

# Care of Burns in Scotland

National Managed Clinical Network

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### Initial management of adult major burns

For use by emergency department and front-line staff upon presentation

#### NOTE

This guideline is not intended to be construed or to serve as a standard of care. Standards of care are determined based on all clinical data available for an individual case and are subject to change as scientific knowledge and technology advance and patterns of care evolve. Adherence to guideline recommendations will not ensure a successful outcome in every case, nor should they be construed as including all proper methods of care or excluding other acceptable methods of care aimed at the same results. The ultimate judgement must be made by the appropriate healthcare professional(s) responsible for clinical decisions regarding a particular clinical procedure or treatment plan. This judgement should only be arrived at following discussion of the options with the patient, covering the diagnostic and treatment choices available. It is advised, however, that significant departures from the national guideline or any local guidelines derived from it should be fully documented in the patient's case notes at the time the relevant decision is taken.

## Treatment initialisation (first hour of intervention)

<b>A</b>	<ol style="list-style-type: none"><li>1. Intubation indicated for extensive burns, stridor, respiratory distress or GCS <math>\leq 8</math></li><li>2. Suxamethonium can be used safely up to 48 hours post burn injury.</li><li>3. Use the largest bore possible, uncut endotracheal tube.</li><li>4. Secure with ties or tube holder</li></ol>
<b>B</b>	Give maximal FiO <sub>2</sub> until carboxyhaemoglobin level known to be $\leq 3\%$
<b>C</b>	<ol style="list-style-type: none"><li>1. Obtain IV access (through burned skin if necessary; securing with suture / bandage)</li><li>2. Revert to IO access after two failed attempts</li><li>3. Give 1000ml Hartmann's or 0.9% saline (preferably warmed) stat</li><li>4. Consider Hydroxycobalamin 5g IV if cardiovascular instability</li></ol>
<b>D</b>	Titrate intravenous analgesia
<b>E</b>	<ol style="list-style-type: none"><li>1. Search for other injuries.</li><li>2. Categorise burn size as 20-50% or &gt;50%</li><li>3. Cool burn (omit only if this would cause threat to life)<ul style="list-style-type: none"><li>• Cool running water for 20 minutes up to 3 hours post-injury</li><li>• Irrigate chemical burns repeatedly. Use either cool running water, suitable amphoteric solution if available (eg diphoterine) or sterile saline/plasmalyte solution</li><li>• Stop if core temperature <math>&lt; 35^{\circ}\text{C}</math></li></ul></li><li>4. Remove non-adherent clothing and jewellery.</li><li>5. Dress burn with cling film (avoid circumferential application). Warm patient by removing wet sheets/clothing, applying blankets, minimising exposure and raising ambient temperature.</li><li>6. Insert nasogastric tube if intubated</li></ol>

## Treatment optimisation (1-12 hours)

A	<ol style="list-style-type: none"> <li>1. Isolated facial burns should have skilled (and if necessary repeated) airway assessment prior to intubation.</li> <li>2. Ensure endotracheal tube ties not overly tight if face swelling.</li> </ol>
B	<p>Give maximal FiO<sub>2</sub> until carboxyhaemoglobin level known to be ≤ 3%</p>
C	<ol style="list-style-type: none"> <li>1. Give warmed balanced crystalloid initially as per Parkland formula: <ul style="list-style-type: none"> <li>• 4ml/kg/% body surface area burned over 24 hours from burn</li> <li>• Half in first 8 hours from burn</li> <li>• Half in subsequent 16 hours</li> </ul> </li> <li>2. Titrate fluid input to urine output 0.5–1ml/kg ideal body weight/hour*</li> <li>3. Consider A-line and CVC (through burned skin if necessary)</li> <li>4. Give Hydroxycobalamin 5g IV if cardiovascular instability/raised lactate not responding to fluid resuscitation</li> </ol>
D	<p>Titrate intravenous analgesia</p>
E	<ol style="list-style-type: none"> <li>1. Estimate burn size using Lund &amp; Browder chart (or Mersey Burns app).</li> <li>2. Consider chest/limb escharotomy if circumferential full thickness burns.</li> <li>3. Warm patient by removing wet sheets/clothing, applying blankets/forced air warmer, minimising exposure, warming intravenous fluids and raising ambient temperature.</li> <li>4. Start nasogastric feed if intubated.</li> <li>5. Position 30° head up and elevate limbs on pillows.</li> <li>6. Consider tetanus prophylaxis</li> </ol>

\*Further guidance is provided in the COBIS Fluid Resuscitation guidance available on [www.nn.nhs.scot/cobis/professionals/clinical-guidelines/](http://www.nn.nhs.scot/cobis/professionals/clinical-guidelines/)