Remove patient from burn source

Chemical or radiation burn
- Yes: Decontaminate
- No:
  - Consider O2
  - Remove constrictive items
  - Estimate depth & area
  - Consider irrigation
  - Cover

Establish IO access
- Establish IV access
- Consider fluid administration
- Consider analgesia

Monitor for arrhythmia
- Yes:
- Electrical burn
- No:

Suspected or known airway burns
- Resp complaints /distress or SaO2 < 94%
- Circumferential burn(s) of thorax
- Hypotension or shock
- Yes:
  - Corneal burn
  - No:
- No:
  - Yes: TRANSPORT
  - No: Flush eyes
INDICATIONS:
- All patients of all ages with thermal, chemical, electrical and radiation burns.

CONTRAINDICATIONS:
- Life threatening injuries must be resolved or stabilized prior to initiating this care map.

NOTES:
- Other agencies or services may be required to remove the patient from danger before EMS can initiate assessment and treatment.
- Dry chemicals should be brushed off the skin with a soft brush or gauze, and then irrigated copiously with room temperature fluid. Wet chemicals should be irrigated copiously with room temperature fluid. Information regarding the chemical causing the injury should be obtained if possible.
- Patients exposed to certain types of radiation may pose a risk to EMS personnel and may require decontamination before they can be treated or transported. Local technical personnel may be able to provide information for the safe handling of contaminated persons. Manitoba Conservation – Environmental Operations: Dangerous Goods Emergency Response (1-204-944-4888) is available 24 hours every day to provide appropriate information, resources and personnel.
- Any burning or burned clothing must be carefully removed. Remove all jewelry or constrictive clothing before swelling begins.
- Patients from an enclosed fire should receive supplemental oxygen by a NRB at high flow rate, regardless of SaO2.
- Appendix A provides information on assessing size (area) and depth (degree) of burns. Second degree partial thickness and third degree full thickness burns greater than 20% BSA are potentially life threatening injuries.
- Thermal burns can be irrigated with room temperature fluids for pain control. Be aware of the potential of hypothermia with prolonged irrigation and/or large surface areas.
- Do not break blisters. Burns should be covered with clean dry dressings / sheets or commercial burn dressings.
- Excluding patients with known or suspected bleeding, providers should consider intravenous (IV) or intraosseous (IO) fluid administration.
  - If SBP is greater than 100 mmHg, administer IV solution at 500 ml/hr.
  - If SBP is less than 100 mmHg, administer IV solution in bolus volumes of 20 ml/kg (to maximum 1 liter per bolus) and repeat as required. When SBP is greater than 100 mmHg continue at 500 ml/hr.
  - Continuously monitor for signs of pulmonary volume overload, especially in the elderly. If volume overload develops, reduce the rate of fluid administration to TKVO (regardless of the SBP) and initiate emergent transport.
- Patients exposed to strong electrical high current must have continuous electrocardiographic monitoring.
- Consider airway inhalational injury or burn, even in the absence of facial burns, especially if patient was in an enclosed space. REMINDER: Airway compromise can develop rapidly.
- Consider pulmonary inhalational injury, especially if patient was in an enclosed space. Consider pulmonary burns if exposed to hot gases or water vapor.
- Circumferential thoracic burns may lead to restrictive respiratory compromise and are a life threatening emergency.
- Providing there are no other potential life-threatening injuries requiring emergent transport, corneal burns should be irrigated as soon as possible. If there is no evidence of penetrating injury to the globe, thermal burns less than 30 minutes old and all chemical burns can be irrigated copiously with normal saline or sterile water. In the absence of life threatening injuries, this can be done prior to transport. Cool moist compresses can then be applied for pain control.
### Appendix A: Estimating size (body surface area) and depth of burns

<table>
<thead>
<tr>
<th></th>
<th>ADULT (% BSA)</th>
<th>INFANT / YOUNG CHILD (% BSA)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Head</strong></td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td><strong>Front torso</strong></td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td><strong>Arm</strong></td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td><strong>Leg</strong></td>
<td>18</td>
<td>14</td>
</tr>
<tr>
<td><strong>Genitalia</strong></td>
<td>1</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Buttock</strong></td>
<td>n/a</td>
<td>2.5</td>
</tr>
<tr>
<td><strong>Palm</strong></td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>First degree</th>
<th>Second degree</th>
<th>Third degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partial thickness</td>
<td>Partial thickness</td>
<td>Full thickness</td>
</tr>
<tr>
<td>Epidermis</td>
<td>Epidermis &amp; dermis</td>
<td>Epidermis, dermis &amp; subcutaneous tissues</td>
</tr>
<tr>
<td>Redness; no blisters</td>
<td>Red, glistening, blisters</td>
<td>Waxy or charred, dry leathery</td>
</tr>
<tr>
<td>Painful +++</td>
<td>Painful +++</td>
<td>Painful +/-</td>
</tr>
<tr>
<td>Not life or limbthreatening</td>
<td>Potentially life or limb threatening</td>
<td>Potentially life or limb threatening</td>
</tr>
</tbody>
</table>