

FACEBOOK LIVE

24 AUG

MANAGING HARD-TO-HEAL WOUNDS IN FOUR SIMPLE STEPS



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KEY LEARNING OUTCOMES

- Understand the link between biofilm and hard-to-heal wounds
- Recognise the need for early intervention
- Learn about wound hygiene concept
- Share the impact of wound hygiene in clinical practice.

THE RATIONALE FOR CHANGE

- The number of hard-to-heal wounds is increasing
- The associated economic and social costs, and the implications for healthcare systems are posing a significant burden (Guest et al, 2017)
- Wounds represent a large proportion of antibiotic use and are a contributor to resistance issues.

Wound care is in crisis.
A 'call to action' to change clinical practice is needed.

WOUND HYGIENE DEFINED

- In March 2019, the concept of wound hygiene first arose during an expert advisory board meeting
- An international panel was convened in July 2019 to discuss, develop and further define the wound hygiene rationale and process
- In February 2020, publication of the international consensus document, defying hard-to-heal wounds with an early antibiofilm intervention strategy: wound hygiene
- Objective: to implement a new international consensus on wound hygiene to embed real change in wound practice
- Representing expert opinion from 12 countries worldwide.



BIOFILM IS THE PRIMARY BARRIER TO HEALING

- Although other underlying host factors present obstacles to healing, it is increasingly acknowledged that a majority, if not nearly all, non-healing wounds contain biofilm, a key barrier to healing (Schultz et al, 2017; Malone and Swanson, 2017).
- Strong body of evidence to support the prevalence of biofilm in wounds (Malone et al, 2017):
 - Meta-analysis on prevalence of biofilm in chronic wounds was conducted by a panel of international expert clinicians and scientists
 - Nine published studies involving 185 chronic wounds were identified
 - Biofilm was reported in 78.2% of chronic wounds, confirmed by microscopic techniques.



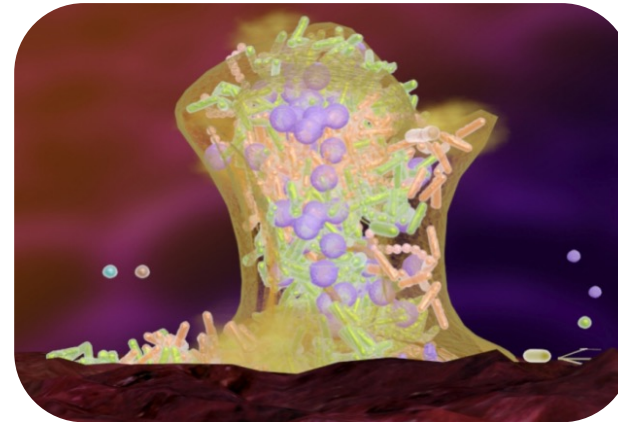
“The results of a meta-analysis support clinical assumptions that biofilms are ubiquitous in human chronic non-healing wounds.” (Malone et al, 2017)

WHAT IS BIOFILM?

There are many definitions of biofilm. Simply put, it can be described as:

Communities of microbes attached to a surface (e.g. catheter, wound), embedded within a self-produced slime that provides protection against antimicrobial agents and host defences.

Bacteria
attached to a
surface
embedded in a
protective slime.



WHY IS BIOFILM A PROBLEM?

- Biofilm can be difficult to remove completely and reforms quickly (Hurlow and Bowler, 2009)
- Biofilm keeps the wound in a low-grade inflammatory state and is also a physical barrier to healing (Gurjala et al, 2011; Metcalf and Bowler, 2013)
- Delays granulation and re-epithelialisation
- Biofilm tolerates antiseptics (Percival et al, 2011), antibiotics (Stewart and Costerton, 2001) and host defences (Gurjala et al, 2011).

STEPS OF WOUND HYGIENE: AN EARLY ANTIBIOFILM INTERVENTION STRATEGY

1. **Cleanse**
2. **Debride**
3. **Refashion**
4. **Dress**



Wound hygiene comprises a set of four steps that should be carried out **regularly and repetitively**.

THOUGHTS

"We do this anyway."

"This is just wound preparation."

"It's very basic."

"This is old stuff."

"I'm not allowed to debride."

"I'm not qualified to do it."

REFRAMING HOW WE TALK ABOUT WOUNDS

Current wound terminology is considered a barrier.

Complex wound: e.g. arterial wounds, are associated with underlying poor health conditions. Complexities can stall healing or even cause failure to heal, leading to long-term duration.

Chronic wound: a wound that does not heal in an orderly and timely process.

We need to adopt consistent terminology.

Hard-to-heal wound...



DEFINING A HARD-TO-HEAL WOUND (CHRONIC, STATIC, NON-HEALING)


A wound that has failed to respond to evidence-based standard of care. The concept of wound hygiene is based on the premise that all hard-to-heal wounds contain biofilm (Malone et al, 2017):


- A wound that exhibits a high volume of exudate
- A wound that exhibits slough
- A wound that is increasing in size
- A wound that has not changed.



- If the above is evident by the third day, it may already be defined as a hard-to-heal wound.

THE BIOFILM MYTH

 **MYTH:** You need to see biofilm in order to manage it.

 **REALITY:** A thin slimy film on the wound surface is considered by some to be a sign of wound biofilm. However, microbes are invisible; therefore a lack of visible film is not an indicator that the wound is biofilm-free. The consensus proposes it should be assumed that biofilm is present in all hard-to-heal wounds.

To improve management of hard-to-heal wounds it is necessary to address the tenacious biofilm.

STEPS OF WOUND HYGIENE

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REGULAR AND REPETITIVE IMPLEMENTATION OF WOUND HYGIENE IS IMPORTANT

In oral health, tooth biofilm (dental plaque) is the most widely accepted cause of periodontal diseases:

- Re-forms within 24 hours of oral hygiene
- Low levels of biofilm remain, and 50–90% of adults worldwide are affected by gingivitis
- This is reversible through repetitive, regular and frequent oral hygiene.



ASSESSING THE PATIENT AND WOUND

Holistic:

Complete a full patient assessment, address underlying aetiologies with best practice care.



Local:

Address local barriers on the wound bed, e.g. tenacious biofilm present in most wounds.



Wound hygiene should be implemented to ensure that underlying issues, wound pathology and the wound biofilm are managed simultaneously.

WOUND HYGIENE: STEP 1 - CLEANSE

Definition:

Actively removing surface contaminants, loose debris, slough, softened necrosis, microbes, remnants of previous dressings from the wound surface and its surrounding skin (Rodeheaver and Ratliff, 2018).

Tools:

- Gauze/non-woven pads
- Cleansing/debridement pads/wipes
- Antiseptic or antimicrobial wash/surfactant
- Consider using water or saline, in accordance with local guidelines.

Rationale: cleanse with intent or 'clean it like you mean it'. Prepares wound bed for debridement and cleanses the periwound skin, removing dead skin scales, callus and the source of contamination.

PRACTICAL

Cleanse:

- Cleanse wound including 10–20cm of periwound skin
- The area that has been in contact with the dressing.

Prevent cross-contamination from the environment or healthcare professional:

- Do not re-use cloth/pad/wipe.

Should be done:

- With force that patient can tolerate
- Regularly
- Repeatedly
- Based on assessment.

WOUND CLEANSING IN ACTION



Cleansing the wound along with periwound skin, removing scaly, crusting and dry plaques that harbour bacteria.

WOUND HYGIENE: STEP 2 - DEBRIDEMENT

Definition:

Physical removal of:

- Biofilm
- Devitalised tissue
- Debris
- Organic matter.

Tools*:

- Mechanical – soft debridement pad or sterile gauze
- Sharp – curette, scalpel, forceps, tweezers
- Surgical – acute setting
- Larval – biological debridement
- Other – e.g. hydrosurgery.

Rationale: applied mechanical force and shear, in combination with liquid surfactants or antimicrobial solution, is required to break up and disrupt biofilm (Gray et al, 2011).

***Perform debridement within your scope of practice**

DEBRIDEMENT: REMOVE ALL UNWANTED MATERIALS

- Biofilm
- Devitalised tissue (necrosis, slough, eschar)
- Impaired tissue (inflamed or infected)
- Exudate
- Serocrusts
- Hyperkeratosis
- Haematomas
- Foreign bodies
- Debris
- Remains of previous dressings
- Any other types of bioburden/ barriers to healing
- Pus.

Autolytic debridement alone is insufficient for wound hygiene. It can be a long process and can increase risk of infection in hard-to-heal wounds (Gray et al, 2011; Atkin, 2014).

KNOWING WHEN NOT TO DEBRIDE

Active mechanical debridement is not recommended for (Murphy et al 2020):

- Lower limb ulcers caused by critical ischaemia
- Pyoderma gangrenosum, gangrene (wet or dry)
- Wounds associated with calciphylaxis or vasculitis.

For patients with:

- Bleeding disorders or on anticoagulation therapy
- Who are in intolerable or unpreventable pain.

TIPS FOR DEBRIDEMENT

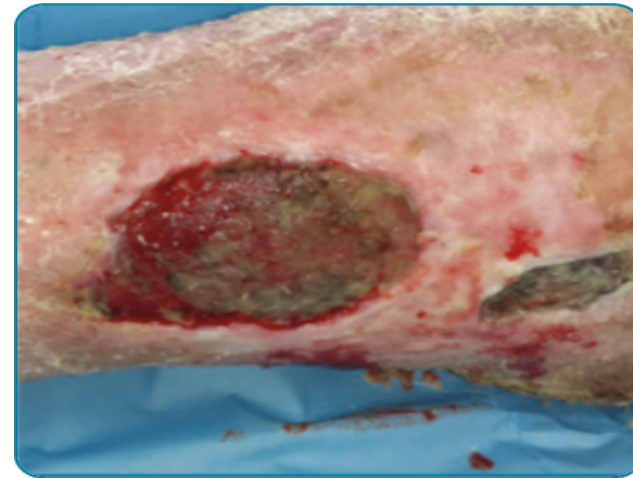
Important reminders:

- Within your scope of practice
- All instruments or devices used for debridement must be sterile to prevent any additional contamination
- After debridement, rinse the wound and periwound skin, ideally with an antimicrobial solution (Murphy et al, 2020)
- Debridement should be regular and repeated (Wilcox et al, 2013).

WOUND DEBRIDEMENT IN ACTION

Debridement to remove all devitalised tissue, wound debris and biofilm, leaving the wound bed in a state conducive to wound healing.

Note: pinpoint bleeding and periwound skin



WOUND HYGIENE: STEP 3 - REFASHION

Bacterial aggregates establish at the edges of these wounds (Bay et al, 2018):

- Active microbes, located near edges (as opposed to deep in the wound bed)
- Biofilm is most active at the wound edges, promotes cell senescence, prevents ingrowth of new, healthy tissue (Rhoads et al, 2008)
- Primary cells that facilitate epithelialisation are at the wound edges.

Refashioning through mechanical debridement:

- Agitates wound edges to encourage pinpoint bleeding (where local practice, pain tolerance and consent allows)
- Disrupts and removes biofilm
- Presents little risk to the tissue as it will naturally regenerate as part of the healing process.

REFASHIONING THE WOUND EDGE

Definition:

- Agitation of the wound edges
- Stimulate the expression of growth factors
- Kick-start the formation of healthy skin.

Tools:

Debridement in the form of :

- Sharp
- Soft debridement pads/wipes
- Gauze/non-woven swabs.

Rationale: to remove devitalised tissue, callus, hyperkeratotic debris and senescent cells at wound edges as they can harbour infection and encourage biofilm formation.

Goal: to facilitate epithelialisation and wound contraction.

TIPS ON REFASHIONING

- One way to visual how much tissue to remove is to think about '**cliffs**' and '**beaches**'
- Remove hyperkeratosis or callus around hard-to-heal wounds (Edmonds and Foster, 2006)
- Pay special attention to surfaces that touch – e.g. undermining harbours biofilm, and **may** need to be cut away or opened up (Murphy et al, 2020)
- The goal is to achieve healthy, pink tissue at the wound edge.

REFASHIONING IN ACTION



WOUND HYGIENE: STEP 4 - DRESS

Definition:

Application of a dressing to:

- Address any residual biofilm
- Prevent contamination and recolonisation
- Prevent biofilm re-formation
- Manage exudate efficiently
- Promote wound healing.

Tools:

- Dressings containing anti-biofilm and antimicrobial agents
- Dressings that can absorb and retain exudate
- Dressings that have a good wear time and are conformable.

Rationale: biofilm can re-form rapidly and repeated debridement alone is unlikely to prevent regrowth. Topical antimicrobials and antibiofilm agents (after biofilm disruption) can address residual biofilm and suppress re-formation.

USING ADVANCED WOUND DRESSINGS

Most hard-to-heal wounds are likely to have biofilm.



Dressing with antibiofilm properties.

Key consideration: high volume of exudate encourages spread of biofilm and impairs cell proliferation and wound healing (Percival et al, 2019).



Dressing should absorb and importantly retain exudate to protect the periwound skin.

The first three steps of wound hygiene clear the barriers at the wound bed, helping dressing to achieve maximum efficacy (Percival et al, 2015).

CASE STUDY 1. ANTERIOR LEG WOUND



7 months from onset

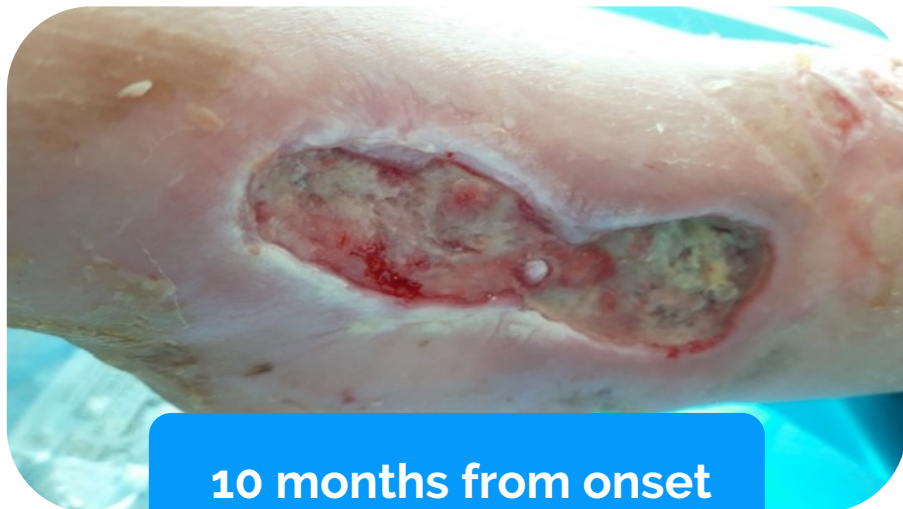


After 5 weeks of
treatment



After 8 weeks of
treatment

CASE STUDY 2. MEDIAL RIGHT FOOT WOUND



10 months from onset



After 1 week of treatment.



After 6 weeks of treatment.

CASE STUDY 3. POST SURGICAL DEBRIDEMENT



4 weeks from onset



After 2 weeks of
treatment



After 6 weeks of
treatment

KEY MESSAGES

- Importance of full holistic assessment addressing underlying aetiologies
- Importance of local wound assessment
- Early implementation of wound hygiene; **cleanse, debride, refashion, dress**
- Regularly and repetitively
- Dressings alone are not sufficient to disrupt and remove biofilm
- Dressing with antibiofilm properties are one part of the strategy for disrupting biofilm and preventing biofilm re-formation
- Re-assess dressing choice and adjust as needed; step up and step down
- Base decision on wound progression and local dressing formulary.

POSITIVES FOR WOUND HYGIENE

- Wound hygiene can be safely practiced by specialist and generalist health professionals of all levels within scope of practice
- It can be used in all healthcare settings, e.g. hospital, GP and community practices
- Four easy steps to remember and implement; **cleanse, debride, refashion, dress.**

Try it and see for yourself.

RESOURCES TO LEARN MORE

Visit the Wound Hygiene website where you can read and download the consensus, publications as well as listen to podcasts and webinars with its authors.

<http://www.woundhygiene.com>



For further information about ConvaTec products or to request product samples and contact from a representative:

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Or email: Wound.Webcare@convatec.com



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