

# Wound Dressing Guide



## promoting healthy skin

*Champions for Skin Integrity*

*The Wound Dressing Guide can be accessed online via  
<https://research.qut.edu.au/ccm/csi-resources/>*

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Wound Dressing Guide

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# Table of contents

<b>1 Introduction</b> .....	3	<b>Low-absorbent dressings</b> .....	27
<b>2 Dressings</b>		<b>Medical-grade honey dressings</b> .....	29
Alginates.....	5	<b>Odour-absorbing dressings</b> .....	31
Antibacterial alginate gels.....	8	<b>Paraffin gauze dressings</b> .....	32
Cadexomer iodine dressings.....	9	<b>PHMB dressings</b> .....	34
Foams.....	11	<b>Semi-permeable films</b> .....	35
Gelling fibres.....	13	<b>Silicone dressings</b> .....	37
High/super absorbent dressings.....	16	<b>Silver dressings</b> .....	39
Hydrocolloids.....	18	<b>3 Frequently asked questions</b> .....	42
Hydrogels.....	21	<b>4 References</b> .....	48
Hydrophobic dressings.....	24		
Hypertonic saline dressings.....	27		





# Introduction

The purpose of this resource is to provide a guide on commonly available wound dressing products. Wound dressings are designed to help healing by optimising the local wound environment. There is little evidence that any dressing is superior to another.

The main reasons that we apply dressings include the following:

- To provide rapid and cosmetically acceptable healing
- To remove or contain odour
- To reduce wound-related pain
- To prevent or treat infection
- To contain exudate
- To cause minimum distress or disturbance to the patient

Before applying any dressing you should ask yourself these questions:

- What is the action of the dressing?
- When should it be used?
- What are the limitations or contraindications to its use?
- Do I know the correct method of application and removal?
- Do I have sufficient knowledge about the dressing and have I been trained to use it?

Dressing selection is based on:

- Characteristics of the wound, including:
  - Location
  - Extent of tissue damage (depth)
  - Wound size
  - Phase of healing
  - Level of exudate
  - Pain
  - Odour
  - Infection
- Factors affecting wound healing, e.g.
  - Cost-effectiveness
  - Patient centered concerns
  - Many other factors

When performing a wound dressing it is not uncommon that you may need to use a combination of dressings. The dressing in contact with the wound bed is known as the *primary dressing*. If a dressing is required to absorb leakage or to secure a primary dressing, it may be referred to as the *secondary dressing*.

The information contained in this resource is not exhaustive or prescriptive. This source is a guide only and does not replace clinical judgement nor does it constitute endorsement of any product or organisation. For specific instructions regarding use of dressing products always refer to manufacturer's directions.





# Alginates

## What are the properties of alginate dressings?

- Alginates are made from seaweed
- When the dressing comes into contact with wound fluid it absorbs the fluid and turns into a gel like substance
- The dressing is highly absorbent—it can absorb up to 20 times its weight
- Some of the alginate dressings (calcium alginates) have haemostatic properties and are ideal for bleeding wounds

## In what forms are they produced?

- Ropes
- Sheets in varying sizes

## When should I use them?

- Filling irregular shaped wounds such as cavities, abscesses and sinuses (*see application tips on next page*)
- Alginate dressings are recommended in infected wounds providing the patient has appropriate antibiotic coverage, and chronic wounds for their absorbency and ability to maintain a moist wound environment

- For moderately to heavily exuding wounds
- For bleeding wounds
- For Cavities/wounds with depth or undermining

## When should I avoid using them?

- Wounds with minimal exudate
- Wounds with dry, hard, necrotic tissue
- Third-degree burns
- Heavily bleeding wounds

## How long should I use them?

If the wound is draining heavily, alginates may need to be changed daily or when there is 70% strikethrough (visible exudate) on the secondary dressing. As drainage decreases, dressing frequency can be reduced to every two to four days or even once weekly.

When the drainage stops or the wound bed looks dry, stop using the alginate dressing and re-evaluate the wound.



## Alginates *continued*

### Application tip

- Before using an alginate dressing in a cavity make sure that you are able to see (visualise) the base of the wound bed
- Also, if you use more than one piece, document clearly how many pieces were used

**Reason:** The dressing may slip down into the base of the wound, or a piece may be missed and left there at the next dressing change. This may then act as a foreign body resulting in delayed wound healing and possible wound infection

- Cut the alginate dressing to the size of the wound surface and then cover with a secondary dressing
- To reduce pain during wound dressing changes it is recommended that you moisten the dressing to make removal easier and less traumatic
- Ensure you flush all alginate fibres out of the wound at each dressing change as retained fibres can be reabsorbed and negatively affect wound healing

### Myth

- You can pre-moisten alginate dressings before you apply them?

**✗ False**

**Reason:** The action of the dressing is to absorb fluid so if you moisten the dressing then it will not be able to absorb any fluid.

- I can use creams such as Flamizine™ in conjunction with an alginate dressing?

**✗ False**

**Reason:** Creams such as Flamizine™ are antimicrobials which release a large amount of silver over a very short period of time (approximately 12 hours). Alginate dressings are designed to stay on for at least 24 hours. Also if you combine these two dressings the Flamizine™ will form a 'scum' over the wound surface. The alginate dressing will also be unable to do its job of absorbing any exudate.





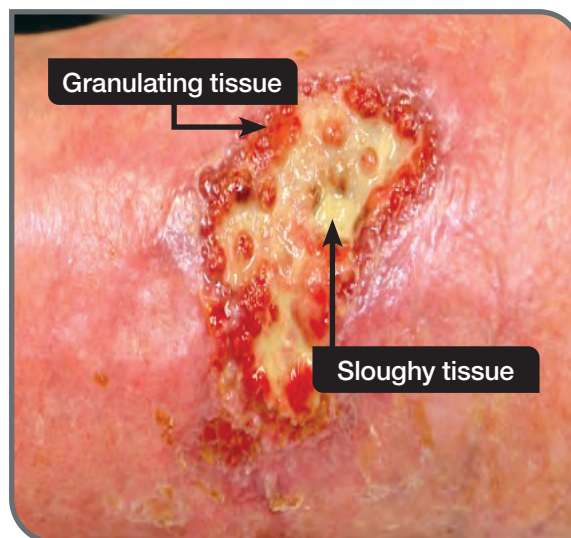
## Alginates *continued*

### Dressing examples:

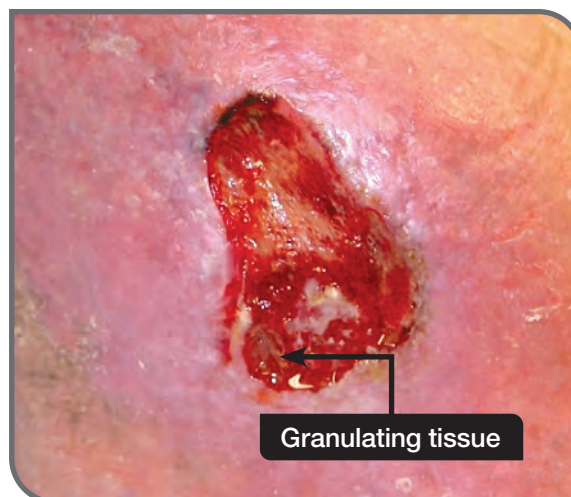
Dressing	Supplier
Kaltostat	Convatec
Melgisorb	Monlycke
ActivHeal Alginate	Sutherland Medical
Algisite M	Smith & Nephew

Cut dressing to wound size. Alginate dressings laterally wick and this may cause the surrounding skin to macerate and breakdown.

A secondary dressing will be required e.g. foam or super absorbent dressing.



Venous leg ulcers



2

ADVANTAGES	DISADVANTAGES
Provides a moist environment	Can only be used on exuding wounds
Keeps nerve endings moist and can reduce pain	Dressings can sometimes adhere to the wound
May be used in sinuses and cavities (if able to see the base of the wound bed)	Requires a secondary dressing
Moderately to highly absorbent	Sometimes mistaken for slough in the wound
Suitable for bleeding wounds	Can sometimes sting or cause discomfort



# Antibacterial alginate gels

## What are the properties of antibacterial alginate gels?

- Hydrated alginate gel embedded with antibacterial enzymes including glucose oxidase also found in honey and lactoperoxidase. The glucose oxidase converts glucose, oxygen and water from the wound exudates into peroxide ions. The peroxide ions are captured by the lactoperoxidase and converted into reactive oxygen species thereby exerting a bactericidal effect. This category of dressings is referred to as enzyme alginogels.

2

## In what forms are they produced?

- Alginate gel

## Dressing examples:

Dressing	Supplier
Flaminal Forte	FlenPharma
Flaminal Hydro	FlenPharma

## When should I use them?

- Infected or highly colonised wounds
- Wounds with offensive odour
- Leg and diabetic foot ulcers
- Pressure injuries
- Abrasions
- Cancerous wounds

ADVANTAGES	DISADVANTAGES
Reduces odour	May need a secondary dressing
Absorbs exudate	May cause maceration
Reduces bacteria	Some patients experience transient stinging or burning on application
Provides moist wound environment	



# Cadexomer iodine dressings

## What are the properties of cadexomer iodine dressings?

- Made up of micro beads that contain 0.9% iodine
- The cadexomer base absorbs exudate, swells and forms a gel
- Iodine is released progressively into the wound
- Iodine exerts an antimicrobial effect and bacteria are removed from the wound surface by the process of capillary action

### **Application tip**

- If applying paste onto the wound, remove the plunger from a 2ml syringe, put paste into the back of the syringe, reapply the plunger and gently squirt onto the wound surface. This will aid in more accurate application of paste and prevent cross contamination.
- Alternatively, you could moisten a cotton-tip and apply a small amount of paste to the moist cotton tip and then apply to wound
- Or you could apply required amount of paste on to the surface of a secondary dressing and apply directly to wound. Be careful not to apply onto the surrounding skin.

## In what forms are they produced?

- Paste
- Powder
- Sheet

## When should I use them?

- Low to heavily exudating wounds
- Can be used on infected wounds

## When should I avoid using them?

- During pregnancy or lactating women
- People with thyroid disease
- Suspected iodine sensitivities

## How long should I use them for?

- Review every two weeks
- Treatment duration should not exceed three months
- Until clinical signs of infection are resolved i.e. nil odour, healthy red granulating tissue, nil slough and not hot to touch



## Cadexomer iodine dressings *continued*



Venous leg ulcer



Diabetic foot ulcer

### Dressing examples:

Dressing	Supplier
Iodosorb Ointment	Smith & Nephew
Iodosorb Powder	Smith & Nephew
Iodosorb dressing (aka Iodoflex)	Smith & Nephew

2

ADVANTAGES	DISADVANTAGES
Iodosorb paste and Iodoflex conform to the wound bed	Contraindicated during pregnancy or lactating women Contraindicated for people with thyroid disease Contraindicated for people with suspected iodine sensitivities
Absorbs exudate	The maximum single application is 50 gram so cannot be used over large wounds
Converts to a gel and promotes moist wound healing	Transient stinging or burning on application
Iodine is progressively released into the wound bed	Will require a secondary dressing
Reduces the pH of the wound, enhancing the antimicrobial effect	
Effective at removing slough	



# Foams

## What are the properties of foam dressings?

- Foam dressings are made from a variety of different materials
- Foam dressings are hydrophilic which means that they attract fluid which aids in absorption
- Foams are not interactive, rather they are used for exudate absorption, padding and to maintain thermal temperature in the wound

## In what forms are they produced?

- Foam dressings are available in a variety of shapes, sizes and thicknesses
- They are available in sheets or cavity filling shapes
- Foams can come with an adhesive boarder or as a non adhesive
- Foams can be impregnated with chemicals such as antimicrobials, surfactants, or ibuprofen.

### *Application tip*

- If the foam is non-adhesive the dressing can be held in place with tape, netting, tubular retention bandage or undercast padding
- If exudate levels are high this can cause the surrounding skin to macerate. To prevent this, skin preparation creams or protective barrier films may aid in protecting the surrounding skin. Alternatively you could consider a multilayered absorbent dressing.
- Foams can be used in conjunction with other dressings to increase absorption. For example, you could combine an alginate or a gelling cellulose fibre with a foam.

2

## When should I use them?

- Low to heavily exuding wounds
- Granulating and epithelialising wounds

## When should I avoid using them?

- Avoid if known sensitivities to any of the foam's additives or components



## Foams *continued*

### Dressing examples:

Dressing	Supplier
Allevyn	Smith & Nephew
Biatain	Coloplast
Lyof foam	Monlycke
ActivHeal Foam	Sutherland Medical

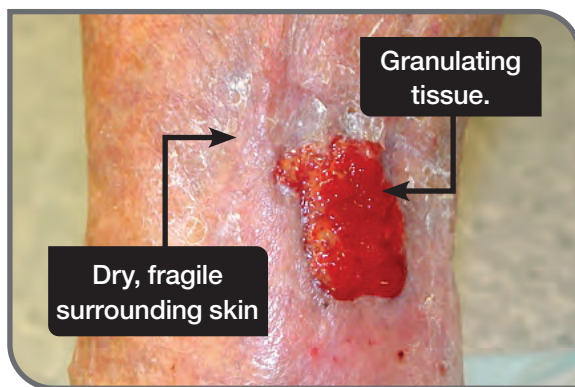
### Myth

■ You can apply a hydrogel under a foam dressing?

**✗ False**

**Reason:** *The action of the dressing is to absorb fluid. If you moisten the dressing with a hydrogel it will then not be able to absorb any fluid.*

2



Note the raised granulation tissue. A polyurethane foam dressing will help compress the tissue.

Chronic venous leg ulceration

ADVANTAGES	DISADVANTAGES
Available in many different shapes and sizes, non occlusive and semi occlusive/ water repellent dressings	The moist wound environment may not be enough to allow autolysis to occur
Facilitates a moist wound environment	May macerate the peri wound skin if it becomes saturated
Highly absorbent	Some of the foams e.g. cavity foams will require a secondary dressing
Provides protection	
Conforms to uneven body surfaces	



# Gelling fibres

## What are the properties of gelling fibre dressings?

- Gelling fibre dressings absorb exudate vertically. This aids in preventing the surrounding skin from becoming too wet and causing damage to it.

## In what forms are they produced?

- Packing ribbon
- Sheets in varying sizes

## When should I use them?

- Moderate to highly exuding wounds
- Infected wounds
  - There are gelling fibre dressings which contain silver and are suitable for infected wounds

## When should I avoid using them?

- Dry wounds
- Wounds with dry, hard, necrotic tissue

## How long should I use them for?

- The dressing may be continued as long as there is enough exudate
- If there is low or nil exudate then an alternative dressing may be required
- If the dressing is adhering to the wound surface then an alternative dressing will be required



## Gelling fibres *continued*

### **Application tip**

- When packing a cavity with a gelling cellulose fibre dressing it is advisable to leave a 'tail' of at least 2cm at the surface of the cavity to enable easier removal of the dressing (see picture right). If more than one piece is used, clearly record how many pieces were used.

**Reason:** The dressing may slip down into the base of the wound and be left there at the next dressing change, resulting in the dressing acting as a foreign body, which can result in delayed wound healing and possible wound infection

- Gelling cellulose fibre dressings do not need to be cut to the size of the wound
- Because this dressing covers the wound edge, as the edge heals and dries the dressing will often stick, (see p.13)



Cavity right elbow. When packing ensure that a tail of at least 2cm at the wound surface is exposed to enable easy dressing removal.



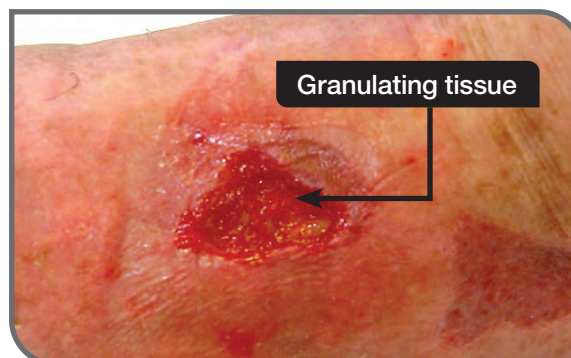


## Gelling fibres *continued*

### Dressing examples:

Dressing	Supplier
Aquacel	Convatec
Aquacel Extra	Convatec
Durafibre	Smith & Nephew
ActivHeal AquaFibre	Sutherland Medical

Gelling cellulose fibre dressings do not need to be cut to the size of the wound.



Mixed venous and arterial leg ulceration to the right medial malleolus

2

ADVANTAGES	DISADVANTAGES
Provides a moist wound environment	Can only be used on wounds producing moderate to large amounts of exudate
Aids in preventing breakdown of the surrounding skin	If there is not enough exudate the dressings can adhere to the wound
Conformable: therefore can be applied to irregular shaped wounds	Requires a secondary dressing e.g. multilayered absorbent dressing, foam
The moist environment aids in the debridement of slough and necrotic tissue	The dressing may be mistaken for slough in the wound



# High/super absorbent dressings

## What are the properties of high/super absorbent dressings?

- Made from a variety of materials with an inner absorbent core capable of containing moderate to high amounts of exudate
- Some dressings are coated with low-adherent materials to reduce risk of adhesion to the wound
- Some have a hydrophilic wound contact layer to facilitate transmission of exudate into the dressing away from the wound surface

2

## In what forms are they produced?

- Mostly non-adherent
- Broad range of sizes

## When should I use them?

- Moderately to heavily exuding wounds

## When should I avoid using them?

- Low levels of exudate

### Myth

- High/super absorbent dressings do not stick to the wound bed.

**✗ False**

**Reason:** *If the wound exudate 'dries out' then the fluid may adhere to the wound surface and the dressing. When the dressing is removed it can cause trauma to the wound and also cause pain to the patient*

### Solution:

**✓** *Consider an alternative dressing or an interface to reduce risk of adhesion. Moisten the dressing to decrease pain on removal*

## When should I stop?

- When exudate levels have reduced and a less absorbent dressing is indicated



## High/super absorbent dressings *continued*

### **Application tip**

- If the absorbent dressing is non adhesive the dressing can be held in place with tape, netting, an undercast padding or tubular retention bandage

### **Dressing examples:**

Dressing	Supplier
Exudry	Smith & Nephew
Mextra	Monlycke
Relevo	Sutherland Medical
Zetuvit Plus	Hartmann
Vliwasorb	Lohmann & Rauscher
DryMax	Sutherland Medical

A high/super absorbent dressing would be used as a secondary dressing to absorb exudate.



Leg ulcer with high levels of exudate



Note the maceration to the surrounding skin. A barrier preparation will assist in protecting the periwound.

2

ADVANTAGES	DISADVANTAGES
Reduce risk of maceration	Must be removed carefully as the dressing is only low adherent not non- adherent
Promotes moist wound healing environment	Generally not suitable for dry or low exudating wounds
	If fluid dries then the dressing may adhere to the wound
	Some require fixation to secure



# Hydrocolloids

## What are the properties of hydrocolloid dressings?

- Hydrocolloids are a type of dressing containing gel-forming agents, such as sodium carboxymethylcellulose (NaCMC) and gelatine
- Hydrocolloids are self adhesive and water repellent
- In the presence of wound exudate, hydrocolloids absorb liquid and form a gel

2

## In what forms are they produced?

- They are available in all shapes and sizes to accommodate small and large wounds and there are varying thicknesses depending on exudate levels

## When should I use them?

- Wounds producing low to moderate levels of exudate
- May be used as a primary dressing or used as a secondary dressing with a gelling fibre or alginate against the wound surface

## When should I avoid using them?

- Hydrocolloids are not recommended for infected wounds

## How long should I use them for?

- Hydrocolloid dressings only need changing every three to five days, if they start leaking, or are 70% full of exudate



## Hydrocolloids *continued*

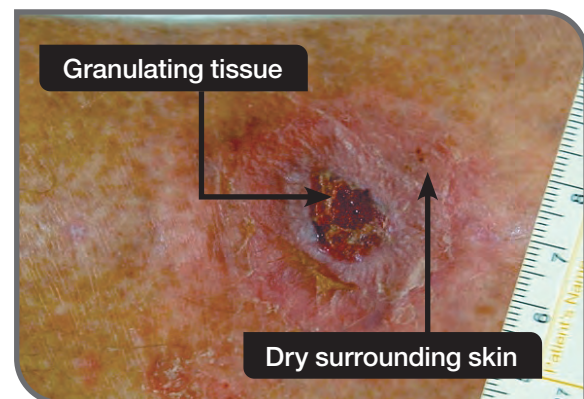
### **Application tip**

- When applying a hydrocolloid the skin surface should be clean and dry
- The dressing should be measured to allow about a one inch (2.5cm) margin from the wound edge
- After you apply the dressing hold the dressing in place with the palm of your hand (the warmth will assist the dressing to mould to the skin)
- Try to avoid over stretching or too much tension when applying the dressing as this may cause trauma such as blistering or breaks to the surrounding skin
- If the edges of the dressing keep rolling the dressing may be secured with adhesive tape, netting, undercast padding or tubular retention bandage

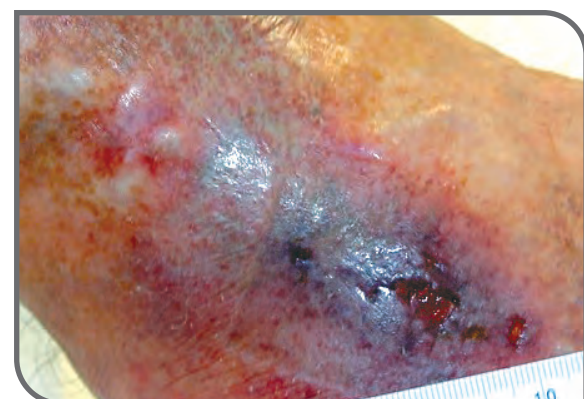
### Dressing examples:

Dressing	Supplier
Duoderm	Convatec
Comfeel	Coloplast
Replicare	Smith & Nephew

Skin barrier wipes can be applied to the surrounding skin for protection from becoming too wet (macerated) and breaking down.



2



Venous leg ulcers



## Hydrocolloids *continued*

ADVANTAGES	DISADVANTAGES
Waterproof which allows patients to shower	Care should be taken when using hydrocolloids as they can encourage the growth of anaerobic bacteria
Absorbs low exudate	Use with caution on fragile or compromised skin as the adhesive may cause trauma
Gel that forms from the wound fluid provides a moist wound environment	May be difficult to keep in place
Reduces pain	Sometimes have a distinctive malodour that is mistaken for pus
The moist environment promotes the formation of new tissue	



# Hydrogels

## What are the properties of hydrogels?

- Hydrogels have a high water content and contain insoluble polymers
- They are designed to hydrate the wound and promote autolytic debridement

## In what forms are they produced?

Hydrogels are available as:

- A gel in a tube (amorphous gel)
- Flexible sheets
- Hydrogel impregnated gauze

## When should I use them?

Hydrogels can be used on wounds that have minimal to moderate exudate

- Gel sheets can be used on flat, low-profile wounds.
- The gel in the tube can be used on low to moderately exuding wounds and necrotic sloughy wounds
- Hydrogel impregnated dressings are non woven gauze that is impregnated with gel. It is useful for packing low-exuding cavity wounds

## When should I avoid using them?

- Highly exudating wounds
- Sinuses or cavities where you cannot visualise the entire base of the wound bed
- Avoid if you are intending to use an absorbent dressing such as a foam dressing

**Reason:** The foam will absorb the gel



## Hydrogels *continued*

### Application tip

- If the surrounding skin looks fragile or compromised it might be beneficial to use a skin barrier preparation before applying the gel
- Apply a moderate amount of gel on the wound surface only. Try to avoid getting the hydrogel onto the good skin.

**Reason:** It will result in macerating the surrounding skin causing skin breakdown

- Make sure that you note the manufacturer's recommendations for storage and single use application
- Some hydrogels contain preservatives and can be used for multiple applications up to 28 days. Check manufacturer's recommendations.
- Hydrogel dressings generally need to be changed daily.

2

### Dressing examples:

Dressing	Supplier
----------	----------

#### Amorphous Gels

SoloSite	Smith & Nephew
Duoderm gel	Convatec
Intrasite gel	Smith & Nephew
Purilon gel	Coloplast
ActivHeal Hydrogel	Sutherland Medical
Normlgel	Monclycke

#### Gel Sheets

Curafil	Covidien/Kendall
Aquaclear	Hartmann
Hydrosorb	Hartmann
Suprasorb G	Lohmann & Rauscher

#### Gel Impregnated

Intrasite Gel conformable	Smith & Nephew
---------------------------	----------------

Skin barrier preparations can be applied to protect the surrounding skin from becoming too wet (macerated) and breaking down.



Arterial ulcer





## Hydrogels *continued*

ADVANTAGES	DISADVANTAGES
Provides a moist wound environment for cell migration	Cannot be used if you cannot visualise all of the wound base
Rehydrates necrotic eschar which helps in its removal without harming good cell growth	Some of the dressings may require a secondary dressing
Some gel sheets allow you to visualise the wound through the dressing	Maceration of the surrounding skin
Reduces pain by keeping nerve endings moist	Some people experience sensitivity to the preservatives



# Hydrophobic Dressings

## What are the properties of hydrophobic dressings?

- Hydrophobic dressings attract bacteria and fungi to the dressing removing them from the wound surface. The hydrophobic coating on the dressing is made from dialkylcarbamoylechloride (DACC), a synthetically produced derivative of a naturally occurring hydrophobic fatty acid.

## In what forms are they produced?

- Gel impregnated sheets
- Absorbent pad
- Gauze
- Ribbon gauze

### *Application tip*

- Do not use in combination with ointments and creams containing lipids as these will reduce the effectiveness of the product

## When should I use them?

- Infected or highly colonised wounds
- Fungal infections
- Sinuses and abscesses

## Dressing examples:

Dressing	Supplier
Cutimed Sorbact	BSN Medical
Cutimed Sorbact Gel	BSN Medical

ADVANTAGES	DISADVANTAGES
Reduces odour	May need a secondary dressing
Absorbs exudate	May cause maceration
Reduces bacteria and fungi	Some patients experience transient stinging or burning on application



# Hypertonic saline dressings

## What are the properties of hypertonic saline dressings?

- Cotton and/or synthetic gauze are impregnated with hypertonic saline in either a dry or wet form
- The hypertonic solution creates an osmotic action to cleanse the wound by wicking away necrotic tissue and purulent debris
- The hypertonic properties will inhibit bacterial growth

## In what forms are they produced?

- Sheets
- Packing ribbon
- Gel

## When should I use them?

- Moist necrotic wounds
- Draining and infected wounds

## When should I avoid using them?

- If the wound is painful
- Dry hypertonic dressings are not recommended for dry wounds or hardened eschar
- Should not be used on bleeding or potentially bleeding wounds
- Avoid if bone, tendon or muscle is on view
- Painful wounds

## When should I stop?

- Should be discontinued in healthy granulating or epithelising wounds

### ***Application tip***

- For optimal results the dressing should be changed two to three times per day
- A secondary absorbent dressing will be required to secure the dressing



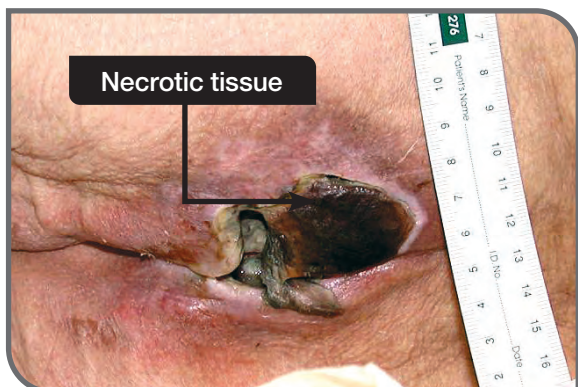
## Hypertonic saline dressings *continued*



Infected diabetic foot ulcer

### Dressing examples:

Dressing	Supplier
Mesalt	Molnlycke
HypergelDressing	Molnlycke
Curity	Covidien/Kendall



Sacral stage IV pressure ulcer

2

ADVANTAGES	DISADVANTAGES
Reduces odour	May cause stinging or discomfort
Maintains a moist wound environment	Dry formulations are not recommended for dry wounds
Promotes removal of loose slough or eschar	Increased dressing changes
Absorbs exudate and bacteria	Will require a secondary dressing
Reduces wound oedema	
Can reduce hypergranulation	



# Low-absorbent dressings

## What are the properties of low-absorbent dressings?

- Made from a variety of materials such as cotton/acrylic fibres & knitted viscose
- Some dressings are coated with low-adherent materials e.g. aluminium or perforated films. The “plastic film” is present to prevent the dressing adhering to the surface of the wound and is perforated to allow the passage of exudate from the wound into the body of the pad

## In what forms are they produced?

- With and without adhesive tape
- Non occlusive and occlusive dressings

## When should I use them?

- Dry to medium exudating wounds
- To protect surgical incisions
- To protect recently healed wounds

## When should I avoid using them?

- Moderately to highly exudating wounds

### Myth

- Low-adherent dressings do not stick to the wound bed.

**✗ False**

**Reason:** *If the wound exudate ‘dries out’ then the fluid may adhere to the wound surface and the dressing. When the dressing is removed it can cause trauma to the wound and also cause pain to the patient*

### Solution:

**✓** *Consider an alternative dressing. For example soft silicones for skin tears may be more appropriate. Moisten the dressing to decrease pain on removal*

2

## When should I stop?

- When the dressing is unable to contain the exudate and is requiring frequent dressing changes
- When the wound is fully healed and there is no risk of wound breakdown



## Low-absorbent dressings *continued*

### Dressing examples:

Dressing	Supplier
Melolin	Smith & Nephew
OpSite Post op	Smith & Nephew
Primapore	Smith & Nephew
Interpose	Multigate
Telfa	Covidien



2

Abdominal laparoscopy sites

ADVANTAGES	DISADVANTAGES
Cheap	Must be removed carefully as the dressing is only low adherent not non-adherent
Easy to use	Skin maceration
	Generally not suitable for highly exudating wounds
	If fluid dries then the dressing may adhere to wound



# Medical-grade honey dressings

## What are the properties of honey dressings?

- Comprised of 82% carbohydrate, enzymes and amino acids
- Acidic pH between 3.2-4.5, which is low enough to be inhibitory to many pathogens
- Medical-grade honey has been sterilised
- Has antibacterial activity
- Is regulated by pharmaceutical standards and registered for medical purpose

## In what forms are they produced?

- Gels
- Ointments
- Sheets

## When should I use them?

- For use on infected or highly contaminated wounds and malodorous wounds

## When should I avoid using them?

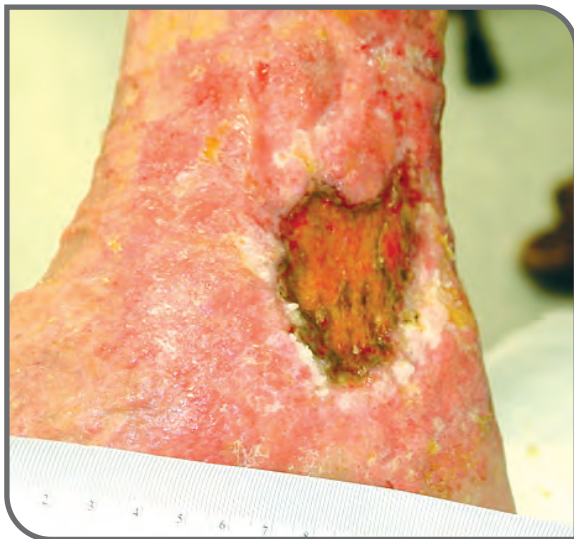
- Allergies to bees
- Hypersensitivity reactions
- Transient stinging/burning on application

## When should I stop?

- Should only be used for short periods of time
- When clinical signs of infection are not apparent



## Medical-grade honey dressings *continued*



Mixed venous & arterial leg ulcer

### Dressing examples:

Dressing	Supplier
Medihoney	Comvita
Apinate Dressing	Comvita
Manuka Honey	Comvita
Activon Tulle	Advancis Medical
Algivon	Advancis Medical

2

ADVANTAGES	DISADVANTAGES
Promotes moist wound healing	If honey is not sterile there is a perceived risk of wound contamination from the presence of clostridium botulism
Promotes autolytic debridement	May cause pain
Has an antimicrobial activity	Could lead to skin maceration
	Requires a secondary dressing





## Odour-absorbing dressings

### What are the properties of odour-absorbing dressings?

- Contain activated charcoal which absorbs odour, bacteria and exudate
- May also contain silver and/or have an absorbant layer

### In what forms are they produced?

- Foams
- High/super absorbent pads
- In combination with alginates

### When should I use them?

- Infected or highly colonised wounds
- Malignant/fungating cancerous wounds
- Wounds with offensive odour

### Dressing examples:

Dressing	Supplier
CarboFlex	Convatec
Lyof foam C	Monlycke
Carbonet	Smith & Nephew
Actisorb Plus	Systagenix



Fungating breast cancer

2

ADVANTAGES	DISADVANTAGES
Reduces odour	May need a secondary dressing
Absorbs exudate	Must not be cut
Can be used as a primary dressing	



# Paraffin gauze dressings

## (Non-medicated and medicated with antiseptics)

### What are the properties of paraffin gauze dressings?

- Open mesh, cotton, rayon, viscose or gauze
- Impregnated with white or soft paraffin and/or medicated antiseptic

### In what forms are they produced?

- Sheets in a variety of sizes
- Some dressings are impregnated with antiseptics e.g. chlorhexidine, povidine iodine, silver

#### Myth

■ Antiseptic paraffin gauze dressings can be applied at any time.

✗ False

**Reason:** *Research has demonstrated that antiseptics are detrimental to cells in wound healing and should not be applied to post-surgical wounds. However prudent use of antiseptics may be indicated in the presence of heavy bacterial colonisation or infection*

### When should I use them?

- Paraffin gauze dressings impregnated with antiseptics should only be used with clinical signs of infection if the person has the appropriate antibiotic coverage. The antiseptic contained in medicated paraffin gauze dressings is usually not in high enough quantities to result in antimicrobial effect and you would therefore need to consider an alternative product.

### When should I avoid using them?

- Some paraffin gauze dressings may leave paraffin or fibres in the wound which may act as a foreign body and resulting in delayed wound healing

### When should I stop?

- If the dressing is adhering to the wound surface
- If the patient is experiencing pain or discomfort
- If the patient has sensitivities



## Paraffin gauze dressings *continued*



Gravel rash on an elbow



Skin graft on a leg ulcer

Paraffin gauze dressings aid in keeping the skin graft moist.

### Dressing examples:

Dressing	Supplier
Bactigras (with Chlorhexidine)	Smith & Nephew
Inadine (with Iodine)	Systagenix
Xeroform (with Bismuth Tribromophenate)	Kendall
Adaptic	Systagenix
Atraumann	Hartmann
Jelonet	Smith & Nephew

2

ADVANTAGES	DISADVANTAGES
Reduces adhesion and allows non-traumatic removal	Requires a secondary dressing
Provides a moist environment that facilitates epithelial cell migration	Does not absorb exudate
	Requires frequent dressing changes to ensure they do not dry out and cause damage to good cells when dressing is removed
	Some products can shed fibres into the wound which can act as a foreign body



## PHMB dressings

### What are the properties of PHMB dressings?

- PHMB (Polyhexamethylene Biguanide) is a gentle yet effective broad spectrum antimicrobial agent which is effective against gram positive and negative organisms including some strains of MRSA

### In what forms are they produced?

- Foams
- Low-adherent primary contact dressings
- Adhesives and non-adhesives

### When should I use them?

- Infected wounds in combination with systemic oral antibiotics
- Highly colonised wounds

### When should I avoid using them?

- Sensitivity to the product
- No response to therapy

### Dressing examples:

Dressing	Supplier
Prontosan Wound Gel (hydrogel)	B Braun
AMD (foam)	Covidien/Kendall
Telfa AMD Island Dressing	Covidien/Kendall
Excilon AMD drain sponge (gauze)	Covidien/Kendall
Kerlix AMD (gauze roll)	Covidien/Kendall
Tielle Foam	Systagenix

#### **Application tip**

- Ensure dressing is at least 1.5cm to 2cm larger than the wound margins

ADVANTAGES	DISADVANTAGES
Reduces odour	May require fixation to secure dressing
Maintains a moist wound environment	
Absorbs exudate and bacteria	
Can reduce hypergranulation	



## Semi-permeable films

### What are the properties of semi-permeable film dressings?

- Semi-permeable film dressings are made from a thin sheet of polyurethane coated with a layer of adhesive
- They are generally clear, adherent, and non-absorbent
- They allow moisture, vapour and gases to escape but are also impermeable (water resistant) to liquids

#### ***Application tip***

- The dressing should be measured to allow a margin of approximately 2.5cm – 5cm margin from the wound edge
- Gently lay the dressing over the wound; avoid wrinkling the dressing
- Try to avoid over stretching or too much tension when applying the dressing as this may cause trauma such as blistering or breaks to the surrounding skin
- When removing a transparent film from the skin gently stretch the dressing to break the contact adhesive bond, this will result in less pain for the patient

### In what forms are they produced?

- Sheets which come in different shapes and sizes

### When should I use them?

- Suitable for superficial and shallow wounds
- Can be used as a secondary dressing to secure a dressing

### When should I avoid using them?

- Should not be used on fragile or comprised skin as it may cause trauma when removed
- Exuding wounds

2



## Semi-permeable films *continued*

### Myth

■ Transparent films are standard treatment in the management of skin tears

**✗ False**

**Reason:** *It is important to assess the patient's surrounding skin before applying a transparent film. Transparent films strongly adhere to dry skin. When it is time to remove the transparent film dressing it can cause trauma to the good skin by tearing it.*

### Solution:

**✓** *A silicone dressing may be more appropriate for this type of skin as it is non adherent to the wound and surrounding skin*

### Dressing examples:

Dressing	Supplier
OpSite Flexigrid	Smith & Nephew
Tegaderm	3M
Mefilm	Monlycke



Abdominal laparotomy incision

2

ADVANTAGES	DISADVANTAGES
Permeable to gases	Exudate may pool under the dressing and macerate the surrounding skin
Allows some moisture vapour to be evaporated from the wound	Care must be taken when removing the dressing as it can cause trauma to the good surrounding skin
Can reduce pain by keeping nerve endings moist	Reaction/sensitivity to adhesive
Allows inspection of wound through dressings	



# Silicone dressings

## What are the properties of silicone dressings?

- Silicones are polymers (long-chains) with a structure that consists of alternate atoms of silicone and oxygen with organic groups attached to the silicone atoms
- Silicone dressings are made from a particular family of solid silicones, which are soft and tacky. These properties enable them to adhere to dry surfaces
- A soft silicone dressing is a dressing coated with soft silicone as an adhesive or a wound contact layer

## In what forms are they produced?

Silicone dressings are produced as:

- Silicone foams with adhesive and non-adhesive borders
- There are silicone sheets with no absorbent dressings attached
- There are also semitransparent films with silicone as the interface

## When should I use them?

- To prevent trauma to the wound and the surrounding skin
- To reduce pain during dressing removal
- Traumatic wounds
- Prophylaxis of skin radiotherapy burns and prophylaxis for pressure injuries
- To aid in the treatment of hypertrophic scars and keloids

## When should I avoid using them?

- Silicone dressings can be used on infected wounds as long as there is the appropriate antibiotic coverage
- Some silicone products contain silver for use on infected wounds
- If sensitivity to the product develops



## Silicone dressings *continued*

### Application tip

- Because silicone dressings are quite tacky they can make application difficult. If you wet your fingers or forceps then handle the dressing this will prevent it from sticking
- The silicone sheet does not have to be cut to wound size. It can lie on the good skin and this can aid in dressing removal

### Dressing examples:

Dressing	Supplier
<b>Sheet</b>	
Mepitel	Molnkycke
Askina SilNet	B Braun
<b>Foam with adhesive</b>	
Mepilex Border	Molnkycke
Allevyn Gentle Border	Smith & Nephew
Biatain Silicone Foam	Coloplast
Askina DresSil	B Braun

2



Skin tear

ADVANTAGES	DISADVANTAGES
Easy to apply	Cost
Reusable	Not recommended for persons with allergies to silicone products
Atraumatic to the wound and surrounding skin	Some silicone products require a secondary dressing
Decreased pain on removal	





# Silver dressings

## What are the properties of silver dressings?

- Silver dressings are a broad spectrum antimicrobial agent and come in a variety of mediums including foams, alginates and gelling cellulose fibres
- They achieve their antimicrobial action by generating and releasing silver into the wound in the presence of wound exudate. Silver is a potent antimicrobial.
- Silver dressings are active against a variety of micro-organisms including *Staphylococcus aureus*, methicillin-resistant *Staphylococcus aureus* (MRSA), *Pseudomonas aeruginosa* and vancomycin-resistant enterococci (VRE)
- Silver has anti-inflammatory properties

## In what forms are they produced?

- Silver-based dressings come in the form of:
  - Alginates
  - Gelling fibres
  - Foams
  - Films
  - Hydrogels
  - Parafin gauze

## When should I use them?

- Clinically infected wounds or critically colonised wounds
- To reduce the risk of wound infection and to treat infected wounds
- To provide sustained antimicrobial activity

## When should I avoid using them?

- Patients with known hypersensitivity to any of the components of the product. If signs of a sensitivity reaction develop during use, treatment should be discontinued.
- Healthy granulating wounds with no signs of critical colonisation or infection

## When should I stop?

- Should only be used for short periods of time, two to three weeks to reduce the risk of resistance. The length of treatment should be determined by the response of the wound and the individual.



## Silver dressings *continued*

### Application tip

- The wound must be producing enough exudate to activate the silver. If the wound is dry the silver dressing should be moistened with water to activate the silver. Do not moisten with normal saline as this will deactivate the silver.
- Do not wet/pre-moisten alginate or gelling cellulose fibre silver dressings
- Avoid using zinc or paraffin on the wound as this may also deactivate or reduce the effectiveness of the silver

### Dressing examples:

Dressing	Supplier
Biatain Ag	Coloplast
Aquacel Ag	Convatec
Mepilex Ag	Monlycke
Acticoat	Smith & Nephew
Actisorb Plus	Johnson & Johnson
Atraumann Ag	Hartmann
Silvercel	Systagenix



Silver dressings can be used on wounds with clinical signs and symptoms of a wound infection in combination with systemic antibiotic usage

ADVANTAGES	DISADVANTAGES
Silver is a broad spectrum antimicrobial and is effective against MRSA & VRE	Should not be used with other antimicrobials
	Do not use with normal saline
	May mask the signs of infection
	Should only be used for short periods





## Frequently asked questions

**How do you stop a bleeding wound and what dressings should be applied?**

### Answer

When an individual sustains a traumatic injury which results in bleeding the following steps should be applied:

1. Apply direct pressure to the wound surface for at least 10 minutes.
2. While applying pressure and, if appropriate, elevate the limb above the level of the heart.
3. Once the bleeding has subsided apply a cold pack to cause the blood vessels to vasoconstrict.

Once the bleeding has ceased, assess the wound type e.g. skin tear\*.

The wound may initially be dressed with an alginate dressing if bleeding is problematic as some alginates act as haemostats. A secondary dressing will be required to absorb exudate.

*\* Refer to the Champions for Skin Integrity Folder for guidelines summary for skin tears*

**When doing a dressing how do I know when I need to use an aseptic technique or a clean technique?**

### Answer

**Aseptic technique** includes strategies which prevent the transmission of microorganisms and involves the use of sterile equipment, fluids and dressings.

**Clean technique** adopts the same control of infection principles to prevent the transmission of microorganisms but clean (rather than sterile) single use gloves and/or tap water that is safe to drink is used.

**Aseptic technique** is required when the client is immunosuppressed, or when the wound enters a sterile body cavity (eg. nephrostomy tube).



## Frequently asked questions *continued*

### When should I use povidone iodine on a wound?

#### **Answer**

Povidine iodine is an antiseptic. Generally the use of povidine iodine is appropriate for acute and superficial wound care use, including simple burns and abrasions. It is useful because it destroys viruses, yeasts, fungi and bacteria.

Povidine iodine should not be used for the cleansing of clean granulating wounds as it can damage tissue. Evidence also suggests that antiseptics such as povidine iodine are ineffective in the presence of organic material such as pus, slough, and necrotic tissue within wounds.

Povidine iodine should only be used in the treatment of acute superficial wounds.

Antimicrobials, such as povidine iodine, should not be used immediately on post-operative wounds.

### What is exudate?

#### **Answer**

Exudate is derived from fluid that has leaked out of blood vessels and closely resembles blood plasma.

Exudate contains a variety of substances including water, electrolytes, nutrients, inflammatory mediators, white cells, protein-digesting enzymes, growth factors and waste products.

As a wound goes through the normal phases of healing exudate is required to promote wound healing.



## Frequently asked questions *continued*

### What do the terms granulating, epithelising, slough and necrotic tissue mean?

#### Answer

Granulating, epithelising, slough and necrotic tissue are all terms to describe tissue present in the wound bed.

#### Granulating/Red Wound

Appearance:

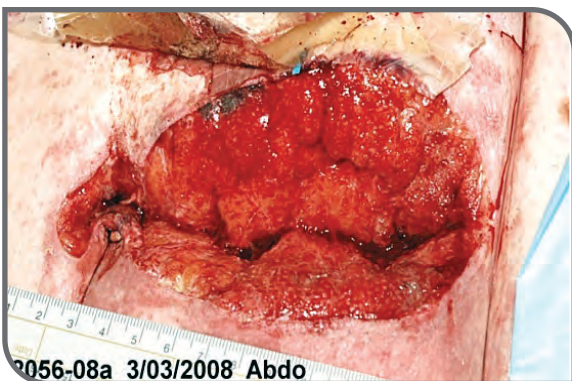
- bright red tissue
- varies in size, shape and amount of exudate produced

#### Epithelising/ Pink wound

Appearance:

- final stages of healing
- pinky white tissue that migrates from wound edges or from the remnants of hair follicles within the dermis
- superficial
- light exudate

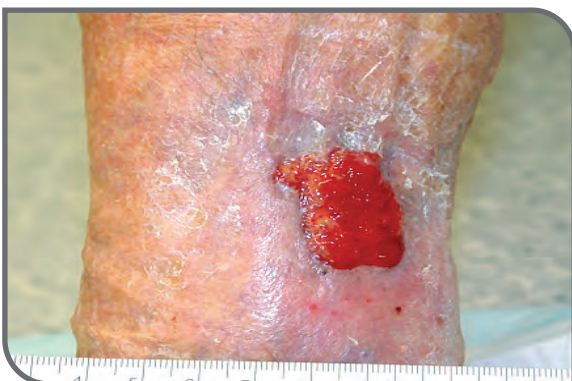
3



Red granulating wound



Epithelial tissue on a donor site



Red granulating wound



## Frequently asked questions *continued*

### **Sloughy/Yellow wound**

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Appearance:

- covered or filled with yellow viscous tissue.
- collection dead cellular debris.



Sloughy tissue



Sloughy tissue

### **Necrotic / Black Wound**

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Appearance:

- dehydrated, dead tissue
- can be dry or moist
- can completely cover surface of the wound or present as small patches at base or margins of the wound



Black necrotic tissue



## Frequently asked questions *continued*

### How can I tell if a wound is getting better or worse?

#### Answer

##### **A healthy wound:**

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- Is pink or ruddy beefy red in colour
- Has no obvious smell
- Exudates small to moderate amounts of clear or serous (light yellow) fluid
- Surrounding skin is warm, (not hot or cold) to touch, is pink and healthy-looks like normal skin
- No pain
- Free of infection
- Over time a healthy wound may show a reduction in pain, odour and/or exudate
- A reduction of 30% wound area in four weeks is indicative of a healing wound

##### **Unhealthy wounds may be:**

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- Very malodorous (offensive smell)
- Greenish in colour, necrotic or covered in thick yellow slough
- Producing large amounts of exudate
- Surrounding skin is red and hot to touch
- Usually very painful or increasing pain
- Person feels systemically unwell, increasingly tired, lacks interest in food and normal activities of daily living, feverish or hot/cold sweats

### What is a primary and secondary dressing?

#### Answer

A **primary dressing** is the dressing which goes directly onto the wound surface e.g. hydrogel, alginate or hydrofibre.

A **secondary dressing** is the dressing that goes on top of the primary dressing. A secondary dressing can be used for a number of reasons including extra absorption or securing a dressing in place.







## References

- Australian Wound Management Association. 2011. Position Document: Bacterial impact on wound healing – from contamination to infection. AWMA.
- Baranoski S. 2008. Choosing a wound dressing, Part 1. *Nursing*, 38:10-12.
- Barnaoki S. 2008. Choosing a wound dressing, Part 2. *Nursing*, 38:14-15.
- Beele H et al. 2012. Expert consensus on a new enzyme alginogel. *Wounds UK*, 8:64-73.
- Carville K. 2007. *Wound Care Manual*. 5th Ed. Osbourne Park: Silver Chain Foundation.
- Fletcher J. 2007. Dressings: cutting and application guide. [www.worldwidewounds.com/2007/may/Fletcher/Fletcher-Dressings-Cutting-Guide.html](http://www.worldwidewounds.com/2007/may/Fletcher/Fletcher-Dressings-Cutting-Guide.html)
- Hess C. 2000. *Clinical Guide: Wound Care*. 3rd Ed. Pennsylvania: Springhouse Corp.
- International Wound Infection Institute. 2016. Wound infection in clinical practice. *Wounds International*.
- NPUAP, EPUAP, PPPIA. 2014. Prevention and treatment of pressure ulcers. Haesler E. (Ed) Osborne Park, WA: Cambridge Media.
- Probst A et al. 2012. Cutimed Sorbact made easy. *Wounds International*, 3(2).
- Selim P. 2000. The use of antiseptics in wound management: A community nursing focus. *Primary Intention*, 63-66.
- Sibbald RG. 2012. Special considerations in wound bed preparation 2011: An update. *Wound Council of Enterostomal Therapists Journal*, 32:10-30.
- Sussman C, Bates-Jensen B. 1998. *Wound Care: A collaborative practice manual for physical therapists and nurses*. Maryland: Aspen Publishers.
- Thomas S. 2003. Soft silicone dressings: frequently asked questions. [www.worldwidewounds.com/2003/october/Thomas/Soft-Silicone-FAQ.html](http://www.worldwidewounds.com/2003/october/Thomas/Soft-Silicone-FAQ.html)
- Ulcer and Wound Management Expert Group. 2012. *Therapeutic Guidelines: Ulcer and Wound Management, Version 1*. Melbourne: Therapeutic Guidelines Ltd.
- World Union of Wound Healing Societies. 2004. Principles of Best Practice: Minimising pain at wound dressing-related procedures. A consensus document. London: MEP Ltd.
- World Union of Wound Healing Societies. 2019. Consensus Document: Wound Exudate. *Wounds International*
- Wound Healing and Management Node Group. 2012. Evidence Summary: Wound infection – silver products and biofilms. Joanna Briggs Institute.
- Wound Healing and Management Node Group. 2012. Evidence Summary: Wound management: dressings – alginate. Joanna Briggs Institute.
- Wounds Australia. 2016. *Standards for Wound Prevention and Management*. 3rd Ed. Osborne Park, WA: Cambridge Media.



