How to manage a minor burn

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Rationale and key points
This article outlines the technique for dressing a minor burn. The nurse should be aware of national burn care referral guidance, and have the knowledge and skills to establish the severity and extent of a burn. The nurse should also be able to determine whether referral to a regional specialist centre is required.

» The extent and severity of a burn determines its ongoing management.
» The burn wound requires regular evaluation, since its appearance and management needs can change over time.
» Competence in general wound care is essential for nurses undertaking this procedure.

Reflective activity
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» The classification of burn depth and guidelines for specialist referral.
» How you think this article will change your practice.

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Keywords
burns, clinical procedures, clinical skills, minor burn, wound care, wound-dressing technique

Preparation and equipment
» The nurse must be competent in general wound care.
» The nurse should be aware of the National Burn Care Referral Guidance (National Network for Burn Care 2012), and have the knowledge and skills to accurately establish the extent and severity of the burn.
» The nurse should refer to local policy and wound formulary guidance to select an appropriate primary dressing.
» The nurse should ensure that all the necessary equipment is available for wound care, including:
  – Appropriate analgesic, as required.
  – Clean trolley on which to prepare the dressing pack.
  – Sterile dressing pack, including sterile gloves.
  – Sterile scissors and forceps, if necessary, for debridement.
  – Appropriate warmed solution, ideally to body temperature, if necessary, for irrigation. Warmed fluids should be used where possible, but this is not essential.
  – Sterile primary dressing.
  – Secondary dressing, if necessary. This should be sterile if the primary dressing is not occlusive.
  – Tape or a tubular cotton dressing to secure the primary and/or secondary dressings.
» First aid may be beneficial in the three hours following a burn injury. This consists of irrigating the wound with cold, ideally 5-15°C, running water for up to 20 minutes as tolerated (British Burn Association (BBA) 2012).
**Procedure**

1. Explain the procedure to the patient and obtain informed consent before commencing wound management.
2. Ensure privacy: screen the bed or close the door.
3. Position the patient comfortably and ensure adequate pain relief has been given as prescribed, if required.
4. Use the principles of aseptic non-touch technique in accordance with local guidelines, to prepare the sterile dressing pack on the wound trolley, and for use of gloves and wound-dressing technique.
5. Remove the previous dressing, if present, and dispose of it in adherence with local policy and procedure. Care must be taken to avoid causing any trauma to the wound bed. Soaking may be necessary to remove the dressing if it has adhered to the wound.
6. Assess the burn. Calculate the burn size and depth using an appropriate method and establish whether referral to the regional specialist centre is required. There are several methods of calculating burn size depending on the patient and circumstances. Further detail is provided in the evidence base section of this article.
7. Irrigate the wound with an appropriate warmed solution, if necessary, and debride blisters, as indicated.
8. Apply an appropriate sterile primary dressing, according to local guidelines.
9. Apply the secondary dressing, if necessary, and secure it carefully, for example with tape or a tubular cotton dressing. Ensure there is sufficient outer padding to absorb any exudate.
10. Dispose of waste appropriately and in accordance with local policy.
11. Ensure the patient is comfortable and document the assessment and procedure in the patient’s notes, along with the planned reassessment date.

**Evidence base**

Approximately 250,000 people experience a burn injury in the UK each year, and of these injuries 80% can be classified as minor burns (BBA 2012). Minor burns can be successfully managed in the community setting without specialist input (Rowley-Conwy 2012). The extent and severity of a burn depends on various factors, including the size and depth of the burn, which require careful initial assessment (Butcher and Swales 2012). The extent and severity of a burn determines its ongoing management. A large burn that is superficial in depth may be considered as a minor burn, while a deep partial or full-thickness burn over a small total body surface area (TBSA) may require referral to a regional specialist centre (Rowley-Conwy 2012). Recommendations for referral to a specialist burns centre are given in Box 1.

The wound requires regular re-evaluation, since its appearance and management needs can change over time (Williams 2009). Burns that appear superficial in depth on initial assessment can deepen during the 48 hours following injury if circulatory impairment occurs in the surrounding tissues; therefore, it is prudent to re-evaluate the wound. To avoid the trauma of regular dressing changes, the wound should be reassessed at 48 hours, not throughout this time (Papini 2004, Williams 2009).

The size of a burn may be estimated as the percentage of TBSA affected using the Rule of Nines (Figure 1) (Wallace 1951) or the palmar surface measurement (Kirby 2004).

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**BOX 1. Burn care referral guidance**

Criteria for referral to a specialist burns centre:
- Burns over 2% of total body surface area (TBSA) in children or over 3% of TBSA in adults.
- Any full-thickness burns.
- Circumferential burns.
- Burns that remain unhealed after two weeks.
- Burns where there is suspicion of non-accidental injury.

Criteria for discussion with a specialist burns centre:
- Burns of the hands, feet, face, perineum or genitalia.
- Chemical, electrical and friction burns.
- Cold injuries.
- An unwell or febrile child with a burn.
- Burns in the presence of comorbidities that may affect wound healing.
- Burns that change in appearance, show signs of infection or where there are concerns about healing.

(Adapted from the British Burn Association 2012)
and Blackburn 1981). The depth of a burn is classified according to its characteristics as superficial, deep partial or full thickness (Table 1) (Williams 2009, Rowley-Conwy 2012). More accurate TBSA calculation tools such as the Lund and Browder (1944) chart are used in specialist areas, but should not be necessary for a minor burn. Erythema of unbroken skin is not included in the TBSA calculation (Hettiaratchy and Papini 2004). Burns may have areas of differing depths in the same wound and treatment should be based on the requirements of the deepest area (Rowley-Conwy 2012).

If the burn has recently occurred, first aid should be commenced; cooling the burn with running water at around 15°C for 20 minutes will be beneficial if the injury has happened within the last 3 hours. Ice or very cold water is not recommended because of the risk of vasoconstriction, which may reduce perfusion and deepen the burn (BBA 2012).

Wound cleansing may not be necessary in many cases (Myers 2011). However, burns are often contaminated with loose skin, soot and debris, which can harbour bacteria and increase the risk of infection. Irrigation of the wound bed aids removal of these materials (Alsbjörn et al 2007). Some authors advocate scrubbing the wound bed to encourage debridement (Krishnamoorthy et al 2012, Hollywood and O’Neill 2014). However, this may cause trauma to the wound bed and the swab or material used can shed fibres into the wound (Rowley-Conwy 2012, Lloyd-Jones 2013).

A Cochrane review (Fernandez and Griffiths 2012) compared different wound cleansing agents with water, including tap water, and found no significant difference in healing and infection rates for acute wounds in adults. Sodium chloride 0.9% is readily available in most clinical areas, but, where appropriate, the wound may be irrigated with running tap water without concern (Cutting 2010). Ideally, fluid warmed to body temperature should be used, since cooling the wound bed can delay wound healing (Lloyd-Jones 2013).

There is no consensus regarding blister management and discussion is ongoing (Murphy and Amblum 2014). Research in this area is limited (Alsbjörn et al 2007). Several authors advocate leaving blisters intact to protect the wound bed from microbial colonisation and to avoid painful debridement (Flanagan and Graham 2001, Shaw and Dibble 2006). However, Gallagher et al (2012) suggested that the wound bed beneath a blister is not sterile, as previously thought, and that the blister may instead protect microbes from the patient’s pre-existing skin flora. These microbes may then colonise the wound bed (Rowley-Conwy 2010).

Intact blisters also prevent assessment of the wound bed, which may result in incorrect classification of the depth of the burn (Rowley-Conwy 2012). Guidance generally favours debriding blisters larger than the size of the patient’s little fingernail, while leaving smaller blisters intact (Murphy and Amblum 2014).

Figure 1. The Rule of Nines: each area comprises a multiple of 9% of the total body surface area

There is considerable variation in dressing choices available. However, the main features of an ideal burn dressing are as follows (Alsbjörn et al 2007, Selig et al 2012):
In practice, a range of dressings fulfil these criteria. Selection of an appropriate dressing depends on the anatomical area of the body, the amount of exudate, the condition of the periwound area and the local wound formulary guidance (Hollywood and O’Neill 2014). Traditional wound dressings such as paraffin gauze should not be used as a primary dressing because they are hydrophobic and dry the wound bed (Alsbjörn et al 2007).

### TABLE 1. Criteria for assessing the depth of a burn

<table>
<thead>
<tr>
<th>Burn depth</th>
<th>Features</th>
<th>Photograph of example</th>
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| Erythema, involving the epidermis only. | » Reddened appearance.  
» Skin unbroken.  
» Painful.  
» Brisk capillary refill.  
» Heals in 3-5 days. | ![Erythema](image1) |
| Superficial partial-thickness burn, involving the epidermis and part of the dermis. | » Red or pink wound bed.  
» Skin broken, wet surface.  
» Blisters usually present.  
» Extremely painful.  
» Brisk capillary refill, blanches easily.  
» Heals in 7-14 days. | ![Superficial](image2) |
| Deep partial-thickness burn, involving the epidermis and most of the dermis. | » Mottled white or deep red wound bed.  
» Waxy dry surface.  
» Diminished sensation.  
» Slow capillary refill.  
» Heals in 14-21 days, may require a skin graft. | ![Deep](image3) |
| Full-thickness burn, involving all structures of the skin. | » Black, brown or white wound bed.  
» Dry leathery surface.  
» Often no sensation.  
» Non-blanching, absent capillary refill.  
» Requires a skin graft in most cases. | ![Full](image4) |

(Adapted from Williams 2009, Rowley-Conwy 2012)
adhere to the wound bed and cause trauma (Butcher and Swales 2012), and fail to adequately manage exudate (Rowley-Conwy 2012).

Dressing changes and follow-up care vary according to the dressing chosen. However, allowance should be made for the high levels of exudate from burns; timely follow-up care prevents saturation of the dressing and patient discomfort. Erythema and newly healed skin does not require a dressing; however, a non-perfumed moisturising cream applied several times per day using a massaging motion will soothe the skin and prevent dryness (Papini 2004). Partial-thickness wounds should be managed with a hydrocolloid dressing; alternatively a hydrofibre or calcium alginate dressing may be suitable for wounds with larger volumes of exudate (Rowley-Conwy 2012).

References


