

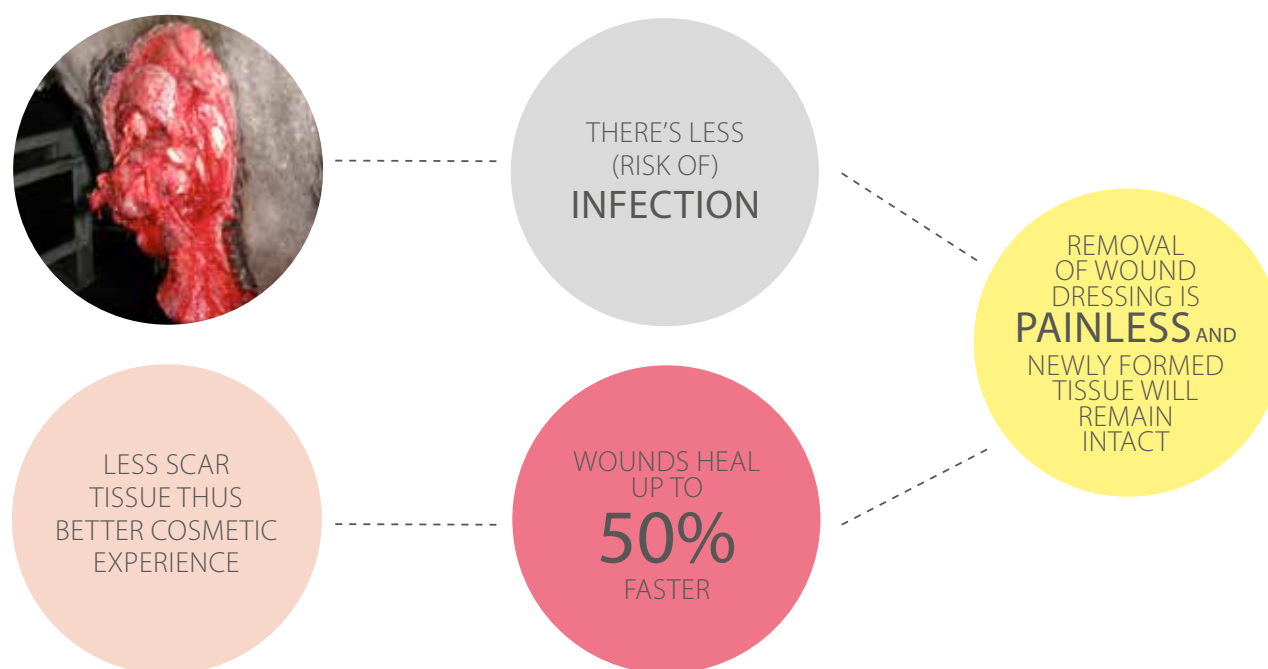
# Wound Care



# Moist Wound Healing

Moist wound healing is the standard of care.  
Moist wound healing is evidence based wound management.  
Moist wound care is now considered by the majority of veterinary surgeons to be superior to wet to dry wound care.

■ KRUUSE offers solutions to support moist wound healing



## Benefits of Moist Wound Management

**The wound is not allowed to dry out, which results in continuous wound healing 24 hours a day**  
The dressing supports a moist environment.

**Excess exudate is removed**  
The exudate is absorbed into the primary and secondary dressing.

**Contact between wound and wound fluid is maintained**  
The patient can benefit from the normal balance of healing factors during each phase of wound healing.

**Optimal function of cells and proteases responsible for healing is promoted**  
Skin cells regenerate at approximately twice the speed when moist compared to dry healing.

**Faster healing with a lower rate of infection is promoted**  
The wound is protected by the retentive dressing which prevents infection from the outside.

**More comfortable for the patient than traditional dressings**  
Keeping the nerve ends hydrated in a wound reduces the pain.

**Fewer bandage changes are required**  
The dressing can be left on the wound for 3 to 5 days depending on the wound status.

**Less scarring**  
The collagen fibers coordinate straighter.

**Decreased cost for the total wound care**  
The reduced number of dressing changes, need for sedation and bandage material decreases the total cost.

# KRUUSE Manuka Honey

High quality medical grade Manuka honey has a recognized effect on supporting the wound healing process.

- Promotes a moist wound environment conducive to healing.
- 100% pure medical graded Manuka Honey from *Leptospermum scoparium*, a small bush/tree from New Zealand
- Sterilized by gamma radiation that does not destroy glucose oxidase
- KRUUSE Manuka honey has unique healing properties compared to other types of honey and dressings



## Unique Features

### Promotes moist wound healing

KRUUSE Manuka Honey promotes autolytic debridement and enhances moist wound healing in many ways.

### Honey's pH creates the desired acidic environment

Honey's pH (3.6–3.7) creates the desired acidic environment that has been shown to decrease bacterial growth, increase fibroblast activity, and increase oxygen release, all of which promote wound healing further.

### Improved osmotic action due to honey's high osmolality

Increased osmolality draws fluid and lymph from the underlying tissues and this fluid provides nourishment to the healing wound.

### Glucose oxidase effect

Glucose oxidase produces hydrogen peroxide and gluconic acid, which provide the main antibacterial qualities of honey. The well-tolerated, low levels of hydrogen peroxide promote angiogenesis and fibroblast activity, enhancing oxygen delivery to tissue.

### Reduced Cost

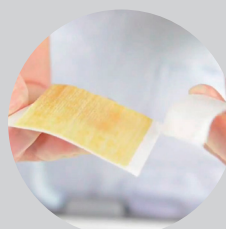
The dressing can be left on the wound for 3 to 5 days depending on the wound status. This reduces the number of dressing changes, need for sedation and bandage material.

### Easy to apply

After wound bed preparation simply apply the dressing needed. Evaluate the wound for the amount of exudate and time to the next dressing change.

### Reduces smell, leads to good compliance from the patient

Honey works to reduce the bacterial burden and often takes away the bad odor that comes from an infected wound.



Easy to apply

### How to decide the appropriate dressings?

- Evaluate how much exudate you expect the wound will produce
- Evaluate when the wound will need the next dressing change
- Decide which dressing(s) this wound will need for this phase

## Instructions for use

Before applying the moist retention dressing debride e.g. remove unhealthy tissue while healthy tissue is spared.

### Tertiary bandage

KRUUSE Vet-Flex  
KRUUSE Soft-Flex bandages  
BUSTER Tubular Bandage

### KRUUSE products that support moist wound healing

KRUUSE#	Description
165000	KRUUSE Manuka ND 5 x 5 cm, non-adherent dressing, 10/pk, sterile
165001	KRUUSE Manuka ND 10 x 12.5 cm, non-adherent dressing, 10/pk, sterile
165002	KRUUSE Manuka ND 10 x 100 cm, non-adherent dressing, 1 roll, sterile
165005	KRUUSE Manuka AD 5 x 5 cm, absorbent dressing, 10/pk, sterile
165006	KRUUSE Manuka AD 10 x 12.5 cm, absorbent dressing, 10/pk, sterile
165007	KRUUSE Manuka AD 10 x 100 cm, absorbent dressing, 1 roll, sterile
165010	KRUUSE Manuka G 15 g gel x 10, sterile
165020	KRUUSE Hydro Gel, 15 g, 10/pk, sterile
165030	KRUUSE Foam Dressing 5 x 5 cm, 10/pk, sterile
165031	KRUUSE Foam Dressing 10 x 10 cm, 10/pk, sterile
165032	KRUUSE Foam Dressing 15 x 15 cm, 5/pk, sterile
165033	KRUUSE Foam Dressing 10 x 20 cm, 10/pk, sterile



### References

Just two out of many:

#### Campbell BG

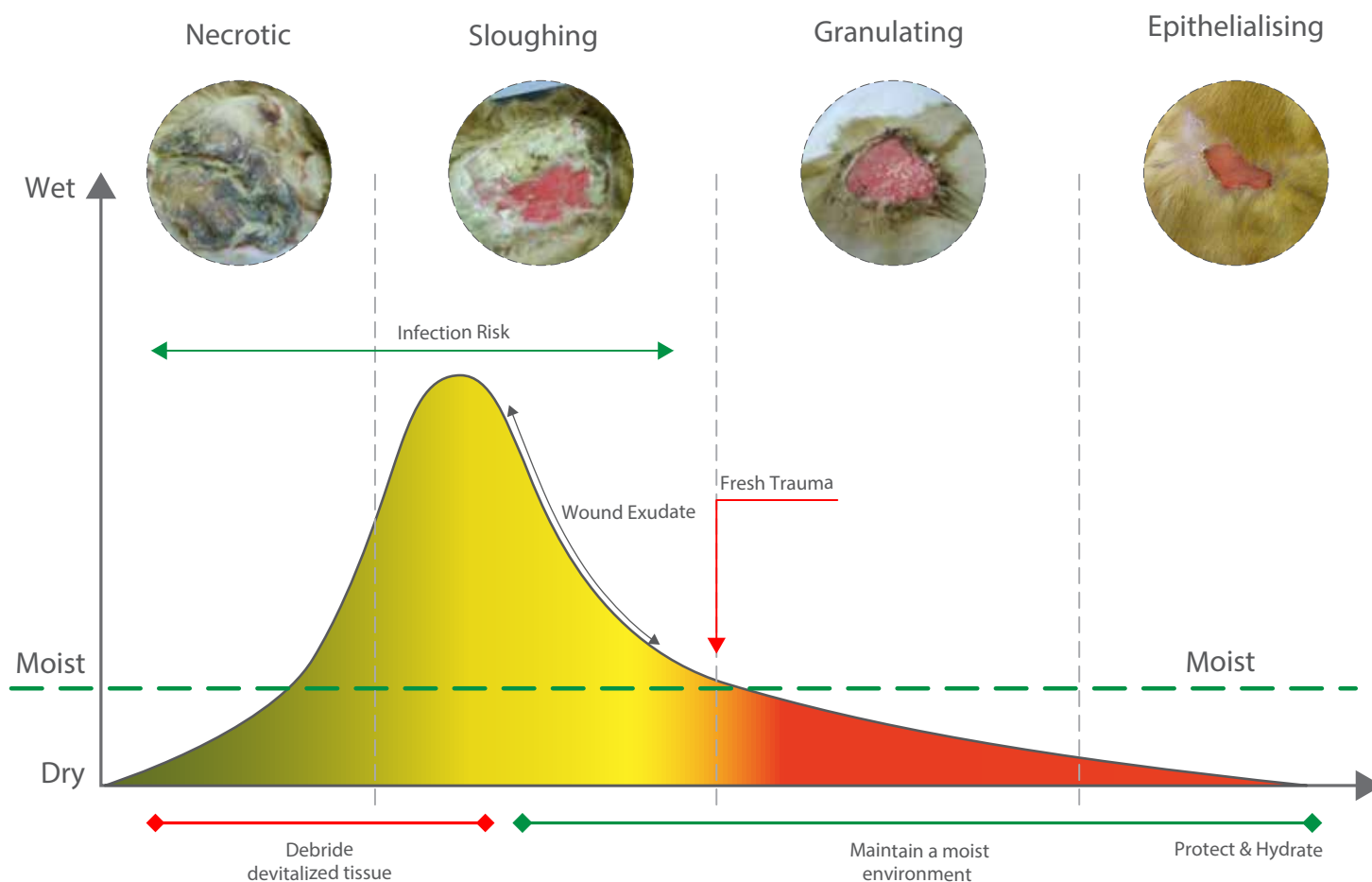
Moist Wound Healing, The new standard of care.  
TODAY'S VETERINARY PRACTICE, July/August 2015, p. 32 – 42

#### Knottenbelt DC


Handbook of EQUINE WOUND MANAGEMENT  
Saunders 2003

For veterinary use only

# Moist Wound Management



# KRUUSE Small Animal Wound Chart

	Dry			Moderate exuding			Heavily exuding		
	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary
 <p><b>Acute/traumatic wound</b></p> <ul style="list-style-type: none"> <li>- Evaluate the wound</li> <li>- Clean the wound using KRUUSE wound lavage system</li> <li>- Dress and bandage according to evaluation</li> </ul>									
 <p><b>Necrotic</b></p> <ul style="list-style-type: none"> <li>- Debride the necrotic tissue and lavage</li> <li>- Protect wound margins and surrounding skin from exudate</li> </ul>	KRUUSE Manuka G KRUUSE Manuka ND KRUUSE HydroGel	KRUUSE Foam KRUUSE Vet-Line KRUUSE Vet-Plast	KRUUSE Vet-Plast KRUUSE Flex Bandages KRUUSE Soft-Flex KRUUSE Tubular Bandage	KRUUSE Manuka G KRUUSE Manuka AD KRUUSE HydroGel	KRUUSE Foam KRUUSE Vet-Line KRUUSE Vet-Plast	KRUUSE Vet-Plast KRUUSE Flex Bandages KRUUSE Soft-Flex KRUUSE Tubular Bandage	KRUUSE Manuka G KRUUSE Manuka AD	KRUUSE Foam	KRUUSE Vet-Plast KRUUSE Flex Bandages KRUUSE Soft-Flex KRUUSE Tubular Bandage
 <p><b>Sloughy</b></p> <ul style="list-style-type: none"> <li>- Debride devitalised tissue and lavage</li> <li>- Protect wound margins and surrounding skin from exudate</li> </ul>	KRUUSE Manuka G KRUUSE Manuka ND KRUUSE HydroGel	KRUUSE Foam KRUUSE Vet-Line KRUUSE Vet-Plast	KRUUSE Flex Bandages KRUUSE Soft-Flex KRUUSE Tubular Bandage	KRUUSE Manuka G KRUUSE Manuka AD KRUUSE HydroGel	KRUUSE Foam KRUUSE Vet-Line KRUUSE Vet-Plast	KRUUSE Vet-Plast KRUUSE Flex Bandages KRUUSE Soft-Flex KRUUSE Tubular Bandage	KRUUSE Manuka G KRUUSE Manuka AD	KRUUSE Foam	KRUUSE Vet-Plast KRUUSE Flex Bandages KRUUSE Soft-Flex KRUUSE Tubular Bandage
 <p><b>Granulating</b></p> <ul style="list-style-type: none"> <li>- Maintain a moist environment and protect new healthy granulation from damage between dressing changes</li> </ul>	KRUUSE HydroGel	KRUUSE Foam KRUUSE Vet-Line	KRUUSE Vet-Plast KRUUSE Flex Bandages KRUUSE Soft-Flex KRUUSE Tubular Bandage	KRUUSE Manuka G KRUUSE Manuka ND KRUUSE HydroGel	KRUUSE Foam KRUUSE Vet-Line	KRUUSE Vet-Plast KRUUSE Flex Bandages KRUUSE Soft-Flex KRUUSE Tubular Bandage			
 <p><b>Epithelialising</b></p> <ul style="list-style-type: none"> <li>- Maintain a clean environment and protect from unnecessary trauma</li> </ul>	KRUUSE HydroGel	KRUUSE Foam KRUUSE Vet-Line	KRUUSE Flex Bandages KRUUSE Soft-Flex KRUUSE Tubular Bandage						

# KRUUSE Hydro Gel

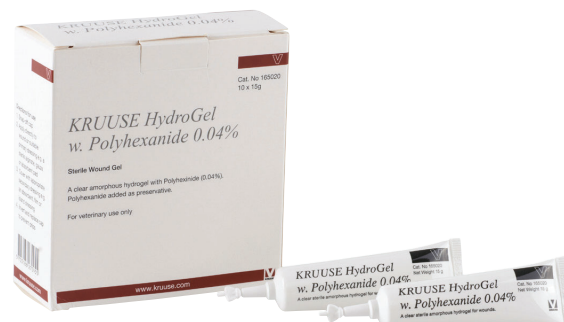
Excellent primary wound dressing to ensure hydration to the wound

Works as a part of the wound preparation with a clear amorphous hydrogel to ensure moist wound healing. Contains 0.04% Polyhexanide for soft cleaning and preservation.

- Provides a moist wound healing environment
- Contains 0.04% Polyhexanide
- Stable gel – not runny
- Loosens and absorbs slough and exudate
- Reduces pain

**KRUUSE# Description**  
165020 KRUUSE Hydro Gel, 15 g, 10/pk, sterile

For veterinary use only



## Recommended uses for KRUUSE Hydro Gel

- Dry wounds
- Dry necrotic and sloughy wounds for autolytic debridement
- Granulating wounds
- Partial or full-thickness lesions
- Abrasions or severe scrapes
- Minor burns

## Features and benefits

### Provides a moist wound healing environment

The Hydro Gel contains 85% water, which gradually releases moisture into the wound.

### Promotes natural debridement through autolysis

When the KRUUSE Hydro Gel donates water to the wound, the necrosis and slough will be dissolved and absorbed by the CMC.

### Reduces maceration

KRUUSE Hydro Gel is firm and stays in place in the wound.

### Absorbs slough and exudate

Contains Carboxymethyl cellulose (CMC) to ensure absorption.

### Reduces infection

KRUUSE Hydro Gel contains 0.04% Polyhexanide (PHMB)\* which is a disinfectant effective against various bacteria e.g. Pseudomonas aeruginosa, Staphylococcus aureus and MRSA. The physical dressing itself is also protecting the wound from getting infected.

### Preservative free

Contains 0.04% Polyhexanide which also works antiseptically.

### Easy to apply

The shape and the softness of the tube make it very easy to apply in depth and in all edges of the wound. No debris will be left in the wound.

\* (PHMB, short for polyhexamethylene biguanid)

## Instructions for use

Always cover the Hydro Gel with a secondary dressing in order to keep the Hydro Gel in place, to absorb excess exudate and to avoid maceration. On top of that it is also possible to put a tertiary bandage.

### Secondary dressing suggestion

- KRUUSE Foam dressing

### Tertiary dressing suggestion

- KRUUSE Vet-Flex
- KRUUSE Soft-Flex

Do not let the KRUUSE Hydro Gel dry out due to evaporation of the water, which will happen if the dressing is changed too rarely.

### TIP

To avoid shaved hair into the wound before wound preparation, it is advisable to fill the wound with KRUUSE Hydro Gel before shaving and rinse with water afterwards.



**Stays in place.  
Easy to apply.**

# KRUUSE Foam Dressing

Comfortable primary or secondary wound dressing for absorption and maintaining a moist wound environment.

- Conforms to the wound bed
- Foam expands as it absorbs exudate to conform to shallow wound cavities
- Keeps nerve endings hydrated to help reduce pain
- Atraumatic dressing change, leaves no residue in the wound
- Excellent fluid handling capabilities with up to 7 days of wear time
- 4 sizes available



## Unique Features

### Provides a moist wound healing environment

The KRUUSE Foam Dressing is made of 4.5 mm polyurethane, which absorbs the exudate and transports excess water away from the wound through the semipermeable backing. Has a high Moisture Vapor Transmission Rate (MVTR).

### Conforms excellently to the wound bed

When the foam gets in contact with the exudate it expands to the shape of the wound, leaving no "dead space" in the cavity of the wound.

### Reduces maceration

KRUUSE Foam Dressings absorb large amounts of exudate to prevent maceration of the surrounding skin areas. The foam is hydrophilic and absorbs fluid vertically via capillary action.

### Reduces infection

The foam absorbs bacteria from the wound while the semipermeable backing works as a bacterial barrier from the environment.

### Reduces pain

Very soft and conformable. Keeping the nerve ends hydrated in a wound reduces the pain.

### Atraumatic dressing change

When used on exuding wounds, KRUUSE Foam Dressings are non-adherent and do not stick to the wound bed, skin or hair and leave no residue in the wound.

### Easy to apply

After wound preparation simply apply the dressing on top of the primary dressing or on the wound bed. No debris will be left in the wound.

### Semipermeable backing

Permit gaseous exchange (O<sub>2</sub> and CO<sub>2</sub>). The microporous foam backing is waterproof from the outside.

### Provides thermal insulation

Loss of temperature can prolong the wound healing process.

### Recommended uses for KRUUSE Foam Dressings

- Exudating wounds
- Necrotic and sloughy wounds
- Infected wounds
- Incisions
- Lacerations
- Pressure ulcers (does not work as a cushion, pressure must be relieved)
- Partial or full-thickness lesions
- Wounds with hyper granulation
- Under compression therapy

## Instructions for use

### Application

After wound bed preparation simply apply the foam on top of the primary dressing. If KRUUSE Foam Dressing is the primary dressing apply the foam with at least one inch on healthy skin. On top of that it is also possible to apply a secondary/tertiary bandage.

### Primary dressing suggestion

- KRUUSE Manuka Honey
- KRUUSE Hydro Gel

### Secondary dressing/bandage suggestion

- KRUUSE Vet-Flex
- KRUUSE Soft-Flex
- BUSTER Tubular Bandage

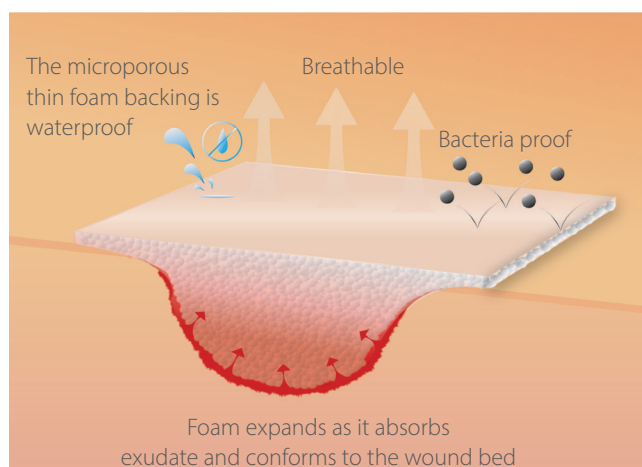
### Removal

Simply remove the foam and clean the wound.

### Do not use

Do not use foams on dry wounds as they might adhere to the wound.

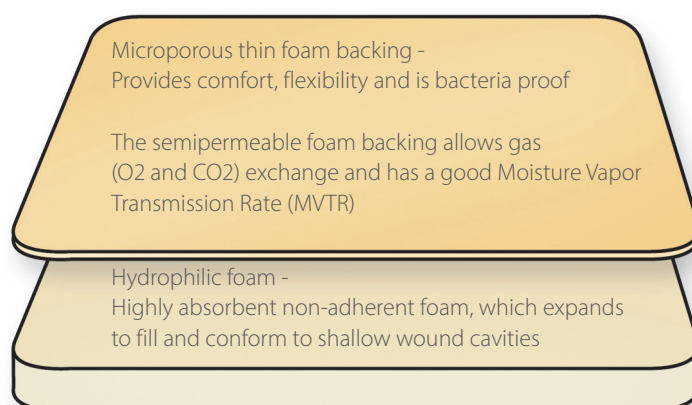
Even though the foam absorbs a lot of fluid, be aware of the time between dressing changes. If a wound is extremely exudating, the dressing gets saturated and maceration of the surrounding skin can occur.



### KRUUSE# Description

165030	KRUUSE Foam Dressing 5 x 5 cm, 10/pk, sterile
165031	KRUUSE Foam Dressing 10 x 10 cm, 10/pk, sterile
165032	KRUUSE Foam Dressing 15 x 15 cm, 5/pk, sterile
165033	KRUUSE Foam Dressing 10 x 20 cm, 10/pk, sterile

For veterinary use only



# BUSTER Tubular Stretch Bandage

Versatile elastic tubular net bandage

## Features

- Facilitates dressing changes
- Speeds up the healing process as it lets the wound “breathe”
- Designed to fit awkwardly shaped appendages
- Eliminates the need for tape to fixate dressings
- Easily accepted by the animal as it exerts subtle, yet supportive pressure
- Cutting or animal bites will not cause the material to shred
- Easy-to-use bandage which can be used routinely after abdominal surgery.

KRUUSE #	Size
160480	0.5 x 7 yds
160481	1 x 7 yds
160482	1.5 x 7 yds
160483	2 x 7 yds
160484	3 x 7 yds
160485	3.5 x 7 yds



Neck bandage



Drop / Neck bandage



Ear bandage



Abdominal bandage



Post-operative abdominal



Front leg bandage



Chest bandage



Front bandage



Carpal bandage



Hind leg bandage



Tarsal bandage



Tail bandage



Rectum/Anal sac bandage



Vaginal bandage



Basic tail bandage



# BUSTER Tubular Stretch Bandage

Versatile elastic tubular net bandage

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160482	1.5 x 7 yds
160483	2 x 7 yds
160484	3 x 7 yds
160485	3.5 x 7 yds



Head bandage



Muzzle bandage



Neck infusion bandage



Neck bandage



Pastern bandage



Foreleg bandage



Carpal bandage



Tarsal bandage



## KRUUSE Fun-Flex Bones, 10/pk

Your favorite cohesive bandage, now in a fun new print!

Superior quality, flexible, cohesive bandages for dressing fixation and controlled support of sprains and distortions. Strong, comfortable, and user-friendly. Easy to tear.

KRUUSE #	Size
164015	2" x 5 yds
164016	3" x 5 yds
164017	4" x 5 yds



## Combine KRUUSE Fun-Flex Bones with BUSTER Design Collars Bones

- and make the perfect match



## KRUUSE Vet-Flex, 10/pk

**BRIGHT COLORS**

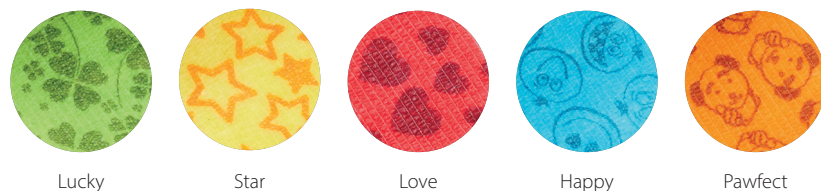
KRUUSE #	Size
160739	4" x 5 yds
160740	3" x 5 yds
160741	2" x 5 yds



## KRUUSE Fun-Flex Care, 10/pk

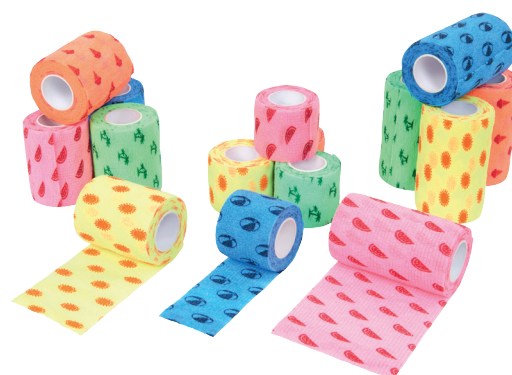
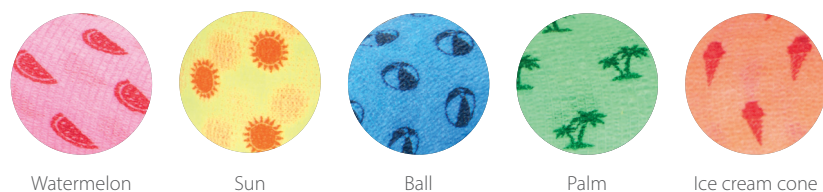
KRUUSE #	Size
164020	2" x 5 yds
164022	3" x 5 yds
164023	4" x 5 yds

**NEW**



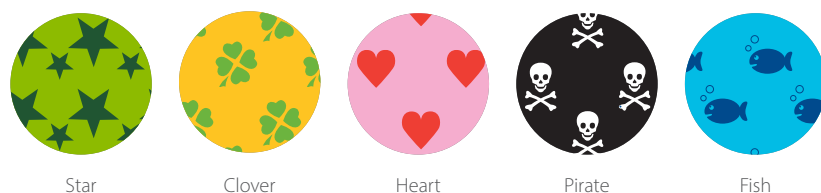
## KRUUSE Fun-Flex Summer, 10/pk

KRUUSE #	Size
164008	2" x 5 yds
164009	3" x 5 yds
164011	4" x 5 yds



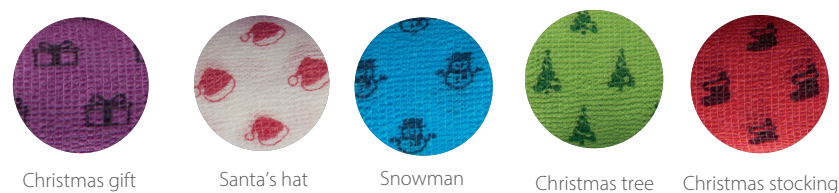
## KRUUSE Fun-Flex, 10/pk

KRUUSE #	Size
164002	2" x 5 yds
164004	3" x 5 yds
164006	4" x 5 yds



## KRUUSE Fun-Flex Christmas, 10/pk

KRUUSE #	Size
164012	2" x 5 yds
164013	3" x 5 yds
164014	4" x 5 yds



# KRUUSE Chew-Stop

Discourage licking or biting and encourage healing.

Our best-selling cohesive bandages are now available with a lick and chew deterrent!

Impregnated with a non-toxic bitter ingredient, Chew-Stop protects wounds after surgery or wound dressing changes and allows for healing with less risk of interference from a curious pet.

KRUUSE#	Description
160675	KRUUSE Chew-Stop, 5 cm x 4.5 m, 10/pk
160676	KRUUSE Chew-Stop, 7.5 cm x 4.5 m, 10/pk
160677	KRUUSE Chew-Stop, 10 cm x 4.5 m, 10/pk



**THE BAD TASTING SOLUTION  
TO HEALING!**



## Did you know?



- Licking a wound increases the risk of infection and tissue or suture damage, which may prolong healing
- It is a myth that dog saliva contains antibacterial properties
- You can use the BUSTER Bootie for additional wound protection on top of the KRUUSE Chew-Stop bandage

# KRUUSE Vet-Flex, Fun-Flex & Chew Stop Bandages

Strong, comfortable and easy-to-tear cohesive bandages

## Recommended uses

- Controlled support and compression of joints, sprains and distortions
- Fixating dressings
- Secondary/tertiary bandage on top of a primary/secondary dressing

## Instructions for use

### Application

Fixate the end of the bandage and apply evenly over the injured body part.

Stretch the bandage according to the level of compression needed.

When finished applying, tear the bandage by holding straight and pulling apart in opposite directions. Do not twist!

Gently squeeze the layers together to enhance the cohesiveness.

Use KRUUSE Fun-Flex as secondary or tertiary bandages on top of primary or secondary dressings.

### Removal

Unroll bandage or cut gently with bandage scissors.

### Do not use

- If patient or user is allergic to latex

For veterinary use only

## Features and benefits

### Reliable and stable fixation

The high weight of the material, 35 g/m<sup>2</sup>, makes the bandage strong and firm, yet comfortable. It also gives excellent compression when you need it most.

### Easy to tear

No scissors needed! Simply pull in opposite directions to tear in a straight line.

### Skin-friendly

KRUUSE cohesive bandages are coated with latex, which makes the cohesiveness stick to itself, but not to other surfaces like skin or hair. The bandage is also porous allowing the fabric to breathe.

### Very flexible

KRUUSE cohesive bandages can be stretched to almost double the unrolled length! You can bandage all kinds of injuries on the animal's body and control the compression.

### Excellent elasticity

The bandage has spandex threads that help minimize shrinkage to give firm compression and fixation. With proper application, the bandage will not constrict.

### Easy to remove

The features of the KRUUSE cohesive bandages make it very easy to remove, even without scissors.

### Hygienic

The bandage is water-resistant, which helps it stay in place. Each roll is individually wrapped in an easy-to-tear pouch for your convenience.

### Good compliance from the patient

The bandage is very light, does not constrict, and is not sticky to touch.



Easy to tear



Latex threads



Spandex threads

# RESOURCES

Webinar: Medical grade honey and the principle of T.I.M.E.



Scan the QR code to view the webinar and get CE credit



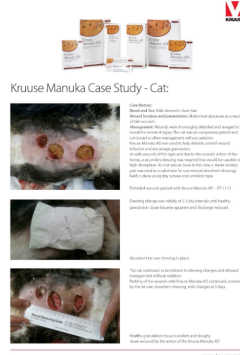
Guide: The Healing Powers of Honey



Scan the QR code to download the guide and take a quiz for CE credit



KRUUSE Manuka Case Study - Cat



Scan the QR code to read the case study



Scan the QR code to listen to the Podcast

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