Clinical Wound Assessment

A Pocket Guide

Developed by

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The authors and Coloplast A/S hope that this pocket guide will help you in clinical practice. Barriers consisting of local and systemic factors may delay or impede healing. Through the assessment it is essential to identify these factors to facilitate faster wound healing whenever possible.

The pocket guide information is intended as a general guideline, please consult wound care guidelines applicable in your area.

If you have any questions or comments to the pocket guide, please send an email to dkbme@coloplast.com

"The comprehensive wound assessment follows the patient assessment. The wound assessment will define the status of the wound and begin to identify impediments to the healing process".[1]

Hess, C.T. and Kirsner, R.S., 2003

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Evidence-based wound management

Evidence-based medicine and ultimately practice with focus on wound care require the highest level of evidence. Further elaboration from David Sackett (2000)[2] defines evidence-based wound management as the integration of best research evidence with clinical expertise and patient values.

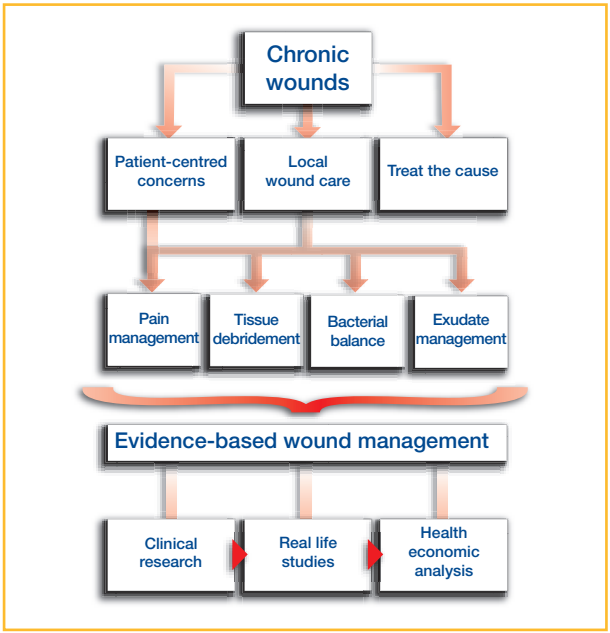
The approach to integrating evidence-based wound management into practice is:

- Clinical research (clinical research studies)
- Real life studies (everyday practice research)
- Health-economic analysis (cost-effectiveness)

A pathway to clinical care and clinical evidence for patients with chronic wounds is presented on page 5.

Pathway to clinical care and clinical evidence

Dressings are part of a holistic wound management plan with individualised patient goals. One goal may be to facilitate faster wound healing by providing the optimal environment for healing to proceed. However, it is necessary to look at the whole patient, underlying disease processes and patient-centred concerns before looking at the wound itself.[3]



Faster wound healing by reducing the barriers to healing

Wound bed preparation extends the existing practice of using a holistic approach to evaluate and remove all barriers to healing, so that wound repair can progress normally. The overall goal of management is to achieve a stable wound that has healthy granulation tissue and one that is characterised by a well-vascularized wound bed. This would involve the removal of factors that delay healing.[4]

Various factors may delay or impede healing. Local factors occur directly within the wound, whereas systemic factors occur throughout the body.[1]

Local factors	Systemic factors
Primary • Blood supply (tissue perfusion) • Tissue oxygen tension	Pivotal • Haemodynamic conditions (perfusion, hypovolemia, hypoxia, pain, etc)
Secondary • Tissue damage • Mechanical stress of the tissue • Hypothermia • Pain • Radiation • Infection • Surgical technique • Suture technique and materials • Others (vasculitis, immunological, etc)	Important • Age • Smoking • Medication • Diseases • Nutritional status • Anaemia • Alcoholism • Radiation • Others (immunological, etc)

Modified from Gottrup, F. et al., 1995[21]

Patient assessment

Wound healing is determined by the general health of the patient. The assessment of the patient as a whole is critical for the planning and evaluation of care and should include:

- Medical history
- Cause of tissue damage
- Medication/allergies
- Other diseases such as:
  - Diabetes
  - Vascular disease
  - Immune compromise
- Inadequate nutrition
- Lifestyle/environment
  - Obesity
  - Tobacco/alcohol abuse
- Impaired mobility
- Inadequate social network, caregiver support
- Psychological problems

Wound assessment

Wound assessment is not an exact science, but requires the skills and assessment of trained professionals. The following need to be assessed and carefully recorded at each dressing change:

- Cause: determine etiology
- Local wound characteristics:
  - Location
  - Size (length x width x depth)
  - Wound bed (black, yellow, red, pink, undermined)
  - Exudate (copious, moderate, mild, none)
  - Wound edge (callus and scale, maceration, erythema, oedema)
  - Odour (absent, present)
- Patient concerns: pain (persistent, temporary)
- Condition of surrounding skin (normal, oedema, warmth, erythema)
- Clinical signs of critical colonisation/local infection and infection (please see pages 11-12)

Assessment of the wound is a prerequisite to the selection of an appropriate dressing.

Characteristics of different wound types[6]

	Arterial	Venous	Diabetic	Pressure ulcers
Location	Usually distal	Above malleolus	Pressure areas on foot	Pressure areas
Size	Small	Small to large	Usually small but may be large	Small to large
Shape	Round	Irregular	Round	Round but may be irregular if large
Depth	Usually relatively shallow	Shallow	Shallow to deep*	Shallow to deep*
Base	Pale	Variable; frequently exudative,	Variable; frequently necrotic if infected	Variable
Margins	Smooth	Irregular	Usually smooth	Variable
Surrounding skin	Pale	Pigmented	Frequently callused	Variable

* may have tracking and/or undermining

Clinical pictures of different wound types

Venous leg ulcer

Arterial leg ulcer

Pressure ulcer

Diabetic foot ulcer

Indications of when to use silver dressings

Contamination/ Colonisation	Critical colonisation/ Local infection	Infection
Likely signs	Likely signs**	Likely signs**
No local pain	New or increased pain at wound site	Severe or increased pain at wound and surrounding tissue
No fever	No fever	Fever, systemic symptoms
Normal smell	May have odour	Foul or excessive odour
Healthy granulation	Abnormal/absent granulation	Abnormal granulation or necrotic tissue
Minimal exudate	Excessive or increased serous exudate	Excessive and purulent exudate
Normal wound margin	Possible tunneling or pocketing	Tunneling, pocketing, maceration, oedema, erythema, warmth
Healing wound*	Static wound	Increased wound size
Treatment	**Treatment**	**Treatment**
Select a wound dressing that provides moist wound healing. Topical antimicrobial (e.g. sustained silver release) dressings may be used if risk of infection is a concern. Always conduct a thorough assessment, as it will determine the treatment.	Topical antimicrobial (e.g. sustained silver release) dressings are appropriate. Always conduct a thorough assessment, as it will determine the treatment.	Systemic antibiotics are appropriate. Topical antimicrobial (e.g. sustained silver release) dressings may give added benefit together with systemic coverage. Always conduct a thorough assessment, as it will determine the treatment.

* (7): A 20%-40% reduction of wound area in 2 to 4 weeks is likely to be a reliable predictive indicator of healing: the efficacy of this fact has been demonstrated specifically for venous leg ulcers.

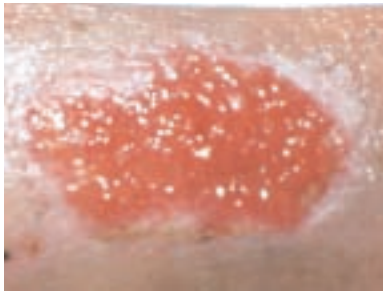
**Adapted from Hess, C.T. and Kirsner, R.S., Ostomy/Wound Management 2003. Enoch, S. and Harding, K., Wounds 2003.

Please remember that diabetic foot ulcers do not always present with the classical signs of local infection. Further reading: International Consensus on the Diabetic Foot (2003) by the International Working Group on the Diabetic Foot.

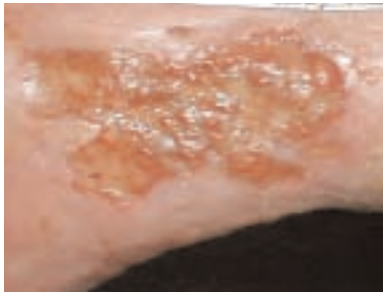
Disclaimer: These are general guidelines. Please check local treatment recommendations applicable to your country or healthcare institution.

Clinical signs

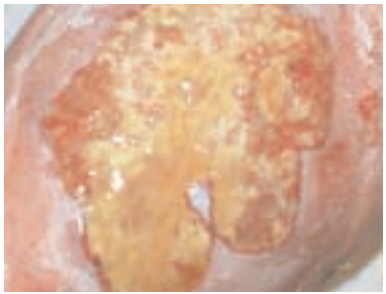
Contamination/ colonisation



Critical colonisation/ local infection



Infection



Criteria for an ideal dressing

Exudate
- Must be able to handle varying amounts of exudate

Secure in place
- Must remain securely in place during activities

Easy to remove
- Must be easy to use and remove without traumatizing the wound or surrounding tissue

Wear-time
- Must require a minimal number of dressing changes to diminish disturbance of the healing process and decrease the nursing time required

Cost-effective
- Lower nursing and dressing costs

Comfort
- Must promote good quality of life for the patient

Modified from Karlsmark et al., British Journal of Nursing, 2004[8]

The ideal silver dressing must:
- Combine antimicrobial effect and capacity to absorb exudate[9]
- Deliver silver in a sustained therapeutic way[9]
- Be supported by clinical documentation in randomised controlled trials
- Be easy to use and comfortable for the patient[9]
- Be cost-effective[9]

Biatain Foam Dressing - Faster wound healing by minimising maceration and leakage

Biatain Dressings have excellent fluid handling capacities[10] leading to less risk of maceration and leakage.

Clinical evidence has shown:

- Lower incidence of leakage and better absorption capacity ratings[11]
- Less need for a secondary absorbent dressing[11]
- Less need for special treatment of the surrounding skin[11]
- Significantly longer wear time compared to the hydrocellular dressing, thereby having an impact on the total cost per treatment[11]
- Clinically tested on patients with diabetic foot ulcers[12]

Biatain is indicated for moderately to highly exuding leg ulcers, pressure ulcers and non-infected diabetic foot ulcers. It may also be used for superficial burns, superficial partial thickness burns, donor sites, postoperative wounds, and skin abrasions.*

The latest development within the **Biatain** family is **Biatain** Soft-Hold*. It functions as a third hand at dressing change, but still with the excellent fluid handling capacity of **Biatain**.

* Please see package insert for complete Instructions for Use

Contreet Foam/**Biatain - Ag** Dressing Faster wound healing by minimising maceration and managing local infection

Contreet Foam combines the excellent fluid handling capacities of **Biatain** with sustained silver release. This unique combination provides faster wound healing, clinically documented.

Clinical evidence has shown:

- **Contreet** Foam/**Biatain - Ag** reduces the ulcer area by 45-56% within 4 weeks[13,17]
- **Contreet** Foam/**Biatain - Ag** has excellent wound bed preparation properties[13,14]
- **Contreet** Foam/**Biatain - Ag** provides excellent exudate management[13,17]
- Odour is dramatically reduced or eliminated after just one week of **Contreet** Foam/**Biatain - Ag** treatment[13,14,17]
- **Contreet** Foam/**Biatain - Ag** is a cost-effective treatment[18]
- Clinically tested on patients with diabetic foot ulcers[15]

Contreet Foam/**Biatain - Ag** Dressings are indicated for treatment of moderately to highly exuding leg ulcers, pressure ulcers, diabetic foot ulcers, partial thickness burns, donor sites, postoperative wounds, and skin abrasions. It can be used to progress wounds with delayed healing due to bacteria/fungi, or wounds where a risk of infection exists.*

Excellent fluid handling foam = **Biatain** Dressing
+ Silver
= **Contreet**/**Biatain - Ag** Dressing

* Please see package insert for complete Instructions for Use

Clinical research on **Contreet***

Author	Title	Published
Jørgensen, B. et al.	The silver-releasing foam dressing, **Contreet** Foam, promotes faster healing of critically colonised venous leg ulcers: a randomised, controlled trial.	International Wound Journal 2005, Vol. 2 (1): 64-73.
Rayman, G. et al.	Sustained silver-releasing dressing in the treatment of diabetic foot ulcers.	British Journal of Nursing 2005, Vol. 14 (2): 109-114.
Sibbald, G. et al	Review of the clinical RCT evidence and cost-effectiveness data of a sustained-release silver foam dressing in the healing of critically colonised wounds	Presented at a symposium at the World Union of the Wound Healing Societies, Paris, France, 2004. Published at www.world-widewounds.com, December 2005
Karlsmark, T. et al.	Clinical performance of a new silver dressing, **Contreet** Foam, for chronic exuding venous leg ulcers.	Journal of Wound Care 2003, Vol. 12 (9): 351-354.
Lansdown, A.B.G. et al.	**Contreet** Foam and **Contreet** Hydrocolloid: an insight into two new silver-containing dressings.	Journal of Wound Care 2003, Vol. 12 (6): 205-210.
Ivins, N. et al.	Safety and Efficacy in Long Term Use of a Sustained Silver-releasing Foam Dressing: A Randomised, Controlled Trial on Venous Leg Ulcers	Poster presented at Stuttgart 2005, the joint Scientific meeting of ETRS, EWMA and DGfW, September 2005
Sibbald R.G. et al.	Wound Bed Preparation properties of a foam dressing and a silver-containing foam dressing.	Poster presented at the 2nd World Union of Wound Healing Societies' meeting in Paris, France, July 2004.
Mosti, G. et al.	Preparing the wound bed for skin grafting with a silver hydrocolloid compared to a standard hydrocolloid.	Poster presented at the 2nd World Union of Wound Healing Societies' meeting in Paris, France, July 2004.
Voyatzoglou, D. et al.	Clinical evalution of an antibacterial silver-containing foam dressing in the treatment of neuropathic/neuroischemic diabetic foot ulcers.	Poster presented at the 2nd World Union of Wound Healing Societies' meeting in Paris, France, July 2004.

* For further documentation please contact Coloplast A/S

Outcomes research on **Contreet***

Author	Title	Published
Münter, K.C. et al.	The CONTOP study: A large scale, comparative, randomised study in patients treated with a sustained silver releasing foam dressing	Poster presented at the 15th EWMA Conference, Stuttgart, Germany, September 2005.
Russell, L. et al.	The CONTOP multinational study: preliminary data from the UK arm.	Wounds UK 2005, Vol. 1 (1): 44-54.
Price, P. and the **Contreet** Study Group	Health-related quality of life aspects after treatment with a foam dressing and a silver-containing foam dressing in chronic leg ulcers.	Poster presented at the 2nd World Union of Wound Healing Societies' meeting in Paris, France, July 2004.

Health economic analysis on **Contreet***

Scanlon, E. et al.	Cost-effective faster wound healing with a sustained silver-releasing foam dressing in delayed healing leg ulcers - a health-economic analysis.	International Wound Journal, 2005. Vol. 2 (2): 150-160.
Scanlon, E. et al.	Cost-effectiveness of a silver-containing hydro-activated foam dressing in Germany and the UK.	Poster presented at the 2nd World Union of Wound Healing Societies' meeting in Paris, France, July 2004.

In vitro documentation on **Contreet***

Lansdown, A.B.G. et al.	**Contreet** Foam and **Contreet** Hydrocolloid: an insight into two new silver-containing dressings.	Journal of Wound Care 2003, Vol. 12 (6): 205-210.
Hanson, L.G. et al.	Magnetic Resonance Imaging safety and compatibility for three silver-containing wound dressings	Poster presented at Stuttgart2005, the joint Scientific meeting of ETRS, EWMA and DGfW, Sept. 2005.
Dolmer, M. et al.	In vitro silver release profiles for various antimicrobial dressings.	Poster presented at the 2nd World Union of Wound Healing Societies' meeting in Paris, France, July 2004.
Larsen, K. and Dolmer, M.	Antimicrobial activity of **Contreet** Foam Dressing on microorganisms commonly found in chronic wounds.	Poster presented at the 13th Conference of the EWMA, Pisa, Italy, May 2003.
Kolte, M.I. et al.	Exudate management of silver containing dressings.	Poster presented at the 12th Conference of the European Wound Management Association, Spain, May 2002.

* For further clinical documentation please contact Coloplast A/S

Searching for evidence-based information

- Ask the question: What information are you looking for?
- Where are you going to search and which key words do you choose?
- How are you going to determine if the results are valid and relevant?
- Does this new information answer your original question?
- Apply the information to clinical practice
- Evaluate the final outcome on patient care

With inspiration from Ryan, S. et al., Ostomy/Wound Management, 2003[13]

Wound care mini-glossary

Bacteria	A single cell organism that can damage healthy cells
Bacterial load	The total microbial numbers in the skin and/or wounds with normal commensals and potential pathogens
Colonisation	The presence of replicating bacteria that adhere to the wound bed but do not cause cellular damage to the host
Contamination	The presence of non-replicating microorganisms within a wound
Cost-effectiveness (Health-economic analysis)	A comparative analysis of two or more alternatives in terms of their costs and clinical outcomes
Critical colonisation /local infection	An increasing bacterial load in a wound is intermediate between the category of colonization and infection. Will not heal but may not display classical signs of infection
Evidence-based wound management	The integration of best research evidence with clinical expertise and patient values
Granulation tissue	The pink to red, moist, fragile tissue that fills in an open wound bed during the proliferative phase of healing. Capillary buds on its surface give it the characteristic bumpy or granular appearance
Infection	Classical signs in the presence of replicating micro-organisms within a wound with a subsequent host response that leads to a delay in wound healing

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2. Sackett, D.L., The fall of "clinical research" and the rise of "clinical-practice research". Clinical and Investigative Medicine 2000, Vol. 23(6): 379-381. Erratum in: Clinical and Investigative Medicine 2001, Vol. 24 (1): 4.

3. Sibbald, R.G., et al., Preparing the wound bed 2003: Focus on infection and inflammation. Ostomy/Wound Management 2003, Vol. 49 (11): 24-51.

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9. White, R.J., An historical overview of the use of silver in wound management. British Journal of Nursing 2001, Vol. 10 (supp): 3-8.

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11. Andersen, K.E. et al., A randomized, controlled study to compare the effectiveness of two foam dressings in the management of lower leg ulcers. Ostomy/Wound Management 2002, Vol. 48(8): 34-41.

12. Lohmann, M. et al., Safety and performance of a new non-adhesive foam dressing for the treatment of diabetic foot ulcers, Journal of Wound Care 2004, Vol. 13 (3): 118-120.

13. Jørgensen, B. et. al., The silver-releasing foam dressing, **Contreet** Foam, promotes faster wound healing of critically colonised venous leg ulcers: a randomised, controlled trial. International Wound Journal 2005, Vol. 2 (1): 64-73.

14. Karlsmark, T. et al., Clinical performance of a new silver dressing, **Contreet** Foam, for chronic exuding venous leg ulcers. Journal of Wound Care 2003, Vol. 12 (9): 351-354.

15. Rayman, G. et al., Sustained silver-releasing dressing in the treatment of diabetic foot ulcers. British Journal of Nursing 2005, Vol. 14 (2): 109-114.

16. Münter, K-C. et al. The CONTOP Study: A Large-Scale, Comparative, Randomised Study in Patients Treated with a Sustained Silver-Releasing Foam Dressing. Poster presented at Stuttgart2005, the joint Scientific meeting of ETRS, EWMA and DGfW, Sept. 2005.

17. Russell, L et al., The CONTOP multinational study: preliminary data from the UK arm. Wounds UK 2005, Vol. 1 (1): 44-54.

18. Scanlon, E. et al., Cost-effective faster wound healing with a sustained silver-releasing foam dressing in delayed healing leg ulcers – a health-economic analysis. International Wound Journal 2005, Vol. 2 (2): 150-160.

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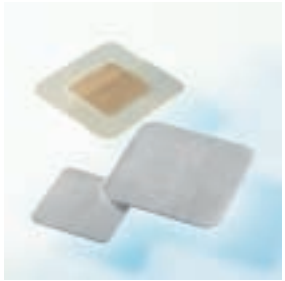
Selection of wound care products

Contreet Foam/**Biatain - Ag**



Product ordering information
For product availability please contact your local Coloplast office or distributor.

Find contact information at www.coloplast.com

Biatain Foam/**Biatain** Soft-Hold

Product ordering information
For product availability please contact your local Coloplast office or distributor.

Find contact information at www.coloplast.com

The passion of Elise Sørensen

The story of Coloplast begins in 1954 when nurse Elise Sørensen invented the world's first disposable ostomy bag out of compassion for her 32-year-old sister Thora.

Since Coloplast was established in 1957, the spirit of Elise Sørensen has been in the company.

Coloplast is driven by a passion to do things better. Our empathy and ability to respond to patient needs are based on a continuous dialogue with patients and health care professionals.

In Coloplast we are determined to help wound care professionals heal wounds faster – thus improving patients' everyday life.

"…Evidence-based wound management is the integration of best research evidence with clinical expertise and patient values "(2)

Modified from Sackett, D.L., 2000

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