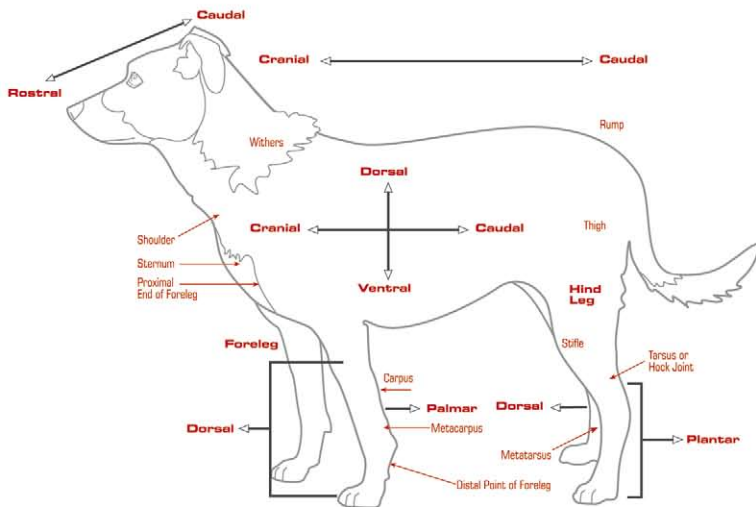
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