Adaptic Touch® and other non-adherent soft silicone dressings

Non-adherent soft silicone dressings are versatile and cost-effective. They do not adhere to the wound bed, thus reducing pain during dressing changes and improving patients’ quality of life. Adaptic Touch® is a silicone dressing from Acelity (previously Systagenix) that conforms to the wound and allows exudate to pass to a secondary dressing, minimising the risk of maceration. This article describes Adaptic Touch and provides an overview of the literature related to non-adherent soft silicone dressings.

References
1. Winter GD. Formation of the scab and rate of epithelization of superficial wounds in the skin of the young domestic pig. Nature 1962; 193: 293–4

Choice of dressing can have a huge impact on the rate at which wounds heal and can help to improve a patient’s quality life. Choosing a silicone non-adherent dressing wound can improve the condition of the wound bed and also help to reduce pain levels during dressing changes.

In his pivotal work conducted in 1962[1] Dr George Winter, who can be considered the founder of modern wound care, stressed the importance of a moist wound environment for optimum wound healing. In his subsequent work, he described the characteristics of an ideal wound dressing and highlighted, among other attributes, the importance of a dressing that provides the wound with sufficient mechanical protection while being non-adherent and non-allergenic or sensitising.

Dr Winter suggested that even the lowest adherence should be avoided as this can easily damage the new epidermis[2].

Both low-adherent and non-adherent dressings avoid damage to the wound. However, low-adherent dressings are mainly tulle made of open-weave cloth impregnated with soft paraffin[3] and these dressings are not ideal as they are waterproof and can therefore trap water vapour and exudate underneath them within the wound bed, causing excessive moisture that leads to maceration[4].

Too much moisture hinders healing and so it is advisable to use dressings that promote moist wound healing and provide atraumatic removal as pain is very much associated with dressing changes (this is also known as procedural pain)[5]. Careful product selection is one of the key elements in reducing pain and trauma during dressing change. There is evidence of a direct correlation between dressings that cause trauma and dressings that cause pain and, therefore, the clinician should choose a dressing that is atraumatic[6]. Non-adherent silicone dressings were developed to provide an atraumatic dressing that ensures minimum damage or no damage both to the wound bed and the surrounding skin[6].

What are soft silicone dressings?
Soft silicone consists of branches of solid silicone which is an inert, synthetic compound. It is tacky and soft, meaning that it can conform and adhere to dry surfaces but is non-adherent to moist surfaces. Silicone has low toxicity and therefore the risk of sensitivity to dressings containing silicone is reduced[7]. Silicone-coated wound contact layer dressings allow dressing removal to be without trauma not only to the wound bed but also to the surrounding skin[8]. As it is atraumatic to both the wound bed and the surrounding skin, the dressing itself helps reduce procedural pain.

As silicone is tacky, the dressing stays in situ during dressing application[8]. It conforms to the wound as a primary dressing and allows the free passage of exudate to a secondary dressing, thus minimising the risk of pooling and maceration. It also reduces the risk of adherence to the secondary dressing[8].

When to use a silicone dressing
Silicone-coated wound contact layer dressings are indicated for wounds with low to high exudate levels. The dressing is non-adherent while allowing exudate to pass through to a secondary dressing and this helps to provide an optimal wound healing environment. Wounds for which these dressings are appropriate range from pressure ulcers and diabetic ulcers to traumatic wounds such as skin tears, partial thickness burns and skin grafts[7]. Soft silicone dressings are also suggested for patients who have fragile skin[7], for patients who are experiencing procedural pain and for wounds that need periwound skin protection[7].
According to the Cochrane Library\cite{11}, it is suggested that any dressing used for burns patients should be based on ease of application and removal, dressing change requirements, cost and patient comfort which would be an indication for a non-adherent dressing. It has also been suggested that silicone non-adhesive dressings are effective in most superficial dermal burns\cite{12}. Non-adherent dressings also have a role in management of skin grafts and can be left on small areas where a graft has been unsuccessful to allow for continued epithelialisation\cite{13}. It is also suggested that a non-adherent dressing can be left in situ for five days in split-thickness grafts while they should be left in place for 7 to 10 days in full thickness grafts\cite{14}.

Non-adherent dressings are also used in combination with negative pressure wound therapy. In one case study, it was reported that by using Adaptic Touch under a foam dressing, changes were not as painful when the silicone dressing was utilised, it needed to be changed less frequently and enabled earlier discharge\cite{15}. It is also suggested that, when the foam is to be placed over tendons, sutures, staples, or a dehisced wound, they should be covered first with a non-adherent dressing before foam placement\cite{16}.

The author finds that using a silicone dressing under the foam when using negative pressure wound therapy to be highly beneficial. The foam does not adhere to the wound and protects the newly-formed granulation tissue and also allows for easy removal, thus leading to less painful dressing change. The pore size is wide enough to allow the flow of exudate to the canister but too small to allow granulation through the dressing, which can lead to adherence, bleeding and pain. The author reports that patients are less ‘afraid’ of dressing changes when a silicone dressing is used under the foam.

Soft silicone dressings can also be used in infected wounds in conjunction with antimicrobial management because they are inert, therefore sensitivity and other adverse reactions are extremely rare\cite{16}.

Are soft silicone dressings cost effective?
In a review conducted by Rippon et al of three randomised controlled trials\cite{17}, a soft silicone dressing was compared with other modalities for burns and split-skin grafts and it was found that silicone was cost effective as there was a significant reduction in procedure time and less frequent dressing changes were required. Furthermore, there was a reduction in pain and the wounds healed faster.

How is the soft silicone dressing used? Application
Gloves need to be moistened with a sterile solution before handling a soft silicone dressing to avoid the potential adherence of the silicone to gloves. The wound should be prepared according to local wound management protocols but it is important to ensure that the periwound skin is dry. A dressing should be selected that is larger than the wound and the dressing may be cut to size if needed. This should be done with sterile scissors and it is suggested that one or two of the backing papers are left in place when cutting. One of the backing papers should then be removed and the dressing placed directly over the wound. The second backing paper can be removed with surgical tongs or forceps.

The dressing should surround the wound in a single layer without any folding occurring. If more than one piece of dressing is required, they should overlap to avoid secondary dressing adherence to the wound. Overlap should be minimised, however, to prevent occlusion of the perforations. An appropriate semi-occlusive secondary dressing should be used as a final cover. The choice of secondary dressing should be based on the level of exudate\cite{18,19}.

How often the dressing is changed is dictated by good wound care practice and will depend on the condition of the wound. However, the soft silicone dressing may be left in place for several days, depending on wound condition and exudate level\cite{19}.

Contraindications
Although hypersensitivity to silicone is a contraindication, the substance is chemically inert and reports of adverse reactions are extremely rare. No skin reactions or any signs of toxicity were demonstrated in animal studies using silicone dressings\cite{16a}. Furthermore, soft silicone has been approved by major regulatory bodies worldwide to be used in wound management\cite{16a}.

Adaptec Touch
Adaptec Touch (Acelity) is a non-adherent, flexible, open-mesh primary wound contact layer composed of cellulose acetate coated with a soft tack silicone to assist dressing application\cite{19}. Its main features, apart from non-adherence, include its reduced risk of


Examining the evidence
Stephens et al have provided a series of poster presentations[9,10,21,22] regarding silicone-coated primary wound contact layers. In the first poster[9] the silicone-coated primary wound dressings showed low adherence properties when using a simulated adherence-to-fibrin clot test method. The second poster[10] concluded that in vitro and in vivo evaluations demonstrated the dressing’s ability to allow free passage of fluid to a secondary dressing in a number of simulated models. The third poster[21] suggested that the dressing meets the effective non-adherent wound contact layer criteria which are:

- Low adherence to wound tissue
- Reduced adherence of secondary dressing to the wound
- Low trauma to wound bed on removal
- Visibility of wound beneath the dressing
- Ease of handling.

For example, when applied as a primary contact layer, Adaptic Touch resulted in a reduction in foam adherence of 84% and reduction in alginate dressing adherence of 92%[21] in an in vitro study conducted using a fibrin clot test. In this study the force required to remove the wound contact layer from the clot (prepared by using bovine serum albumin, plasma fibrinogen and thrombin) was measured using an Instron Tensile Tester. Other positive factors related to its use include the fact that the condition of the wound could be seen beneath the dressing and the product was easy to handle[21].

Adaptic Touch was found to have an optimally-designed pore size that provided for less adherence to the secondary dressing. In another poster of this series[21], 13 clinicians were asked for feedback regarding the ease of handling of three different non-adherent dressings. Adaptic Touch consistently received positive feedback and was particularly favoured by clinicians for its ease of cutting. .

The findings of these presentations are echoed in a series of case studies[22] that were conducted at Cardiff University and used 11 patients with leg ulcers with varying aetiologies. Clinical measurements of wound area and depth, pain severity scores, wound exudate and odor were recorded and both clinicians and patients were asked to report upon the ease and removal of dressings. The conclusions of this series generally suggest that Adaptic Touch allowed the passage of exudate, was easy to cut to size before the backing paper was taken off and could be removed without causing trauma to the wound. It was rated satisfactory or highly satisfactory by clinical staff. The case reports also show that the dressing also reduced pain for patients, improved patient quality of life and promoted early discharge.

In a 2011 consensus document resulting from a multidisciplinary focus group discussion on the use of Adaptic Touch[16] for the treatment of minor injuries, digits, with negative pressure wound therapy, as a secondary dressing to hold the primary dressing in place, and on skin tears and paediatric wounds, it was found that the dressing was easily removed, allowed free flow of exudate and was atraumatic. It was also suggested that it could be applied to different types of wounds in different clinical settings. Adaptic Touch was shown to be as good as, or better than, products with similar properties. Its cost-effectiveness compared to other similar products was also highlighted as an important factor. A small study conducted by the University of Cardiff in 2011[20] came to similar conclusions. Ten out of 11 patients found Adaptic Touch comfortable between dressing changes. The study also confirmed that the dressing conformed well to the wound in challenging anatomical locations and remained in place between dressing changes.

Conclusion
Non-adherent soft silicone dressings are easy to use, versatile and have been shown to be cost effective. Furthermore, the dressings have been found to be comfortable for the patient and able to reduce procedural pain. Wound care specialists find these dressings easy to use and published case reports have shown that the use of Adaptic Touch had positive effects on wound management and improved patients’ quality of life.