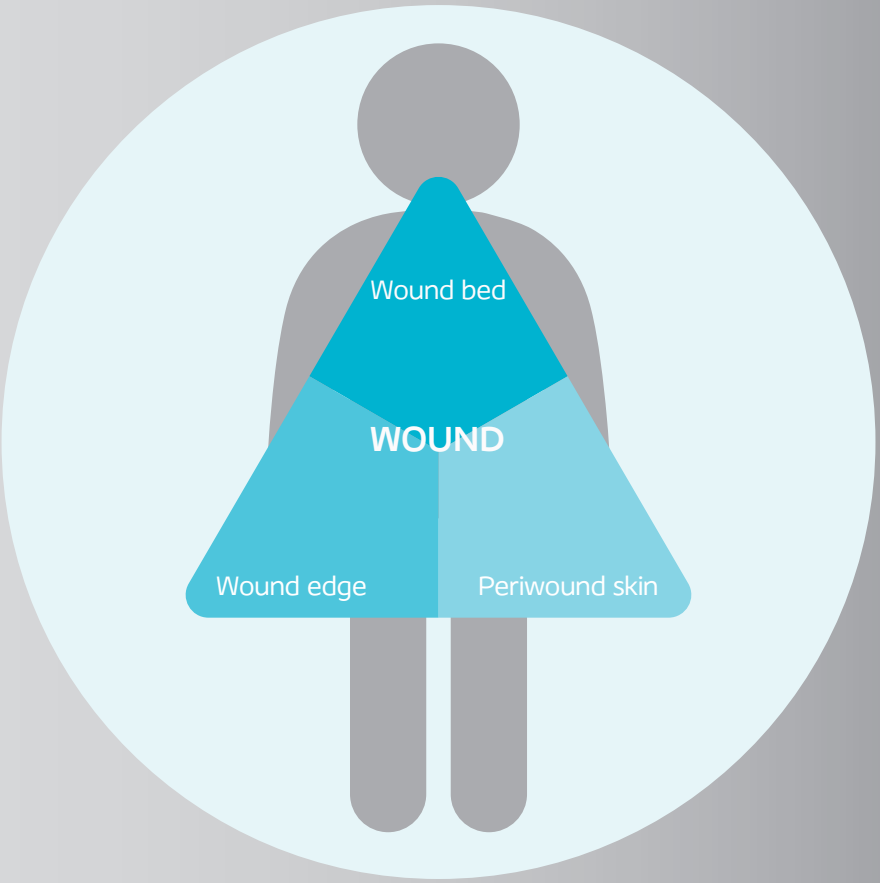
The Triangle of Wound Assessment

A simple and holistic framework for wound management

Coloplast



We asked healthcare professionals around the world about their priorities for wound care

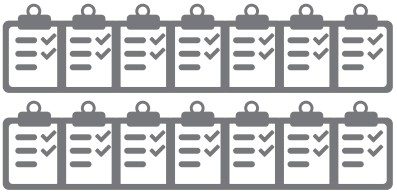
We found that most people treating wounds are not specialists in a hospital[1]

Up to ***79%*** of wounds are being treated in the community[2]

Respondents said that protecting the periwound skin is very important[1]

Approximately ***70%*** of wounds are surrounded by unhealthy skin[3]

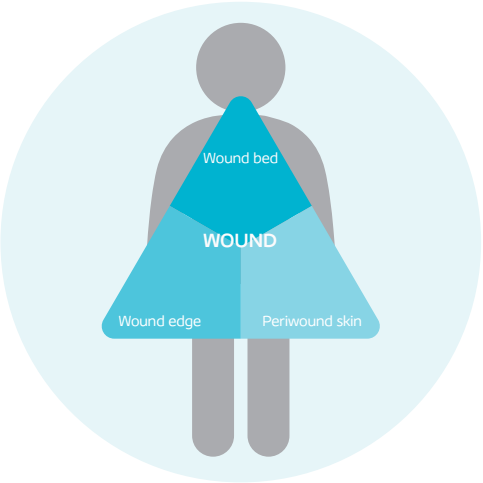
However, in a recent study of 14 wound assessment tools ...



...none met all of the criteria for optimal wound assessment[4]

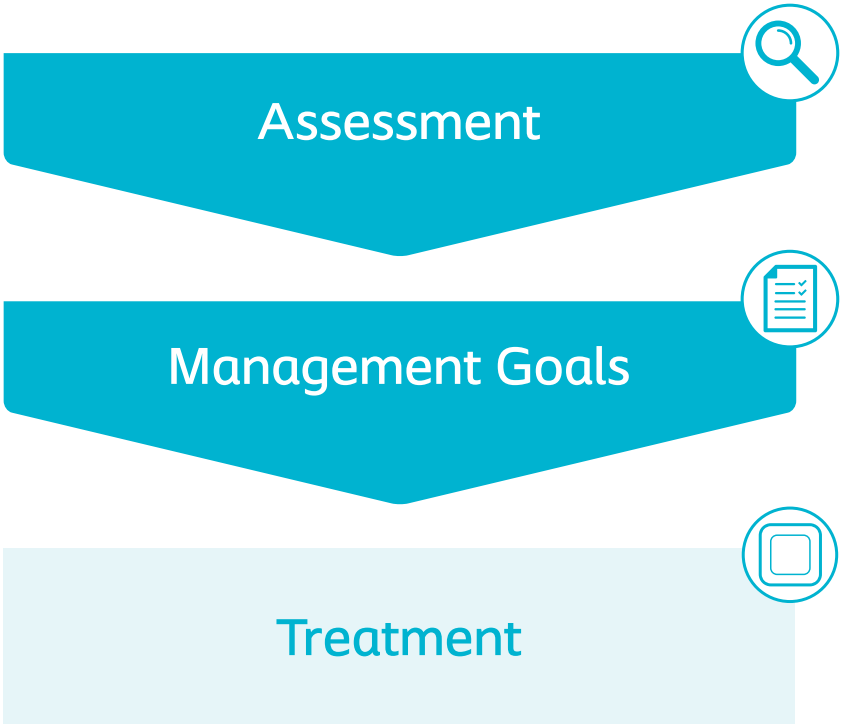
The Triangle of Wound Assessment is a holistic framework that allows practitioners to assess and manage all areas of the wound, including the periwound skin.

It is a simple and systematic approach that guides the user from complete wound assessment to setting management goals, and selecting the optimal treatment.



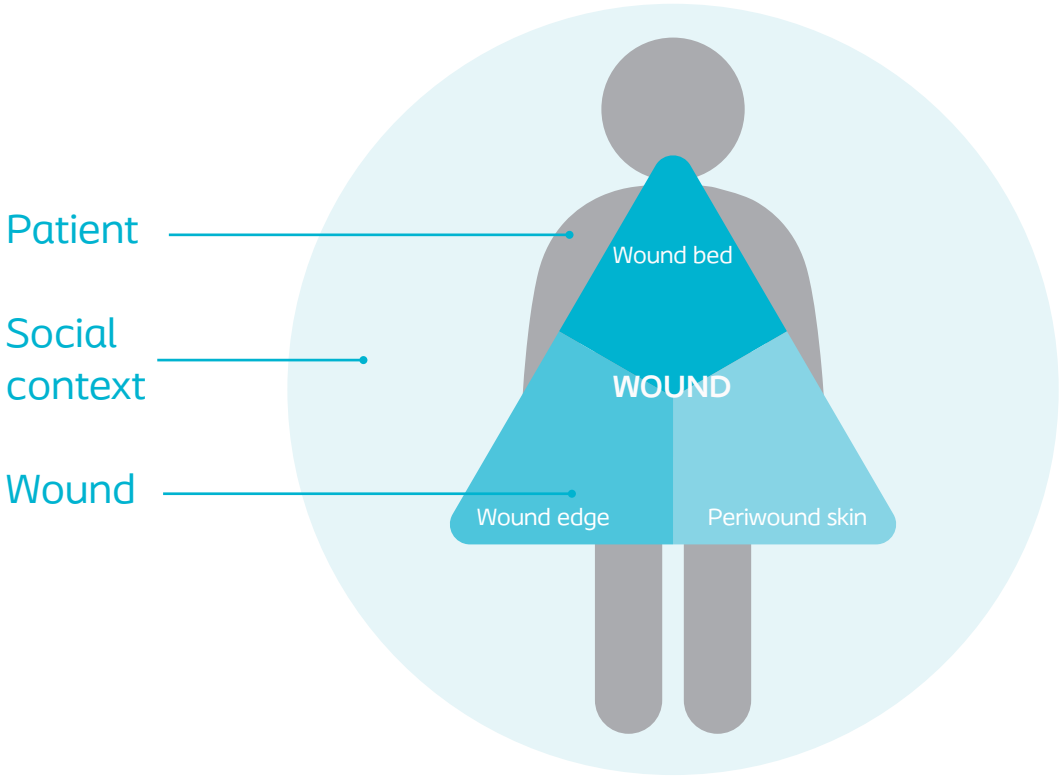
The Triangle of Wound Assessment offers a systematic approach to wound management

Optimal wound management starts with a holistic wound assessment. This will help to more efficiently set management goals, which will increase the potential for better treatment outcomes.



This is achieved through a holistic framework

The Triangle of Wound Assessment provides a framework to assess all three areas of the wound while remembering the patient behind the wound within their social context.



It's not just about the wound but also the patient behind the wound

Optimal management of the wound starts with assessing the patient behind the wound, and the social context in which the patient lives.

Patient & Social context

Information

- Age
- Gender
- Nutrition & Mobility
- Smoking & Alcohol
- Work & living arrangements

Medical history

- Co-morbidities
- Medications

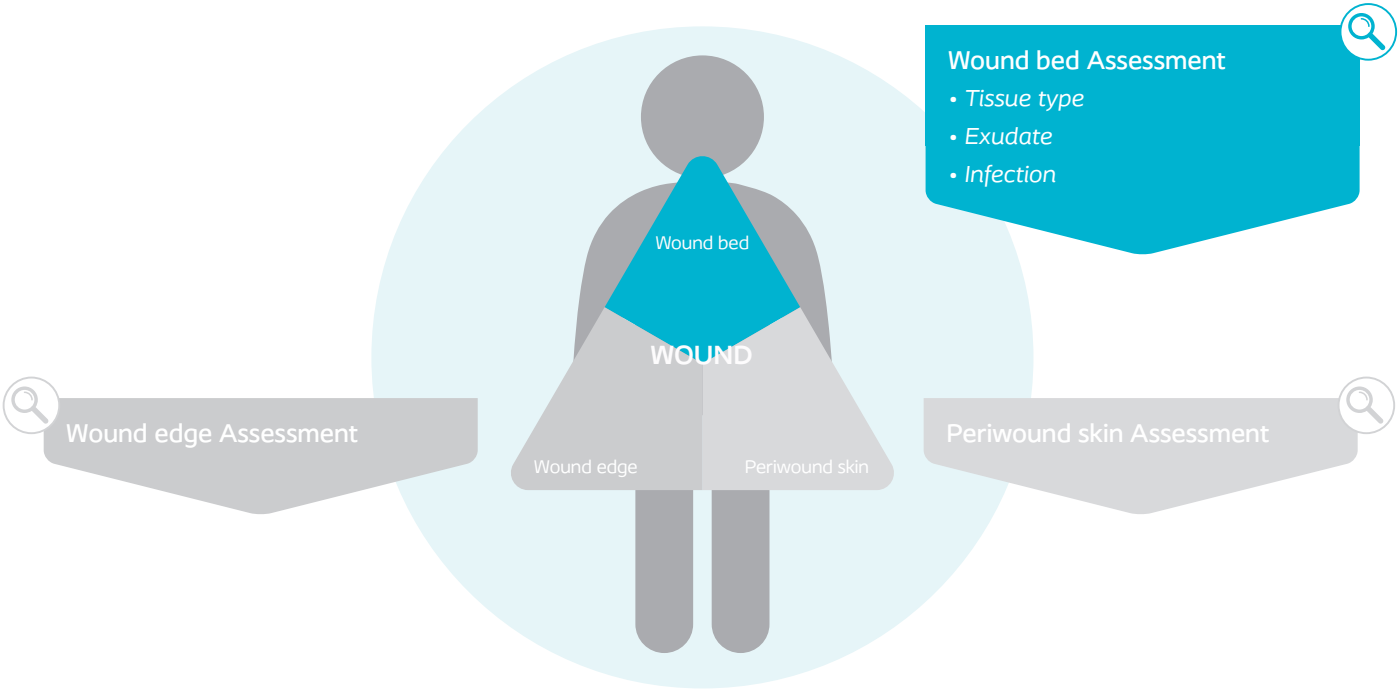
Wound description

- Type/diagnosis
- Location & Duration
- Size
- Pain

“My wound is preventing me from living a normal life. I just want to have my life back”

Wound bed assessment

The wound bed needs to be monitored closely due to its unpredictability. Problems often arising in this area can have an impact on both the wound edge and the periwound skin.[6,7,8]



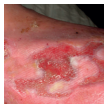
Wound bed Assessment

Tissue type

Necrotic  ☐ ____ %

Granulating  ☐ ____ %

Sloughy  ☐ ____ %

Epithelialising  ☐ ____ %

Exudate

Level ☐ Dry ☐ Low ☐ Medium ☐ High

Type ☐ Thin/watery ☐ Cloudy ☐ Thick
☐ Purulent ☐ Clear ☐ Pink/red

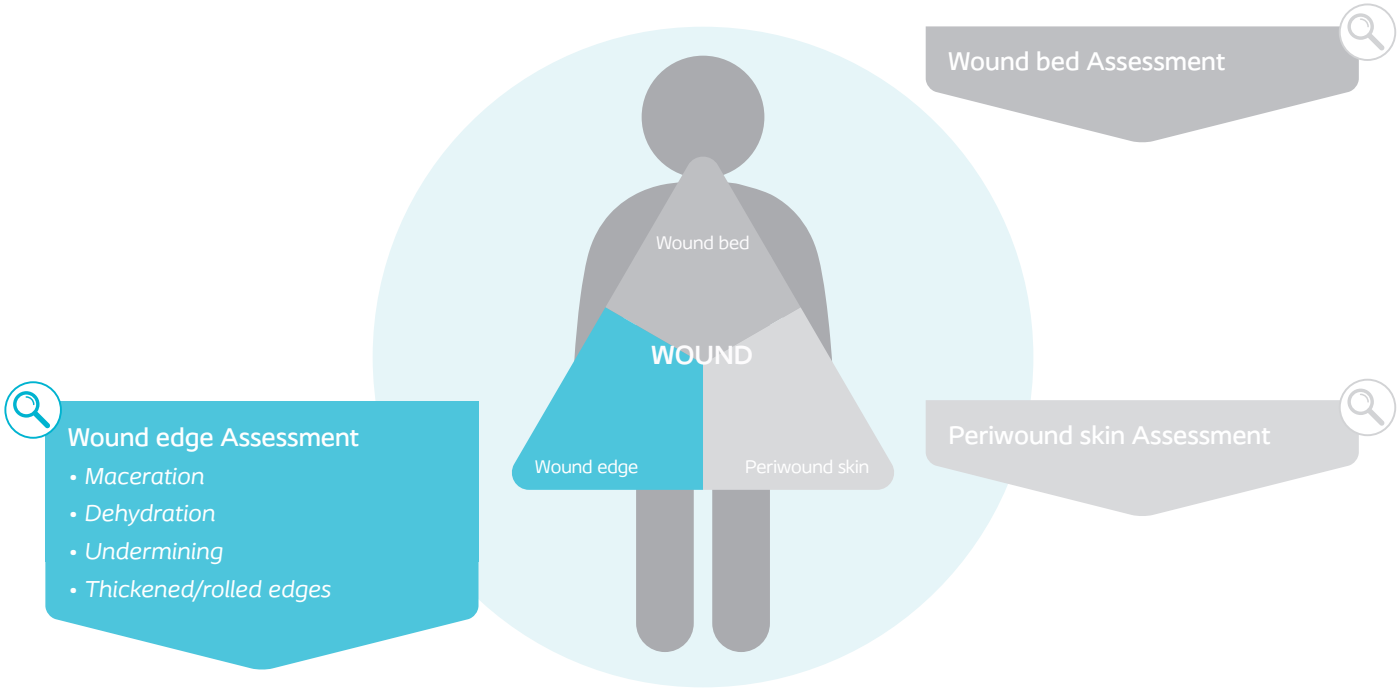
Infection

Local
- ☐ Increased pain
- ☐ Erythema
- ☐ Oedema
- ☐ Local warmth
- ☐ Increased exudate
- ☐ Delayed healing
- ☐ Friable granulation tissue
- ☐ Malodour
- ☐ Pocketing

Spreading/systemic
- ☐ Increased erythema
- ☐ Pyrexia
- ☐ Abscess/pus
- ☐ Wound breakdown
- ☐ Cellulitis
- ☐ General malaise
- ☐ Raised WBC count
- ☐ Lymphangitis

Wound edge assessment

Wound edge assessment provides valuable information of wound progression. Advancement of the epithelial edge is a reliable predicitive indicator of wound healing.[6,7,8]

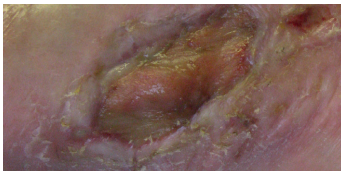


Wound edge Assessment

Maceration

☐

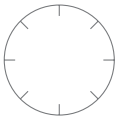
Dehydration



☐

Undermining

☐



Mark position

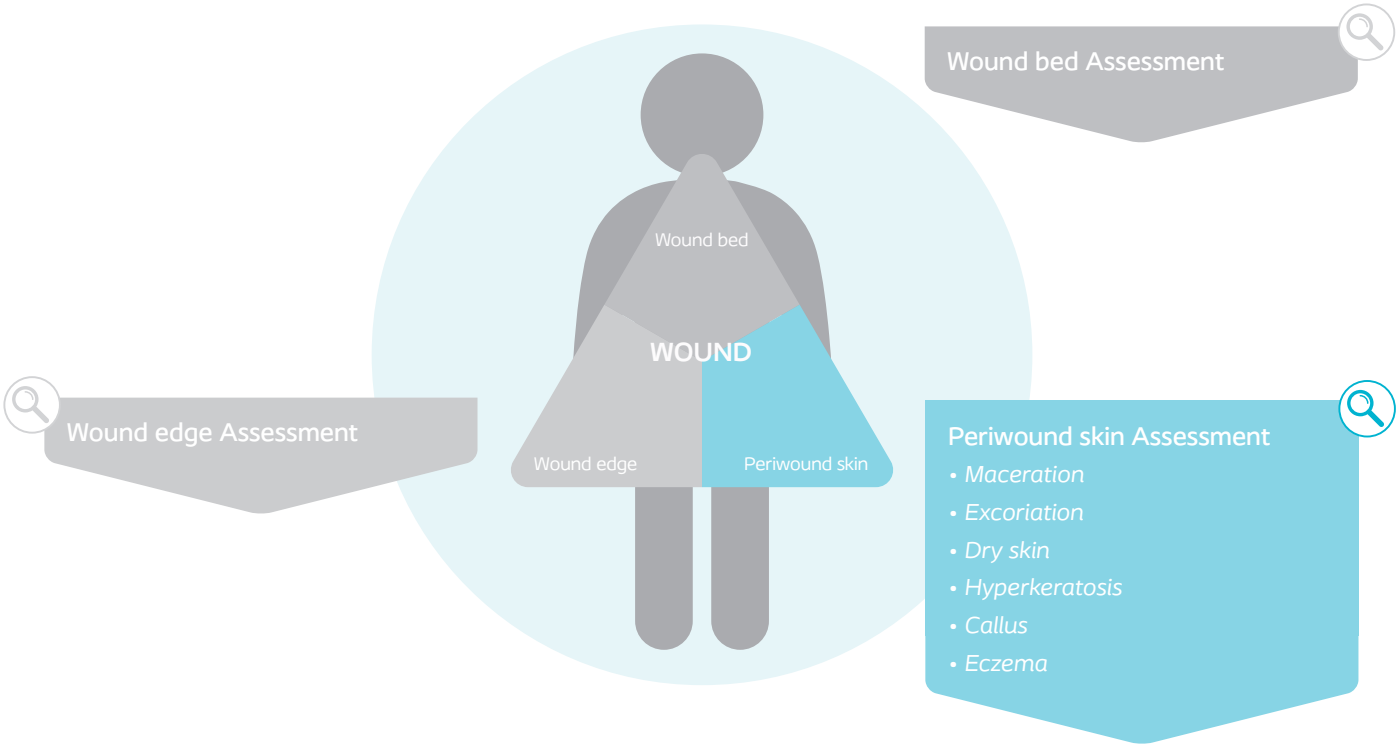
Extent: _____ cm

Rolled edges

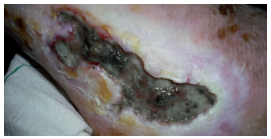
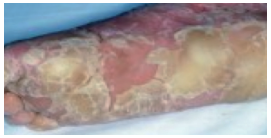
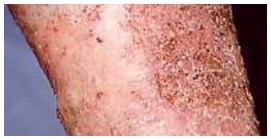
☐

Periwound skin assessment

When damaged, the periwound skin (defined as skin within 4cm of the wound edge, or any skin under the dressing) can lead to delayed healing times as well as pain and discomfort for the patient.[6,7,8]

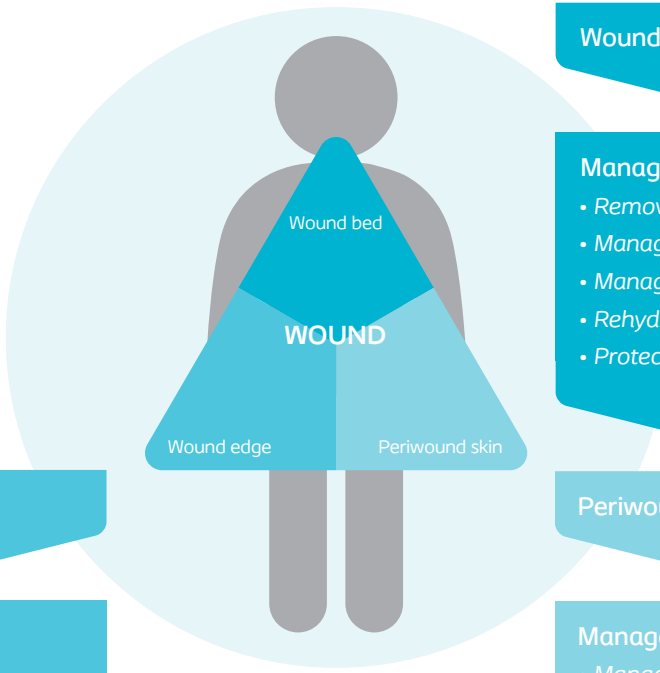


Periwound skin Assessment

Maceration		☐ _____	_____ CM
Excoriation		☐ _____	_____ CM
Dry skin		☐ _____	_____ CM
Hyperkeratosis		☐ _____	_____ CM
Callus		☐ _____	_____ CM
Eczerma		☐ _____	_____ CM

From wound assessment to management goals

When setting management goals, it is important to consider assessment of all three areas, as well as the patient's expectations.



Wound bed Assessment

Management goals
- *Remove non-viable tissue*
- *Manage exudate*
- *Manage bacterial burden*
- *Rehydrate wound bed*
- *Protect granulation/epithelial tissue*

Wound edge Assessment

Management goals
- *Manage exudate*
- *Rehydrate wound edge*
- *Remove non-viable tissue*
- *Protect granulation/epithelial tissue*

Periwound skin Assessment

Management goals
- *Manage exudate*
- *Protect skin*
- *Rehydrate skin*
- *Remove non-viable tissue*

Wound bed

Assessment	Management goals	Treatment examples
Tissue type • Necrotic • Sloughy	***Remove non-viable tissue***	Debridement
• Granulating • Epithelialising	***Protect granulation/ epithelial tissue***	Hydrocolloid
Exudate • Dry	***Rehydrate wound bed***	Hydrogel
• Low • Medium • High	***Manage exudate***	Appropriate dressing for exudate level (e.g. hydrocolloid for low, foam for high)
Infection • Sign of infection	***Manage bacterial burden***	Antimicrobial

Wound edge

Assessment	Management goals	Treatment examples
• Maceration	***Manage exudate***	Appropriate dressing for exudate level (e.g. hydrocolloid for low, foam for high)
• Dehydration	***Rehydrate wound edge***	Barrier cream
• Undermining • Rolled edges	***Remove non-viable tissue + Protect granulation/ epihelial tissue***	Debridement + Hydrocolloid

Periwound skin

Assessment	Management goals	Treatment examples
• Maceration	***Manage exudate***	Appropriate dressing for exudate level (e.g. hydrocolloid for low, foam for high)
• Dry skin	***Rehydrate skin***	Barrier cream
• Excoriation • Eczema	***Protect skin***	Barrier film
• Hyperkeratosis • Callus	***Remove non-viable tissue***	Debridement

Choosing the optimal treatment

An accurate wound assessment and setting of management goals allows for optimal treatment to be chosen at each assessment and reassessment of the wound.[6,7,8]

Treatment

- *Include primary and secondary dressings, and any skin care products if relevant*
- *Always consider the underlying cause of the wound and include any further treatment needed (e.g. compression therapy)*
- *Consider if referral to a specialist is needed*

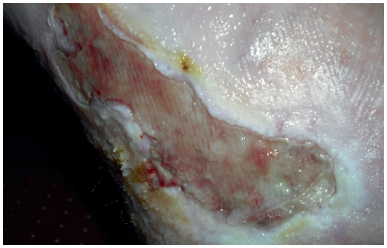
"The Triangle of Wound Assessment addresses all aspects of the holistic approach to wound management- assessment, diagnosis, treatment plan, documentation and communication. It is provided in a very clear, concise and practical way that helps the practitioner manage the patient and the wound"

Simon, Tissue Viability Nurse

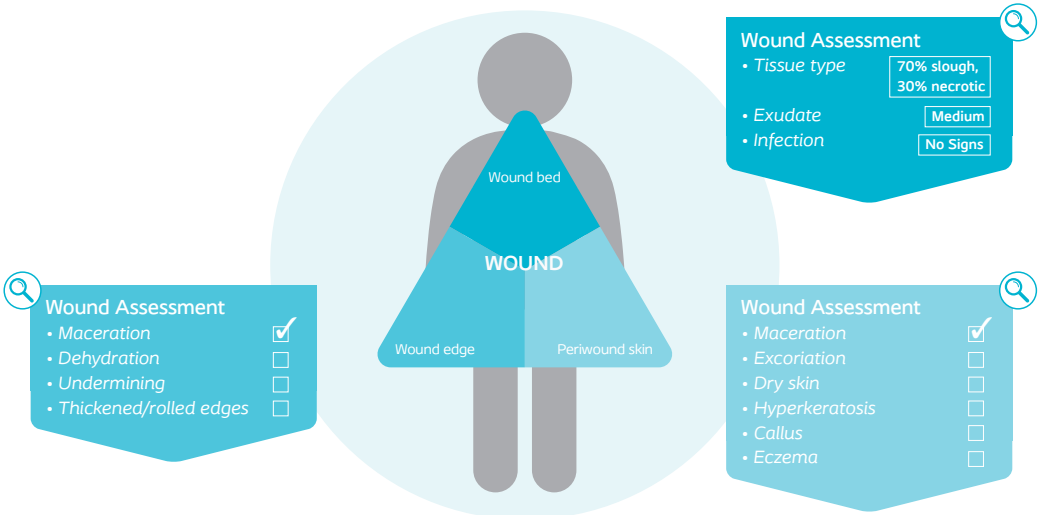
The Triangle of Wound Assessment used in clinical practice

Patient

68 year old gentleman with a nonhealing venous leg ulcer treated with compression therapy. The patient had poor nutrition and supplements were prescribed. He had reduced mobility, requiring a walking stick to mobilise.



Wound Assessment



Case courtesy of Caroline Dowsett

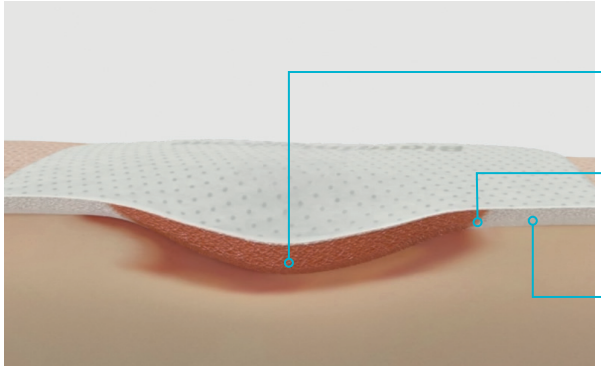
Management goals

1. Remove non-viable tissue
2. Manage exudate (medium)
3. Protect skin

Treatment

Debridement followed by applying a silicone foam dressing in combination with compression therapy.

Dressing choice: Biatain® Silicone, with compression therapy



Wound bed
Conforms to the wound bed for superior absorption, minimising exudate pooling.

Wound edge
Absorbs exudate vertically and locks away the fluid, reducing the risk of maceration.

Periwound skin
Soft silicone adhesive layer provides a gentle and secure fixation, ensuring minimal tissue damage to the periwound skin.[9-12]

Glossary of terms

Wound bed assessment

Tissue type

Necrotic

- Black, dead tissue, which contains dead cells and debris that are a consequence of the fragmentation of dying cells

Sloughy

- Yellow, fibrinous tissue that consists of fibrin, pus, and proteinaceous material

Granulating

- Red new connective tissue and microscopic blood vessels that form on the surfaces of a wound during the healing process

Epitheliailising

- Pink/white tissue in the final stage of healing where epithelial cells resurface the wound

Exudate

Fluid from the wound

- In normal healing increases during inflammatory stage to cleanse the wound and provide a moist environment, which maximises healing
- In chronic wounds, this fluid is biochemically different, which break down the protein framework in the wound causing further tissue break down

Infection

- The presence of bacteria or other microorganisms in sufficient quantity to damage tissue or impair healing. Clinical signs of infection may not be present in patients who are immunocompromised, or those that have poor perfusion or a chronic wound

Wound edge assessment

Maceration

- Softening and breaking down of wound edge resulting from prolonged exposure to moisture and wound exudate. Frequently appears white

Dehydration

- Low moisture impairing cellular development and migration needed for new tissue growth

Undermining

- The destruction of tissue or ulceration extending under the wound edge so that the ulcer is larger at its base than at the skin surface

Rolled edges

- Epithelial tissue migrating down sides of the wound instead of across. Can present in wounds with inflammatory origin, including in cancer, and can result in poor healing outcomes if not addressed appropriately

Periwound skin assessment

Maceration
- Softening of the skin as a result of prolonged contact with moisture. Macerated skin looks white

Excoriation
- Caused by repeated injury to the surface of the skin body caused by trauma, e.g. scratching, abrasion, drug reactions or irritants

Dry skin
- Keratin cells become flat and scaly. The skin feels rough and flaking may be visible

Hyperkeratosis
- Excessive build up of dry skin (keratin) often on hands, heels, soles of feet

Callus
- Thickened and hardened part of the skin or soft tissue, especially in an area that has been subjected to friction or pressure

Eczema
- Inflammation of the skin, characterized by itchiness, red skin, and a rash

Management goals

Non-viable tissue
- Necrotic or sloughy tissue, which acts as a barrier to healing if left within the wound

Bacterial burden
- The number of microorganisms in the wound. At low levels with no signs of infection this is called contamination and colonisation, and no treatment is needed. However, at higher levels signs will start to show which indicate a localised or spreading infection

References

1. Dowsett C et al. Taking wound assessment beyond the edge. Wounds International 2015;6(1):19-23
2. Posnett J, Gottrup F, Lundgren H, Saal G. The resource impact of wounds on healthcare providers in Europe. Journal of Wound Care 2009; 18(4): 154-161
3. Ousey K, Stephenson J, Barrett S et al. Wound care in five English NHS Trusts. Results of a survey. Wounds UK 2013; 9(4): 20-8
4. Greatrex-White S, Moxey H. Wound assessment tools and nurse's needs: an evaluation study. International Wound Journal 2013; 12(3): 293-301 doi:10.1111/iwj
5. Wound Care Research, ReD Associates and Coloplast. Data on file 2014
6. Dowsett C et al. Taking wound assessment beyond the edge. Wounds International 2015;6(1):19-23
7. Dowsett et al. The Triangle of Wound Assessment Made Easy. Wounds International. May 2015
8. Romanelli M et al. Advances in wound care: the Triangle of Wound Assessment Wounds International, 2016
9. Cartier H et al. Wound management with the Biatain® Silicone foam dressing: A multicentre product evaluation. Wounds International 2014;10(4)
10. Andersen MB & Marburger M. Comparison of 24 hours fluid handling and absorption under pressure between ten wound dressings with silicone adhesive. Presented at EWMA 2015
11. Data on file, Coloplast 2015 (0100485)
12. Best Practice Statement: Effective exudate management. Wounds UK, 2013

How to get started with the Triangle of Wound Assessment

Visit the website, where you can learn more about how the Triangle of Wound Assessment can be implemented into clinical practice, as an assessment tool and as an educational framework.

You can also download tools to get started with implementing the Triangle of Wound Assessment in your practice, and get access to publications where you can read more.

To learn more visit:

www.triangleofwoundassessment.com

Ostomy Care / Continence Care / Wound & Skin Care / Urology Care

Coloplast A/S, Holtedam 1, 3050 Humlebaek, Denmark
www.coloplast.com

Coloplast