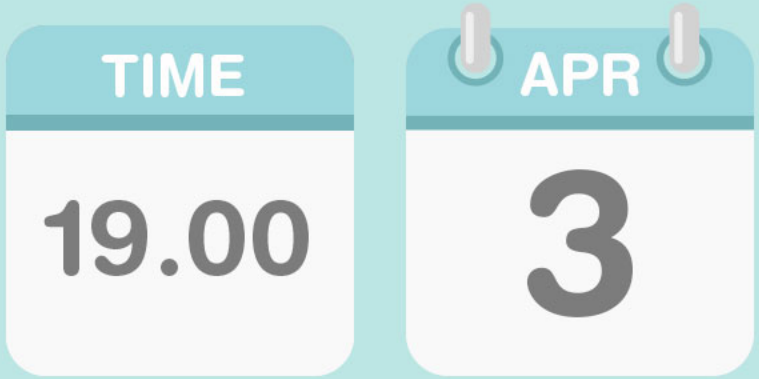
Wound debridement: guidelines and practice to remove barriers to healing



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Wound debridement: guidelines and practice to remove barriers to healing

Learning objectives

1. The burden of wounds and the impact to the NHS
2. Understand what debridement is and why it is needed
3. The impact of not debriding
4. Review national guidance on mechanical debridement
5. Understand which patients benefit from mechanical debridement

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The burden of wounds

2.2m wounds

10.9m community nurse visits

18.6m general practice nurse visits

7.7m GP visits

= £5.3billion

3.4m hospital outpatients visits

Guest et al, 2015

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The burden of chronicity

- Many wounds highlighted in the Guest paper will contain devitalised tissue
- Bacteria and/or biofilm will be present in 60–99% of chronic wounds (Shultz, EWMA, May 2015)
- As the current wound care community fully grasps the importance of **chronic wounds being chronic infections**, there will be significant changes in wound care management algorithms and pathways and, more importantly, improvements in chronic wound healing outcomes (Wolcott, 2016)

Debridement — definition

Debridement is an integrated part of wound management, achieving certain goals and, thus, creating a healthy wound bed, margins and peri-wound skin with the objective to promote and accelerate healing.

The definition of debridement is ‘the act of removing necrotic material, eschar, devitalised tissue, serocrusts, infected tissue, hyperkeratosis, slough, pus, haematoma, foreign bodies, debris, bone fragments or any other type of bioburden from the wound with the object to promote wound healing’
(EWMA Document: Debridement 2013).

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Do we all debride/ who debrides?

- Any healthcare professional who manages wounds can potentially be debriding, e.g. by applying an autolytic wound dressing
- Certain methods of debridement require extra knowledge, skills and competencies, e.g. surgical and sharp debridement, application of larvae and more technical solutions
- Some methods of debridement are very easy to use and require little training and are therefore ideal for general use and self-care, e.g. modern mechanical debridement with, for example, monofilament fibre technology

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Points to consider with debridement

- Patient consent
- Healthcare professionals' knowledge and competence to recognise which method of debridement is most appropriate for the patient and their wound
- It may not always be possible to fully debride a wound at first attempt
- Remember: many chronic wounds will need frequent debridement to prevent reformation of biofilm

Why debride?

Because devitalised tissue . . .

- is a physical barrier to healing
- may induce chronic inflammation
- can prevent effectiveness of topical treatments
- may cause underestimation of the wound extent
- is a source of nutrients for bacteria
- can mask or mimic signs of infection
- can contribute to a septic response

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Wound assessment and debridement

- Devitalised tissue can potentially obscure the full extent of the wound

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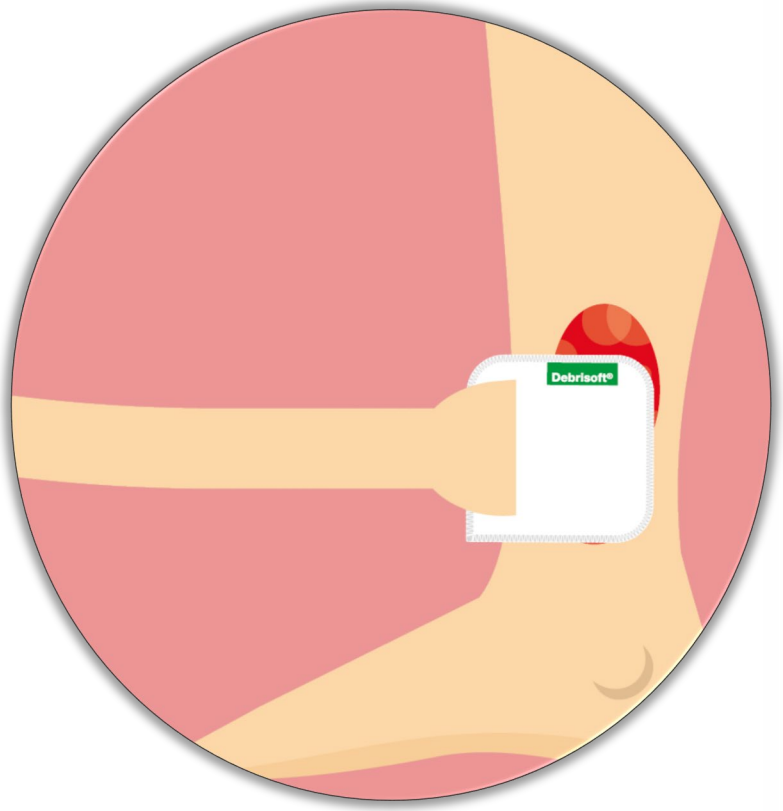
Wound assessment and debridement

- The focus should be on appropriate debridement methods to achieve timely, optimal, pain-free removal of devitalised tissue
- Timely debridement of devitalised tissue will also result in prompt assessment and clearer wound management objectives



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The importance of debridement and wound bed preparation

- Wound bed preparation is the management of a wound to accelerate healing, or to facilitate the effectiveness of other therapeutic measures
- It assists clinicians in providing wound management by identifying barriers that affect the patient with the wound, and not just the wound itself
- The wound and surrounding skin should be assessed using a structured assessment method, such as the TIMES principle, highlighted in the Best Practice Statement for the holistic management of venous leg ulceration (expanded from the original TIME principle; EWMA, 2004)

What happens when we don't debride?

- The healing process is impeded
- Exudate volume will increase
- The surrounding skin may become damaged
- Bacteria will proliferate
- The wound may become malodorous
- Wound infection may develop

Infection and/or Biofilm

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Associated costs of not debriding

Cost of delayed debridement

- Delayed wound healing
- Cost of potential complications, e.g. infection
- Cost of more expensive wound dressings and adjunct therapies and for a longer length of time
- Very poor quality of life for the patient — delayed wound healing, pain, high exudate volume, malodour…

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Debridement methods

There are five main methods of debridement:

- Autolytic — application of an autolytic wound dressing
- Biological — the use of maggots
- Enzymatic — application of topical agents that chemically liquefy necrotic tissues with enzymes
- Mechanical — the use of monofilament fibre technology
- Surgical sharp and conservative sharp — using surgical instruments, such as scalpel, curette, scissors

Debridement methods: positives and negatives

Autolytic

- Low skill needed/time-consuming (weeks)/high cost (total treatment and risk of complications due to time)

Biological

- Quick result (days)/expensive, high skill level, ‘yuck’ factor

Enzymatic

- Faster than autolytic/painful, high cost

Debridement methods: positives and negatives

Mechanical/(monofilament fibre technology)

- Very fast (minutes), low skill, minimal pain or pain-free/not suitable for hard, devitalised tissue

Surgical sharp and conservative sharp

- Fast result (result only)/high cost (theatre, specialist time, instruments etc), very high skill

Mechanical debridement

- Wet to dry
  - Most commonly used in USA
  - Non-selective — so good tissue can potentially be removed too
  - Increased risk of infection, gauze remnants act as a foreign body, very painful on removal
- Paraffin tulle
  - Less rapid epithelialisation, very painful on removal
- Gauze
  - Traditionally used in past times
  - Significantly more pain
  - Frequent dressing changes needed, so increases demand for resources
- Monofilament fibre technology
  - Effective and rapid debridement — 2–4 minutes
  - Little or no pain during the procedure
  - Easy to use
- **'The use of wet to dry, paraffin tulle or gauze has little to support their use'** (EWMA, 2013)

Benefits of monofilament fibre technology

- Easy to use by general healthcare professionals in all care settings
  - Very little training is required
  - Can be used by the patient or carer and encourages self-care
- Pain-free or minimal pain experienced during treatment
- Rapid wound and skin debridement within minutes
- Evidenced-based debridement
- A range of products to meet every need
  - Debrisoft pad — 10x10cm, 13x20cm and Debrisoft Lolly for smaller wounds and hard-to-reach areas
- Supported by NICE Guidance, 2019

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National guidance on mechanical debridement

The National Institute for Health and Care Excellence (NICE) concluded that mechanical debridement using a monofilament fibre technology device is clinically and cost-effective when compared to other debridement methods.

Medical technologies guidance [MTG17]: **The Debrisoft monofilament debridement pad for use in acute or chronic wounds was recently updated on the 25 March 2019 to include all three sizes of the technology**

The NICE committee concluded that the technology is:

- Well tolerated by patients
- Likely to debride wounds more quickly
- Results in fewer nurse visits
- More cost-effective than other debridement methods

NICE National Institute for Health and Care Excellence

Full guidance can be viewed and downloaded from the NICE website

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What is NICE medical technology guidance?

NICE uses evidence available to develop recommendations to improve health and social care.

The guidance is split into categories:

- Technology appraisals
- Interventional procedures
- Medical technologies
- Diagnostics and highly specialised technologies

NICE medical technologies guidance addresses specific technologies notified to NICE by sponsors. The recommendations are based on comparing the status quo with the advantages of the technology under review. An expert panel is then consulted. If the case for adopting the technology is supported, then the technology has been found to offer advantages to patients and the NHS.

What does this mean in practice?

Effective for patients

- Access to effective and quick debridement from all HCPs
- Tolerable, low pain debridement
- Less risk of infection and increased exudate volume from devitalised tissue

Effective for clinicians

- Faster debridement
- Can result in fewer nurse visits
- Releasing time to care

Effective for the NHS

- Increasing the quality and standard of care
- Cost saving when compared with other debridement methods

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Patients/wounds that need mechanical debridement

- Wounds containing moist, devitalised tissue, e.g. sloughy, necrotic, haematoma
- Wounds containing debris, e.g. traumatic wounds, grazes, burns, explosive wounds
- Wounds containing bacteria, e.g. static, non-healing, slow-to-heal that are showing signs of a wound biofilm
- Wounds that are highly exudating, they are likely to contain bacteria and biofilm or devitalised tissue or debris
- Hyperkeratotic skin, e.g. venous disease (varicose eczema), chronic oedema/ lymphoedema skin changes
- Dermatology, e.g. eczema, psoriasis, acne, actinic keratosis, pre photodynamic therapy (PDT), etc

Case study

Achieving healing in a young adult with a venous leg ulcer using a biofilm pathway and short stretch bandaging

Geraldine Weale, Nursing Sister, Deeside Community Hospital, Betsi Cadwaladr University Health Board.

- Liam is a 26-year-old man who suffered a post trauma deep vein thrombosis (DVT) when just 18 years old — a history of venous leg ulceration for eight years
- Liam describes having a leg ulcer at a young age as ‘life changing’ — it stopped him playing sport and swimming and changed how he interacted with friends
- Because of his damaged circulation and medication, he lived with the constant fear that his leg was going to deteriorate or bleed
- Despite this, Liam continued to work full time and support his family

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Method

In the summer of 2018, Liam's nurse changed his treatment:

- Implemented Debrisoft as part of the treatment regime to expedite wound bed preparation and removal of devitalised tissue and bacteria at every dressing change
- From a combination long-stretch cohesive bandage system, to a cohesive short-stretch bandage (Actico)

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Results

- The use of a fluorescent imaging device showed that using monofilament fibre technology removed bacteria not visible to the eye as well as devitalised tissue
- There was a dramatic reduction in leg oedema and improvement in leg shape almost immediately
- Liam reported that the cohesive short-stretch bandage system made ‘his leg feels much more comfortable with less ridging and less slippage’


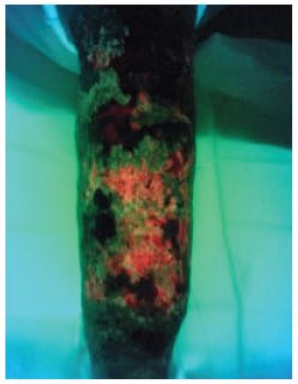

Figure 1 & 2 – 12.4.18 before treatment with monofilament fibre debridement technology


Figure 3 & 4 – 12.4.18 after first treatment showing removal of superficial bacteria and uncovering deeper pockets of bacteria with monofilament fibre debridement technology


Figure 5 & 6 – 12.4.18 after second treatment showing removal of deeper pockets of bacteria with monofilament fibre debridement technology

In December 2018, after 8 years of ulceration, Liam’s venous leg ulcer healed.

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Conclusion

- This case study demonstrates how learning and implementing new knowledge, technology and skills can translate into improved patient outcomes
- By sharing Liam's story we can really understand the devastating effect a leg ulcer can have, especially on a teenager and young adult
- Liam now has a bespoke plan for the prevention of future venous leg ulcers, which will include higher compression while at work when he will be on his feet for long periods
- This is achieved by using short-stretch wrap systems (ReadyWrap) to encourage continued self-care and ownership of his long-term condition

Wound Care Today 27–28 February 2019 Milton Keynes, UK

Summary

- Wound care is a burden on the NHS
- Debridement is an important part of the wound care regime
- All healthcare professionals can debride
- There are many forms of debridement — some that need more training/skill than others
- There is national guidance for implementing mechanical debridement and monofilament fibre technology

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Contact L&R

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