Royal
Adelaide
Hospital

Minor Burn Management Guidelines

Government of South Australia
Health
Central Adelaide
Local Health Network

Contents

Minor burns referral criteria

Any of the following criteria is sufficient to contact the Burns On Call Registrar

- > 2% TBSA in adults
- > 0.5% TBSA in children
- Full thickness burns
- Electrical or chemical burn
- Special area (face, neck, hands, feet, genitals, perineum, joint, airway)
- Suspected airway/inhalation injury
- Burns with concurrent co-morbidities or injuries
- Possible non accidental injury
- Extremes of age
- Circumferential burn
- Or any burn the treating physician isn't happy to send home

Please note this is a guideline for referral only and does not replace clinical judgement.

Process of referring a burns patient

Royal Adelaide Hospital – for patients aged 16 and above

- Contact on call Burns Registrar/Fellow on **0435 051 631** (24/7)
- For general dressing advice contact Burns Unit on **(08) 7074 5076**

To organise Burns OPD appointment (following discussion with burns doctor):

1. Complete referral form and email to rah.burns@sa.gov.au
2. Contact the Burns Unit to arrange a time on **(08) 70745076**

Women's and Children's Hospital – for patients aged 16 and under

- Contact Burns Registrar (Registrar On Call for Burns after hours) contact via switch **(08) 8161 7000**
- For general dressing advice and outpatient appointments (within business hours) contact Burns Advanced Nurse Consultant via switch **(08) 8161 7000 pg 4258**

To organise Burns OPD appointment (following discussion with burns doctor:

- Complete referral form and email to childrensburns@health.sa.gov.au, or
- send a photo of the completed referral to the WCH Burns Nurse phone on **0488 052 886**

Considerations for Burns OPD follow up

Some minor burn injuries will require further follow up by the Burns service. Such cases would include but not be limited to:

- Burn wounds in which depth is unclear after 3–5 days.
- Burn injuries which are slow to heal (e.g. poor progression at 5–7 days).
- Burn injuries in patients with co-morbidities that can complicate wound healing (e.g. Diabetes).
- Ongoing pain issues.
- Where resources are unavailable e.g. dressings supplies, clinician experienced in wound management.

Additional considerations for hospital admission

Burn depth, size and treatment plans are not the only reasons a patient may require admission.
Other considerations for admission include:

- Pain will not be adequately controlled with oral analgesia.
- Infection – cellulitis of the burn wound requiring intravenous antibiotics.
- Bed rest with lower limb(s) elevation is required.
- If patient lives alone or has inadequate support at home and there are safety concerns.
- Any circumstance that may result in a patient having an inability to cope with own dressing/wound care.
- Suspected act of assault or abuse or neglect.

Checklist for telephone consults/referrals:

- ✓ Patient's detail
- ✓ Time of burn and mechanism
- ✓ Location of burn wounds
- ✓ Place where burn occurred (e.g. at home/workplace etc)
- ✓ Estimation of depth and TBSA (minor/major burn)
- ✓ First aid provided
- ✓ AMPLE history
- ✓ Initial treatment at the scene/at GP clinic

For more information on referrals

Paediatric Burns Service - Women's and Children's Hospital

wch.sa.gov.au/patients-visitors/children/surgical-care/burns

Adult Burns Service – Royal Adelaide Hospital

rah.sa.gov.au/health-professionals/clinical-services/surgical/burns-surgery

General first aid

20 minutes running water

- First aid is effective up to 3 hours post injury.
- Keep non-burn area warm when performing first aid.
- Cover wound with non-adherent dressing/clingfilm after cooling is complete.
- Using hydrogels (e.g. Burn Aid) is NOT the preferred method of cooling.
- Hydrogel products should only be used for a period of no more than 20 minutes and not be used in the elderly or very young.

Ice should NEVER be used for burn wound cooling – it causes vasoconstriction leading to further burn tissue damage and systemic hypothermia.

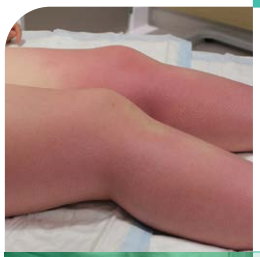
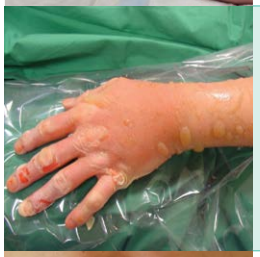
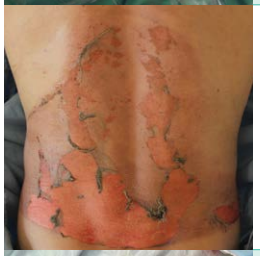
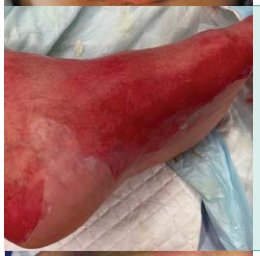
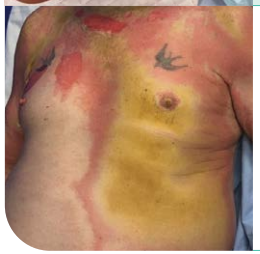
First aid considerations

Chemical

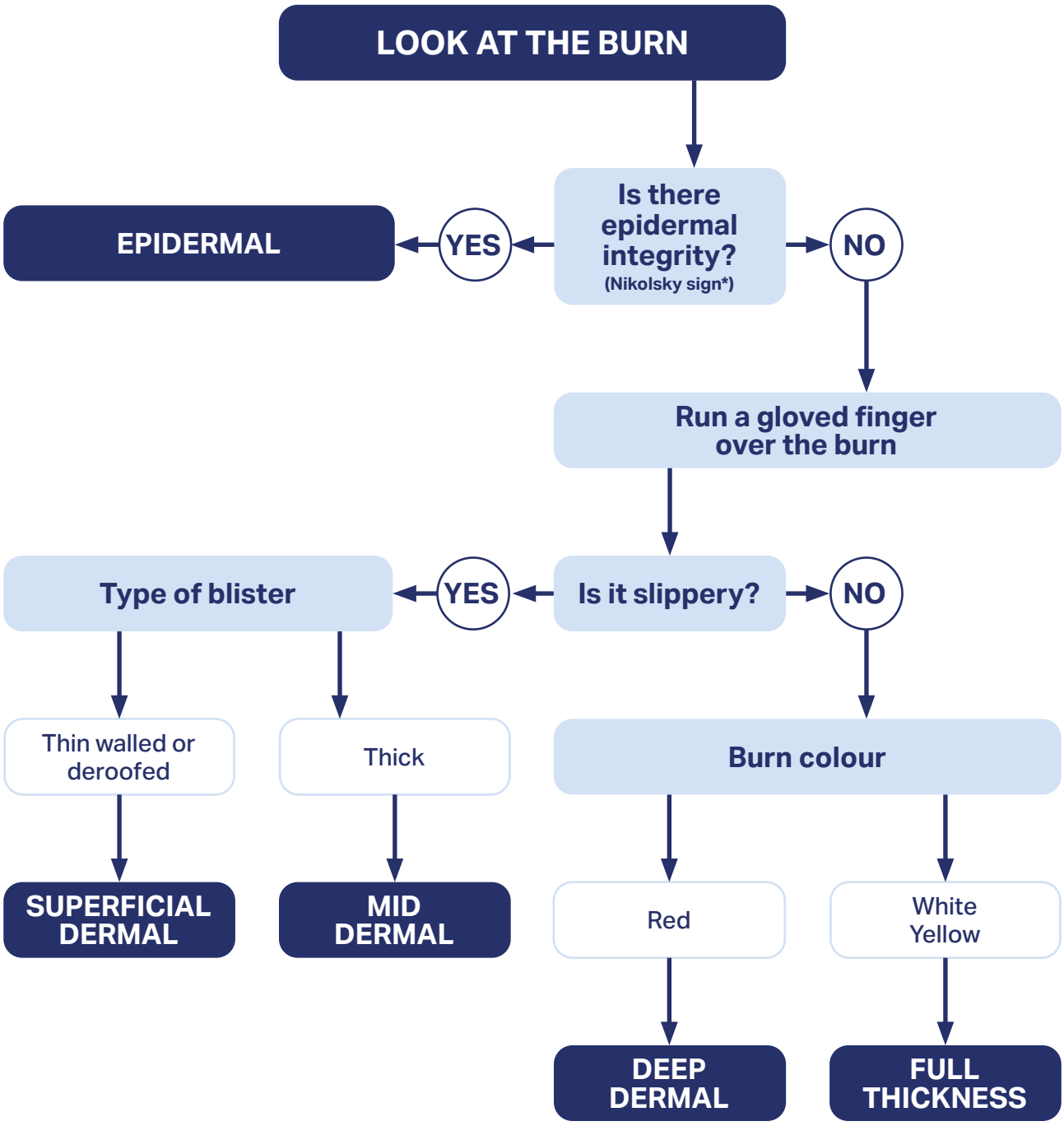
- Irrigate the burn for 1–2 until cessation of burning sensation.
- First aid givers must be wearing protective clothing before beginning treatment. Remove all contaminated clothing immediately.
- Powdered agents should be brushed from the skin with care.
- Areas of contact should be irrigated with copious amounts of tepid/ lukewarm running water (this is decontamination not cooling). Avoid washing chemical over unaffected skin.
- Chemical eye injuries require continuous irrigation until ophthalmological review is available – always ensure that the unaffected eye is uppermost when irrigating to avoid contamination.
- Hydrofluoric Acid burns require Calcium Gluconate10% gel to be applied to burn area. Wipe and reapply gel every 15mins for an hour or until cessation of pain.

Cold injuries

- Rapid rewarming in water heated to 37–40°C with a mild antibacterial agent (povidone-iodine or chlorhexidine) added for at least 30 minutes until complete thawing.
- Massage of the affected area is contraindicated as it may cause mechanical trauma.

	Depth	Colour	Moisture	Blisters	Capillary refill	Sensation	Healing
	Epidermal	Light red	N/A	Can be delayed >2 days	Present	Present and painful	4–7 days
	Superficial dermal	Pale pink	Moist	Thin walled	Brisk <2 secs	Present and painful	7–14 days
	Mid dermal	Dark pink	Moist	Thick walled	Sluggish >3 secs	Present – can be dulled	14–21 days
	Deep dermal	Red	Dry	+/-	Absent	Absent	>5 weeks or excision and graft required
	Full thickness	Yellow, white, charred	Dry	No	Absent	Absent	Excision and graft required

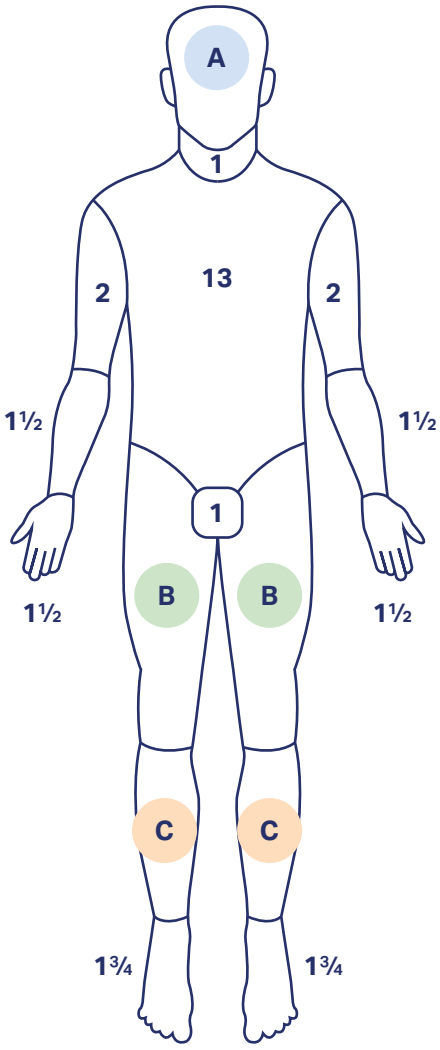
Burn depth assessment tool



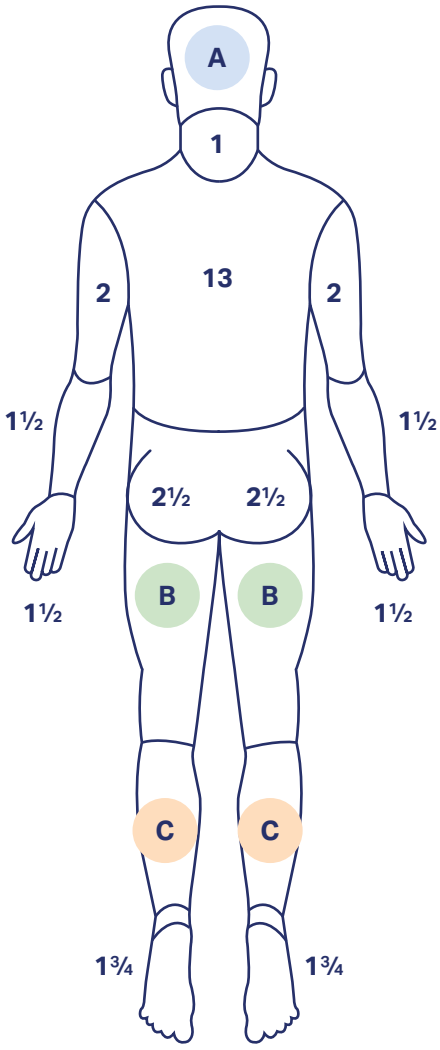
***A positive Nikolsky sign occurs when the epidermis of the skin detaches from the dermis/wound bed with slight friction*

Burn size assessment tool

Use the Lund and Browder chart to determine the Total Body Surface Area (TBSA) of a burn injury.



REGION	%
Head	
Neck	
Ant. trunk	
Post trunk	
Right arm	
Left arm	
Buttocks	
Genitalia	
Right leg	
Left leg	
Total burn	



AREA	Age 0	1	5	10	15	Adult
A=½ of head	9½	8½	6½	5½	4½	3½
B= ½ of one thigh	2¾	3¼	4	4½	4½	4¾
C= ½ of one lower leg	2½	2½	2¾	3	3¼	3½

Considerations for burns medications

Pain Relief

Pre debridement

Appropriate options for medications to use when debriding and cleaning wounds include:

- Entonox
- IV or subcut fentanyl/morphine
- Oxycodone

PRN analgesia

The majority of patients with minor burns will manage at home with regular/PRN paracetamol and ibuprofen however consideration should be given to use PRN opiate analgesia for break through pain relief. Patient's will also require pain relief at every dressing change and need to be advised to take pain relief prior to the appointment.

Tetanus

It's recommended to give a Tetanus booster as per the Australian Immunisation Handbook guidelines if the patient's last booster was more than 5 years ago.

Antibiotics

Not all minor burns require Antibiotics. If you're unsure about the need for antibiotics discuss with the On call Registrar who will refer to the RAH Burns Antimicrobial Guidelines. For patients who are not prescribed antibiotics, discuss the signs of infection with them and advise to contact their GP/ Burns Unit if they have any concerns.

Initial burn wound care overview

1 FIRST AID

Complete first aid, 20mins running water if required. Remove restrictive clothing/ jewellery (i.e rings) as soon as possible.

2 PAIN RELIEF

Administer pain relief. Do not attempt to debride a wound without sufficient analgesia.

3 DEBRIDE AND CLEAN

Debride blisters and remove all non-viable skin from wound edges. Wash affected area with antiseptic solution.

4 SHAVE

Shave any body hair from and around the burn wound allowing for a 2.5cm margin surrounding the burn site.

5 PHOTOS

After obtaining consent from the patient, take a photo of the burn wound.

6 ASSESS

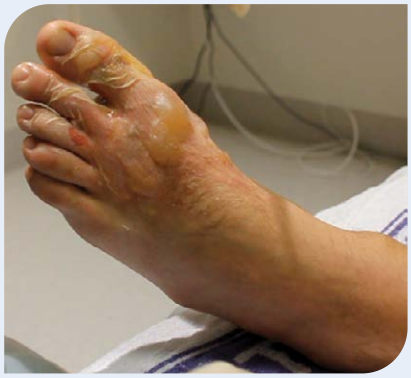
Assess wound depth by pressing on wound bed and looking for capillary refill. Use burn assessment tools to determine depth and size (TBSA).

7 DRESS

Use appropriate dressing based on wound depth, size, likelihood of infection and how soon wound will be reviewed.

Initial burn wound care for adults

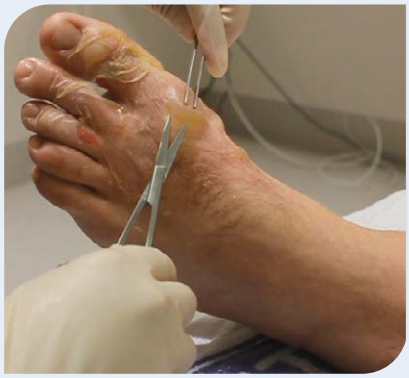
Initial debridement of a burn wound is the cornerstone of wound management. Adequate analgesia will allow "complete" debridement and of course will be greatly appreciated by the patients.



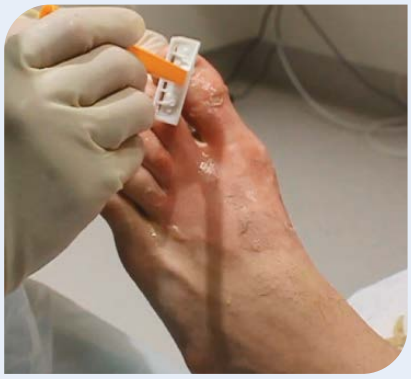
After completing first aid and administering appropriate analgesia, setup for debridement and dressing.

Items required:

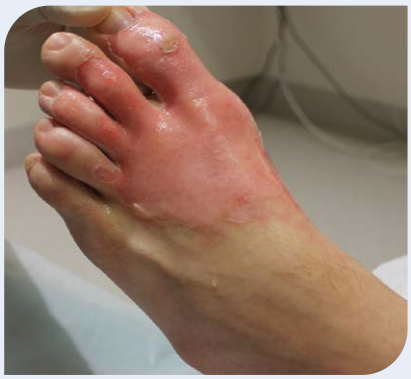
- Iris scissors
- Forceps
- Gauze
- Saline



- Snip into blister and use forceps to pull away non viable skin.
- Holding scissors flat against the body, snip around the wound edge.
- For comfort, wet gauze can be placed over the wound while debriding other areas.



- Shave any hair in or surrounding the burn wound.
- Allow a 2.5cm margin to aid in fixation of dressings.



- Assess burn depth and size.
- Clean wound using antiseptic solution.
- Choose appropriate dressing.

Wound care considerations for adults

As a general rule, a burn wound should be assessed and dressed at least an hour after the time of injury to determine depth and size. Burns are dynamic in nature and can take up to three day to declare their true depth and size.

It is recommended to debride and remove all non viable skin and blisters unless blisters are very small, flat or non-fluid filled.

Small superficial dermal burns

For wounds that will be reviewed in <24hrs:

- Apply a non adherent paraffin tulle gras dressing, such as Jelonet® over the wound.
- A secondary layer of a non adherent dressing, such as Melolite® may be advisable.

For wounds that will be reviewed in >24hrs–3 days:

- Silver based dressing such as Acticoat® is recommended for all other wounds.
- Mepitel® can be used as a primary layer on the wound bed before applying Acticoat®.
- Alternative dressing options for a clean superficial wound, such as a hot water scald, include Mepilex Ag® however these dressings cannot be wetted and procedures should be followed to allow patients to shower (such as plastic bag wrapping).

Wound dressing application advice

- Cut Acticoat® to a size slightly bigger than the wound, secure with Hypafix®.
- For some patients, Acticoat® can cause a stinging or burning sensation on application. This can be minimised by resting the product after activation with water for a couple of minutes before application.
- NEVER use saline to activate silver.
- Remove one side of Mepitel® backing and lay product onto Acticoat® and cute to size. Remove second side of backing prior to applying dressings to the wound.
- Secure Mepilex Ag® dressings with Hypafix®.
- Round the edges of Hypafix® for longer adherence to the skin.

Commonly used burns dressings

Dressing	Type of burn	Suitable use	Dressing change
Jelonet®	Any non debrided wound	Used as initial dressing for wounds that will be reviewed in <24hrs	Daily
Acticoat®	Burn of any depth	• Can be used on all areas of the body excluding face • Non-infected burns • Used with small colonised/ infected burns	3 or 7 days depending on wound and product
Mepitel®	Superficial and mid dermal burns	Used in conjunction with Acticoat® as first layer on wound bed"	3 or 7 days depending on wound and product
Mepilex Ag®	Superficial dermal	Used in clean superficial wound such as hot water scald	4–7 day
Soft white paraffin	Face, genitalia, perineum	Used in areas that cannot be covered with a dressing	Every 6 hours or as directed by Burns clinician

Burns in specialty areas

Facial burns

- Consider staining eyes with Fluorescein and the need for an ophthalmic review.
- Male patients will need to shave daily if beard covers wound area, depending on rate of beard growth.
- Daily hair washes are required.
- Clean facial burns with normal saline using aseptic technique every six hours. Debride the blisters and remove crusts. Pay particular attention to eye and ear care.
- Apply sterile soft paraffin to raw areas every six hours after cleaning.
- Consider virology swabs for Herpes Simplex Virus on days two and five post-burn in patients with a history of cold sores.
- Apply moisturising cream to healed areas.
- Advise patient to stay out of sunny and dusty conditions until wounds have healed.
- Advise patient to wear sunscreen and a hat after wounds have healed to decrease risk of scarring.

Perineal/Genital burns

Burns to the perineal or genital region meet burns referral criteria and all burns to these regions should be discussed with a burns doctor to ensure appropriate wound care is being provided.

Foot burns

Inadequate management of foot burns frequently results in serious infection. This can lead to a need for skin grafting (where spontaneous healing was expected) and even digital/ other amputation.

Considerations

- Avoid any constrictive/abrasive footwear - loose footwear should be worn. Initial elevation for at least 24 hours is of utmost importance in preventing burn depth progression.
- Swelling to the burned area can be reduced by elevation. Encourage frequent elevation of feet Time off work should be considered especially for those whose jobs entail standing or a hot, dusty dirty environment.
- As burns to the feet meet ANZBA referral criteria, consider contacting the Burns Unit/Burns Registrar for advice and how to best manage foot wounds.

Burns in the elderly patient

Elderly people can be more prone to burn injury due to impaired judgement, coordination, balance and poor reaction time. These burn injuries are more problematic and serious compared to younger patients due to several factors including:

Physiological factors

- Thinner skin
- Decreased regenerative capacity
- Reduced pain perception
- Sensory impairment
- Decreased circulation capabilities

Physical factors

- Limited mobility
- Slow reaction time
- Decreased coordination
- Poor vision

Metabolic and Nutritional factors

- Reduced metabolic resilience
- Nutritional deficiencies

Psychological and social factors

- Cognitive impairment
- Social isolation and limited support
- Safety at home

Immunological factors

- Gradual deterioration of the immune system
- Chronic low-grade inflammation/ inflammatory conditions

Early specialist treatment and care for burn injuries, even small TBSA burns, is imperative to ensure the best outcome for elderly patients

Burns in patients with diabetes

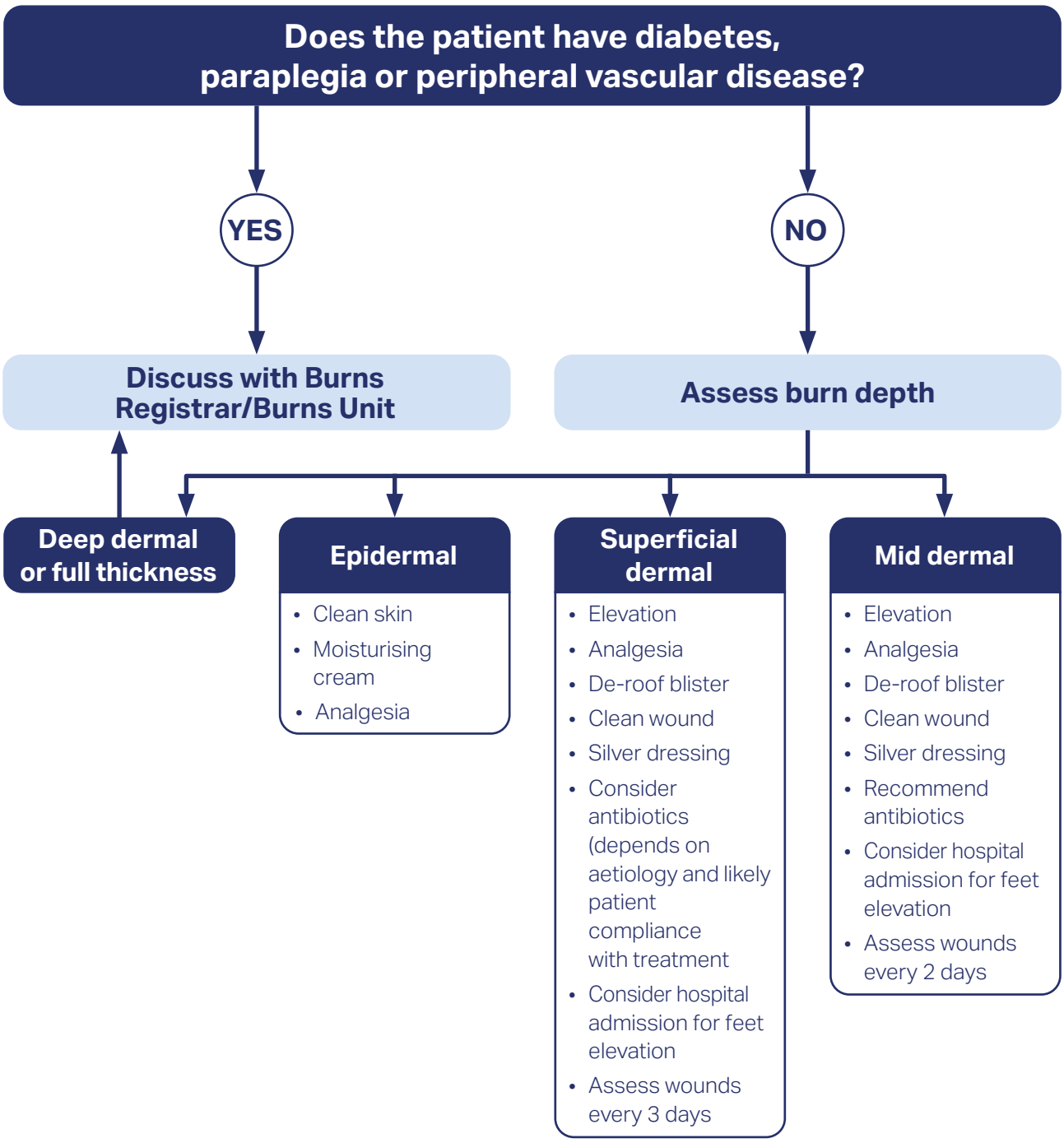
Type 1 and type 2 diabetes increases burn risk and poor burn healing in three main ways:

- Higher risk for peripheral vascular disease, which leads to poor healing.
- Neuropathy, which leads to an inability to sense heat.
- Impaired resistance to infection, placing patients at increased risk for delays in wound healing and potential for amputation.

Even a minor burn in a person with diabetes can result in a severe wound infection resulting in hospital admission for antibiotic therapy and possibly surgery. Deeper burn injuries often require surgery and carry a significant risk of digit or limb amputation in feet and hands. For a similar depth of burn injury, a wound will often take longer to heal in a person with diabetes (especially if they have nerve damage and poor circulation) and may result in permanent scarring with effects on function and appearance.

Early assessment and treatment may prevent a minor injury from developing into something more serious. All lower limb/feet burns sustained by a person with diabetes should be referred to the Burns Service.

Diabetic lower limb burn assessment tool



Burns in children

Children are also at risk of more significant burn injuries due to coordination, poor reaction time, and other physiological and physical factors. Babies and young children at most at risk due to:

- Larger surface area to body weight ratio
- Size and different body proportions compared to older children
- Thickness of skin
- Inability to move away from heat source and administer first aid

The ability to properly assess and treat a child with a burn injury can be difficult in a GP/ clinic setting. It may not be possible to administer appropriate pain relief and debride even small wounds in this setting. Strongly consider contact the Women's and Children's Burns clinicians for advice on managing minor burns.

Initial wound management for minor burns

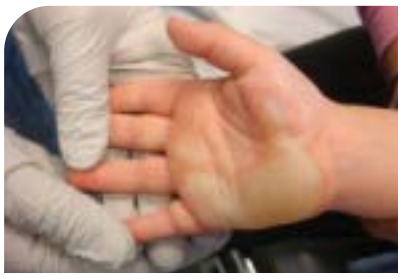
The WCH Burns Service recommends the removing of burn blisters (de- roofing/non-surgical debridement) unless very small, flat or non-fluid filled.

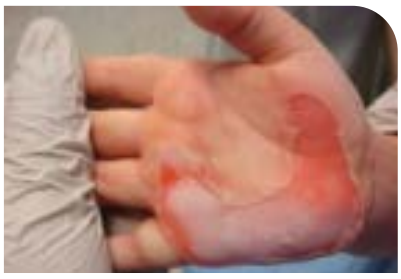
Prior to removing blisters:

- Assess the need to remove
- Consider need to refer to WCH Burns Service
- Obtain consent from the patient/care giver
- Administer appropriate analgesia and allow time to take effect
- Take digital image before and after procedure if possible (especially if referring to Burns Service)
- Prepare dressing materials

Procedure for removing blisters

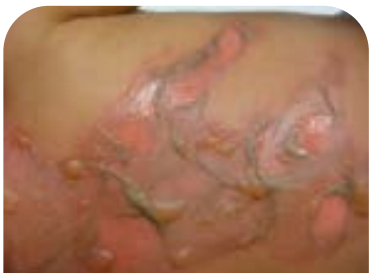
- Most blisters and non-viable skin can be removed using normal saline and gauze with firm pressure.
- Thick walled blisters on the soles of feet and palmer surface of hands (glabrous skin) will require the use of sharp scissors +/- forceps. Depending on the compliance of the child, scissors may be just required to incise the blister and the remaining skin removed with moist gauze.
- Dress the wound – refer to commonly used burn dressings chart.
- Provide dressing care education and arrange follow (complete referral to WCH Burns Service if required).
- If your facility does not have the capacity or resources to de – roof blisters, refer to local emergency department.





Pre and post deroofing of blisters using sharp scissor.

Example only- refer to Burns Service for advice



Example of superficial burn that requires blisters and non viable skin to be removed with normal saline and gauze.

Further information for burn management

Adult Burns Service
rah.sa.gov.au/health-professionals/clinical-services/surgical/burns-surgery

Paediatric Burns Service
wch.sa.gov.au/patients-visitors/children/surgical-care/burns#for-health-professionals

References

- First Aid and Emergency Management of Adult Burns 2023 practice guidelines, Royal Adelaide Hospital Burns Unit, Central Adelaide Local Health Network rah.sa.gov.au/assets/general-downloads/CALHN-RAH-Burns-Unit_First-aid-and-emergency - management-of-adult-burns_2023-Practice-Guidelines-26092023.pdf
- Paediatric Burns Service Guidelines 2023, Women's and Children's Hospital Burns Service, Women's and Children's Health Network cdn.wchn.sa.gov.au/downloads/WCH/children/burns/Paediatric-Burns-Service-Guidelines.pdf

Care of minor burns in adults

Minor burns are considered to be any burn less than 10% total body surface area. Although smaller in size, minor burns may still require specialist care.

1 First aid

Effective up to 3hrs post injury.

- 20mins cool running water NO ICE
- Remove all jewellery/clothing near burn site
- For chemical injuries irrigate >1–2hrs
- Running water is preferred over hydrogels (e.g. Burn Aid)

2 Assessment

Burns are dynamic in nature. Burn assessment should occur at least one hour post injury.

Assess depth:

- colour
- moisture
- sensation/pain
- capillary refill

Assess size:

- Palmar method – patient's palm is 1% TBSA
- Lund & Browder chart

3a Immediate discussion

Recommend immediate phone referral if:

Size:

- Superficial >2% TBSA
- Any full thickness burns

Site:

- Hands
- Face/neck
- Circumferential burns
- Feet
- Perineum/genitalia
- Involving major joint

Mechanism:

- Inhalation
- Chemical
- Electrical
- Suspected non-accidental injury

Co-morbidity:

- Medical illness/condition which may influence healing or management plan
- Elderly/vulnerable person
- Co-existing psychiatric/social or situational issues affecting wound healing/management

Other:

- Febrile/unwell patient
- Infected burn wound
- Concerns regarding healing

Any burn the referring clinician isn't confident to manage.

Burns On Call Registrar
Phone 0435 051 631

Please note, if you are at all unsure of a management plan, feel free to discuss with a senior member of the Burns team.

3b Outpatient pathway discussion

Options for referring clinicians

If unable to give pain relief

OR

Unable/not confident to debride wound

- Apply a temporary non- adherent dressing such as Jelonet
- Contact Burns Unit to arrange OPD for following day

- Give appropriate pain relief
- Debride blisters/ loose skin
- Assess depth/size
- If patient consents, send photo with referral form
- Apply silver dressing
- Contact Burns unit to arrange follow up OPD
- Review within 3 days as burn wounds can evolve 1–72hrs post injury

RAH Adult Burns Service

For 24/7 enquiries (Burns Unit Nurse Team Leader) and OPD bookings:

(08) 7074 5076
rah.burns@sa.gov.au
rah.sa.gov.au/health-professionals/clinical- services/surgical/burns-surgery

Burns OPD Clinic
7GA, level 7, Royal Adelaide Hospital
Mon–Fri, 8am–3pm
BOOKINGS ESSENTIAL

Royal Adelaide Hospital

Government of South Australia

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