PAEDIATRIC ACUTE CARE GUIDELINE	
Burns – Fluids	
Scope (Staff):	All Emergency Department Clinicians
Scope (Area):	Emergency Department

This document should be read in conjunction with this DISCLAIMER
http://kidshealthwa.com/about/disclaimer/

Burns – Fluids

Background

General

The aims of intravenous fluids in a child with burns are:

- To rehydrate the child with a major body surface area (BSA) burn (this **excludes** simple erythema):
  - 0-18 months: 8% and over
  - Older children: 10% and over
- To achieve adequate perfusion of all potentially viable tissue and to maintain function of all vital organs, as evidenced by adequate, and not excessive urine output.

Assessment

Investigations

The following baseline tests need to be obtained if an IV cannula is inserted:

- FBC, LFT, U&E, BGL
- Venous Blood Gas (VBG) (if inhalation burns or carbon monoxide poisoning is suspected)
- Group and Hold (if other injuries are present secondary to trauma)

Management

Resuscitation

- For Resuscitation fluids – see ED guideline: Fluids – Intravenous Therapy

Initial management

Burns Resuscitation Fluids According to the Parkland Formula

- To be added to the child's normal maintenance fluids
- Calculate the volume required for fluid replacement using the following formula:

% BSA x weight (in kg) x 2

- To assess the % BSA use the Burns Body Surface Area Sheet
- This gives an estimate of the volume of replacement fluid required in the first 24 hours**from the time of the burn** (not from time of arrival in hospital)
- Administer this calculated volume using **Hartmann's solution** as follows:
  - 50% within the first 8 hours
  - 50% over the next 16 hours
- Adjustments may be required based on the ongoing assessment of the child
- The Burns Registrar will recalculate the estimated % BSA during the initial assessment

Maintenance

Determine child's normal daily maintenance fluid requirement – See ED guideline: Fluids – Intravenous Therapy

Total fluid requirement calculation:

Total fluid = rehydration fluid + maintenance fluid (given as an hourly rate)

- Any volume of fluid given and tolerated orally or by nasogastric tube should be deducted from the IV fluid volume that is required to maintain the desired urine output
- Monitor urine output closely after first 2 hours

Urine output

- As a rule, if a burn is severe enough to require IV fluid resuscitation, then urine output should be properly monitored with a catheter
- Optimal urine output 0.5 – 1mL/kg/hr for paediatric burns fluid resuscitation patients
- Adjust fluid rate to compensate

See Burns Fluid Calculator

Further management

Neurovascular Observations

- The burn must be **elevated** to reduce swelling (especially important in circumferential burns)
- The neurovascular status must be observed closely
- Excessive fluids may result in increasing oedema, possibly compromising the circulation and necessitate an escarotomy
- Early review by the Burns Registrar or Consultant is vital if there are any concerns regarding vascular compromise

Medications

- See ED Guideline: Burns – Medication

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