

Women's and Children's Hospital Paediatric Burn Guidelines

Assessment and treatment of major paediatric burns >10% TBSA

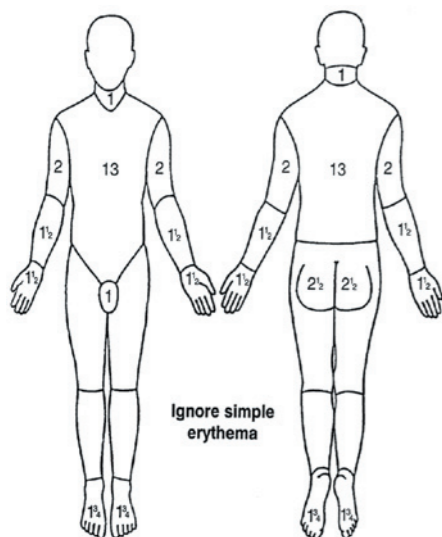
First aid

- First aid**
- > Stop the burning process. 'Cool the burn' with cool tap water for 20 minutes. Do not use ice. If cool tap water has not been applied it is still effective up to 3 hours post burn.
 - > Remove clothing, jewellery and anything constricting.
 - > Once cooled, cover burn area with cling wrap and warm the patient. Elevate limbs.
 - > Chemical burns – Wash copiously with water until 'burning' sensation settles.

Primary survey

- Airway**
- > Stabilize cervical spine.
 - > Check airway patency.
 - > Observe for signs of inhalation injury.
- Breathing**
- > Humidified oxygen should be commenced. If breathing is compromised, consider early endotracheal intubation.
- Circulation**
- > Check pulses and blood pressure. Consider IV access.
 - > Circumferential deep dermal to full thickness burns may cause a tourniquet effect. Escharotomies may be required. Elevate the affected area. Check distal pulses and capillary return and contact WCH Burns Service.
- Disability**
- > Assess conscious state.
- Exposure/ Environment**
- > Estimate percent of total body surface area burned (%TBSA). Monitor temperature, avoid hypothermia.
- Brief history**
- > Allergies, past medical history, tetanus status, medications and last meal.

Lund and Browder chart



Area	0–1 year	1–4 year	5–9 year	10–14 year	15 year	Adult	Superficial	Deep	Total %
Head	19	17	13	11	9	7			
Neck	2	2	2	2	2	2			
Ant. trunk	13	13	13	13	13	13			
Post. trunk	13	13	13	13	13	13			
R. buttock	2.5	2.5	2.5	2.5	2.5	2.5			
L. buttock	2.5	2.5	2.5	2.5	2.5	2.5			
Genitalia	1	1	1	1	1	1			
R. upper arm	4	4	4	4	4	4			
L. upper arm	4	4	4	4	4	4			
R. lower arm	3	3	3	3	3	3			
L. lower arm	3	3	3	3	3	3			
R. hand	2	2	2	2	2	2			
L. hand	2	2	2	2	2	2			
R. thigh	6	7	8.5	9	9.5	10			
L. thigh	6	7	8.5	9	9.5	10			
R. leg	5	5	5.5	6	6.5	7			
L. leg	5	5	5.5	6	6.5	7			
R. foot	3.5	3.5	3.5	3.5	3.5	3.5			
L. foot	3.5	3.5	3.5	3.5	3.5	3.5			
Total									

Fluid requirements

- Fluid resuscitation**
- Hartmann's solution (Parkland Formula)**
- 4mls x % of burn x body weight (kg)
= quantity over 24 hours
- Give 50% of the fluid in the first 8 hours
Give 50% of the fluid in the next 16 hours
- Examples**
- $4 \times 40\% \times 12 \text{ kgs} = 1920 \text{ mls}$
- 960mls in 8 hours
960mls in 16 hours
- The periods of time are calculated from the time of the burn injury. Children should have daily maintenance in addition to the fluid resuscitation.**
- Examples**
- 5% Glucose + 0.45% Normal Saline
@ 4mls/kg/Hr for the first 10kg
2mls/kg/Hr for between 10–20kg
1mls/kg/Hr for greater than 20kg
- 12kg
4mls per kg for the first 10kg = 40mls
2mls/kg for between 10–20kg = 4mls
44mls/hour
- Monitor urine output**
- > Burns $\geq 15\%$ may require a urethral catheter.
 - > Urine output should be 0.5 to 1ml/kg/hr.
 - > If urine output becomes excessive ($\geq 2 \text{ ml/kg/hr}$) reduce fluid resuscitation rate.
 - > Observe urine colour, if the urine is red or brown consult WCH Burns Service.

Secondary survey

- Other injuries**
- > Check for any other injuries, i.e. cervical or spinal injuries, loss of consciousness, lacerations etc.
- Insert nasogastric tube**
- > Insert nasogastric tube in any patient with burns $\geq 15\%$, or any patient that is unresponsive or any patient preparing for air transport.
- Analgesia**
- > Ensure that respiratory rate, sedation and oxygen saturation are monitored during morphine administration.
 - > Initial morphine: Prepare a syringe with 10mg of morphine to a total of 10mls = 1mg/ml.
 - > Titrate to comfort in five minutely doses.
 - > ≤ 12 months of age call WCH on call Anaesthetist on 8161 7000, pager 3643.
 - > 10–20kg use 0.5ml 20–30kg use 1ml 30–40kg use 1.5ml $\geq 40 \text{ kg}$ use 2ml bolus
 - > When comfortable start morphine infusion at 0.5mg/kg in 50mls normal saline. Run up to 4ml/Hr with boluses available every 30 minutes.
- Medications**
- > Tetanus toxoid should be given if patient is not currently covered.
- Burn history**
- Obtain:
- > Time of injury.
 - > Mechanism of injury e.g. scald, contact, flame.
 - > Location of the event e.g. confined space (risk of inhalation injury).
 - > Any associated injuries.
- Wound care**
- > Obtain advice from WCH Burns Service.
 - > Wash burns with soapy water, cover with cling wrap.
 - > Apply White Soft Parafin to the face.

Referral criteria

- > Burns greater than 5–7% Total Body Surface Area (TBSA).
- > Burns to face, hands, feet, genitalia, perineum, major joints.
- > Full thickness burns.
- > Electrical burns
- > Chemical burns.
- > Inhalation burns.
- > Circumferential burns.
- > Burn Injury in patients with pre-existing medical disorders.
- > Burns with associated trauma.
- > Suspicious burns.

For more information

Women's and Children's Hospital, Burns Service
Telephone: (08) 8161 7000 and page the burns registrar.

Considerable care has been taken to ensure that the information included in these guidelines is accurate. These guidelines are intended as an aid only and should not replace clinical judgment. Any loss or damage incurred as a consequence of using these guidelines is not the responsibility of the Women's and Children's Hospital.