

## Basic Burn Assessment

### Specific Burn History In Addition To Standard Medical History:

1.) What is the mechanism? Flame? Hot oil? Petrol?

Flame burns especially if accelerant is involved (e.g. petrol) and chemical burns (alkali burns more than acid) result in deep burns which usually require treatment.

Does the pattern of burn fit with described mechanism? Careful history is especially important in children to exclude non-accidental injury or abuse.

**If there is suspicion of airway or inhalational injury e.g. fire in a confined space or examination findings below suggesting airway injury, speak to tertiary centre / hospital urgently.**

2.) When did it happen?

Helps determine if the burn is healing / will heal.

3.) Was there any first aid administered on the scene?

Immediate first aid decreases severity of burn. As a general rule, always irrigate with cool water **immediately** for ANY burn (beware if electrocution!) especially chemical burns. Chemical burns need prolonged irrigation. **NO** ice or ice water. **NO** toothpaste, oils, balms, lotions, butter etc.. It is worth irrigation even up to 2 hours after burn.

4.) Does the patient feel unwell or pyrexial?

Patient may have infected burns or maybe dehydrated if large area of burn.

### Examination:

1.) Signs of airway injury or inhalational injury?

Suggested in history e.g. trapped in a burning house.

Look for facial burns, burnt facial hair, burnt nasal hair, hoarse voice, soot around nose and mouth, burns inside mouth.

2.) Is the patient unwell?

Pyrexia suggests infected burns and ALL dressings must be removed to check.

Hypotension, tachycardia can be signs of dehydration in large burns or sepsis and require immediate aggressive fluid resuscitation (and antibiotics if sepsis suspected).

3.) Estimate approximate area of burn (expressed as % Total Body Surface Area - TBSA)?

Quick and simple estimation using the patient's own hand where the total area of the palm **AND** fingers together correspond to approximately 1%. Consider children have comparatively larger heads than adults, relative to the rest of their body. Note that erythema (see depth estimation) is NOT counted in estimation of burn area. More accurate estimation can be achieved with specialised burn charts (see below).

4.) Estimate the depth of burn. This is classified into:

*Erythema only:* This is just painful erythematous skin (difficult to see in dark skin!) with no blistering; like sunburn or minor flash burns. Usually heals well spontaneously with no scarring.

*Partial thickness (superficial partial thickness or deep partial thickness).* Painful blistering IS partial thickness:

Superficial partial thickness burns are pink and painful with blanching and visible brisk capillary refill when digital pressure is applied to the burn. These may heal within 2 weeks but will need dressings and may scar.

Deep partial thickness burns are painful and maybe cherry red, deep red or nearly white rather than pink. Fixed red staining with no convincing capillary refill or blanching observed with digital pressure. These usually require surgery.

*Full thickness* burns are supposed to be painless to touch with a white or leathery black appearance. No blanching or capillary refill. Always require surgery (unless very small and "unimportant" anatomical area), delayed healing otherwise.

**Other Important Points:**

Beware inhalational injuries which may have no evidence of airway problems initially but can develop airway obstruction within a few hours so contact hospital early and do not delay.

Beware circumferential burns of limbs which can have delayed swelling with resulting compartment syndrome.

Consider referral to hospital or specialist care for the following also:

- Partial thickness burns affecting the face, hands, feet, genitals
- Partial thickness burns of about 5% or more as dressings can be challenging with high wound exudate

Mixed depth burns are a combination of any of erythema, superficial partial thickness, deep partial thickness or full thickness burns.

Superficial burns can deepen if they get infected but antibiotics are usually not given prophylactically.

