ClinicalEvidence

Burns: dressings

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ABSTRACT

INTRODUCTION: Burns are classified according to depth. This overview concerns the treatments for partial-thickness burns, which can be expected or have the potential to heal spontaneously (superficial partial-thickness and mid-dermal partial-thickness burns). Injuries that involve the deeper part of the dermis and require surgical treatments to achieve healing are not the focus of this overview. METHODS AND OUTCOMES: We conducted a systematic overview and aimed to answer the following clinical question: What are the effects of treatments for partial-thickness burns? We searched: Medline, Embase, The Cochrane Library, and other important databases up to January 2014 (BMJ Clinical Evidence overviews are updated periodically; please check our website for the most up-to-date version of this review). RESULTS: At this update, searching of electronic databases retrieved 322 studies. After deduplication and removal of conference abstracts, 193 records were screened for inclusion in the overview. Appraisal of titles and abstracts led to the exclusion of 160 studies and the further review of 33 full publications. Of the 33 full articles evaluated, two systematic reviews and two RCTs were added at this update. We performed a GRADE evaluation for 30 PICO combinations. CONCLUSIONS: In this systematic overview, we categorised the efficacy for 10 interventions, based on information relating to the effectiveness and safety of alginate dressing, biosynthetic dressing, chlorhexidine-impregnated paraffin gauze dressing, hydrocolloid dressing, hydrogel dressing, paraffin gauze dressing, polyurethane film, silicone-coated nylon dressing, silver-impregnated dressing, and silver sulfadiazine cream.

QUESTIONS

INTERVENTIONS

Key points

- Superficial partial-thickness and mid-dermal partial-thickness burns can be expected, or have the potential, to heal spontaneously. Injuries which involve the deeper part of the dermis (deep partial-thickness and full-thickness burns) generally require surgical treatments to achieve healing and are not the focus of this overview.

  Most minor burns occur in the home.

  Cooling the burn for 20 minutes with cold tap water within 3 hours of the injury reduces pain and wound oedema, but prolonged cooling or use of iced water may worsen tissue damage or cause hypothermia.

- This overview focuses on the effect of selected commonly used and some more recently developed types of dressings for partial-thickness burns. Although we have searched for trials comparing the individual interventions with placebo or no treatment, there is a lack of evidence for these comparisons. The basic principles of burn wound management preclude the option of no dressing treatment for all but the most minor of burns.

  We excluded sunburn, residual wounds post injury, large surface area burns, and burns to sensitive areas (i.e., specific areas that are likely to result in either functional or cosmetic impairment; e.g., face, hands, perineum).

- We found insufficient evidence to draw any conclusions on the efficacy of alginate dressing, biosynthetic dressing, chlorhexidine-impregnated paraffin gauze dressing, hydrocolloid dressing, hydrogel dressing, paraffin gauze dressing, polyurethane film, silver-impregnated dressing, or silicone-coated nylon dressing in treating partial-thickness burns.

  Topical antibacterial substances, such as chlorhexidine, may be toxic to regenerating epithelial cells, and their use may delay healing in wounds that are not infected.

- Silver sulfadiazine cream may prolong healing times and increase pain compared with other treatments, although the evidence is limited by small sample sizes and the heterogeneity of the patient population.

- Because there is a lack of evidence to inform treatment choices, decisions on appropriate treatment in clinical practice are determined by logistical, as well as clinical, considerations. In the majority of these injuries, healing will occur in a timely fashion if infection is prevented.

Clinical context

GENERAL BACKGROUND

Burns are classified according to depth. The most minor burns are superficial burns (previously termed first-degree burns), such as sunburn. They involve the epidermis only and cause erythema. Generally, superficial burns do not require dressings but moisturiser only. Partial-thickness burns (previously termed second-degree burns) are divided into superficial partial-thickness and mid and deep partial-thickness dermal burns. Full-thickness burns (previously termed third-degree burns) result in destruction of the full thickness of dermis and may extend to involve injuries to subcutaneous tissue, muscular, neurovascular, or skeletal structures. Full-thickness burns require surgical treatments to achieve healing and are not the focus of this overview.

FOCUS OF THE REVIEW

This overview concerns the treatments for partial-thickness burns which can be expected, or have the potential, to heal spontaneously (superficial partial-thickness and mid-dermal partial-thickness burns). Small partial-thickness burns are common and mostly occur in the home. At present, there is a wide range of dressing for treatment options. Treatment choices have the potential to impact significantly on healing outcomes. This overview focuses on the effect of selected commonly used and some more recently developed types of dressings for partial-thickness burns.

COMMENTS ON EVIDENCE

There is a lack of evidence regarding best dressings as treatments for partial-thickness burn injuries. In part, this is due to the difficulty of objectively assessing wound depth at the time of injury and also to the logistics of determining wound healing times. Adverse events are relatively rare, which means that trials require large numbers of recruits. Reviewing the current evidence systematically can be challenging in this area due to a lack of clarity and consistency in the terminology used in studies concerning type of burn and difficulty in consistent classification of the various individual dressings. There is a lack of evidence for the comparison of individual dressing options with placebo or no treatment because the basic principles of burn wound management preclude the option of no dressing treatment for all but the most minor of burns. Also, there are few wound dressing products that differ from each other in only one feature (e.g., presence or absence of chlorhexidine) and few studies that were designed to assess the efficacy of one single characteristic of a wound dressing.

SEARCH AND APPRAISAL SUMMARY

At this update, searching of electronic databases was performed. After deduplication and removal of conference abstracts, 193 records were screened for inclusion in the overview. Appraisal of titles and abstracts led to the exclusion of 160 studies and the further review of 33 full publications. Of the 33 full articles evaluated, two systematic reviews and two RCTs were added at this update.

ADDITIONAL INFORMATION

The choice of wound dressings for partial-thickness burns is rightly determined by logistical, as well as clinical, considerations. In the majority of these injuries, healing will occur in a timely fashion if infection is prevented.

DEFINITION

Burns are classified by depth into superficial (involving epidermis only); partial-thickness (superficial, mid and deep partial-thickness), involving part of the dermis; and full-thickness burns, in which all of the dermis is destroyed, and which may extend to involve subcutaneous tissue, muscular, neurovascular, or skeletal structures. [1] However, the depth of burn is not always static because of the various factors (e.g., inadequate tissue perfusion resulting from the injury), which may release a cascade of vaso-active and inflammatory mediators and, in turn, deepen the burn wound. [2] Superficial partial-thickness burns are caused by exposure to heat sufficient to cause damage to the epidermis and papillary dermis of the skin. Due to the exposure of sensory nerve endings in the superficial dermis, these wounds are often painful and tender. The skin is moist, pink or red, and is perfused, as demonstrated by blanching on pressure. This type of injury can result in an immediate blister response and heal within 3 weeks with minimal scarring if no infection is present. [1] Burn depth is an assessment tool undertaken by burns experts using clinical judgement; however, measuring blood flow, or its disruption, using laser Doppler imaging can also achieve the same task. [3] The severity of a superficial partial-thickness burn is usually judged by the percentage of total body surface area (%TBSA) involved, with the vast majority involving less than 10% TBSA. The population studied for this overview includes adults and children with partial-thickness burns. Our search of the literature was for adults and children with minor thermal burns, including superficial and partial-thickness burns. We found that sometimes the term 'superficial' appeared to be used to describe what we suspected to be 'superficial partial-thickness'. We excluded sunburn, residual wounds post injury, large surface area burns, and burns to sensitive areas (i.e., specific areas that are likely to result in either functional or cosmetic impairment; e.g., face, hands, perineum).

INCIDENCE/ PREVALENCE

The incidence of superficial and partial-thickness burns is difficult to estimate. Generally, less than 5% of all burn injuries requiring treatment will necessitate admission to hospital. [4] [5] [6] Worldwide estimates surrounding all thermal burn injuries suggest that about 2 million people are burned, up to 80,000 are hospitalised, and 6500 die of burn wounds every year.

AETIOLOGY/ RISK FACTORS

The pattern of injury varies among different age groups. Men aged 18 to 25 years seem more susceptible to injury owing to a variety of causes — mainly flame, electrical, and, to a lesser extent, chemicals. [5] [6] [7] Many burn injuries in this age group are due to the inappropriate use of flammable agents, such as petrol. However, most burns occur in the home. Thermal burns, in particular scalds, are common among children as well as older adults. The kitchen is reported to be the most common place of injury for children, as is the bathroom for older people. Those with concomitant conditions or complicating factors such as motor or neurological impairment are at greater risk.

PROGNOSIS

Superficial partial-thickness burns will heal spontaneously, with minimal hypertrophic scarring, within 2 to 3 weeks if the wound remains free of infection. [8] The capacity to heal is also dependent on the health and age of the individual, with older people and those with concomitant medical conditions prone to delayed healing. Cooling the burn, as part of the initial emergency treatment, significantly reduces pain and wound oedema if started within 3 hours of injury. [7] The optimal time to cool a wound may vary from 20 to 30 minutes, using tap water (at a temperature of 5–25°C). [9] Use of iced water or prolonged periods of cooling can deepen tissue injury and induce hypothermia, and are best avoided. [8] Cleaning solutions and dressings aim to prevent wound infection. The ideal dressing will establish an optimum micro-environment for wound healing. It will maintain the wound temperature and moisture level, permit respiration, allow epithelial migration, [10] and exclude environmental bacteria.

AIMS OF INTERVENTION

To promote wound healing; to prevent infection, with minimal adverse effects and discomfort.

OUTCOMES

Healing time to healing; quality of healing with regard to scarring, re-epithelialisation, re-pigmentation, and cosmetic results; prevention of wound infection; requirement for antibiotic treatment; requirement for surgery; number and frequency of dressing changes; quality of life during treatment regimen. **Symptom severity** pain; ease of dressing application and removal. **Investigator/participant preference and satisfaction**. **Adverse effects**.

METHODS

Search strategy *BMJ Clinical Evidence* search and appraisal January 2014. Databases used to identify studies for this systematic overview include: Medline 1966 to January 2014, Embase 1980 to January 2014, The Cochrane Database of Systematic Reviews 2014, issue 1 (1966 to date of issue), the Database of Abstracts of Reviews of Effects (DARE), and the Health Technology Assessment (HTA) database. **Inclusion criteria** Study design criteria for inclusion in this systematic overview were systematic reviews and RCTs published in English, at least single-blinded, and containing 20 or more individuals (at least 10 in each arm), of whom more than 80% were followed up. There was no minimum length of follow-up. We excluded all studies described as 'open', 'open label', or not blinded, unless blinding was impossible. *BMJ Clinical Evidence* does not necessarily report every study found (e.g., every systematic review). Rather, we report the most recent, relevant and comprehensive studies identified through an agreed process involving our evidence team, editorial team, and expert contributors. The population studied for this review included adults and children with partial-thickness burns. Our search of the literature was for adults and children with minor thermal burns, including superficial and partial-thickness burns. We found that sometimes the term 'superficial' appeared to be used to describe what we suspected to be 'superficial partial-thickness'. We have used the terms as reported in the individual trials in our data tables. The interventions are types of dressing. Superficial burns do not usually require dressings other than moisturiser. We excluded sunburn, residual wounds post injury, large surface area burns, and burns to sensitive areas (i.e., specific areas that are likely to result in either functional or cosmetic impairment; e.g., face, hands, perineum). **Evidence evaluation** A systematic literature search was conducted by our evidence team, who then assessed titles and abstracts, and finally selected articles for full text appraisal against inclusion and exclusion criteria agreed a priori with our expert contributors. In consultation with the expert contributors, studies were selected for inclusion and all data relevant to this overview extracted into the benefits and harms section of the review. In addition, information that did not meet our predefined criteria for inclusion in the benefits and harms section, may have been reported in the 'Further information on studies' or 'Comment' section. **Adverse effects** All serious adverse effects, or those adverse effects reported as statistically significant, were included in the harms section of the overview. Pre-specified adverse effects identified as being clinically important were also reported, even if the results were not statistically significant. Although *BMJ Clinical Evidence* presents data on selected adverse effects reported in included studies, it is not meant to be, and cannot be, a comprehensive list of all adverse effects, contraindications,

or interactions of included drugs or interventions. A reliable national or local drug database must be consulted for this information. **Comment and Clinical guide sections** In the Comment section of each intervention, our expert contributors may have provided additional comment and analysis of the evidence, which may include additional studies (over and above those identified via our systematic search) by way of background data or supporting information. As *BMJ Clinical Evidence* does not systematically search for studies reported in the Comment section, we cannot guarantee the completeness of the studies listed there or the robustness of methods. Our expert contributors add clinical context and interpretation to the Clinical guide sections where appropriate. **Data and quality** To aid readability of the numerical data in our reviews, we round many percentages to the nearest whole number. Readers should be aware of this when relating percentages to summary statistics such as relative risks (RRs) and odds ratios (ORs). We have performed a GRADE evaluation of the quality of evidence for interventions included in this review (see table, p 42). The categorisation of the quality of the evidence (high, moderate, low, or very low) reflects the quality of evidence available for our chosen outcomes in our defined populations of interest. These categorisations are not necessarily a reflection of the overall methodological quality of any individual study, because the Clinical Evidence population and outcome of choice may represent only a small subset of the total outcomes reported, and population included, in any individual trial. For further details of how we perform the GRADE evaluation and the scoring system we use, please see our website (www.clinicalevidence.com).

QUESTION What are the effects of treatments for partial-thickness burns?

OPTION ALGINATE DRESSING

- For GRADE evaluation of interventions for Burns: dressings, see table, p 42 .
- We don't know whether alginate dressings are effective in treating partial-thickness burns, as we only found one small RCT comparing calcium alginate dressing with silver sulfadiazine cream.

Benefits and harms

Alginate dressings versus placebo/no treatment:

We found one systematic review (search date 2012), [11] which identified no RCTs that met *BMJ Clinical Evidence* inclusion criteria. We found no subsequent RCTs.

Alginate dressings versus silver sulfadiazine cream:

We found one systematic review (search date 2012), [11] which identified one RCT [12] (59 people) comparing calcium alginate dressings with silver sulfadiazine cream in people with partial-thickness burns. The review categorised the calcium alginate dressing intervention as a fibre dressing.

Healing

Alginate dressing compared with silver sulfadiazine cream We don't know whether calcium alginate dressings are more effective than silver sulfadiazine cream at reducing the time to complete healing of partial-thickness burns. We only found one small RCT, which did not report any statistical analysis (very low-quality evidence)

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Time to healing					
[11] Systematic review	59 people (73 wounds) with partial-thickness burns of 50–200 cm Data from 1 RCT	**Mean time to complete wound healing** 12.1 days with calcium alginate dressing 11.7 days with silver sulfadiazine cream	P value not reported		

Symptom severity

No data from the following reference on this outcome. [11]

Investigator/participant preference and satisfaction

No data from the following reference on this outcome. [11]

Adverse effects

No data from the following reference on this outcome. [11]

Comment: **Clinical guide**
Alginate dressings are absorbent and may be used with some effect in the early phases after burn injury when the wound is highly exudative. The amount of time that an alginate dressing can remain in situ needs to be weighed up using sound clinical judgement, which takes into account burn size and depth, overall treatment aims set out by the burns team, along with manufacturer product recommendations. However, their tendency to dry and adhere to wounds in the later stages of healing may make them unsuitable during this phase. [13]

OPTION BIOSYNTHETIC DRESSING New

- For GRADE evaluation of interventions for Burns: dressings, see table, p 42 .
- Biosynthetic dressings are described in the Cochrane systematic review included in this section as "a family of materials that have been developed to mimic a function of skin by replacing the epidermis or dermis, or both". They may differ in terms of the actual materials they are manufactured from.
- We found no direct information from RCTs about biosynthetic dressings compared with placebo/no treatment for partial-thickness burns. The basic principles of burn wound management preclude the option of no dressing treatment for all but the most minor of burns.
- Biosynthetic dressings may be more effective than silver sulfadiazine cream at healing and improving pain associated with partial-thickness burns, although the evidence is weak and from small trials only.
- We don't know whether biosynthetic dressings are more effective than hydrocolloid dressings at healing superficial or mid-dermal partial-thickness burns, or at improving pain scores.
- We don't know whether antimicrobial-releasing biosynthetic dressings are more effective than silver sulfadiazine cream at healing or improving investigator/participant satisfaction when treating superficial and partial-thickness burns.

Benefits and harms

Biosynthetic dressing versus placebo or no treatment:

We found no systematic review or RCTs comparing biosynthetic dressing with placebo or no treatment for partial-thickness burns.

Biosynthetic dressing versus hydrocolloid dressing:

We found one systematic review (search date 2012), [11] which identified one RCT [14] meeting *BMJ Clinical Evidence* inclusion criteria.

Healing

Biosynthetic dressing compared with hydrocolloid dressing We don't know whether biosynthetic dressings are more effective than hydrocolloid dressings at reducing mean times to complete healing of superficial or mid-dermal partial-thickness burns (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Time to healing					
[11] Systematic review	72 people with superficial or mid-dermal partial-thickness burns Data from 1 RCT	**Mean time (days) to complete wound healing** 12.24 with biosynthetic dressing (Biobrane™) 11.21 with hydrocolloid dressing	MD +1.03 95% CI –1.66 to +3.72 P = 0.45 This study had unclear blinding	⟷	Not significant

Symptom severity

Biosynthetic dressing compared with hydrocolloid dressing We don't know whether biosynthetic dressings are more effective than hydrocolloid dressings at reducing severity of symptoms in people with superficial or mid-dermal partial-thickness burns (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Pain					
[11] Systematic review	72 people with superficial or mid-dermal partial-thickness burns Data from 1 RCT	**Mean aggregate pain score (measured using a visual analogue scale for 37 patients and Oucher Scale for 34 patients)** 2.36 with biosynthetic dressing (Biobrane™) 2.37 with hydrocolloid dressing Study authors did not make it clear if the use of these 2 scales was balanced across both groups	P = 0.99 This study had unclear blinding	⟷	Not significant

Investigator/participant preference and satisfaction

No data from the following reference on this outcome. [11]

Adverse effects

No data from the following reference on this outcome. [11]

Biosynthetic dressing versus silver sulfadiazine cream:

We found one systematic review (search date 2012), [11] which identified four RCTs [15] [16] [17] [18] meeting *BMJ Clinical Evidence* inclusion criteria. The systematic review did not pool data from these RCTs due to heterogeneity, missing variance data, and the different types of burns and unit of analysis errors.

Healing

Biosynthetic dressing compared with silver sulfadiazine cream Biosynthetic dressings may be more effective than silver sulfadiazine cream at improving healing times for partial-thickness burns, although the evidence is weak and from small trials only (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Time to healing					
[11] Systematic review	20 children (aged 17 years or younger) with partial-thickness burns Data from 1 RCT	**Mean time to heal (days)** 9.7 with biosynthetic dressing (Biobrane™) 16.1 with silver sulfadiazine cream	P <0.001 Blinding in the study [15] was not clearly reported	○○○	biosynthetic dressing
[11] Systematic review	47 people (50 wounds) with partial-thickness burns Data from 1 RCT	**Mean time to heal (days)** 13.7 with biosynthetic dressing (Biobrane™) 21.3 with silver sulfadiazine cream	P <0.01 This study [16] was not blinded; randomisation was by wound rather than by patient	○○○	biosynthetic dressing
Time to re-epithelialisation					
[11] Systematic review	33 people (58 wounds) with partial-thickness burns Data from 1 RCT 3-armed trial	**Mean time to re-epithelialisation (days)** 9.5 with Biobrane™ biosynthetic dressing 7.5 with TransCyte™ biosynthetic dressing 11.2 with silver sulfadiazine cream Although patients were randomised, the measurement of outcome was according to burn wound (n = 58); not clear how wounds were distributed in the randomised patients	P <0.001 (among groups) This study was not blinded [18]		
Dressing changes					
[11] Systematic review	33 people (58 wounds) with partial-thickness burns Data from 1 RCT 3-armed trial	**Number of dressing changes** 2.4 with Biobrane™ biosynthetic dressing 1.5 with TransCyte™ biosynthetic dressing 9.2 with silver sulfadiazine cream	P <0.0001 (among groups) This study was not blinded [18]		
Need for surgery					
[11] Systematic review	47 people (50 wounds) with partial-thickness burns Data from 1 RCT	**Number of people needing split-thickness skin graft** 4/27 (15%) with biosynthetic dressing (Biobrane™) 5/23 (22%) with silver sulfadiazine cream	RR 0.68 95%CI 0.21 to 2.24 P = 0.53 This study [16] had unclear blinding	⟷	Not significant
[11] Systematic review	33 people (58 wounds) with partial-thickness burns Data from 1 RCT 3-armed trial	**Number of wounds needing autografting** 3 with Biobrane™ biosynthetic dressing 1 with TransCyte™ biosynthetic dressing 5 with silver sulfadiazine cream	Significance not reported Denominator values not provided in the systematic review, so it is not possible to determine the relative risk This study [18] was unblinded		

Symptom severity

Biosynthetic dressing compared with silver sulfadiazine cream Biosynthetic dressings may be more effective at relieving pain in people with partial-thickness burns compared with silver sulfadiazine; however, the evidence is weak (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Pain					
[11] Systematic review	20 children (aged 17 years or younger) with partial-thickness burns Data from 1 RCT	**Pain (measured as difference in pretreatment pain baseline scores using a visual analogue scale plus face scale; lower values equal less pain)** 3.3 with biosynthetic dressing (Biobrane™) 3.8 with silver sulfadiazine cream	P value not significant This study had unclear blinding [15]	⟷	Not significant
[11] Systematic review	People with partial-thickness burns 2 RCTs in this analysis	**Pain (mean score, measured on a 5-point visual analogue scale with 1 = no pain and 5 = severe pain)** with biosynthetic dressing (Biobrane™) with silver sulfadiazine cream 106 people in this analysis	MD –1.63 95%CI –2.20 to –1.06 P <0.00001 One of the studies randomised by wound rather than by patient One RCT performed an intra-individual comparison where 2 burn sites were randomised to either the intervention or the control One RCT was not blinded and the other had unclear blinding	◌◌◌	biosynthetic dressing
Relief following dressing application					
[11] Systematic review	20 children (aged 17 years or younger) with partial-thickness burns Data from 1 RCT	**Relief following dressing application (measured using a visual analogue scale plus face scale; lower values equal less pain) , day 1** 2.4 with biosynthetic dressing (Biobrane™) 3.7 with silver sulfadiazine cream	P <0.001 This study had unclear blinding [15]	◌◌◌	biosynthetic dressing
[11] Systematic review	20 children (aged 17 years or younger) with partial-thickness burns Data from 1 RCT	**Relief following dressing application (measured using a visual analogue scale plus face scale; lower values equal less pain) , day 2** 2.6 with biosynthetic dressing (Biobrane™) 3.8 with silver sulfadiazine cream	P <0.001 This study had unclear blinding [15]	◌◌◌	biosynthetic dressing

Investigator/participant preference and satisfaction

No data from the following reference on this outcome. [11]

Adverse effects

No data from the following reference on this outcome. [11]

Antimicrobial-releasing biosynthetic dressing versus silver sulfadiazine cream:

We found one systematic review (search date 2012), [11] which identified two RCTs [19] [20] meeting *BMJ Clinical Evidence* inclusion criteria.

Healing

Antimicrobial-releasing biosynthetic dressing compared with silver sulfadiazine cream We don't know whether antimicrobial-releasing biosynthetic dressings are more effective than silver sulfadiazine cream at healing superficial and partial-thickness burns (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Time to healing					
[11] Systematic review	50 patients with a mean burn % of total body surface area (TBSA) of 15% Data from 1 RCT	**Mean time to complete wound healing** 6.8 days with antimicrobial-releasing biosynthetic dressing 11.7 days with silver sulfadiazine cream	P value and variance not reported Unclear blinding within study [19] The RCT performed an intra-individual comparison, and the participant's 2 burn sites were randomised to either the antimicrobial dressing or silver sulfadiazine cream		
Wound infections					
[11] Systematic review	50 patients with a mean burn % TBSA of 15% Data from 1 RCT	**Number of wound infections** 15/50 (30%) with antimicrobial-releasing biosynthetic dressing 8/50 (16%) with silver sulfadiazine cream	RR 1.88 95% CI 0.87 to 4.02 P = 0.11 The RCT [19] performed an intra-individual comparison, and the participant's 2 burn sites were randomised to either the antimicrobial dressing or silver sulfadiazine cream	⟷	Not significant
Need for surgery					
[11] Systematic review	27 patients with second-degree burns Data from 1 RCT	**Number of patients needing grafting surgery** 8/27 (30%) with antimicrobial-releasing biosynthetic dressing 7/27 (26%) with silver sulfadiazine cream	Significance not reported The RCT [20] performed an intra-individual comparison, and the participant's 2 burn sites were randomised to either the antimicrobial dressing or silver sulfadiazine cream		

Symptom severity

No data from the following reference on this outcome. [11]

Investigator/participant preference and satisfaction

Antimicrobial-releasing biosynthetic dressings compared with silver sulfadiazine cream We don't know whether antimicrobial-releasing biosynthetic dressings are more effective than silver sulfadiazine cream at improving investigator/participant satisfaction during the treatment of superficial and partial-thickness burns (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Participant satisfaction					
[11] Systematic review	50 patients with a mean burn % TBSA of 15% Data from 1 RCT	**Patient classification of biosynthetic dressing** 34/50 (68%) with favourable 11/50 (22%) with unfavourable 5/50 (10%) with no difference	Significance not reported The RCT [19] performed an intra-individual comparison, and the participant's 2 burn sites were randomised to either the antimicrobial dressing or silver sulfadiazine cream The study had unclear blinding		

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Nurse satisfaction					
[11] Systematic review	50 patients with a mean burn % TBSA of 15% Data from 1 RCT	**Nurse classification of biosynthetic dressing** 41/50 (82%) with favourable 9/50 (18%) with unfavourable	Significance not reported The RCT [19] performed an intra-individual comparison, and the participant's 2 burn sites were randomised to either the anti-microbial dressing or silver sulfadiazine cream The study had unclear blinding		

Adverse effects

No data from the following reference on this outcome. [11]

Further information on studies

[11] Biosynthetic dressing compared with silver sulfadiazine cream: incidence of infection was reported in the narrative of this systematic review from two RCTs that met *BMJ Clinical Evidence* inclusion criteria. One RCT reported the presence of growth of bacteria in four wounds with biosynthetic dressings and four wounds with silver sulfadiazine cream. Two of the wounds in each treatment group required surgical intervention. The second RCT included in the review reported three infections with biosynthetic dressings and two infections with silver sulfadiazine cream. Of these, one patient in each treatment group required skin grafting.

Comment: **Clinical guide**
Biobrane™ is designed to adhere to the burn wound and produce physiological wound closure until healing occurs. It excludes bacteria from the wound and does not need to be changed until removed when the wound has healed. It requires meticulous wound bed preparation in order to function effectively and, therefore, its use is generally confined to specialist settings. Although no longer available, advanced treatment dressings like TransCyte™ used bilaminar constructs with a synthetic epidermal replacement layer and a dermal replacement layer, which was comprised of nylon mesh impregnated with human fibroblast-derived proteins and growth factors.

OPTION CHLORHEXIDINE-IMPREGNATED PARAFFIN GAUZE DRESSING

- For GRADE evaluation of interventions for Burns: dressings, see table, p 42 .
- We found no direct information from RCTs about whether chlorhexidine-impregnated paraffin gauze dressing is more effective than no active treatment for partial-thickness burns. The basic principles of burn wound management preclude the option of no-dressing treatment for all but the most minor of burns.
- There are few wound dressing products that differ from each other in only one feature (e.g., presence or absence of chlorhexidine), and we found no studies that were designed to assess the efficacy of one single characteristic of a wound dressing.
- Topical antibacterial substances, such as chlorhexidine, may be toxic to regenerating epithelial cells, and their use may delay healing in wounds that are not infected.

Benefits and harms

Chlorhexidine-impregnated paraffin gauze dressing versus placebo or no treatment:

We found no systematic review or RCTs comparing chlorhexidine-impregnated paraffin gauze dressing with placebo or no treatment for partial-thickness burns.

Chlorhexidine-impregnated paraffin gauze dressing versus hydrocolloid dressing:

See option on Hydrocolloid dressing, p 12 .

Chlorhexidine-impregnated paraffin gauze dressing plus silver sulfadiazine cream versus hydrocolloid dressing:

See option on Hydrocolloid dressing, p 12 .

Chlorhexidine-impregnated paraffin gauze dressing versus hydrocolloid dressing plus silver sulfadiazine cream:

We found one systematic review (search date 2012), [11] which identified one three-armed RCT. [21] The review only reported on the comparison chlorhexidine-impregnated paraffin gauze dressing with hydrocolloid dressing from this three-armed RCT. We have included this in the intervention section on hydrocolloid dressing (see option on Hydrocolloid dressing, p 12). However, the review did not report on the comparison of chlorhexidine-impregnated paraffin gauze dressing with hydrocolloid dressing plus sulfadiazine cream. Therefore, we have reported on this comparison here directly from the RCT.

Healing

Chlorhexidine-impregnated paraffin gauze dressing compared with hydrocolloid dressing plus silver sulfadiazine cream We don't know whether chlorhexidine-impregnated paraffin gauze dressing is more effective than hydrocolloid dressing plus silver sulfadiazine at reducing wound healing time and the number of dressing changes in people with minor burns (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Time to healing					
[21] RCT **3-armed trial**	50 people (54 burn sites) presenting within 24 hours of injury; injury affecting <5% of total body surface area (TBSA) In review [11] The remaining arm evaluated hydrocolloid dressing alone	**Mean healing time** 11.1 days with chlorhexidine-impregnated paraffin gauze dressing 14.2 days with hydrocolloid dressing plus silver sulfadiazine cream There were 18 people in the chlorhexidine-impregnated paraffin gauze dressing group and 16 people in the hydrocolloid dressing plus silver sulfadiazine cream group	Significance not assessed The RCT did not report the methods used for randomisation or allocation concealment Patients and investigators were not blinded		
Number of dressing changes					
[21] RCT **3-armed trial**	50 people (54 burn sites) presenting within 24 hours of injury; injury affecting <5% of TBSA In review [11] The remaining arm evaluated hydrocolloid dressing alone	**Mean number of dressing changes** 4.1 with chlorhexidine-impregnated paraffin gauze dressing 3.9 with hydrocolloid dressing plus silver sulfadiazine cream There were 18 people in the chlorhexidine-impregnated paraffin gauze dressing group and 16 people in the hydrocolloid dressing plus silver sulfadiazine cream group	Significance not assessed The RCT did not report the methods used for randomisation or allocation concealment Patients and investigators were not blinded		

Symptom severity

No data from the following reference on this outcome. [21]

Investigator/participant preference and satisfaction

No data from the following reference on this outcome. [21]

Adverse effects

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Adverse effects					
[21] RCT **3-armed trial**	50 people (54 burn sites) presenting within 24 hours of injury; injury affecting <5% of TBSA In review [11]	**Adverse effects** with chlorhexidine-impregnated paraffin gauze dressing with hydrocolloid dressing plus silver sulfadiazine cream Absolute results not reported The RCT reported that the chlorhexidine-impregnated paraffin gauze would stick to the wound surface, causing pain People in the hydrocolloid group also complained of pain when the adhesive border was removed from the surrounding unshaved skin			

Chlorhexidine-impregnated paraffin gauze dressing versus polyurethane film:
See option on Polyurethane film, p 24 .

Further information on studies

[21] The RCT reported that one person in the hydrocolloid dressing plus silver sulfadiazine cream group required antibiotic treatment.

Comment: In common with other antibacterial substances, chlorhexidine shows some toxicity to regenerating epithelial cells such as keratinocytes and fibroblasts, although the applicability of these studies to clinical situations remains unclear. Topical antimicrobials seem to be clinically indicated in infected burns and may delay wound healing to a lesser extent than does an uncontrolled infection. However, the toxicity associated with topical antibacterial products makes them relatively contraindicated in wounds that are not infected or heavily contaminated.

OPTION HYDROCOLLOID DRESSING

- For GRADE evaluation of interventions for Burns: dressings, see table, p 42 .

- We found no direct information from RCTs about whether hydrocolloid dressings are better than no active treatment in the treatment of partial-thickness burns. The basic principles of burn wound management preclude the option of no-dressing treatment for all but the most minor of burns.
- We don't know whether hydrocolloid dressings are more effective than biosynthetic dressings at healing superficial or mid-dermal partial-thickness burns or reducing severity of symptoms.
- Hydrocolloid dressings may be more effective at reducing the number of dressing changes required compared with chlorhexidine-impregnated paraffin gauze in people with minor burns, but we don't know about healing times. However, this evidence is from one small RCT.
- Hydrocolloid dressing may be more effective at reducing wound healing time, improving wound appearance, re-pigmentation of the wound, symptom severity, and investigator/participant satisfaction compared with silver sulfadiazine in people with superficial partial-thickness burns. However, this evidence is from one small RCT.
- We don't know whether hydrocolloid dressings plus silver sulfadiazine are more effective than chlorhexidine-impregnated paraffin gauze dressings at reducing wound healing time and the number of dressing changes in people with minor burns.

Benefits and harms

Hydrocolloid dressing versus placebo or no treatment:

We found no systematic review or RCTs comparing hydrocolloid dressing versus placebo or no treatment for superficial and partial-thickness burns.

Hydrocolloid dressing versus biosynthetic dressing:

See option on Biosynthetic dressing., p 5

Hydrocolloid dressing versus chlorhexidine-impregnated paraffin gauze dressing:

We found one systematic review (search date 2012; 3 RCTs; 344 people) [11] comparing hydrocolloid dressing with chlorhexidine-impregnated paraffin gauze dressing. The review did not pool data because of clinical heterogeneity among RCTs (variation in comparators used, absence of data, and poor reporting). Two of the RCTs did not meet *BMJ Clinical Evidence* inclusion criteria for this overview (one [22] had a follow-up of <80% and another [23] was reported in a conference abstract) and, therefore, they are not reported here. We report the remaining RCT here. [21]

Healing

Hydrocolloid dressing compared with chlorhexidine-impregnated paraffin gauze dressing Hydrocolloid dressing may be more effective at reducing the number of dressing changes required compared with chlorhexidine-impregnated paraffin gauze, but we don't know about healing times in people with minor burns (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Healing time					
[21] RCT **3-armed trial**	50 people (54 burn sites) presenting within 24 hours of injury; injury affecting <5% of total body surface area (TBSA) In review [11]	**Mean healing time** 10.6 days with hydrocolloid dressing 11.1 days with chlorhexidine-impregnated paraffin gauze dressing There were 18 people in the chlorhexidine-impregnated paraffin gauze dressing group and 16 people in the hydrocolloid dressing group The remaining arm evaluated hydrocolloid dressing plus silver sulfadiazine cream	Reported as not significant P value not reported The RCT did not report the methods used for randomisation or allocation concealment Patients and investigators were not blinded	⟷	Not significant

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Number of dressings changed					
[21] RCT **3-armed trial**	50 people (54 burn sites) presenting within 24 hours of injury; injury affecting <5% of TBSA In review [11]	**Mean number of dressing changes** 2.3 with hydrocolloid dressing 4.1 with chlorhexidine-impregnated paraffin gauze dressing There were 18 people in the chlorhexidine-impregnated paraffin gauze dressing group and 16 people in the hydrocolloid dressing group The remaining arm evaluated hydrocolloid dressing plus silver sulfadiazine cream	Reported as significant P value not reported The RCT did not report the methods used for randomisation or allocation concealment Patients and investigators were not blinded	○○○	hydrocolloid dressing
Wound infection					
[21] RCT **3-armed trial**	50 people (54 burn sites) presenting within 24 hours of injury; injury affecting <5% of TBSA In review [11]	**Numbers of pathogenic bacterial isolates** with hydrocolloid dressing with chlorhexidine-impregnated paraffin gauze dressing Absolute results not reported There were 18 people in the chlorhexidine-impregnated paraffin gauze dressing group and 16 people in the hydrocolloid dressing group The remaining arm evaluated hydrocolloid dressing plus silver sulfadiazine cream	P = 0.12	⟷	Not significant

Symptom severity

No data from the following reference on this outcome. [21]

Investigator/participant preference and satisfaction

No data from the following reference on this outcome. [21]

Adverse effects

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Adverse effects					
[21] RCT **3-armed trial**	50 people (54 burn sites) presenting within 24 hours of injury; injury affecting <5% of TBSA In review [11]	**Adverse effects** with hydrocolloid dressing with chlorhexidine-impregnated paraffin gauze dressing Absolute results not reported	Significance not assessed The RCT did not report the methods used for randomisation or allocation concealment		

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
		The RCT reported that the chlorhexidine-impregnated paraffin gauze would stick to the wound surface, causing pain; people in the hydrocolloid group also complained of pain when the adhesive border was removed from the surrounding unshaved skin The remaining arm evaluated hydrocolloid dressing plus silver sulfadiazine cream			

Hydrocolloid dressing versus chlorhexidine-impregnated paraffin gauze dressing plus silver sulfadiazine cream:

We found one systematic review (search date 2012) [11] comparing hydrocolloid dressing with chlorhexidine-impregnated paraffin gauze dressing plus silver sulfadiazine cream, which identified no RCTs that met *BMJ Clinical Evidence* inclusion criteria.

Hydrocolloid dressing plus silver sulfadiazine cream versus chlorhexidine-impregnated paraffin gauze dressing:

See option on Chlorhexidine-impregnated paraffin gauze dressing, p 10 .

Hydrocolloid dressing versus silver sulfadiazine cream:

We found one systematic review (search date 2012) [11] that identified one RCT comparing hydrocolloid dressing with silver sulfadiazine cream plus sterile gauze dressing after initial burn cleaning. [24]

Healing

Hydrocolloid dressing compared with silver sulfadiazine cream Hydrocolloid dressing may be more effective at reducing wound healing time, improving wound appearance, and improving re-pigmentation of the wound compared with silver sulfadiazine in people with superficial partial-thickness burns (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Time to healing					
[11] Systematic review	50 people with superficial partial-thickness burns affecting <15% TBSA Data from 1 RCT	**Time to wound healing** 10.23 days with hydrocolloid dressing 15.59 days with silver sulfadiazine cream	P <0.01 RCT [24] had small sample size and did not specify methods for randomisation or allocation concealment Participants and investigators were not blinded	◌◌◌	hydrocolloid dressing
Number of dressing changes					
[11] Systematic review	50 people with superficial partial-thickness burns affecting <15% TBSA Data from 1 RCT	**Mean number of dressing changes** 3.55 with hydrocolloid dressing 22.2 with silver sulfadiazine cream	MD –18.65 95% CI –22.54 to –14.76 This was an expected result due to protocols used (please see Further information about studies for more details) RCT [24] had small sample size and did not specify methods for	◌◌◌	hydrocolloid dressing

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
			randomisation or allocation concealment Participants and investigators were not blinded		
Wound appearance (post-complete healing)					
[11] Systematic review	50 people with superficial partial-thickness burns affecting <15% TBSA Data from 1 RCT	**Wound appearance** with hydrocolloid dressing with silver sulfadiazine cream Absolute results not reported	P <0.01 RCT [24] had small sample size and did not specify methods for randomisation or allocation concealment Participants and investigators were not blinded	◌◌◌	hydrocolloid dressing
Repigmentation (post-complete healing)					
[11] Systematic review	50 people with superficial partial-thickness burns affecting <15% TBSA Data from 1 RCT	**Re-pigmentation** with hydrocolloid dressing with silver sulfadiazine cream Absolute results not reported	P <0.01 RCT [24] had small sample size and did not specify methods for randomisation or allocation concealment Participants and investigators were not blinded	◌◌◌	hydrocolloid dressing

Symptom severity

Hydrocolloid dressing compared with silver sulfadiazine cream Hydrocolloid dressing may be more effective at reducing pain, interference with activities of daily living, and improving the ease of dressing application and removal compared with silver sulfadiazine in people with superficial partial-thickness burns (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Pain					
[11] Systematic review	50 people with superficial partial-thickness burns affecting <15% TBSA Data from 1 RCT	**Mean level of pain (measured by a 10-point visual analogue scale where 0 = no pain and 10 = maximum pain)** 1.09 with hydrocolloid dressing 2.28 with silver sulfadiazine cream	MD –1.19 95% CI –1.82 to –0.56 P <0.00002 RCT [24] had small sample size and did not specify methods for randomisation or allocation concealment Participants and investigators were not blinded	◌◌◌	hydrocolloid dressing
Dressing application and removal					
[11] Systematic review	50 people with superficial partial-thickness burns affecting <15% TBSA Data from 1 RCT	**Level of satisfaction with the dressing application and removal** with hydrocolloid dressing with silver sulfadiazine cream Absolute results not reported	P <0.01 RCT [24] had small sample size and did not specify methods for randomisation or allocation concealment Participants and investigators were not blinded	◌◌◌	hydrocolloid dressing

Investigator/participant preference and satisfaction

Hydrocolloid dressing compared with silver sulfadiazine cream Hydrocolloid dressing may be more effective at improving investigator/participant satisfaction in people with superficial partial-thickness burns (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Overall investigator/participant satisfaction (post-complete wound healing)					
[11] Systematic review	50 people with superficial partial-thickness burns affecting <15% TBSA Data from 1 RCT	**Overall investigator/participant satisfaction** with hydrocolloid dressing with silver sulfadiazine cream Absolute results not reported	P <0.001 RCT [24] had small sample size and did not specify methods for randomisation or allocation concealment Participants and investigators were not blinded	○○○	hydrocolloid dressing

Adverse effects

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Adverse effects					
[24] RCT	50 people with superficial partial-thickness burns affecting <15% TBSA In review [11]	**Adverse effects** with hydrocolloid dressing with silver sulfadiazine cream The RCT did not report any harms of treatment The RCT reported no infections occurred in either group	Significance not assessed RCT [24] had small sample size and did not specify methods for randomisation or allocation concealment		

Hydrocolloid dressing alone versus hydrocolloid dressing plus silver sulfadiazine cream:
See option on Silver sulfadiazine cream, p 36 .

Further information on studies

[11] Result for number of dressing changes for analysis of hydrocolloid dressing versus silver sulfadiazine cream was to be expected in the RCT [24] included in the systematic review because silver sulfadiazine dressings were changed routinely, whereas there was no indication to change hydrocolloid dressings without leakage or suspected infection.

Comment: **Clinical guide**
Hydrocolloid dressings have widespread acceptance in the management of partial-thickness burn wounds. The exudate beneath a hydrocolloid dressing may have some antimicrobial properties, and because the dressing does not adhere to the wound, it is relatively painless to change.

OPTION HYDROGEL DRESSING

- For GRADE evaluation of interventions for Burns: dressings, see table, p 42 .
- We found no direct information from RCTs about whether hydrogel dressing is better than no active treatment in the treatment of partial-thickness burns. The basic principles of burn wound management preclude the option of no dressing treatment for all but the most minor of burns.
- We don't know whether hydrogel dressings are more effective at healing partial-thickness burns compared with standard treatment (which may have included silver sulfadiazine, paraffin gauze with or without antibiotics or topical antibiotics). Hydrogel dressings may be more effective at reducing overall pain scores in people with partial-thickness burns compared with standard treatment, but the evidence is weak with small numbers.

- Hydrogel dressing may be more effective at reducing time to wound closure and improving the number of people healed at 9 and 12 days following a partial-thickness burn compared with silver sulfadiazine cream.
- We don't know whether hydrogel fibre dressings improve mean healing times for partial-thickness burns compared with silver sulfadiazine cream because the two trials we found had conflicting results.

Benefits and harms

Hydrogel dressing versus placebo or no treatment:

We found no systematic review or RCTs comparing hydrogel dressing versus placebo or no treatment for partial-thickness burns.

Hydrogel dressing versus silver sulfadiazine cream:

We found one systematic review (search date 2012), [11] which identified one RCT meeting *BMJ Clinical Evidence* inclusion criteria comparing iconic hydrogel dressing (Procutase™) with silver sulfadiazine cream on emergency department presentation. [25] We found one additional RCT comparing a liposome hydrogel including polyvinylpyrrolidone iodine (PVP-I hydrogel) with silver sulfadiazine cream. [26] The RCT performed an intra-individual comparison, and the participant's two burn sites were randomised to either PVP-1 hydrogel or silver sulfadizine cream, and were treated until complete wound healing.

Healing

Hydrogel dressing compared with silver sulfadiazine cream Hydrogel dressing may be more effective at reducing time to wound closure compared with silver sulfadiazine cream, improving the number of people healed at 9 and 12 days following a partial-thickness burn. We don't know whether hydrogel dressing is more effective at improving clinician assessments of inflammation and healing, improving anti-infective efficacy, or improving cosmetic result (e.g., smoothness, elasticity, appearance) compared with silver sulfadiazine cream in people with partial-thickness burns (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Time to healing					
[26] RCT	47 people with partial-thickness burns (burn sites of individual randomised to either PVP-I hydrogel or silver sulfadiazine cream)	**Mean time to wound closure** 9.9 days with PVP-I hydrogel 11.9 days with silver sulfadiazine cream	P = 0.015 RCT not blinded because of characteristic colour of PVP-I hydrogel	○○○	PVP-I hydrogel
Number of people healed					
[11] Systematic review	80 people with second-degree burns Data from 1 RCT	**Number of people healed , day 6** 6/40 (15%) with iconic hydrogel dressing 4/40 (10%) with silver sulfadiazine cream	RR 1.50 95%CI 0.46 to 4.91 P = 0.50 The study [25] had unclear blinding	⟷	Not significant
[11] Systematic review	80 people with second-degree burns Data from 1 RCT	**Number of people healed , day 9** 20/40 (50%) with iconic hydrogel dressing 10/40 (10%) with silver sulfadiazine cream	RR 2.00 95%CI 1.08 to 3.72 P = 0.028 The study [25] had unclear blinding	●○○	iconic hydrogel dressing
[11] Systematic review	80 people with second-degree burns Data from 1 RCT	**Number of people healed , day 12** 32/40 (80%) with iconic hydrogel dressing 19/40 (48%) with silver sulfadiazine cream	RR 1.68 95%CI 1.17 to 2.42 P = 0.0046 The study [25] had unclear blinding	●○○	iconic hydrogel dressing

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
[11] Systematic review	80 people with second-degree burns Data from 1 RCT	**Number of people healed , day 15** 36/40 (90%) with iconic hydrogel dressing 31/40 (78%) with silver sulfadiazine cream	RR 1.16 95%CI 0.95 to 1.41 P = 0.14 The study [25] had unclear blinding	⟷	Not significant
Wound infection					
[11] Systematic review	80 people with second-degree burns Data from 1 RCT	**Infection with *Pseudomonas aeruginosa* requiring antibiotic therapy** 0/40 (0%) with iconic hydrogel dressing 1/40 (3%) with silver sulfadiazine cream	RR 0.33 95% CI 0.01 to 7.95 P = 0.50	⟷	Not significant
Anti-infective efficacy (clinician-rated)					
[26] RCT	47 people with partial-thickness burns (burn sites of individual randomised to either PVP-I hydrogel or silver sulfadiazine cream)	**Anti-infective efficacy (rated as 'excellent' by clinician)** 54% with PVP-I hydrogel 26.1% with silver sulfadiazine cream Absolute numbers not reported	Significance not assessed RCT not blinded because of characteristic colour of PVP-I hydrogel		
[26] RCT	47 people with partial-thickness burns (burn sites of individual randomised to either PVP-I hydrogel or silver sulfadiazine cream)	**Anti-infective efficacy (rated as 'good' by clinician)** 43.5% with PVP-I hydrogel 67.4% with silver sulfadiazine cream Absolute numbers not reported	Significance not assessed RCT not blinded because of characteristic colour of PVP-I hydrogel		
Cosmetic result (clinician-rated)					
[26] RCT	47 people with partial-thickness burns (burn sites of individual randomised to either PVP-I hydrogel or silver sulfadiazine cream)	**Cosmetic items (smoothness, elasticity, and appearance; rated as 'excellent' on clinician global assessment scale)** 37% with PVP-I hydrogel 13% with silver sulfadiazine cream Absolute numbers not reported	Significance not assessed RCT not blinded because of characteristic colour of PVP-I hydrogel		

Symptom severity

Hydrogel dressing compared with silver sulfadiazine cream We don't know whether hydrogel dressing is more effective at improving patient assessments of pain and itching in people with partial-thickness burns (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Pain and itching (participant-rated)					
[26] RCT	47 people with partial-thickness burns (burn sites of individual randomised to either PVP-I hydrogel or silver sulfadiazine cream)	**Pain and itching (participant-rated)** with PVP-I hydrogel with silver sulfadiazine cream Absolute results not reported	Significance not assessed Reported by RCT to be "similar" for both treatments RCT not blinded because of characteristic colour of PVP-I hydrogel		

Investigator/participant preference and satisfaction

No data from the following reference on this outcome. [26]

Adverse effects

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Adverse effects					
[26] RCT	47 people with partial-thickness burns (burn sites of individual randomised to either PVP-I hydrogel or silver sulfadiazine cream)	**Proportion of burn sites associated with pain (as an adverse effect)** 6/43 (14%) with PVP-I hydrogel 5/43 (12%) with silver sulfadiazine cream Burn site treated until complete wound healing	Significance not assessed RCT not blinded because of characteristic colour of PVP-I hydrogel		
[26] RCT	47 people with partial-thickness burns (burn sites of individual randomised to either PVP-I hydrogel or silver sulfadiazine cream)	**Proportion of burn sites associated with itching** 1/43 (2%) with PVP-I hydrogel 1/43 (2%) with silver sulfadiazine cream Burn site treated until complete wound healing	Significance not assessed RCT not blinded because of characteristic colour of PVP-I hydrogel		
[26] RCT	47 people with partial-thickness burns (burn sites of individual randomised to either PVP-I hydrogel or silver sulfadiazine cream)	**Proportion of wounds for which dressing change was rated as "not unpleasant"** 50% with PVP-I hydrogel 34.5% with silver sulfadiazine cream Absolute numbers not reported Burn site treated until complete wound healing	Significance not assessed RCT not blinded because of characteristic colour of PVP-I hydrogel		
[26] RCT	47 people with partial-thickness burns (burn sites of individual randomised to either PVP-I hydrogel or silver sulfadiazine cream)	**Adverse effects (general)** 6/43 (14%) with PVP-I hydrogel 6/43 (14%) with silver sulfadiazine cream See further information on studies Burn site treated until complete wound healing	Significance not assessed RCT not blinded because of characteristic colour of PVP-I hydrogel		

Hydrogel dressing versus standard treatment:

We found one systematic review (search date 2012), [11] which identified two RCTs [27] [28] meeting *BMJ Clinical Evidence* inclusion criteria. Both these studies compared hydrogel to 'standard care', which could have included silver sulfadiazine, paraffin gauze with or without antibiotics or topical antibiotics. Both RCTs performed an intra-individual comparison and the participant's two burn sites were randomised to either hydrogel or standard treatment. In addition, the intervention for the control arm was decided by the clinician, not standardised, and no details were provided.

Healing

Hydrogel dressing compared with standard treatment We don't know whether hydrogel dressings are more effective at healing partial-thickness burns compared with standard treatment (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Time to healing					
[11] Systematic review	93 patients with second-degree burns (burn sites of individual randomised to either hydrogel or standard treatment) Data from 1 RCT	**Mean healing times (days)** 13.6 with hydrogel dressing 15.1 with standard treatment	P = 0.07 RCT [28] blinding not reported	⟷	Not significant
[11] Systematic review	62 patients with partial-thickness burns (burn sites of individual randomised to either hydrogel or standard treatment) Data from 1 RCT	**Mean healing times (days)** 11.92 with hydrogel dressing 13.55 with standard treatment	P <0.02 RCT [27] blinding not reported	○○○	hydrogel dressing
Number of dressing changes					
[11] Systematic review	62 patients with partial-thickness burns (burn sites of individual randomised to either hydrogel or standard treatment) Data from 1 RCT	**Rate of dressing renewal (ratio between healing time and number of dressings)** 8.2 days with hydrogel dressing 3.5 days with standard treatment 27 (52%) people with hydrogel dressing and 2 (4%) with standard treatment had one application	Significance not assessed RCT [27] blinding not reported		

Symptom severity

Hydrogel dressing compared with standard treatment. Hydrogel dressings may be more effective at reducing overall pain scores in people with partial-thickness burns compared with standard treatment, but the evidence is weak with small numbers (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Level of pain					
[11] Systematic review	93 patients with second-degree burns (burn sites of individual randomised to either hydrogel or standard treatment) Data from 1 RCT	**Pain (measurement tool not specified) , days 2, 4, and 8** with hydrogel dressing with standard care	P <0.0001 Unclear if this is a combined analysis for all time points Intra-individual randomisation may influence the pain results RCT [28] blinding not reported	○○○	hydrogel dressing
[11] Systematic review	62 patients with partial-thickness burns (burn sites of individual randomised to either hydrogel or standard treatment) Data from 1 RCT	**Mean pain (measurement tool not further specified, lower score for lower level of pain) , overall assessment of at end of study** 2.73 with hydrogel dressing 4.04 with standard care	MD –1.31 95%CI –2.37 to –0.25 P = 0.016 Intra-individual randomisation may influence the pain results RCT [27] blinding not reported	○○○	hydrogel dressing

Investigator/participant preference and satisfaction

No data from the following reference on this outcome. [11]

Adverse effects

No data from the following reference on this outcome. [11]

Hydrogel fibre dressing versus silver sulfadiazine cream:

We found one systematic review (search date 2012), [11] which identified two RCTs [29] [30] meeting *BMJ Clinical Evidence* inclusion criteria.

Healing

Hydrogel fibre dressing compared with silver sulfadiazine cream We don't know whether hydrogel fibre dressings improve mean healing times for partial-thickness burns compared with silver sulfadiazine cream because the two trials we found had conflicting results (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Healing time					
[11] Systematic review	70 patients with superficial second-degree burns Data from 1 RCT	**Mean healing times (days)** 10.0 with hydrogel fibre dressing 13.7 with silver sulfadiazine cream The hydrogel fibre dressing used in this RCT [29] was impregnated with silver	MD –3.70 95%CI –5.44 to –1.96 P = 0.000030 Unclear blinding in paper	○○○	hydrogel fibre dressing
[11] Systematic review	84 patients with superficial, mid-dermal, or mixed partial-thickness burns at first presentation Data from 1 RCT	**Median time to healing (days)** 16 with hydrogel fibre dressing 17 with silver sulfadiazine cream	P = 0.517 No variance data were reported Study [30] was 'unblinded'	⟷	Not significant
Number of dressing changes					
[11] Systematic review	84 patients with superficial, mid-dermal, or mixed partial-thickness burns at first presentation Data from 1 RCT	**Median time to healing (days)** 7.7 with hydrogel fibre dressing 19.1 with silver sulfadiazine cream The protocol was to change silver sulfadiazine dressings routinely; there was no indication to change hydrogel fibre dressings other than every second day	MD –11.40 95%CI –15.66 to –7.14 P <0.00001 Study [30] was 'unblinded'	○○○	hydrogel fibre dressing
Wound infection					
[11] Systematic review	84 patients with superficial, mid-dermal, or mixed partial-thickness burns at first presentation Data from 1 RCT	**Incidence of infection** 8/42 (19%) with hydrogel fibre dressing 6/40 (15%) with silver sulfadiazine cream Patients who developed infections were treated with antibiotics	RR 1.27 95% CI 0.48 to 3.34 P = 0.63 Study [30] was 'unblinded'	⟷	Not significant

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Need for surgery					
[11] Systematic review	84 patients with superficial, mid-dermal, or mixed partial-thickness burns at first pre-sentation Data from 1 RCT	**Number of people requiring surgery** 5/42 (12%) with hydrogel fibre dressing 7/40 (18%) with silver sulfadi-azine cream Need for skin grafting due to re-classification of a partial-thick-ness burn as a full-thickness burn, or because of infection	RR 0.68 95% CI 0.24 to1.97 P = 0.48 Study [30] was 'unblinded'	⟷	Not significant

Symptom severity

Hydrogel fibre dressing compared with silver sulfadiazine cream Hydrogel fibre dressings may be more effective at reducing pain scores for patients aged 4 years and older with partial-thickness burns compared with silver sulfadiazine, however, the evidence is weak (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Level of pain					
[11] Systematic review	84 patients with superficial, mid-dermal, or mixed partial-thickness burns at first pre-sentation Data from 1 RCT	**Mean patient pain scores (measured using John Hopkins visual analogue scale for those aged 4 and older) , during dressing changes** 3.63 with hydrogel fibre dressing 4.77 with silver sulfadiazine cream	P = 0.003 Study [30] was 'unblinded'	○○○	hydrogel fibre dressing
[11] Systematic review	84 patients with superficial, mid-dermal, or mixed partial-thickness burns at first pre-sentation	**Mean investigator reported pain scores (for pre-verbal population) , during dressing changes** 3.52 with hydrogel fibre dressing 3.32 with silver sulfadiazine cream	P = 0.991 Study [30] was 'unblinded'	⟷	Not significant
[11] Systematic review	70 patients with superficial second-degree burns Data from 1 RCT	**Mean pain (measured on a 10-point Likert Scale) , day 7** 0.9 with hydrogel fibre dressing 3.3 with silver sulfadiazine cream The hydrogel fibre dressing used in this RCT [29] was impregnated with silver Similar significant results reported at day 1 and 3	MD –2.40 95%CI –3.18 to –1.62 P <0.00001 RCT had unclear blinding	○○○	hydrogel fibre dressing

Investigator/participant preference and satisfaction

No data from the following reference on this outcome. [11]

Adverse effects

No data from the following reference on this outcome. [11]

Further information on studies

[26] One patient treated with silver sulfadiazine cream had wound necrosis and withdrew from the study prematurely. The RCT reported 20 adverse effects related to treatment, including six systemic adverse effects (deemed not clinically relevant) that could not be attributed to either treatment.

Comment: **Clinical guide**
Hydrogel dressings promote debridement and moist wound healing. Use on larger scald burns in children requires expertise to assess for infection and ensure appropriate dressing regimen.

OPTION PARAFFIN GAUZE DRESSING

- For GRADE evaluation of interventions for Burns: dressings, see table, p 42 .
- We found no direct information from RCTs about whether paraffin gauze dressing is better than placebo or no treatment in the treatment of partial-thickness burns. The basic principles of burn wound management preclude the option of no dressing treatment for all but the most minor of burns.
- We don't know whether paraffin gauze dressing is more effective than polyurethane film at reducing wound healing time, reducing wound infection, or reducing residual scarring at 3 months in people with partial-thickness burns.
- Silver-nanoparticle dressings may be more effective than Vaseline® covered with gauze at improving healing of partial-thickness burns, but we only found weak evidence from a single trial with small numbers.

Benefits and harms

Paraffin gauze dressing versus placebo or no treatment:

We found no systematic review or RCTs.

Paraffin gauze dressing versus polyurethane film:

See option on Polyurethane film, p 24 .

Paraffin gauze dressing versus silver-impregnated dressing:

See option on Silver-impregnated dressing., p 31

Comment: **Clinical guide**
Paraffin gauze is widely used for the management of smaller superficial burns. Its tendency to dry out and adhere to the wound as healing proceeds can result in traumatic dressing changes.

OPTION POLYURETHANE FILM

- For GRADE evaluation of interventions for Burns: dressings, see table, p 42 .
- We found no direct information from RCTs about whether polyurethane film is better than placebo or no treatment for partial-thickness burns. The basic principles of burn wound management preclude the option of no dressing treatment for all but the most minor of burns.

- We don't know whether polyurethane film is more effective than paraffin gauze dressing at reducing wound healing time, reducing wound infection, or reducing residual scarring at 3 months in people with partial-thickness burns. We only found one small RCT.
- Polyurethane film may be more effective at reducing mean wound healing time, increasing healing at 10 days after injury, and reducing pain and 'social inconvenience' in people with small blistered burns compared with chlorhexidine-impregnated paraffin gauze dressing. We don't know whether polyurethane film is more effective at increasing healing at more than 10 days after injury or at reducing wound infection in people with small blistered burns compared with chlorhexidine-impregnated paraffin gauze dressing. We only found one small RCT.

Benefits and harms

Polyurethane film dressing versus placebo or no treatment:

We found no systematic review or RCTs comparing polyurethane film versus placebo or no treatment for partial-thickness burns.

Polyurethane film versus paraffin gauze dressing:

We found one systematic review (search date 2012), [11] which identified one RCT comparing polyurethane film with paraffin-impregnated gauze dressing. [31]

Healing

Polyurethane film compared with paraffin gauze dressing We don't know whether polyurethane film is more effective than paraffin gauze dressing at reducing wound healing time, reducing wound infection, or reducing residual scarring at 3 months in people with partial-thickness burns (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Time to healing					
[11] Systematic review	55 people with partial-thickness burns Data from 1 RCT	**Median days to wound healing** 10 days with polyurethane film 7 days with paraffin gauze dressing	P >0.05 Blinding not reported	⟷	Not significant
Wound infection					
[11] Systematic review	55 people with partial-thickness burns Data from 1 RCT	**Wound infections** 3/30 (10%) people with polyurethane film 2/25 (8%) people with paraffin gauze dressing	RR 1.25, 95% CI 0.23 to 6.90 P = 0.80 No infection required antibiotic treatment Blinding not reported	⟷	Not significant
Residual scarring					
[31] RCT	55 people with partial-thickness burns In review [11] Data from 1 RCT	**Proportion of people with residual scars , 3 months** 6/29 (21%) with polyurethane film 2/25 (8%) with paraffin gauze dressing	Reported as not significant P value not reported Blinding not reported	⟷	Not significant

Symptom severity

Polyurethane film compared with paraffin gauze dressing We don't know whether polyurethane film is more effective than paraffin gauze dressing at reducing pain in people with partial-thickness burns (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Pain					
[11] Systematic review	55 people with partial-thickness burns Data from 1 RCT	**Proportion of people reporting moderate to severe pain (assessed on a 4-item scale for degrees of no pain, mild, moderate, and severe pain)** 3/30 (10%) with polyurethane film 4/24 (16%) with paraffin gauze dressing	Reported as not significant P value not reported Blinding not reported	⟷	Not significant

Investigator/participant preference and satisfaction

Polyurethane film compared with paraffin gauze dressing We don't know whether polyurethane film is more effective than paraffin gauze dressing at improving participant satisfaction in people with partial-thickness burns (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Participant satisfaction					
[11] Systematic review	55 people with partial-thickness burns Data from 1 RCT	**Proportion of people 'satisfied' (satisfaction ratings were self-assessed, or, in the case of children, assessed by their parents)** 27/29 (96%) with polyurethane film 20/25 (80%) with paraffin gauze dressing	Reported as not significant P value not reported Blinding not reported	⟷	Not significant

Adverse effects

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Adverse effects					
[11] Systematic review	55 people with partial-thickness burns Data from 1 RCT	**Adverse effects** with polyurethane film with paraffin gauze dressing Skin reactions such as follicular exanthema and itching occurred in 2/30 (7%) people with polyurethane film. Data for paraffin gauze dressing group not reported	Significance not assessed Blinding not reported		

Polyurethane film versus chlorhexidine-impregnated paraffin gauze dressing:

We found one systematic review (search date 2012), [11] which identified one RCT [32] comparing polyurethane film with chlorhexidine-impregnated paraffin gauze dressing.

Healing

Polyurethane film compared with chlorhexidine-impregnated paraffin gauze dressing Polyurethane film may be more effective at reducing mean wound healing time and increasing healing at 10 days after injury compared with chlorhexidine-impregnated paraffin gauze dressing, but we don't know whether polyurethane film is more effective

at increasing healing at more than 10 days after injury or at reducing wound infection in people with small blistered burns (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Time to healing					
[11] Systematic review	51 people with small blistered burns Data from 1 RCT	**Mean healing time** 10.0 days with polyurethane film 14.1 days with chlorhexidine-impregnated paraffin gauze dressing	P <0.02 RCT [32] gave no information on methods for randomisation or allocation concealment Participants and investigators not blinded	○○○	polyurethane film
Healing					
[11] Systematic review	51 people with small blistered burns Data from 1 RCT	**Healing , at 10 days after injury** with polyurethane film with chlorhexidine-impregnated paraffin gauze dressing Absolute results reported graphically	P <0.05 RCT [32] gave no information on methods for randomisation or allocation concealment Participants and investigators not blinded	○○○	polyurethane film
[11] Systematic review	51 people with small blistered burns Data from 1 RCT	**Healing , at more than 10 days after injury** with polyurethane film with chlorhexidine-impregnated paraffin gauze dressing Absolute results reported graphically	Reported as not significant P value not reported RCT [32] gave no information on methods for randomisation or allocation concealment Participants and investigators not blinded	⟷	Not significant
Wound infection					
[11] Systematic review	51 people with small blistered burns Data from 1 RCT	**Proportion of people with wound infection** 1/26 (4%) with polyurethane film 2/25 (8%) with chlorhexidine-impregnated paraffin gauze dressing	RR 0.48 95% CI 0.05 to 4.98 P = 0.54 RCT [32] gave no information on methods for randomisation or allocation concealment Participants and investigators not blinded	⟷	Not significant

Symptom severity

Polyurethane film compared with chlorhexidine-impregnated paraffin gauze dressing Polyurethane film may be more effective at reducing pain and reducing 'social inconvenience' (defined as difficulty in coping or embarrassment) compared with chlorhexidine-impregnated paraffin gauze dressing in people with small blistered burns (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Pain					
[11] Systematic review	51 people with small blistered burns Data from 1 RCT	**Comparative ranking on a 'pain' perception diagram (assessing intensity and duration)** with polyurethane film with chlorhexidine-impregnated paraffin gauze dressing Absolute results reported graphically	P <0.01 RCT [32] gave no information on methods for randomisation or allocation concealment Participants and investigators not blinded	○○○	polyurethane film

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Social inconvenience					
[11] Systematic review	51 people with small blistered burns Data from 1 RCT	**Comparative ranking on a 'social inconvenience' perception diagram (assessing embarrassment and difficulty in coping)** with polyurethane film with chlorhexidine-impregnated paraffin gauze dressing Absolute results reported graphically	P <0.01 RCT [32] gave no information on methods for randomisation or allocation concealment Participants and investigators not blinded	○○○	polyurethane film

Investigator/participant preference and satisfaction

No data from the following reference on this outcome. [11]

Adverse effects

No data from the following reference on this outcome. [11]

Comment: **Clinical guide**
Film dressings are highly effective at excluding air and bacteria from the healing wound surface. They are non-stick and promote moist wound healing. Their inability to absorb wound exudate makes them relatively ineffective during the early exudative phase of burn wound healing if there are large amounts of exudate. Therefore, they are best employed after this phase has resolved (in general, after the first 48 hours).

OPTION SILICONE-COATED NYLON DRESSING

- For GRADE evaluation of interventions for Burns: dressings, see table, p 42 .
- We found no direct information from RCTs about whether a silicone-coated dressing is better than placebo or no treatment in the treatment of partial-thickness burns. The basic principles of burn wound management preclude the option of no dressing treatment for all but the most minor of burns.
- Silicone-coated nylon dressing may be more effective than silver sulfadiazine cream at reducing wound healing time and number of dressing changes in children presenting with burn injury (mostly superficial partial-thickness burns).
- Silicone-coated nylon dressing may be more effective than silver sulfadiazine cream at reducing pain in children with superficial partial-thickness burns in the first 5 days after injury, however this evidence is from one small RCT only.

Benefits and harms

Silicone-coated nylon dressing versus placebo or no treatment:

We found no systematic review or RCTs comparing silicone-coated nylon dressing with placebo or no treatment for partial-thickness burns.

Silicone-coated nylon dressing versus silver sulfadiazine cream:

We found one systematic review (search date 2012), [11] which found two RCTs (142 people) comparing silicone-coated nylon dressing with silver sulfadiazine cream. [33] [34] The review did not perform a meta-analysis because of clinical heterogeneity among RCTs (variation in comparators used, absence of data, and poor reporting).

Healing

Silicone-coated nylon dressing compared with silver sulfadiazine cream Silicone-coated nylon dressing may be more effective than silver sulfadiazine cream at reducing wound healing time and number of dressing changes in children presenting with burn injury (mostly superficial partial-thickness burns) (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Healing					
[33] RCT	76 children presenting within 24 hours of injury with a previously untreated burn; 66 of whom had superficial partial-thickness burns In review [11]	**Mean healing time** 7.58 days with silicone-coated nylon dressing 11.26 days with silver sulfadiazine cream	P <0.01 RCT gave no information on methods for randomisation or allocation concealment Participants and investigators not blinded	○○○	silicone-coated nylon dressing
[34] RCT	66 children with superficial partial-thickness burns of <15% total body surface area (TBSA) In review [11]	**Median time to full re-epithelialisation of the wound** 10.5 days with silicone mesh dressing 27.6 days with silver sulfadiazine cream Wet and dry gauze dressings were applied over both treatments	P = 0.0002 Participants and investigators not blinded	○○○	silicone mesh dressing
Number of dressing changes					
[11] Systematic review	76 children presenting within 24 hours of injury with a previously untreated burn; 66 of whom had superficial partial-thickness burns Data from 1 RCT	**Number of new dressings** 3.64 with silicone-coated nylon net dressing 5.13 with silver sulfadiazine cream	MD –1.49 95% CI –2.64 to –0.34 P <0.001 Result expected as dressings were changed every 2–3 days until complete healing was obtained, and simply reflects the longer healing period with the silver sulfadiazine cream; dressing removal was reported as easy and atraumatic RCT gave no information on methods for randomisation or allocation concealment Participants and investigators not blinded	○○○	silicone-coated nylon dressing

Symptom severity

Silicone-coated nylon dressing compared with silver sulfadiazine cream Silicone-coated nylon dressing may be more effective than silver sulfadiazine cream at reducing pain in children with superficial partial-thickness burns in the first 5 days after injury (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Pain					
[34] RCT	66 children with superficial partial-thickness burns of <15% TBSA In review [11]	**Mean pain score (measured on the Objective Pain Scale, where 0 = no pain and 10 = severe pain), in the first 5 days after injury** 4.0 with silicone mesh dressing 4.9 with silver sulfadiazine cream	P <0.025 Participants and investigators not blinded	○○○	silicone mesh dressing

No data from the following reference on this outcome. [33]

Investigator/participant preference and satisfaction

No data from the following reference on this outcome. [33]

Adverse effects

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Adverse effects					
[33] RCT	76 children presenting within 24 hours of injury with a previously untreated burn; 66 of whom had superficial partial-thickness burns In review [11]	**Adverse effects** with silicone-coated nylon dressing with silver sulfadiazine cream The RCT found no allergies in either treatment group, and found no fluid collection, haematoma, or secondary displacement in either group			
[34] RCT	66 children with superficial partial-thickness burns of <15% TBSA In review [11]	**Moderate to severe eschar formation** 6% with silicone mesh dressing 42% with silver sulfadiazine cream Absolute numbers not reported Wet and dry gauze dressings were applied over both treatments	P <0.0001 Participants and investigators not blinded	○○○	silicone mesh dressing
[34] RCT	66 children with superficial partial-thickness burns of <15% TBSA In review [11]	**Mean pain score at dressing change (measured on the Objective Pain Scale) , first 5 days after burn injury** 3.8 with silicone mesh dressing 4.6 with silver sulfadiazine cream Wet and dry gauze dressings were applied over both treatments	P <0.05 Participants and investigators not blinded	○○○	silicone mesh dressing

Further information on studies

[33] One case of wound infection was reported among the 30 children treated with silver sulfadiazine cream.

[34] The RCT found that no wounds in either treatment arm exhibited signs of infection during the dressing changes. However, it was reported that wound cultures for children treated with silicone mesh dressing yielded both a wider variety of bacterial fauna and larger amounts of bacterial growth. The RCT reported that three children in the silicone mesh dressing group developed fever of unknown origin followed by a diffuse maculopapular rash. They were excluded from the RCT on a precautionary basis, although their wounds healed without complication.

Comment: **Clinical guide**
The silicone coating makes these dressings non-stick, which may be a significant advantage in the management of wounds where painful dressing procedures are otherwise likely.

OPTION SILVER-IMPREGNATED DRESSING New

- For GRADE evaluation of interventions for Burns: dressings, see table, p 42 .
- We found no direct information from RCTs on how silver-impregnated dressings compare with placebo/no treatment for partial-thickness burns. The basic principles of burn wound management preclude the option of no dressing treatment for all but the most minor of burns.
- There are few wound dressing products that differ from each other in only one feature (e.g., presence or absence of silver) and we found no studies that were designed to assess the efficacy of a single characteristic of a wound dressing.
- Silver-impregnated dressings may be more effective than silver sulfadiazine cream at healing and reducing pain in people with superficial and partial-thickness burns, but the evidence we found is weak and from small numbers only. The terminology used for type of burn in the RCTs we have included for this comparison was not entirely clear in all cases.
- Silver-nanoparticle dressings may be more effective than Vaseline® covered with gauze at improving healing of partial-thickness burns, but we only found weak evidence from a single trial with small numbers.

Benefits and harms

Silver-impregnated dressing versus placebo/no treatment:

We found no systematic review or RCTs comparing silver-impregnated dressing versus placebo or no treatment for partial-thickness burns.

Silver-impregnated dressing versus silver sulfadiazine cream:

We found one systematic review (search date 2012), [11] which identified five RCTs comparing silver-impregnated dressing with silver sulfadiazine cream for superficial and partial-thickness burns. [35] [36] [37] [38] [39] We also found two further RCTs. [40] [41]

Healing

Silver-impregnated dressing compared with silver sulfadiazine cream Silver-impregnated dressings may be more effective than silver sulfadiazine cream at healing superficial and partial-thickness burns. However, the evidence is weak and varies depending on the outcome and time-points measured (very low-quality evidence)

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Time to healing					
[11] Systematic review	People with partial-thickness burns 2 RCTs in this analysis	**Mean healing time (days)** with silver-impregnated dressing with silver sulfadiazine cream 169 people in this analysis	MD–4.22 95%CI –5.92 to –2.52 P <0.00001 1 study was not blinded; 1 study had unclear blinding	○○○	silver-impregnated dressing

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
[11] Systematic review	98 people with residual burn wounds (166 burn sites; average time since burn was 36 days; most of the other RCTs in the review included patients only within 24-48 hours after burn) Data from 1 RCT	**Mean healing time** with silver-impregnated dressing (nanocrystalline silver dressing) with silver sulfadiazine cream Although patients (n = 98) were randomised, the outcomes mostly measured effects on wounds (n = 166); not clear how wounds were distributed in the randomised patients	Reported as being significantly shorter in the silver impregnated dressing group P value not reported The study had unclear blinding	○○○	silver-impregnated dressing
Time to re-epithelialisation					
[40] RCT	24 children (aged 9 months–9 years) with superficial and mid-dermal burns followed up until re-epithelialisation of the wound	**Mean time to re-epithelialisation (days)** 12.42 with silver-impregnated dressing (biocompatible hydrogel impregnated with ionic silver) 12.75 with silver sulfadiazine cream	P = 0.949 The study had unclear blinding	⟷	Not significant
[41] RCT	68 people (age >17 years) with partial-thickness burns until complete epithelialisation of the wound	**Mean time to full re-epithelialisation (days)** 10 with silver-impregnated dressing (hydrocolloid dressing impregnated with silver sulfadiazine) 12 with silver sulfadiazine cream	P=0.04 The study had unclear blinding	○○○	silver-impregnated dressing
Number of people healed					
[11] Systematic review	People with partial-thickness burns 2 RCTs in this analysis	**Number of people healed , 15 days** 108/135 (80%) with silver-impregnated dressing 92/135 (68%) with silver sulfadiazine cream For 1 of these RCTs, the average time since burn was 36 days (most of the other RCTs in the review included patients only within 24-48 hours after burn) Similar significant results were reported at 21 days (data from 1 RCT, 104 people, P <0.0041)	RR 1.17 95% CI 1.02 to 1.35 P = 0.025 1 study was unblinded and the other had unclear blinding	●○○	silver-impregnated dressing
[11] Systematic review	104 people with partial-thickness burns (superficial second degree burns [n = 56]; deep second degree burn [n = 48]; all <10% total body surface area) Data from 1 RCT	**Number of people healed , 10 days** 20/52 (38%) with silver-impregnated dressing (silver pressure dressings for 7 days followed by hydrogel) 11/52 (21%) with silver sulfadiazine cream Similar non significant results were reported at 7and 17 days	RR 1.82 95% CI 0.97 to 3.40 P = 0.062 The RCT [35] was unblinded	⟷	Not significant

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Healing rate					
[11] Systematic review	98 people with residual burn wounds (166 burn sites; average time since burn was 36 days; most of the other RCTs in the review included patients only within 24–48 hours after burn) Data from 1 RCT	**Mean rate of healing (% wound area)** 90.8 with silver-impregnated dressing (nanocrystalline silver dressing) 88.6 with silver sulfadiazine cream	MD +2.21 95%CI –2.37 to +6.79 P = 0.34 The RCT had unclear blinding	⟷	Not significant
Incidence of infection					
[11] Systematic review	People with partial-thickness burns or residual burn wounds 4 RCTs in this analysis For one of these RCTs, the average time since burn was 36 days (most of the other RCTs in the review included patients only within 24–48 hours after burn)	**Number of infections** 28/174 (16%) with silver-impregnated dressing 27/174 (16%) with silver sulfadiazine cream 266 people in this analysis The number of infections was reported by number of wounds only in 1 study, which also included patients with residual burn wounds (see Further information on studies)	RR 1.04 95% CI 0.64 to 1.67 P = 0.88 1 RCT was not blinded, and blinding was unclear for the other 3 RCTs	⟷	Not significant
[41] RCT	68 patients with partial-thickness burns until complete epithelialisation of the wound	**Wound infections** 1/34 (3%) with silver-impregnated dressing (hydrocolloid dressing impregnated with silver sulfadiazine) 1/34 (3%) with silver sulfadiazine cream Both patients required antibiotics, and responded well; all wounds healed without auto-grafting	Significance not reported This study had unclear blinding		
Number of wound dressings					
[11] Systematic review	65 participants with partial-thickness burns followed-up until wound closure Data from 1 RCT	**Mean number of wound dressings** 2.93 with silver-impregnated dressing (ionic silver dressing) 14.00 with silver sulfadiazine cream	MD –11.07 95%CI –19.58 to –2.56 P = 0.011 The RCT [36] had unclear blinding	○○○	silver-impregnated dressing
[40] RCT	24 children (aged 9 months–9 years) with superficial and mid-dermal burns followed-up until re-epithelialisation of the wound	**Mean number of dressing changes** 13.50 with silver-impregnated dressing (biocompatible hydrogel impregnated with ionic silver) 13.42 with silver sulfadiazine cream	P = 0.449 This study had unclear blinding	⟷	Not significant
Nursing time					
[11] Systematic review	65 participants with partial-thickness burns followed-up until wound closure	**Mean nursing time (minutes)** 8.47 with silver-impregnated dressing (ionic silver dressing)	MD –4.82 95%CI –19.42 to +9.78 P = 0.52	⟷	Not significant

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
	Data from 1 RCT	13.29 with silver sulfadiazine cream	The RCT had unclear blinding		

Symptom severity

Silver-impregnated dressings compared with silver sulfadiazine cream We don't know whether silver-impregnated dressings are more effective than silver sulfadiazine cream at reducing pain in people with superficial and partial-thickness burns (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Pain					
[11] Systematic review	People with partial-thickness burns 3 RCTs in this analysis	**Mean pain measured using 10-point visual analogue scale from 1 (least pain) to 10 (most pain)** with silver-impregnated dressing with silver sulfadiazine cream 135 people in this analysis	MD –2.84 95% CI –5.89 to +0.21 P = 0.068	⟷	Not significant
[40] RCT	24 children (aged 9 months–9 years) with superficial and mid-dermal burns followed-up until re-epithelialisation of the wound	**Mean pain during dressing changes (measured in older children on a scale of 1–10 or using the Wong-Baker Pain Scale; measured using the observational pain assessment scale in infants and toddlers)** 2.33 with silver-impregnated dressing (biocompatible hydrogel impregnated with ionic silver) 5.33 with silver sulfadiazine cream	P = 0.0001 This study had unclear blinding	○○○	silver-impregnated dressing (biocompatible hydrogel impregnated with ionic silver)
[41] RCT	68 patients with partial-thickness burns until complete epithelialisation of the wound	**Mean pain scores 30 minutes after wound dressing (measured on a 10-point visual analogue pain scale with 1 = no pain and 10 = severe pain)** 3 with silver-impregnated dressing (hydrocolloid dressing impregnated with silver sulfadiazine) 6 with silver sulfadiazine cream	P = 0.02 This study had unclear blinding	○○○	silver-impregnated dressing (hydrocolloid dressing impregnated with silver sulfadiazine)

Investigator/participant preference and satisfaction

Silver-impregnated dressings compared with silver sulfadiazine cream We don't know whether silver-impregnated dressings are more effective than silver sulfadiazine cream at improving investigator/participant satisfaction in people with superficial and mid-dermal burns, as the evidence we found is from small numbers and only in children (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Participant satisfaction					
[40] RCT	24 children (aged 9 months–9 years) with superficial and mid-dermal burns followed-up until re-epithelialisation of the wound	**Mean patient satisfaction (measured on a 4 point scale, with 1 = 'unsatisfied' and 4 = 'extremely satisfied')** 3.25 with silver-impregnated dressing (biocompatible hydrogel impregnated with ionic silver) 2.17 with silver sulfadiazine cream	P = 0.004 This study had unclear blinding	○○○	silver-impregnated dressing (biocompatible hydrogel impregnated with ionic silver)

No data from the following reference on this outcome. [11] [41]

Adverse effects

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Adverse effects					
[40] RCT	24 children (aged 9 months–9 years) with superficial and mid-dermal burns followed-up until re-epithelialisation of the wound	**Any adverse effects** Result with silver-impregnated dressing Result with silver sulfadiazine cream	The RCT reported that neither group had any adverse events during the course of the study; no further details		

No data from the following reference on this outcome. [11] [41]

Silver-impregnated dressings versus Vaseline® covered with gauze:

We found one systematic review, (search date 2011), [42] which identified one RCT meeting *BMJ Clinical Evidence* inclusion criteria examining the effects of silver-impregnated dressings with Vaseline® covered with gauze for partial-thickness burns.

Healing

Silver-impregnated dressing compared with Vaseline® covered with gauze Silver-nanoparticle dressings may be more effective than Vaseline® covered with gauze at improving healing of partial-thickness burns, but we only found weak evidence from a single trial with small numbers (very low-quality evidence)

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Time to healing					
[42] Systematic review	128 people with superficial or partial-thickness burns; subgroup analysis of people with partial-thickness burns Data from 1 RCT	**Mean time to healing , up to 4 weeks** 19.1 days with silver-impregnated dressing (silver nanoparticle dressing) 22.7 days with Vaseline® covered with gauze	MD –3.60 95%CI –4.94 to –2.26 P <0.01 Blinding in the study was not clearly reported	○○○	silver-impregnated dressing (silver nanoparticle dressing)
[42] Systematic review	128 people with superficial or partial-thickness burns; subgroup analysis of people with partial-thickness burns Data from 1 RCT	**Mean time to healing , up to 4 weeks** 9.6 days with silver-impregnated dressing (silver nanoparticle dressing) 13.5 days with Vaseline® covered with gauze 63 people in this analysis	MD –3.90 95%CI –4.54 to –3.26 P <0.01 Blinding in the study was not clearly reported	○○○	silver-impregnated dressing (silver nanoparticle dressing)
Prevention of infection					
[42] Systematic review	128 people with superficial or partial-thickness burns; subgroup analysis of people with partial-thickness burns	**Bacterium colonisation** with silver-impregnated dressing with Vaseline® covered with gauze	The review reported that the RCT found a reduction in bacterium colonisation with the silver-impregnated dressing compared with the Vaseline® covered with gauze dressing; no further details given		

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
	Data from 1 RCT				

Symptom severity

No data from the following reference on this outcome. [42]

Investigator/participant preference and satisfaction

No data from the following reference on this outcome. [42]

Adverse effects

No data from the following reference on this outcome. [42]

Further information on studies

[42] The RCT in the systematic review from which we extracted data is in Chinese, but is reported in English in the systematic review. We are unable to verify translation accuracy.

Comment: There are a wide variety of silver-containing preparations. Modern preparations contain nanocrystalline silver, which is impregnated into the dressing and released over time. Certain products (e.g., Acticoat™) will release silver into the wound over time, whereas certain simple hydrocolloid and hydrofibre dressings (e.g., AQUACEL Ag™) release silver ions when the dressing absorbs wound exudate. Some dressings may have the silver bound to activated charcoal (e.g., ACTISORB Silver 220™). [42]

Clinical guide
Silver exerts an antimicrobial effect. Silver products may be indicated in some instances, especially where wounds have been contaminated, in order to decrease the risk of burn wound infection. However, it should be recognised that there is little to support this approach. Trials of antimicrobial dressings in contaminated wounds are lacking.

OPTION SILVER SULFADIAZINE CREAM

- For GRADE evaluation of interventions for Burns: dressings, see table, p 42 .
- We found no direct information from RCTs about whether silver sulfadiazine cream is better than placebo or no treatment in the treatment of partial-thickness burns. The basic principles of burn wound management preclude the option of no dressing treatment for all but the most minor of burns.
- Silver sulfadiazine cream may prolong healing times and increase pain compared with other treatments, although the evidence is limited by methodological study design issues, including small sample sizes and the heterogeneity of the patient population.

Benefits and harms

Silver sulfadiazine cream versus placebo or no treatment:

We found no systematic review or RCTs comparing silver sulfadiazine cream with placebo or no treatment for partial-thickness burns.

Silver sulfadiazine cream versus alginate dressing:

See option on Alginate dressing, p 4 .

Silver sulfadiazine cream versus biosynthetic dressing:

See option on Biosynthetic dressing, p 5 .

Silver sulfadiazine cream versus hydrocolloid dressing:

See option on Hydrocolloid dressing, p 12 .

Silver sulfadiazine cream versus hydrogel dressing:

See option on Hydrogel dressing, p 17 .

Silver sulfadiazine cream versus silicone-coated nylon dressing:

See option on Silicone-coated nylon dressing, p 28 .

Silver sulfadiazine cream versus silver-impregnated dressing:

See option on Silver-impregnated dressing, p 31 .

Silver sulfadiazine cream plus chlorhexidine-impregnated paraffin gauze dressing versus hydrocolloid dressing:

See option on Hydrocolloid dressing, p 12 .

Silver sulfadiazine cream plus hydrocolloid dressing versus hydrocolloid dressing alone:

We found one systematic review (search date 2012), [11] which identified one three-armed RCT. [21] The three intervention arms included hydrocolloid dressing, hydrocolloid dressing plus silver sulfadiazine cream, and chlorhexidine-impregnated paraffin gauze dressing. The comparison of hydrocolloid dressing with chlorhexidine-impregnated paraffin gauze has been considered under the intervention hydrocolloid (see option on Hydrocolloid, p 12). The review only reported on the comparison hydrocolloid dressing with chlorhexidine-impregnated paraffin gauze, but not on the comparison hydrocolloid dressing with hydrocolloid dressing plus silver sulfadiazine cream, so we have reported directly from the RCT.

Healing

Silver sulfadiazine cream plus hydrocolloid dressing compared with hydrocolloid dressing alone Silver sulfadiazine cream plus hydrocolloid dressing may be less effective at reducing wound healing time and at reducing dressing changes compared with hydrocolloid dressing alone in people with minor burns (very low-quality evidence).

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Time to healing					
[21] RCT **3-armed trial**	50 people (54 burn sites) presenting within 24 hours of injury; injury affecting <5% of total body surface area In review [11]	**Mean healing time** 10.6 days with hydrocolloid dressing alone 14.2 days with silver sulfadiazine cream plus hydrocolloid dressing The remaining arm assessed the effects of chlorhexidine-impregnated paraffin gauze dressing There were 16 people in the hydrocolloid dressing alone group and 16 people in the silver sulfadiazine cream plus hydrocolloid dressing group	Reported as significant P value not reported The RCT did not report the methods used for randomisation or allocation concealment Patients and investigators were not blinded	○○○	hydrocolloid dressing alone
Number of dressing changes					
[21] RCT **3-armed trial**	50 people (54 burn sites) presenting within 24 hours of injury; injury affecting <5% of total body surface area In review [11]	**Mean number of dressing changes** 2.3 with hydrocolloid dressing alone 3.9 with silver sulfadiazine cream plus hydrocolloid dressing There were 16 people in the hydrocolloid dressing alone group and 16 people in the silver sulfadiazine cream plus hydrocolloid dressing group The remaining arm assessed the effects of chlorhexidine-impregnated paraffin gauze dressing	Reported as significant P value not reported The RCT did not report the methods used for randomisation or allocation concealment Patients and investigators were not blinded	○○○	hydrocolloid dressing alone

Symptom severity

No data from the following reference on this outcome. [21]

Investigator/participant preference and satisfaction

No data from the following reference on this outcome. [21]

Adverse effects

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
Adverse effects					
[21] RCT **3-armed trial**	50 people (54 burn sites) presenting within 24 hours of injury; injury affecting <5% of total body surface area In review [11]	**Adverse effects** with hydrocolloid dressing alone with silver sulfadiazine cream plus hydrocolloid dressing Absolute results not reported Patients in the hydrocolloid group complained of pain when the ad-			

Ref (type)	Population	Outcome, Interventions	Results and statistical analysis	Effect size	Favours
		hesive border was removed from the surrounding unshaved skin There were 16 people in the hydrocolloid dressing alone group and 16 people in the silver sulfadiazine cream plus hydrocolloid dressing group The remaining arm assessed the effects of chlorhexidine-impregnated paraffin gauze dressing			

Silver sulfadiazine cream plus hydrocolloid dressing versus chlorhexidine-impregnated paraffin gauze dressing:

See option on Chlorhexidine-impregnated paraffin gauze dressing, p 10 .

Further information on studies

[21] One person in the silver sulfadiazine cream plus hydrocolloid dressing group required antibiotic treatment, presumably for wound infection.

Comment: Silver sulfadiazine cream is known to be toxic to regenerating epithelial cells and may retard healing of minor burns, which are known to heal by re-epithelialisation. [7] The need to remove residual cream and replace with new cream at daily dressing changes makes this choice less acceptable, unless daily dressings are indicated for some other reason.

GLOSSARY

Polyurethane film dressing such as Opsite or Tegaderm serves as a barrier to bacteria and water. The dressing can be left in place for several days. Film dressing is suitable for lightly exuding wounds and as secondary dressing because fluid from moderate to heavily exudating wounds may leak from this type of dressing, increasing the risk of wound contamination. [10]

Very low-quality evidence Any estimate of effect is very uncertain.

SUBSTANTIVE CHANGES

Biosynthetic dressing New option. One systematic review added. [11] Categorised as 'unknown effectiveness'.

Silver-impregnated dressing New option. Two systematic reviews [11] [42] and two further RCTs [40] [41] added. Categorised as 'unknown effectiveness'.

Alginate dressing One systematic review updated. [11] Categorisation unchanged (unknown effectiveness).

Chlorhexidine-impregnated paraffin gauze dressing One systematic review updated. [11] Categorisation unchanged (unknown effectiveness).

Hydrocolloid dressing One systematic review updated. [11] Categorisation unchanged (unknown effectiveness).

Hydrogel dressing One systematic review updated. [11] Categorisation unchanged (unknown effectiveness).

Polyurethane film One systematic review updated. [11] Categorisation unchanged (unknown effectiveness).

Silicone-coated nylon dressing One systematic review updated. [11] Categorisation unchanged (unknown effectiveness).

Silver sulfadiazine cream One systematic review added. [11] Categorisation changed from 'unknown effectiveness' to 'unlikely to be beneficial'.

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GRADE **Evaluation of interventions for Burns: dressings.**

Important outcomes		Healing, Investigator/participant preference and satisfaction, Symptom severity							
Studies (Participants)	**Outcome**	**Comparison**	**Type of evidence**	**Quality**	**Consistency**	**Directness**	**Effect size**	**GRADE**	**Comment**
What are the effects of treatments for partial-thickness burns?									
1 (59) [11]	Healing	Alginate dressings versus silver sulfadiazine cream	4	–3	0	0	0	Very low	Quality points deducted for sparse data, lack of reporting on blinding, weak methods (randomisation/ allocation)
1 (72) [11]	Healing	Biosynthetic dressing versus hydrocolloid dressing	4	–3	0	0	0	Very low	Quality points deducted for sparse data, unclear blinding, and weak methods (unclear randomisation/allocation)
1 (72) [11]	Symptom severity	Biosynthetic dressing versus hydrocolloid dressing	4	–3	0	0	0	Very low	Quality points deducted for sparse data, unclear blinding, and weak methods (unclear randomisation/allocation)
3 (approx 253) [11]	Healing	Biosynthetic dressing versus silver sulfadiazine cream	4	–3	0	0	0	Very low	Quality points deducted for no or unclear blinding, incomplete reporting of results in 2 trials, and weak methods (unclear randomisation/allocation)
3 (approx 126) [11]	Symptom severity	Biosynthetic dressing versus silver sulfadiazine cream	4	–3	0	0	0	Very low	Quality points deducted for sparse data, no or unclear blinding, and weak methods (unclear randomisation/allocation in 1 trial; patients acting as own control in 1 trial)
2 (77) [11]	Healing	Antimicrobial-releasing biosynthetic dressing versus silver sulfadiazine cream	4	–3	0	0	0	Very low	Quality points deducted for sparse data, unclear blinding, and weak methods (unclear randomisation/allocation/intra-individual comparisons)
1 (50) [11]	Investigator/participant preference and satisfaction	Antimicrobial-releasing biosynthetic dressing versus silver sulfadiazine cream	4	–3	0	0	0	Very low	Quality points deducted for sparse data, unclear blinding, and weak methods (unclear randomisation/allocation/patients used as own control)
1 (34) [21]	Healing	Chlorhexidine-impregnated paraffin gauze dressing versus hydrocolloid dressing plus silver sulfadiazine cream	4	–3	0	0	0	Very low	Quality points deducted for sparse data, unclear blinding, weak methods (randomisation/allocation), and no statistical analysis between groups
1 (34) [21]	Healing	Hydrocolloid dressing versus chlorhexidine-impregnated paraffin gauze dressing	4	–3	0	0	0	Very low	Quality points deducted for sparse data, unclear blinding, incomplete reporting of results, and weak methods (randomisation/allocation)
1 (42) [11]	Healing	Hydrocolloid dressing versus silver sulfadiazine cream	4	–3	0	0	0	Very low	Quality points deducted for sparse data, no blinding, incomplete reporting of results, and weak methods (randomisation/allocation)
1 (42) [11]	Symptom severity	Hydrocolloid dressing versus silver sulfadiazine cream	4	–2	0	–1	0	Very low	Quality points deducted for sparse data, no blinding, and weak methods (randomisation/allocation); directness point deducted for unclear outcome
1 (42) [11]	Investigator/participant preference and satisfaction	Hydrocolloid dressing versus silver sulfadiazine cream	4	–3	0	0	0	Very low	Quality points deducted for sparse data, no blinding, incomplete reporting of results, and weak methods (randomisation/allocation)
2 (127) [11] [26]	Healing	Hydrogel dressing versus silver sulfadiazine cream	4	–3	0	0	0	Very low	Quality points deducted for sparse data, lack of blinding, and incomplete reporting of results

Important outcomes	Healing, Investigator/participant preference and satisfaction, Symptom severity								
Studies (Participants)	Outcome	Comparison	Type of evidence	Quality	Consistency	Directness	Effect size	GRADE	Comment
1 (47) [26]	Symptom severity	Hydrogel dressing versus silver sulfadiazine cream	4	–3	0	0	0	Very low	Quality points deducted for sparse data, lack of blinding, and incomplete reporting of results
2 (unclear) [11]	Healing	Hydrogel dressing versus standard treatment	4	–3	0	0	0	Very low	Quality points deducted for sparse data, lack of blinding, patients acting as own control, and incomplete reporting of results
2 (unclear) [11]	Symptom severity	Hydrogel dressing versus standard treatment	4	–3	0	0	0	Very low	Quality points deducted for sparse data, lack of blinding, patients acting as own control, and incomplete reporting of results
2 (152) [11]	Healing	Hydrogel fibre dressing versus silver sulfadiazine cream	4	–3	0	0	0	Very low	Quality points deducted for sparse data, lack of blinding, and weak methods in 1 trial (randomisation/allocation unclear)
2 (152) [11]	Symptom severity	Hydrogel fibre dressing versus silver sulfadiazine cream	4	–3	0	0	0	Very low	Quality points deducted for sparse data, lack of blinding, and weak methods in 1 trial (randomisation/allocation unclear)
1 (55) [11]	Healing	Polyurethane film versus paraffin gauze dressing	4	–3	0	0	0	Very low	Quality points deducted for sparse data, lack of blinding, and incomplete reporting of results
1 (55) [11]	Symptom severity	Polyurethane film versus paraffin gauze dressing	4	–3	0	0	0	Very low	Quality points deducted for sparse data, lack of blinding, and incomplete reporting of results
1 (55) [11]	Investigator/participant preference and satisfaction	Polyurethane film versus paraffin gauze dressing	4	–3	0	0	0	Very low	Quality points deducted for sparse data, lack of blinding, and incomplete reporting of results
1 (51) [11]	Healing	Polyurethane film versus chlorhexidine-impregnated paraffin gauze dressing	4	–3	0	0	0	Very low	Quality points deducted for sparse data, lack of blinding, incomplete reporting of results, and weak methods (randomisation/allocation)
1 (51) [11]	Symptom severity	Polyurethane film versus chlorhexidine-impregnated paraffin gauze dressing	4	–3	0	0	0	Very low	Quality points deducted for sparse data, lack of blinding, incomplete reporting of results, and weak methods (randomisation/allocation)
2 (139) [33] [34]	Healing	Silicone-coated nylon dressing versus silver sulfadiazine cream	4	–3	0	0	0	Very low	Quality points deducted for sparse data, lack of blinding, and weak methods (randomisation/allocation)
1 (63) [34]	Symptom severity	Silicone-coated nylon dressing versus silver sulfadiazine cream	4	–3	0	0	0	Very low	Quality points deducted for sparse data, lack of blinding, and weak methods (randomisation/allocation)
7 (unclear) [11] [40] [41]	Healing	Silver-impregnated dressing versus silver sulfadiazine cream	4	–2	0	–1	0	Very low	Quality points deducted for no or unclear blinding, weak methods in 4 RCTs (unclear randomisation/ allocation, reporting on wounds rather than people, incomplete reporting of results); directness point deducted for 1 RCT studying delayed rather than acute treatment and use of variety of types of dressings impregnated with silver

Important outcomes	Healing, Investigator/participant preference and satisfaction, Symptom severity								
Studies (Participants)	**Outcome**	**Comparison**	**Type of evidence**	**Quality**	**Consistency**	**Directness**	**Effect size**	**GRADE**	**Comment**
5 (227) [11] [40] [41]	Symptom severity	Silver-impregnated dressing versus silver sulfadiazine cream	4	–2	0	–1	0	Very low	Quality points deducted for unclear blinding and weak methods (unclear randomisation/ allocation); directness point deducted for use of variety of types of dressings impregnated with silver
1 (24) [40]	Investigator/participant preference and satisfaction	Silver-impregnated dressing versus silver sulfadiazine cream	4	–3	0	0	0	Very low	Quality points deducted for sparse data, unclear blinding, and weak methods (unclear randomisation/ allocation)
1 (128) [42]	Healing	Silver-impregnated dressings versus Vaseline® covered with gauze	4	–3	0	0	0	Very low	Quality points deducted for sparse data, unclear blinding, and weak methods (unclear randomisation/ allocation)
1 (32) [21]	Healing	Silver sulfadiazine cream plus hydrocolloid dressing versus hydrocolloid dressing alone	4	–3	0	0	0	Very low	Quality points deducted for sparse data, unclear blinding, incomplete reporting of results, and weak methods (randomisation/allocation)

We initially allocate 4 points to evidence from RCTs, and 2 points to evidence from observational studies. To attain the final GRADE score for a given comparison, points are deducted or added from this initial score based on preset criteria relating to the categories of quality, directness, consistency, and effect size. Quality: based on issues affecting methodological rigour (e.g., incomplete reporting of results, quasi-randomisation, sparse data [<200 people in the analysis]). Consistency: based on similarity of results across studies. Directness: based on generalisability of population or outcomes. Effect size: based on magnitude of effect as measured by statistics such as relative risk, odds ratio, or hazard ratio.