

# Treatment of Electrical Injuries

## Clinical Assessment in A&E

- ATLS approach in severe injury
- History: Voltage? Amperage? Anatomical site, and duration of contact? Was patient thrown from source? Was there a loss of consciousness?
- Full body examination: assessment of entry/exit wounds and extent of cutaneous burn
- Assessment for compartment syndrome
- ECG- evaluation of dysrhythmia/arrhythmia
  - Pregnant women should be referred to obstetrics for consideration of foetal cardiac monitoring

## Assess voltage

- Low voltage <1000v
  - UK domestic is 240v
  - Workshops 380v
- High voltage >1000v
  - Overhead lines 1500v
  - Railway lines 25,000 v
  - High voltage lines 45,000 v +

### LOW VOLTAGE INJURY

#### Low voltage injury with NO cutaneous burn

- If ECG normal, consider discharge
- **If ECG abnormal, follow high voltage pathway**

#### Low voltage injury with small cutaneous burn

- Send details and photographs, via Burns MDSAS Telereferral System to your nearest Burn Service
- Call nearest Burn Service to discuss. Likely suitable for discharge and outpatient follow-up
- Clean and deroof burn, use non adhering dressing

#### Low voltage injury with large cutaneous burn or compartment syndrome

- Refer immediately to your nearest Burn Service via Burns MDSAS Telereferral System (including photographs of wounds)
- Use non adhering dressing
- **Follow high voltage pathway**

### HIGH VOLTAGE INJURY

#### High voltage injury with NO cutaneous burn Or low voltage and ECG changes

- Admit locally
- Minimum 24 hours monitoring
- Discuss with cardiology need for further cardiac investigations
- Manage other organ failures

#### High voltage injury with cutaneous burn or compartment syndrome

- ATLS approach
- Assess for compartment syndrome/ rhabdomyolysis and size of burns (% TBSA)
- Call Burn Service to follow-up on telereferral and consider fasciotomy locally prior to transfer if indicated
- Transfer to Burn Service as directed

## SPECIALISED BURNS SERVICES

### The Welsh Burns Centre & Paediatric Unit

Morrison Hospital, Swansea  
Tel: 01792 703 802  
Switch: 01792 702222

**SWUK Paediatric Burns Centre**  
Bristol Royal Hospital for Children  
Tel: 0117 342 7901  
Switch: 0117 923 0000 (Bleep 6780)

**Bristol Burns Unit**  
Southmead Hospital  
Tel: 0117 414 3100/3102  
Switch: 0117 950 5050 (Bleep 1311)

**Salisbury Burns Unit**  
Salisbury District Hospital  
Tel: 01722 345 507  
Switch: 01722 336262

**Plymouth Burns Facility**  
Derriford Hospital, Plymouth  
Tel: 01752 792274  
Switch: 01752 202082

**MDSAS Burns Telereferral**  
<https://www.mdsas.nhs.uk/burns/>