# The Missing Link

## The key to improved wound assessment

An educational supplement in association with BJN

# Contents






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# Foreword

Karen Ousey

The quality agenda, Quality, Innovation, Productivity and Prevention (QIPP), has clearly identified that the NHS must become more efficient and save £20 billion by the year 2014/15 (Department of Health [DH], 2008). Prevention, treatment and management of chronic wounds are inextricably linked to this initiative, especially as the cost of wound care to the NHS is so high. The QIPP Safe Care work stream has focused on reducing harm and associated expenditure across a range of areas, with the Chief Nursing Officer for England, in the *High Impact Actions For Nursing And Midwifery*, setting the specific challenge, that there should be no avoidable pressure ulcers in NHS-provided care (Beasley, 2010).

Financial costs of chronic wounds have been widely reported and discussed. Tennvall et al (2006) recounted that being able to accurately place a monetary cost on wound management was difficult owing to variables including length of time to healing, frequency of dressing changes and nursing time. The DH (2010) estimated that management and treatment of a grade 1 pressure ulcer would cost between £143 000 and £214 000, rising to between £447 000 and £668 000 for a grade 4. Posnett and Franks (2008) estimated venous leg ulceration would cost the NHS at least £168–98 million per year while Kerr (2012) estimated that between £600 million and nearly £700 million is spent each year on foot ulcers and amputations.

A chronic wound is defined as any wound that has not healed for 6 weeks or more (Cutting and Tong, 2003). This includes pressure, diabetic foot, and leg ulcers. Surgical and traumatic wounds may also become chronic. The cost to health care of managing chronic wounds is not only financial, it can also affect the quality of life of the patient in terms of mobilisation, nutrition, sleep, social isolation, malodour, pain and infection. Accurate and timely assessment is essential and the patient should be engaged with assessment and treatment plans. Tennvall et al (2006) suggested using a structured approach to management, pointing out that appropriate treatment strategies reduce healing time and overall costs of care, and improve quality of life.

In order for practitioners to effectively manage chronic wounds, an evidence-based approach to interventions is essential. Education and skills development can be accessed via a range of methods including higher education institutions, study days, conferences or in-house study days/sessions.

This supplement will explore the challenges of wound assessment and investigate the cost of debridement and quality of life issues, focusing on the use of Debrisoft® as a debridement technique.

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# Wound Assessment

Leanne Cook

Accurate wound assessment is an essential skill required by all practitioners to effectively plan, implement and evaluate the care required for each patient (Ousey and Cook, 2011). Holistic assessment of the patient and the wound is vital to ensure accurate diagnosis of the underlying cause of the wound and identify factors that could delay wound healing. The World Union of Wound Healing Societies (2008) reminds us of the value of assessment and diagnosis in the treatment of wounds, highlighting the need for effective treatment for patients with wounds. The diagnostic process will:

- Determine the cause of the wound
- Identify any comorbidities/complications that may contribute to the wound or delay healing
- Assess the status of the wound
- Help to develop the management plan.

To ensure accurate assessment all practitioners involved in wound care should have sufficient training, knowledge and expertise (Wounds UK, 2008). There have been concerns raised around whether nurses are accurately undertaking wound assessment (Ashton and Price, 2006; McIntosh and Ousey, 2008; Dowsett, 2009). Inappropriate wound management can result in failing to heal wounds, which increases patient suffering and the risk of complications (Wounds UK, 2008). McIntosh and Ousey's (2008) study reiterated this, reporting that optimal care is not always provided by nurses, leading to delayed wound healing, increased pain, increased risk of infection and inappropriate use of wound products, all of which result in a reduction in quality of life. Every patient with a wound has the right to expect a good minimum standard of care, regardless of the cause of their wound or where that care is delivered (Fletcher, 2010). Therefore, practitioners need to provide accurate diagnoses, clear treatment goals and rationale of choice of dressings and therapies, and perform regular evaluation in addition to ensuring the most effective wound care is provided.

Wound-bed preparation is a concept that aims to provide a structured and systematic approach to the management of chronic wounds. It concentrates on removal of barriers that impair wound healing. The International Advisory Board on Wound Bed Preparation (2004) developed the acronym TIME (T = Tissue, non-viable or deficient; I = Infection or inflammation; M = Moisture imbalance; E = Edge of wound, non-advancing or undermined). TIME provides practitioners with a structured assessment tool that focuses the clinician on assessing the presence of non-viable tissue, infection or chronic inflammation, imbalance of moisture levels and assessment of wound edges, to ascertain whether they are advancing or there is evidence of undermining.

Accurate wound-bed assessment will differentiate between viable and non-viable tissue. Non-viable or devitalised tissue includes eschar (black necrotic tissue) and slough. The physical appearance of the devitalised tissue depends on the moisture content; eschar is black and leathery. As the moisture levels increase, the appearance changes from black through shades of brown to yellow or grey (O'Brien, 2002). The presence of necrotic or non-vital tissue is common in chronic non-healing wounds and its presence can delay wound healing. Removal of devitalised tissue has many benefits including providing an environment that promotes healing, lowering bacterial burden and reducing malodour. It also allows full inspection of the extent of the tissue damage (European Wound Management Association, 2004). Assessing the extent of tissue damage is important in all wounds, especially in diabetic foot and pressure ulcers. Categorisation

Figure 1

Figure 2

Figure 3

of pressure ulcers is difficult if the wound is covered with devitalised tissue (Figure 1), only when it has been successfully debrided is the true extent of the tissue damage evident (Figure 2).

For many wounds, more than one method of debridement may be required (Vowden and Vowden, 2002). Currently there is no clear evidence to support one method of debridement over another (Leaper, 2002). Therefore, the choice of method of debridement will depend on the wound type, location, practitioner knowledge and skills, patient choice and time frame.

Mechanical debridement was historically associated with the use of 'wet-to-dry' gauze, which non-discriminatorily physically removes devitalised tissue from the surface of the wound, resulting in significant pain and damage to healthy tissue (Falabella, 2006). The main advantage of mechanical debridement is that it quickly removes non-viable tissue. Debrisoft (Activa Healthcare) has been designed to provide fast, effective mechanical debridement that is pain- and trauma-free (Bahr, 2011). Debrisoft (Figure 3) is a pad made from monofilament polyester fibres that is gently wiped over the wound bed. Debrisoft was valuable in the management of a patient with a mixed-disease leg ulcer as Figure 4 shows.

The patient in Figure 4 was known to have stenotic arterial disease of his peroneal and anterior tibial artery with an ankle brachial pressure index of 0.72. He was managed in three-layer modified compression with a moist hydrofibre as the wound contact layer. The wound had a thin layer of slough evident that was thicker towards the wound edges. Debrisoft was moistened and wiped over the wound for approximately 5 minutes visibly removing the slough. Upon review 2 weeks later (Figure 5), the wound had reduced in size and healthy granulation tissue was visible with no evidence of slough returning.

Promoting debridement may not be the best option for all types of devitalised tissue. Necrotic tissue, as a result of peripheral arterial disease (Figure 6), should not be routinely debrided as this can increase the risk of infection in this specific patient group (Leaper, 2002). Holistic patient assessment will highlight evidence of peripheral arterial disease; if it is suspected, the patient will require referral to the vascular specialists to ascertain the extent of disease and undergo re-vascularisation before starting any form of debridement.

It is recognised that hard-to-heal wounds pose significant personal costs to those affected, as well as being costly for the NHS (Ousey and McIntosh, 2010). Accurate wound assessment

Figure 4

Figure 5

Figure 6

and the use of evidenced-based interventions will ensure high-quality, cost-effective treatment (World Union of Wound Healing Society, 2008). Wound-bed preparation needs to be combined with holistic wound assessment, which encompasses the patient's psychological needs. This will result in a clear understanding of treatment aims and highlight where therapeutic interventions are required to accelerate healing. Wound debridement is commonly an initial aim within wound management and there is a wide variety of methods available, however, careful selection is required as the choice of method can be pivotal in achieving successful outcomes (O'Brien, 2002; Gray et al, 2011).

Debridement aims to remove the non-viable tissue; there are many options including autolytic, surgical, enzymatic, sharp, biological, chemical and mechanical. Each method has specific advantages and disadvantages that the practitioner needs to fully understand. Failure to use the correct method for any given wound may lead to further delays in healing, increased patient suffering, and an unnecessary increase in cost (Falabella, 2006).

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# Wound Biofilms

Sian Fumarola

### What is a biofilm?

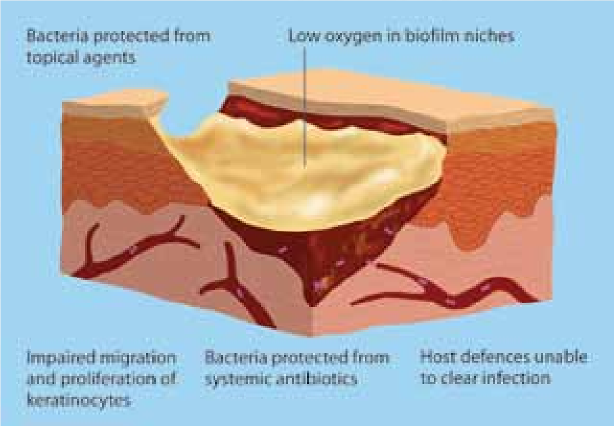
Biofilms are found throughout the natural and industrial world, coating rock surfaces in rivers and streams, colonising and corroding metal pipes, and inside water distribution pipes causing contamination. Until the late 1970s, the concept of a biofilm was largely unknown and scientists believed that most bacteria existed in a free-floating or planktonic form. During the 1980s and 90s, research confirmed that attached bacteria were organised in elaborate ways (Lawrence et al, 1991) and in 2000, the gene sequencing of *Pseudomonas aeruginosa* (*P. aeruginosa*) (the bacteria in cystic fibrosis biofilms) was discovered and, consequently, opened up new areas of biofilm research (Whiteley, 2001).

The definition of a biofilm has evolved from the relatively simple concept of fine extracellular polymer fibrils enabling bacteria to anchor to surfaces (Marshall, 1976, cited by Donald and Costerton, 2002), to a more complex description:

*'a microbially derived sessile community characterised by cells that are irreversibly attached to a substratum or interface or to each other' (Donald and Costerton, 2002: 170).*

These cells are often embedded in an extracellular polymeric substance composed of proteins and polysaccharides. The biofilm structure enhances survival strategies ensuring that a percentage of the bacteria present will survive when presented with physical or chemical challenges (Dowd et al, 2008).

It is estimated that more than 99% of bacteria in the natural environment exist in stable biofilms and this may also be the case in wounds (Costerton et al, 1999; James et al, 2008). Devitalised tissue has been shown to provide a habitat for *P. aeruginosa* biofilm in an animal model (Serralta et al, 2001) and tissue with confluent colonies of biofilm-like appearance have also been removed from patients with recurrent *Staphylococcus aureus* wound infections (Gotz, 2002). Percival and Bowler (2008) hypothesise that bacterial biofilms could have a significant effect on inflammation,




Andrew Bezear

infection and healing, and fragments of biofilm have also been shown to slough off at intervals and spread infection to other locations within the body (Costerton, 1999). It is estimated that biofilms are associated with 65-80% of non-healing wounds leading to chronic inflammation and delayed healing (James et al, 2008; Percival and Bowler, 2008).

### Why do some practitioners believe chronic non-healing wounds contain biofilm?

Chronic wounds exhibit an impaired response to wound healing owing to a number of factors. These include decreased perfusion of oxygen to the wound, a shortage of growth factors, increased inflammatory cytokines, development of cell senescence (ageing), abnormal matrix metalloproteinase regulation, excessive neutrophils and the presence of necrotic tissue, slough and bacteria (Dow et al, 1999; Wolcott et al, 2008). The bioburden in the wound may comprise proteinaceous exudate, devitalised tissue and white blood cells, which may be visually identified as slough in the wound bed (Wolcott and Dowd, 2008). Hurlow and Bowler (2012) suggest that as the biofilm's extracellular matrix develops into a macroscopic community, it may become visible to the naked eye, for example, in plaque on the tooth's surface. The bacteria within the biofilm, however, cannot be seen by the naked eye; their three-dimensional structure is difficult to discern even using microscopes.

### Debridement as a key component of anti-biofilm strategy

An important factor in delayed wound healing is the presence of devitalised or necrotic tissue in the wound bed (Vowden and Vowden, 1999), and the evidence presented suggests that biofilms may form a habitat within the devitalised tissue, further disrupting the normal cascade of healing. Sharp debridement of devitalised tissue in the wound bed has been shown to significantly decrease the presence of microorganisms (Schultz et al, 2004), although the biofilm's ability to re-form means that this strategy alone is insufficient. It may be necessary to use multiple strategies to manage potential wound biofilms.

### Antibiotics and antiseptics

Antibiotics are thought to suppress the biofilm's metabolic activity, although a large percentage of the biofilm is dormant at any one time, limiting antibiotic efficacy. Systemic antibiotics should be given when deep tissue infection is suspected, for example, in diabetic foot ulcers, or when system infection is confirmed (Rhoads et al, 2008).

Antiseptics can be considered as an ongoing strategy to suppress the biofilm following debridement and, where necessary, in conjunction with systemic antibiotics. Antiseptics have been shown to penetrate biofilms and destroy bacterial cells, however, informed choice should be made about the selection of antiseptic as some, for example, silver, have been shown to damage human proteins (Wilson et al, 2005 cited in Rhoads et al, 2008).

Historical misunderstanding of the physiology of the wound biofilm may have led to inappropriate management strategies, e.g. long-term administration of antibiotic and topical antimicrobial therapies, without due consideration to adjunct therapies such as debridement.

### Antibiofilm agents

Several antibiofilm agents have been identified and used successfully in the food and water industry, including Xylitol, lactoferrin, ethylenediaminetetraacetic acid (EDTA), gallnium and dispersin B, although there is limited research in wound models. These antibiofilm agents disrupt biofilm communication, intercellular matrix and metabolism. It is suggested that these agents are not toxic to human cells and, therefore, could potentially play a role in wound management in the future (Martineau and Dosch, 2007).

Martineau and Dosch (2007) have demonstrated the anti-biofilm properties of EDTA when incorporated into a wound gel. The protein lactoferrin stimulates 'twitching', causing bacteria to move around rather than forming harmful clusters, and its affinity for iron prohibits biofilm growth. Iron is essential for the biofilm and so, by signalling that it is in short supply, the biofilm is discouraged (Singh et al, 2002).

Xylitol is a naturally occurring substance, used in chewing gum, that has been shown to reduce the incidence of dental decay, possibly through the destruction of biofilms on the teeth (Burt, 2006).In-vitro evidence related to the impact of topical antimicrobials as antibiofilm agents has indicated that silver and povidone-iodine have limited effect, whereas PHMB may have a positive impact in infected wounds (Wiegand et al, 2009). Lenselelink and Andriessen (2011) demonstrated that continuous application of PHMB within a biocellulose dressing (Suprasorb X + PHMB®) reduces biofilm.

### Dressings

There is evidence that some wound dressings can sequester or trap and retain bacteria (Tachi et al, 2004; Ljungh, 2006), however, this can depend on the structure, fibres and chemicals present. Tachi et al (2004) studied the bacterial retention capacity of alginate dressings in comparison with hydrofibre dressings in an infected animal model. They concluded that significant variance existed, and bacterial retaining ability was greater in the hydrofibre dressing. They did not, however, study sequestration of bacterial biofilms. Ljungh et al (2006) examined the principles of hydrophobic interactions in dialkylcarbamoyl chloride (DACC) dressings to bind and remove bacteria from wounds, and found that when the dressings came into contact with moisture, bacteria were irreversibly bound and subsequently removed from the wound. Again, the study only looked at planktonic bacteria.

### Debridement

Wound debridement has been described as a significant modality in the management of wound biofilms and it is likely that concurrent, rather than single, treatment episodes will be more effective at reducing the bioburden and supporting the immune response (Wolcott et al, 2008). Devitalised tissue in the wound bed may increase inflammatory response and mask or mimic signs of infection (Kammerlander et al, 2005), and although debridement may be the appropriate treatment option (as previously described), challenges exist in the level of skill required to perform some aspects of mechanical debridement safely, for example, sharp and hydro debridement. To address this, a selective method of mechanical debridement has been developed and successfully evaluated in practice in a number of different types of wounds (Gray et al, 2011; Haemmerle et al, 2011; Fumarola, 2012; Stephen-Haynes, 2012; Westgate and Cutting, 2012).

Debrisoft is made of monofilament polyester fibres with a fleece–like wound contact surface designed to remove devitalised cells, slough and debris from the wound bed. Westgate and Cutting (2012) have demonstrated the removal of biofilm material on a solid surface using the Debrisoft debridement product.

The pad is moistened with the selected wound cleansing solution and passed over the wound surface using the appropriate pressure. It has been demonstrated that Debrisoft successfully removes debris, bacteria and haematoma from the wound bed and hyperkeratotic skin from lower limbs (Gray et al, 2011; Haemmerle et al, 2011), while maintaining patient comfort (Bahr et al, 2011; Fumarola, 2012). The treatment episode can be achieved in as short as 2-3 minutes (Bahr et al, 2011), and no adverse medical device events have been recorded to date.

Debrisoft has been used as a debriding agent in a range of acute, traumatic, and chronic wounds where the focus has been on the removal of wound debris and potential biofilm while effectively managing the patient's pain experience. Successful treatment episodes have informed appropriate interventions, reduced in-patient bed days and safe ongoing care by the patient's nursing team (Fumarola, 2012; Stephen-Haynes, 2012; Gray et al, 2011).

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# Quality of Life
Janice Bianchi

The treatment of chronic wounds has been estimated to cost the NHS £2-3 billion, which equates to about 3% of the annual healthcare budget based on figures from 2005 to 2006 (Posnett and Franks, 2007). However, with an ageing population and an increased incidence of concomitant factors such as obesity and diabetes, it is possible that this figure has increased significantly and will continue to do so (Upton and Hender, 2012). The cost to the NHS of dealing with the psychological consequences of chronic wounds is often overlooked but is estimated to be between £40.5 million and £85.5 million per year or £750 per patient (Upton and Hender, 2012).

Where possible, the practitioner's aim is to reduce the symptoms that cause distress to patients and, ultimately, to heal wounds. Chronic wounds often contain necrotic or sloughy tissue, which can harbour bacteria and act as a barrier to healing (Vowden and Vowden, 2011). It is generally accepted that fast and effective debridement of devitalised tissue supports wound healing (Bahr et al, 2011). Hyperkeratosis (thickening of the outer layer of the skin) is another common concern. It is frequently seen in the lower leg of patients with venous disease. Traditional methods of removal of hyperkeratosis can be time consuming and may traumatise the skin. If dead skin cells can be removed quickly and safely, practitioners can then accurately assess the skin and initiate appropriate treatment.

### Benefits to the patient

The benefits of rapid and effective wound healing for the patient should not be underestimated. The psychological consequences of living with a chronic wound are well documented. Upton and Hender (2012) suggest that patients with chronic wounds may experience negative emotions such as:

- Stress
- Concern about physical symptoms
- Lack of self-worth
- Despair.

Jones et al (2006) found that prolonged pain and malodour in patients with chronic wounds were associated with anxiety and stress. Mobility restrictions also impact negatively and have been described as one of the worst aspects of living with a chronic wound (Hamer et al, 1994). Green and Jester (2009) found the quality of life of sufferers of chronic venous ulcers is compromised by many issues including pain and social isolation.

The studies cited here give a good indication of the significant impact chronic wounds have on patients' quality of life and wellbeing both physically and psychologically. Pain, odour, restricted mobility and lack of self-worth can lead to life changes including giving up hobbies, reduced contact with family and friends and, for some, financial burden owing to loss of income.

### Benefits for nursing staff

The recognised demographic changes mean the population of the UK is ageing and will continue to do so (Office of National Statistics, 2012). Chronic wounds and skin changes associated with venous disease, e.g. hyperkeratosis, most commonly occur in the older population. We are, therefore, likely to see increasing numbers of chronic wounds.

Enhancing wound healing through effective debridement can lead to a reduction in overall treatment costs (Gray et al, 2011). In the current financial climate, the best possible use of available resources and time must be guaranteed. In terms of wound care, this means ensuring appropriate use of products through effective and timely assessment.

### Wound debridement

Successful debridement is often associated with a reduction in exudate, and odour, and the appearance of a healthy, granulating wound bed (Vowden and Vowden, 2011).

Additionally, when sloughy or necrotic tissue is present, it is difficult to assess the wound bed accurately. Removal of this tissue may allow more accurate assessment of the wound bed.

Traditional methods of rapid wound debridement such as sharp debridement, hydrosurgery or ultrasonic therapy are considered potentially painful and harmful unless carried out by practitioners with specialist knowledge and skills. Because of the level of skill required to carry out rapid wound debridement, district nurses, general nurses and other non-specialists often choose dressings that facilitate autolytic debridement of necrotic or sloughy tissue. This is a useful method of debridement but may take a considerable amount of time to achieve a granulating wound bed.

Debrisoft is a selective mechanical wound debridement product that is easy to use and requires a minimal level of skill. It is available on Drug Tariff and, unlike some forms of debridement, it can be used by generalist nurses on wards or in the patient's home. In clinical trials (Bahr et al, 2011; Gray et al, 2011), it has been shown to be an effective debridement product. Bahr et al (2011) recruited 60 patients to a multi-centre trial. They included all wounds requiring debridement and excluded wounds that appeared infected or caused severe pain. The researchers noted a significant shift in the wound condition after three debridement sessions approximately 4 days apart (the mean duration of each debridement session was 2.51 minutes). Bahr et al (2011) also identified that 95% of patients reported that they either experienced no pain or only slight discomfort of a short duration (mean: 2 minutes). The clinicians who used the product identified that it was convenient and easy to use (Bahr et al, 2011). This may allay concerns nurses have over using rapid debridement products.

## Removal of hyperkeratosis

Traditional methods of removing this hyperkeratotic layer of dead skin cells can take a significant period of time and may cause trauma. They involve soaking the leg for up to 20 minutes and the application of ointment-based emollients to soften the dead skin cells and facilitate removal by forceps. This may have to be done on several occasions. Gray et al (2011) were able to remove hyperkeratotic skin in a patient with extensive hyperkeratosis with a single 5-minute treatment with Debrisoft .

## Referral to specialist services

For some patients with infected or painful wounds, specialist input will still be necessary. However, having access to a rapid debridement product that is quick and easy to use, causes little or no pain in most patients (Bahr et al, 2011; Gray et al, 2011) and requires no formal training is hugely beneficial. It gives generalist nurses the freedom to assess and, where appropriate, debride wounds, without having to refer to specialist services such as tissue viability specialists and leg ulcer clinics.

The case study presented on page 12 highlights the benefits of speeding up wound debridement.

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# Case Study

Barbara Pritchard
Tissue Viability Nurse
North East Wales

## Patient details

- Female
- 77 years old
- Admitted to hospital with cellulitis 7th March 2011

## Medical history

None

## Wound history

Mrs H was admitted to hospital with cellulitis. She was referred to the tissue viability service because of superficial wounds to her lower leg. I suggested applying a non-adherent contact layer to the affected areas and covering with padding and toe-to-knee bandage, and keeping the leg elevated.

Two weeks later, I was contacted again. Mrs H had been taking the dressings down herself and not following the advice of the nursing staff. The area had now deteriorated causing great concern to both her and her husband.

When I visited Mrs H, the wound was covered in thick slough and the exudate was bright green in colour (Figure 7). Mrs H was very upset, believing that the wound would never heal. It was the sight of the slough on her leg that was causing her the most concern, as it was not reducing.

The leg was washed in warm water and Debrisoft was used, removing the majority of the slough (Figure 8). Mrs H was overwhelmed at the sight of the slough being removed and I reassured her that the wound would heal. A silver dressing was applied under toe-to-knee padding and bandaging. The leg was washed at each dressing change using warm water with an added emollient only. The dressing was renewed every 3 days for 2 weeks.

Mrs H was discharged from hospital 9 days after my visit. She was referred to the cellulitis clinic as an outpatient and to the district nurses for dressing changes. After 2 weeks, the silver dressing was changed to non-adherent contact layer and toe-to-knee padding and bandage.

The wound went on to heal without any further problems and was completely healed within 4 weeks of discharge.

Figure 7

Figure 8

# Closing the Link

Karen Ousey

This supplement explores the challenges of wound assessment, the cost of debridement, and issues of quality of life, while focusing on Debrisoft as a debridement technique.

Cook discusses the importance of accurate wound assessment, noting the lack of clear evidence favouring any one of the various methods of debridement over another (Leaper, 2002).The choice of method depends on wound type, location, practitioner knowledge and skills, patient choice and time frame. Registered nurses must keep their skills and knowledge up to date (Nursing and Midwifery Council, 2010: 4). Those undertaking debridement must be competent in a range of techniques and possess the underpinning knowledge of anatomy, physiology and choice of technique. Each practitioner must be responsible for their education and skills development and should access educational support from their work place, higher education institutions, study days and conferences, and through reflecting on current evidence.

Practitioners performing debridement should have:

- Good knowledge of relevant anatomy
- Understanding of the range of wound debridement methods available
- Capability to identify viable tissue and differentiate non-viable tissue
- Ability to manage pain and patient discomfort before, during, and after the procedure
- Appropriate skills to deal with complications (e.g. bleeding)
- Awareness of infection control procedures. (Vowden and Vowden, 2011:2)

Fumarola discusses wound biofilms, explaining that wound debridement had been described as a significant modality in their management. However, she cautions that although debridement may be the appropriate treatment option, challenges may exist in the level of skill required to perform some aspects of mechanical debridement safely, for example, sharp and hydro debridement. Before undertaking any form of debridement procedure, Vowden and Vowden (2011:3) advise that the practitioner ask the following questions:

- What is the cause of the wound?
- What is the aim of treatment?
- What are the risks and benefits of performing debridement?
- What speed of debridement is required?
- Which method would be most appropriate?
- Where are the skills and/or equipment required to perform the treatment?

Bianchi indicates that chronic wounds can have a significant impact on quality of life and wellbeing, both physically and psychologically. Therefore, the benefits of rapid and effective wound healing should not be underestimated. Preserving and enhancing patients' wellbeing has been discussed by a specialist group of practitioners who produced a consensus definition (Wounds International, 2012).

Wellbeing is a dynamic matrix of factors, including physical, social, psychological and spiritual. Within wound healing, optimising an individual's wellbeing will be the result of collaboration and interactions between clinicians, patients, their families and carers, the healthcare system and industry. Wounds International (2012) suggests that stakeholders should work together to improve wellbeing in a cost-effective and efficient way, through therapeutic partnerships with patients and their carers and shared decision making. The group recognised that industry colleagues should also make efforts to develop products that optimise efficacy and enhance quality of life.

Individual accurate wound assessment is essential in determining the most appropriate debridement technique. Practitioners must ensure their skills and underpinning knowledge are current to be able to safely execute any debridement technique. If the practitioner believes they do not have the requisite skills, assistance should be sought from a suitably qualified member of staff such as tissue viability specialists, podiatrists or medical staff.

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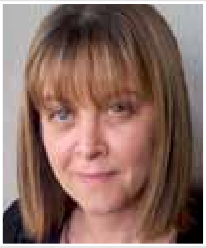
# Author Bios

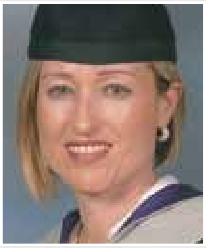


## Dr Karen Ousey

Karen is Reader in Advancing Clinical Practice in the School of Human and Health Sciences, University of Huddersfield. Karen's clinical background is in orthopaedics and tissue viability and she has worked in a range of trusts across the North West of England and London. Before joining the University of Huddersfield, she was a lecturer at the University of Salford. She has over 22 years' experience in both clinical practice, as tissue viability lead, and in academia. Karen is Clinical Editor for Wounds UK and reviews for the *British Journal of Community Nursing*, *British Journal of Nursing* and *International Journal of Orthopaedic and Trauma Nursing*.

## Leanne Cook

Leanne is a Registered Nurse and Lecturer Practitioner at University of Huddersfield. She is also a Vascular Nurse Specialist at Mid Yorks NHS Trust and completed her Masters degree in Advanced Nursing Practice at University of Leeds in 2010. Her special interests include leg ulcer management, quality agenda, peripheral arterial disease and advanced wound management. She has published many articles related to wound assessment, product selection, and management of leg ulceration.



## Sian Fumarola

Sian has been a Registered Nurse for 29 years, during which time she has practiced in a variety of specialties within acute care. She was appointed as Clinical Nurse Specialist in Tissue Viability in 2000 where she leads a team of tissue viability nurses providing a specialist clinical and educational service to a 1300-bed acute NHS trust/major trauma centre covering all inpatient areas. She has a special interest in complex surgical and trauma wounds and the management of wound infection. Sian chairs the West Midlands regional Tissue Viability Group, sits on the West Midlands Region Strategic Health Authority Pressure Ulcer Board and participates in a number of expert panels and forums nationally.

## Janice Bianchi

Janice is an independent Tissue Viability and Dermatology Educator and Honorary Lecturer in Glasgow University. She is a member of a number of dermatology and tissue viability/leg ulcer interest groups. She is currently leading on the development of a skin tear guideline on behalf of the National Association of Tissue Viability Nurse Specialists Scotland. Recent activity includes medical writing, a dermatology project with NHS Education for Scotland, project managing national survey for British Dermatology Nursing Group and providing educational advice to several wound care companies.

# Notes

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