Mepilex® Border dressing:

FOR THE EFFECTIVE MANAGEMENT OF EXUDING WOUNDS

Wounds UK

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INTRODUCTION

Foreword

Effective exudate management can reduce time to healing, reduce exudate-related problems, such as periwound skin damage and infection, improve patients' quality of life, reduce dressing change frequency and clinician time, and therefore improve healthcare efficiency (Gardner, 2012). This supplement highlights the importance of appropriate dressing selection and describes the role of Mepilex Border® (Mölnlycke, Gothenburg, Sweden) in the management of moderately to highly exuding wounds. User testimonials provide the clinical perspective of using Mepilex Border, a soft silicone, non-adherent foam dressing, within a holistic wound care approach for patients.

Understanding the challenges of exudate management

Exudate provides a moist environment necessary for optimal wound healing, as it prevents the wound bed from drying out, aids migration of tissue-repairing cells, provides essential nutrients for cell metabolism, enables the diffusion of immune and growth factors, and assists separation of dead or damaged tissue (autolysis).

However, exudate may cause a problem for the patient or caregiver when the quantity produced and/or its composition delay or prevent healing (World Union of Wound Healing Societies [WUWHS], 2007). Overproduction of exudate can often be detrimental to wound healing and patient wellbeing (Figure 1). Exudate can be difficult to manage, due to the challenge of absorbing large amounts of wound fluid and the potential harmful bacteria and proteases contained in the fluid (WUWHS, 2007).

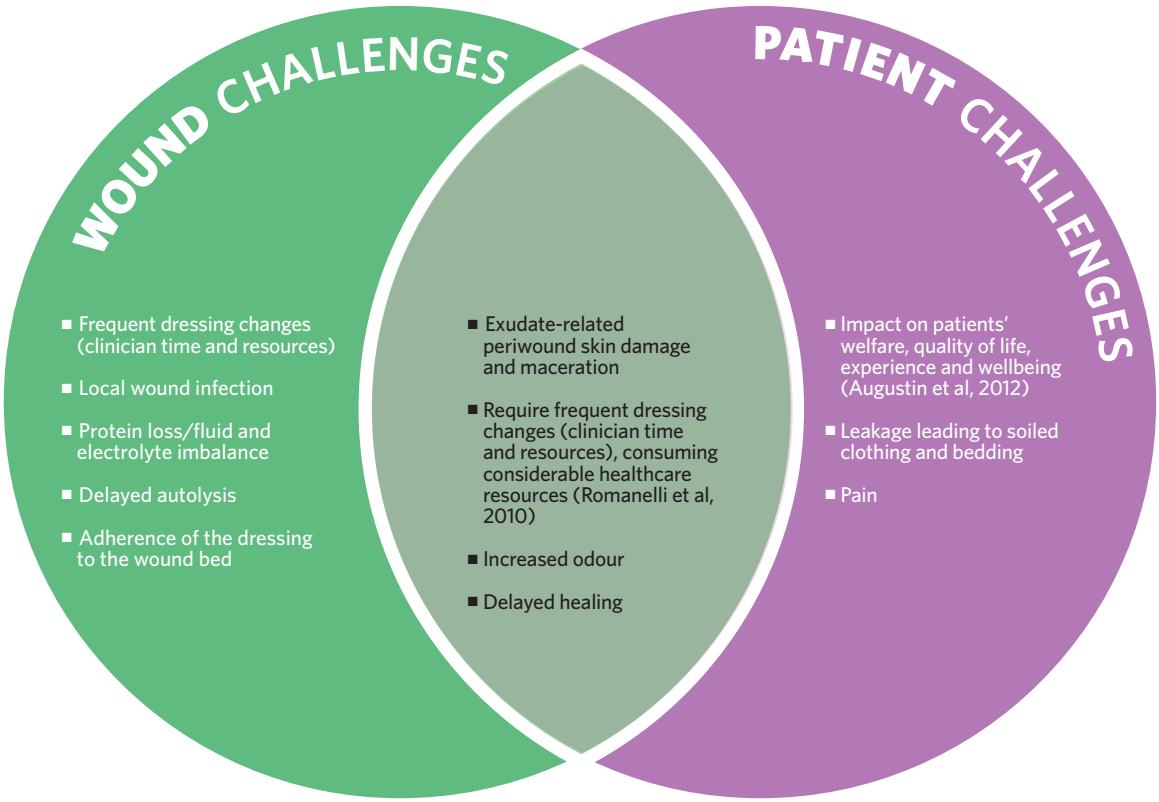

Figure 1: Venn diagram of patient and wound challenges as a result of excess exudate (WUWHS, 2007).

Burden of wound care

The Burden of Wounds study estimated that in 2012/13 about 2.2 million patients in the UK were treated by the NHS for an acute or chronic wound at a cost of £4.5–£5.3 million (Guest et al, 2015). Wound healing demands are set to rise with a rising elderly population with long-term conditions and more complex needs (Dowsett, 2015).

Typically, the cost of wound care is driven by the dressing change frequency, which includes the clinician's time, the duration of treatment and the incidence of complications (Wounds International, 2013). In the Burden of Wound cohort, the cost of wound care products was estimated at £742 million (Guest et al, 2015); however, the cost of dressing themselves represent a relatively small proportion of the total wound care cost (12%), even though with appropriate use within a wound management protocol they can improve outcomes (Gottrup et al, 2010). The remaining 88% of the total cost of wound care results from managing infections, maceration, pain and anxiety, delayed healing, and the additional nursing and hospital resources these complications consume (Guest et al, 2015).

Guest et al (2015; 2017) concluded that clinical and economic benefits could be accrued from an increased awareness of the impact that wounds impose on patients and the NHS and improved systems of care, which can include cost-effective and appropriate dressing selection.

DRESSING SELECTION FOR EXUDATE MANAGEMENT

Treating the underlying condition is the cornerstone of management for patients with wounds and the wide variety of dressings available, with different modes of action and attributes, play an important role. Dressing selection is based on a number of factors, including a detailed patient and wound assessment, identification of the underlying cause and objective of treatment, cost-effectiveness and availability of the dressing and patient preference, such as:

- Dressing size – is the size of the dressing appropriate for the wound?
- Wear time – increasingly, wear time is becoming a critical factor in dressing selection, as the number of dressing changes impacts on the number of dressings used, community nursing visits and associated costs, such as travel (Dowsett, 2015).
- Ease of use – does the patient want to, and are they able to change the dressing themselves?

Wound and patient assessment

Before a clinician selects an appropriate management regimen and a dressing, the wound should be examined using a framework that aids systematic wound assessment, such as TIME (Schultz, 2003). According to WUWHS, wound assessment should include assessment of exudate (colour, consistency, amount, odour) and the wound base, edge and periwound skin. Close examination of exudate may indicate the components, contaminants and underlying causes, which can direct an appropriate dressing selection.

Depending on the cause of exudate and the aim of treatment (e.g. debride, moderate wound moisture, resolve infection, reduce pain and discomfort), the management regimen will differ. If the aim is to reduce wound moisture, the strategy may incorporate using a more absorbent dressing than previously used; changing to a dressing type of greater fluid handling capability; adding or using a higher absorbency secondary dressing; or increasing the frequency of primary and/or secondary dressing change (WUWHS, 2007).

If the aim is to reduce wound pain and discomfort, a silicone dressing that is non-adherent can minimise pain and trauma at dressing application and removal (WUWHS, 2004).

Cost effectiveness

Treatment interventions for wound care need to be both efficient and cost effective (Dowsett, 2010). Clinical and economic benefits could be achieved from improved, consistent systems of care, and an increased awareness of the impact that wounds impose on patients and the NHS (Guest et al, 2015). Early holistic assessment gives more time to provide effective treatment and reduces the risk of further complications.

Foam dressings

Foam dressings have been available for over 30 years and are a popular choice for the treatment of chronic wounds with moderate to high amounts of exudate, as they are designed to absorb fluid with minimal lateral movement to prevent periwound skin damage or fluid leakage. Clinicians must consider whether a foam dressing satisfies the selection criteria for exudate management (Box 1). If there is difficulty containing exudate, managing infection or protecting periwound skin, there should be prompt consideration of an alternative dressing or intervention.

BOX 1: Criteria to consider when selecting an appropriate foam dressing for exudate management (WUWHS, 2007)

- It should provide a moist wound environment that is conducive to healing
- It remains intact and *in situ* throughout wear time, without leakage
- It is comfortable, conformable and flexible
- It does not cause allergy or sensitivity
- It retains exudate when used in conjunction with another therapy, such as compression bandaging
- It is capable of sequestration of bacteria and other exudate components
- Is easy to apply and remove, without causing skin trauma/discomfort
- Have a long wear time, leading to more cost savings.

MEPILEX BORDER DRESSING

Mepilex Border is a self-adherent polyurethane foam 5-layer silicone bordered dressing (Figure 2), which includes unique soft silicone Safetac® technology. The first dressings utilising Safetac technology were launched in 1990 in the form of a wound contact layer. This then lead to the development and launch of the Mepilex Border range in 2001. Mepilex Border is available in various sizes and shapes, including heel and sacrum variants, which are specifically designed for areas where there is a high risk of pressure ulceration and have been shown to reduce pressure ulcer incidence (Davies, 2016).

Mepilex Border is now available as a 10 x 10.5cm size across the NHS at a competitive price for moderately to highly exuding wounds, where a non-adherent, silicone dressing is appropriate.

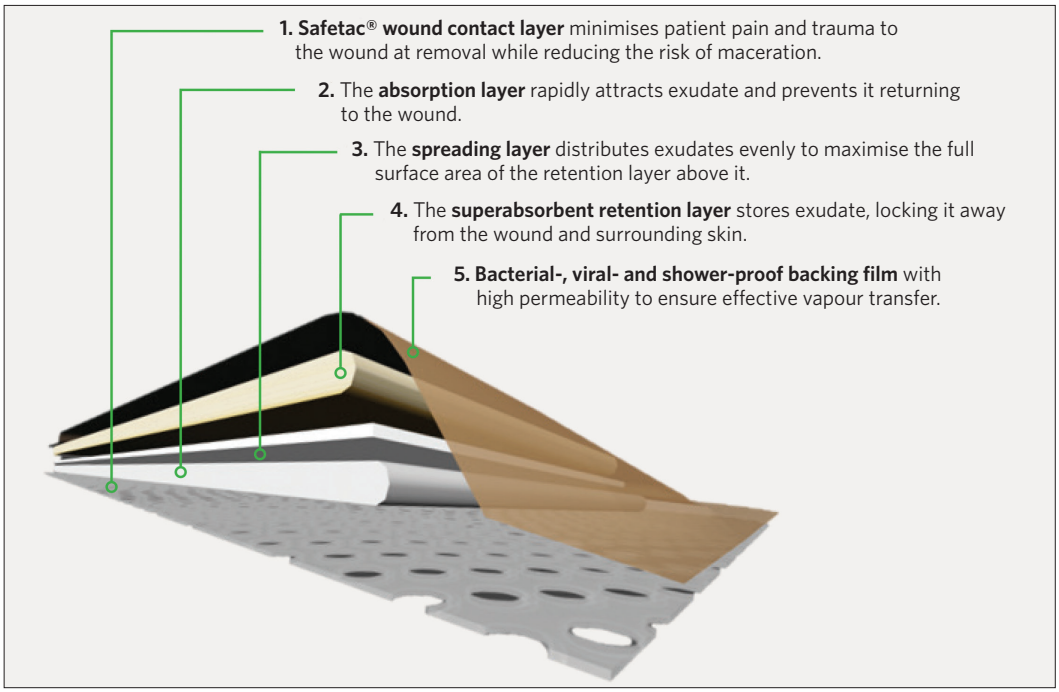

Figure 2: Five-layer dressing design of Mepilex Border

The gentle wound contact layer of Mepilex Border with Safetac technology adheres to intact dry skin, so remains *in situ* over the moist wound or damaged surrounding skin, but does not cause trauma to the fragile areas (Silverstein et al, 2011). There is a reduced risk of damaging the wound or stripping epidermis in the periwound region (Zilmer et al, 2006), while minimising pain (White, 2008) and psychological stress at dressing removal (Woo et al, 2009; Upton and Solowiej, 2012).

The design of a foam dressing focuses on increasing moisture vapour transmission rate (MVTR), retention and absorbency to provide higher fluid handling capacities (see Box 2 for properties of Mepilex Border).

- The inner layers of Mepilex Border dressing are designed to absorb moisture, spread the exudate across the entire surface area of the dressing and lock it away from the wound
- The outer film layer prevents contamination of bacteria or viruses while allowing moisture to evaporate (NICE, 2017).

Mepilex Border has been shown to provide a higher total fluid handling capacity than other silicone bordered foam dressings (Independent SMTL test report 10/3299/1; Marburger et al, 2013; Independent SMTL test report 15/4962/1).

BOX 2: MVT rate of Mepilex Border (g/10cm²/24h)

13.1	+	7.8	=	20.9
Moisture vapour loss		Mass of fluid absorbed		Total fluid-handling capacity

MVT rate: The measurement of water vapour diffusion through a material
Fluid-handling capacity: The sum of moisture vapour loss plus absorbency

Over the past 20 years, a robust evidence base has been built for the role of Mepilex Border in exudate management (Figure 3). A strong evidence-based research can help to achieve a more consistent treatment, as well as improved effectiveness and quality of wound care (Ubbink et al, 2015). Published analysis shows that combined, the design features of Mepilex Border lead to fewer dressing changes, a longer wear time and reduced costs associated with complications, such as maceration, leading to lower overall treatment costs (Charlesworth et al, 2014; White, 2008).

Figure 3: Evidence pyramid for Mepilex Border for the treatment of wounds

THE CLINICAL PERSPECTIVE

Kumal Rajpaul, *Consultant Nurse, Tissue Viability & Continence Nurse Manager, Kings College Hospital NHS Foundation Trust* describes in his own words how Mepilex Border fits into a holistic wound care approach in an inpatient setting

"I work in an acute teaching hospital and my team and I oversee all patients with wounds that are referred to the service while in the hospital (e.g. pressure ulcers, leg ulcers, skin tears, surgical wound dehiscence, trauma wounds and atypical lesions), regardless of whether they are the reason for the hospitalisation or a secondary diagnosis.

I began working in tissue viability in 2004, when the only dressing size available on wards was 10x10cm and we would have to cut to size. Over the past 10 years, there has been an increase in the variety of dressings available in terms of sizes and shapes, with Mepilex Border dressing being one of the first silicone-bordered dressing available in the UK.

The tissue viability team uses foam dressings for exuding wounds; when patients show sensitivity to an adhesive dressing on the formulary or an adhesive dressing is not appropriate for their fragile skin, I use Mepilex Border dressing. It is standard care for elderly patients with fragile skin, and we use it for neonatal and paediatric patients where an atraumatic dressing change is vital to avoid physical or psychological trauma from a painful dressing change. I use a removal technique that aims to reduce the risk of further trauma: using one hand placed on the skin, while I use my other hand to carefully remove the dressing in the opposite direction to the wound to avoid pulling.

When called to see a patient with a wound, we first complete a full patient and wound holistic assessment. The wound is then cleansed as appropriate, and the surrounding skin dried before Mepilex Border or an appropriate wound contact layer is applied. Mepilex Border can also be used under compression therapy for suitable wounds and patients.

Patients report that Mepilex Border is soft and gentle on removal, and the colour of the dressing also makes the exudate staining appear more discreet. I've noticed both these features have led to better compliance and less anxiety at dressing changes compared to other dressings on the formulary."

Mr Sanjib Majumber, *Consultant Plastic & Reconstructive Surgeon, Leeds* describes in his own words how and why he uses Mepilex Border for certain patient groups

"For me, Mepilex Border has three factors that makes it an integral part of my clinical practice. Firstly, the dressing wound contact layer is silicone and non-adherent; during dressing removal, it does not rip healing tissue or traumatise the wound bed. Secondly, the dressing border is also silicone, so on removal there is no sticky residue on the surrounding skin, and there is a reduced risk of skin damage. Thirdly, the highly absorbent design makes it appropriate for a broad range of exuding wounds.

These three factors are why I choose Mepilex Border for moderately exuding wounds when a gentle non-adherent dressing is required. This is especially important for patients with thin, fragile, vulnerable skin, like the elderly or people who are on steroids (e.g. for asthma). Its gentle, non-adherent design also lends itself to use in the paediatric setting. Evidence suggests that painful dressing experiences in childhood can trigger reduced confidence in the clinician, anxiety about future dressing changes (Smith et al, 1997; Vingoe, 1994) and potentially long-term psychological trauma or post-traumatic stress disorders (Graf et al, 2011). If a dressing change is painful, the child may require sedation and a stay in hospital, leading to increased costs.

THE CLINICAL PERSPECTIVE

In the plastic surgery clinic, we also use Mepilex Border for skin graft donor sites (SGDS) as a secondary dressing over a calcium alginate dressing to manage the bleeding. SGDS are highly exuding wounds; therefore, a high-absorbent dressing, which can maintain moisture balance is preferred. SGDS are also very painful, so the chosen dressing regimen needs to be atraumatic and have a long wear time as the dressing needs to remain *in situ* for up to 2 weeks barring infection.

Patients report that dressing changes with Mepilex Border are comfortable, and those who self-care have reported it easy to use. Choosing a dressing that is comfortable and pain free at dressing change can reduce the fear and anxiety of patients. This in turn can increase patient compliance and engagement with self-care, thus reducing hospital appointments and ultimately costs to the NHS."

Tracy Conroy, *Queen's Nurse and Tissue Viability Lead Nurse, Locala Community Partnerships CIC, Kirklees, West Yorkshire* describes the challenges facing community wound care

"I am a tissue viability lead nurse working in the community setting. Leading a team who provide clinical advice and support to patients and colleagues in patients own homes, care homes and GP practices. I am also a member of the wound management formulary group covering South West Yorkshire.

Community wound care faces many challenges, with factors such as number of visits, travel distance and time (which increase costs) to be considered (Hughes and Jones, 2017), as well as organisational support, engagement and teamwork and also communication, planning and maintaining focus (Irwin et al 2013).

Treating patients in their own home is a challenge compared to treating as an inpatient in terms of the home environment and the availability of care; as such, patient concordance can be an issue in the community, because they do not have access to 24-hour nursing care. However, sometimes patients have more incentive to help heal their wounds and they are often more empowered in their own homes.

Mepilex Border dressing is on our wound management formulary as a silicone foam dressing. The silicone adhesive dressing is used for patients with sensitive skin or who have allergies. It is used for skin tears, where a gentle dressing is required, and we also use it for exuding wounds.

Feedback from patients suggests that it is comfortable to wear, moulding to the body contours, and it is not painful on removal. When Mepilex Border dressing is in use, patients are shown how to remove the dressing safely and told that it is shower-proof. Not many of our patients self-care, but those who do report that it is easy to remove.

Earlier this year, a task and finish group from our wound management formulary group reviewed foam dressings to review cost-effectiveness and clinical effectiveness; as a result, Mepilex Border dressing remains on the formulary. Mepilex Border is a dressing that is straight forward and easy-to-use as a primary or secondary dressing."

CLINICAL APPLICATION OF MEPILEX BORDER

Treatment

Mepilex Border is designed for a wide range of medium to highly exuding wounds such as pressure ulcers, leg and foot ulcers, surgical incisions, and traumatic wounds, such as skin tears, blisters, abrasions, and wounds healing by secondary intention.

When clinical signs of infection are present, the use of Mepilex Border may be continued if appropriate infection treatment is initiated alongside. The instructions for use recommend that Mepilex Border dressings may be left in place for several days, depending on the condition of the wound and levels of exudate. With this in mind, it is the clinician's responsibility to ensure timely wound reviews and to monitor changes in wound size and condition so that the ongoing wound care regimen remains appropriate.

Prevention

Mepilex Border dressing is increasingly being used prophylatically to help reduce the occurrence of pressure ulceration in at-risk patients (Clark et al, 2014; Santamaria and Santamaria, 2014), and in such cases, should only be applied to intact skin. In a number of randomised controlled trials, Mepilex Border Sacrum and Mepilex Border Heel dressings have been proven to help reduce pressure ulcer occurrence and associated costs (Santamaria and Santamaria, 2014; Santamaria et al, 2015a; Santamaria et al, 2015b; Davies, 2016).

Using Mepilex Border dressings as part of pressure ulcer prevention strategies would represent an additional initial cost to standard care; however, this cost could be offset if using the dressings reduced the severity or incidence of pressure ulcers (NICE, 2017). In addition, facilities that used Mepilex Border dressings at a rate of one dressing per patient made a 100% return on investment in less than 1 year (Padula, 2017).

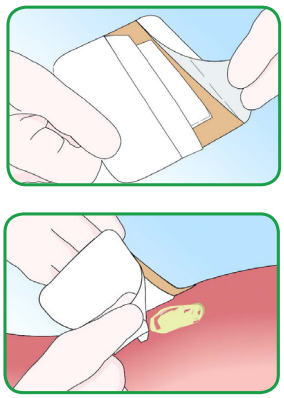

Figure 4: Application of Mepilex Border dressing

How to use Mepilex Border

- The wound should be cleansed in accordance with local procedures, and the surrounding skin dried thoroughly
- The release films of the dressing are to be removed (Figure 4)
- For best results, Mepilex Border should overlap the dry surrounding skin by at least 2cm to ensure secure fixation and helps protect the periwound from maceration
- **Tip: Avoid stretching the dressing during application**
- Dressing removal:
  - *Treatment*: To remove the dressing, gently lift one corner and continue to peel the dressing back until it is detached from the skin
  - *Prevention*: When Mepliex Border Heel and/or Mepilex Border Sacrum are used for pressure ulcer prevention, the skin should be checked every day. The visual inspection/handling tabs allow the clinician to peel back the dressing to expose the protected area, before replacing it to its original position. To check the wound, one corner can be gently lifted and the dressing slowly peeled back.

Summary

Exudate is necessary for moist wound healing but can pose a problem when the quantity produced and/or its composition delays or prevents healing. Mepilex Border dressing has a robust evidence base in the effective management of exuding wounds. The gentle, silicone design of the dressing is also suitable for patients with fragile or sensitive skin. Mepilex Border can be part of standard care in the acute, inpatient or outpatient setting following holistic assessment of the patient and wound to determine the issues and cause of the wound.

References

Akobeng AK (2005) Understanding randomised controlled trials. *Arch Dis Child* 2005; 90(8): 840-4

Augustin M, Carville K, Clark M et al (2012) *International consensus. Optimising wellbeing in people living with a wound. An expert working group review.* London: Wounds International. Available from: www. woundsinternational.com

Charlesworth B et al (2014) Dressing-related trauma: clinical sequelae and resource utilization in a UK setting. *Clinicoecon Outcomes Res* 28(6): 227-39

Clark M, Black J, Alves P et al (2014) Systematic review of the use of prophylactic dressings in the prevention of pressure ulcers. *Int Wound J* 11(5):460–471

Davies P, Rippon M (2008) Evidence review: the clinical benefits of Safetac technology in wound care. *J Wound Care* Suppl: 3–31

Davies P (2016) Role of multi-layer foam dressings with Safetac in the prevention of pressure ulcers: a review of the clinical and scientific data. *J Wound Care* 25(1): S1–S24

Davies P, McCarty S, Hamberg K (2017) Silver-containing foam dressings with Safetac: a review of the scientific and clinical data. *J Wound Care* 26: 6(Suppl 1) S1–S32

Department of Health (2010) Pressure Ulcers: Productivity Calculator. Available at: https://www.gov.uk/government/publications/pressureulcers- productivity-calculator (accessed 14.2.2014)

Dowsett C (2015) Breaking the cycle of hard-to-heal wounds: balancing cost and care. *Wounds International* 6(2): 17–21

Gottrup F, Apelqvist J, Price P et al (2010) Outcomes in controlled and comparative studies on non-healing wounds: recommendations to improve the quality of evidence in wound management. *J Wound Care* 19(6): 239–68

Graf A, Schiestl C, Landolt MA (2011) Posttraumatic stress and behavior problems in infants and toddlers with burns. *J Pediatr Psychol* 36(8): 923–31

Guest JF, Ayoub N, McIlwraith T et al (2015) Health economic burden that wounds impose on the National Health Service in the UK. *BMJ* 5: e009283

Guest JF, Ayoub N, McIlwraith T et al (2017) Health economic burden that different wound types impose on the UK's National Health Service. *Int Wound J* 14(2): 322–30

Hughes MA, Jones J (2017) A large-scale evaluation of managing moderate and highly exuding wounds in the community. *Wounds UK* 13(3): 78–85

Independent SMTL test report 10/3299/1

Independent SMTL test report 15/4962/1

Irwin M M, Bergman R M, Richards R (2013) The Experience of Implementing Evidence-Based Practice Change: A Qualitative Analysis. *Clin J Oncol Nurs* 17(5): 544-9

Marburger M et al. *In vitro* test of eight wound dressings with silicone adhesive: Fluid handling capacity with and without compression. Poster presented at *Wounds UK*, Harrogate, UK 2013

Meaume S, Van De Looverbosch D, Heyman H et al. A study to compare a new self-adherent soft silicone dressing with a self-adherent polymer dressing in stage II pressure ulcers. *Ostomy Wound Manage* 2003; 49: 9, 44–51

National Institute for Health and Clinical Excellence (2017) Mepilex Border Dressings For Preventing Pressure Ulcers. Medtech Innovation Briefing. Available at: www. nice.org.uk/mib124 (accessed 23.05.2018)

Padula WV (2017) Effectiveness and value of prophylactic 5-layer foam sacral dressings to prevent hospital-acquired pressure injuries in acute care hospitals an observational cohort study. *J Wound Ostomy Continence Nurs* 44(5): 413–9

Romanelli M, Vowden K, Weir D (2010) *Exudate Management Made Easy*. Wounds International 2010; 1(2) Available from www.woundsinternational.com

Santamaria N, Santamaria H (2014) An estimate of the potential budget impact of using prophylactic dressings to prevent hospital-acquired PUs in Australia. *J Wound Care* 23(11):583-9

Santamaria N et al (2015a) A randomised controlled trial of the effectiveness of soft silicone multi-layered foam dressings in the prevention of sacral and heel pressure ulcers in trauma and critically ill patients: the border trial. *Int Wound J* 12(3): 302-8

Santamaria N, Liu W, Gerdtz M (2015b) The cost-benefit of using soft silicone multi-layered foam dressings to prevent sacral and heel pressure ulcers in trauma and critically ill patients: a within-trial analysis of the Border Trial. *Int Wound J* 12(3): 344–50

Schultz GS, Sibbald RG, Falanga V, et al (2003) Wound bed preparation: a systematic approach to wound management. *Wound Repair Regen* 11(2): Suppl S1-28

Silverstein P, Heimbach D, Meites H et al (2011) An open, parallel, randomized, comparative, multicenter study to evaluate the costeffectiveness, performance, tolerance, and safety of a silver-containing soft silicone foam dressing (intervention) vs silver sulfadiazine cream. *J Burn Care Res* 32(6): 617–26

Smith NK et al (1997) Non-drug measures for painful procedures. *Am J Nursing* 97(8): 18-20

Upton D, Solowiej K (2012) The impact of atraumatic vs conventional dressings on pain and stress. *J Wound Care* 21(5): 209–16

Vingoe FJ (1994) Anxiety and pain: terrible twins or supportive siblings? In: Gibson HB (ed) *Psychology, Pain and Anaesthesia*. New York, NY: Chapman and Hall.

White R (2008) A Multinational survey of the assessment of pain when removing dressings. *Wounds UK* 4(1)

Wiberg A-B, Feili F, Daun E-K (2008) Preventing maceration with a soft silicone dressing: *in vitro* evaluations. Poster presented at the 3rd Congress of the World Union of Wound Healing Societies, Toronto, Canada

Woo KY, Coutts PM, Price P et al (2009) A randomized crossover investigation of pain at dressing change comparing 2 foam dressings. *Adv Skin Wound Care* 22(7): 304–10

World Union of Wound Healing Societies (WUWHS) (2004) *Principles of best practice: Minimising pain at wound dressing-related procedures. A consensus document*. London: MEP Ltd

World Union of Wound Healing Societies (WUWHS) (2007) *Principles of best practice: Wound exudate and the role of dressings. A consensus document.* London: MEP Ltd

Wounds International (2013) *Making the case for cost-effective wound management. An international consensus.* Wounds International. Available at: http://bit.ly/19pg6MB (accessed 20.05.2018)

Zillmer R, Ägren MS, Gottrup F, Karlsmark T (2006) Biophysical effects of repetitive removal of adhesive dressings on peri-ulcer skin. *J Wound Care* 15(5): 187–91

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