Management of Burns

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Importance of right information

- Right and correct information and timely intervention can save someone’s life.
- Wrong or incomplete information can put yourself or your loved ones at danger.
- I hope today by listening and imbibing right information we will be able to help ourselves as well as we can help our society and nation

Various aspects of Burn, its prevention and management

- Today we will be discussing various aspects of Burn, its prevention and management.
- Suppose you are at the place of burn
  - Either as a victim
  - Or as an observer

  What to be in done in these cases

What to do if you are the Victim

- First of all you have to whats the reason of this burn because its management depends on the reason of the burn.
- First you will observe that whats the main source of this burn
- Hot metal or object like Hot Pressing iron or some vessel
- Fire Directly
- Hot liquid like hot milk, water or boiling oil
- Chemical
- Electricity
- Some Blast

In case of burn directly Fire

- If you are the victim
  - First of all you have to see the source of the fire, you have to get away from the source. Please mind that you don’t have to run very far and you have to run in the direction of exit.
  - Check if you clothes has caught fire, then immediately you have to lie down and roll on the ground and fire will be extinguished.
  - You have to remove your clothes immediately after that and if not possible you can pour water on yourself.

What to do if you are the observer

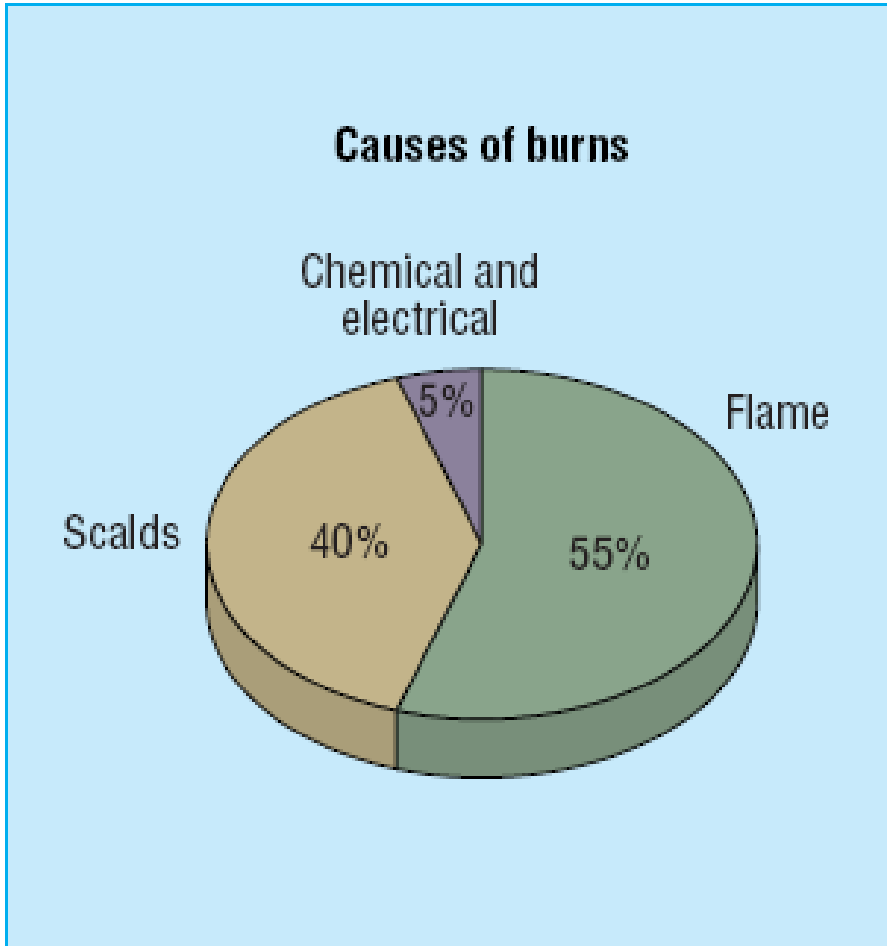
- First of all you have to ensure first your safety.
- It should not happen that you go to save himself and you yourself get entrapped.
- First you will observe that whats the main source of this burn
- Take him away from the source
- You can use blanket, fire extinguisher or if there is nothing available with you.
- You can ask him to lie down and roll.
- After this move to a well ventilated place or open place because fire generates a gas Carbon mono oxide and in many cases death occurs due to asphyxiation due to this gas.

In case of burn of electricity

- If you are the victim
  - Disconnect the electricity
  - Don’t put water.
  - Use slippers, Don’t go bare foot.
  - As electricity flows through heart as heart has maximum blood volume and as liquid is a good conductor. Chances of arrhythmia are high in case of electricity.

Burns

- Types of thermal burn injury
  - Flame
  - Scalds
  - Thermal Contact
  - Flash Burns
  - Blast Injury
  - Friction burns



Burns

- Other types of burn injuries
  - Electric Contact
  - Electric Flash
  - Lightning Burns
  - Chemical Burns
  - Cold injury – Frostbite & Chillblains
  - Radiation Burns

Burns

Burn injury is defined as a syndrome of local and systemic manifestations following exposure to very high temperature, electrical current, chemicals or radiation.

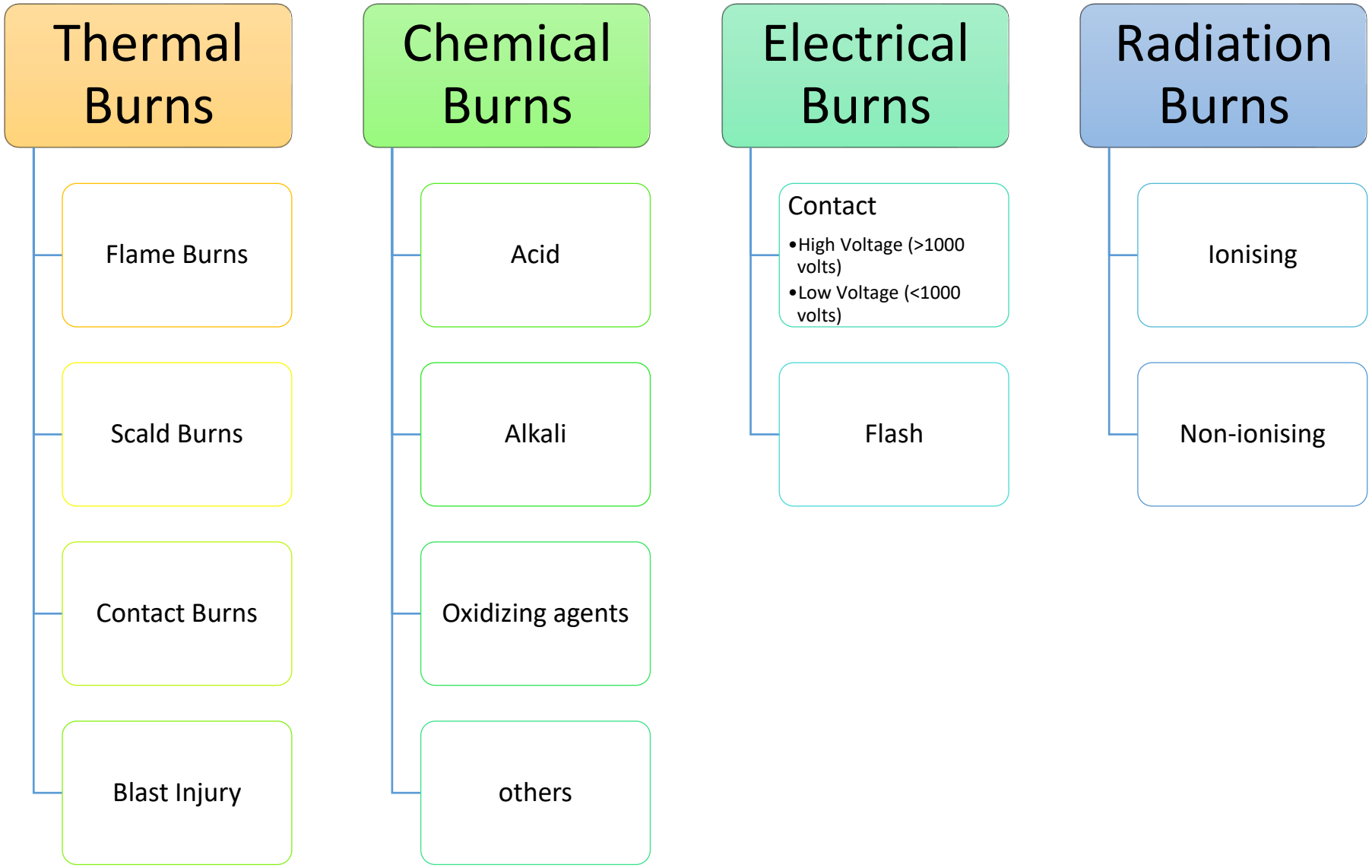
A

B

C

D

Based on Etiology



Thermal Burns

- **Flame**:
  - 50% of adult burns
  - Associated with inhalations injuries
  - Usually deep dermal or full thickness
  - Flash or flame burns are encountered in **45% of the victims of explosions and bombings** occurring in confined spaces

Ann Burns Fire Disasters. 2007 Dec 31;20(4):203–215.
Show available content in: English | French

Military and Civilian Burn Injuries During Armed Conflicts

BS Atiyeh [1], SWA Gunn [2], SN Hayek [3]

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PMCID: PMC3188083 PMID: 21991098

Scald Burns

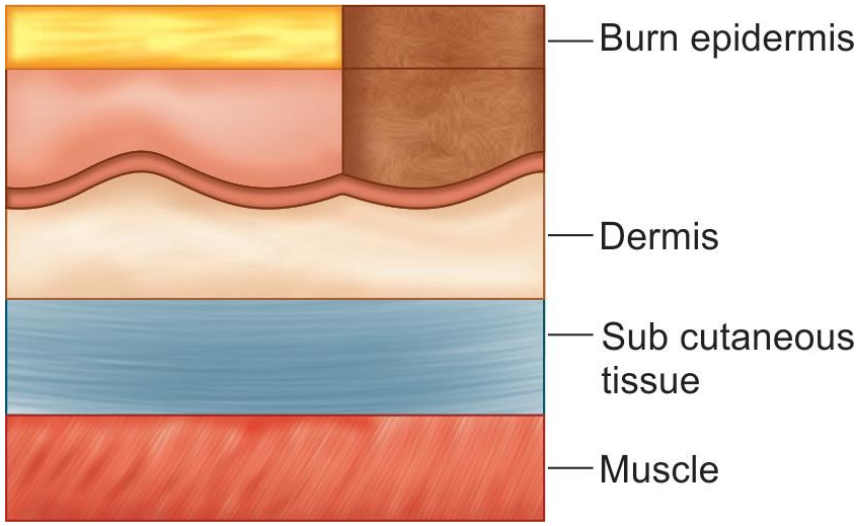
- 70% of burns in children
- Hot drinks/liquids/hot water bath
- Superficial dermal burns

Chemical Injuries

- As result of industrial accidents and household chemical products
- Tend to be deep
- Coagulative necrosis
- Alkalis more damage than Acids
- Cement common cause of alkali burns

Burns

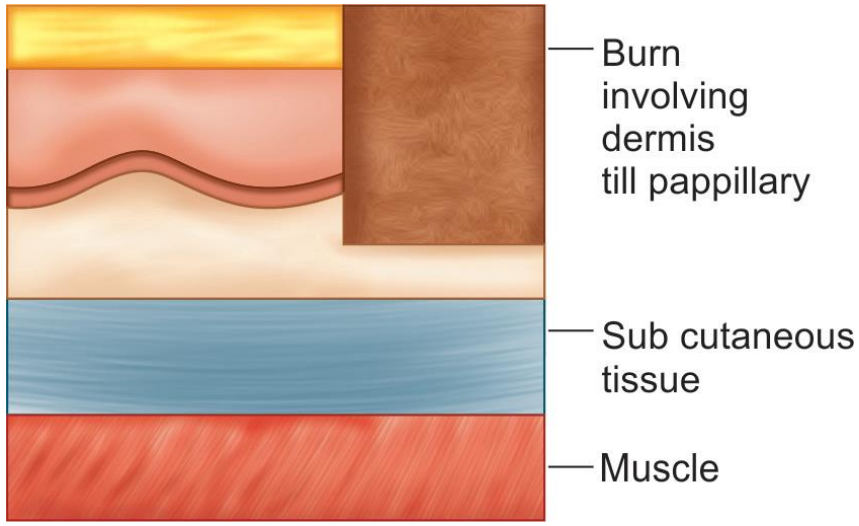
- Depth of burns
- **1st Degree**
- 2nd Degree
- 3rd Degree
- 4th Degree



Schematic diagram showing 1st degree (epidermal) burns

Burns

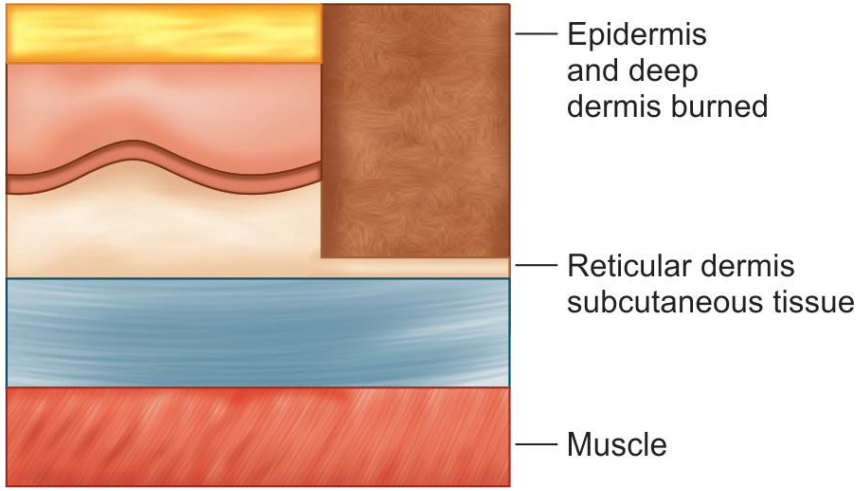
- Depth of burns
- 1st Degree
- **2nd Degree**
- 3rd Degree
- 4th Degree



Schematic diagram showing 2nd degree (superficial Papillary dermal) burns

Burns

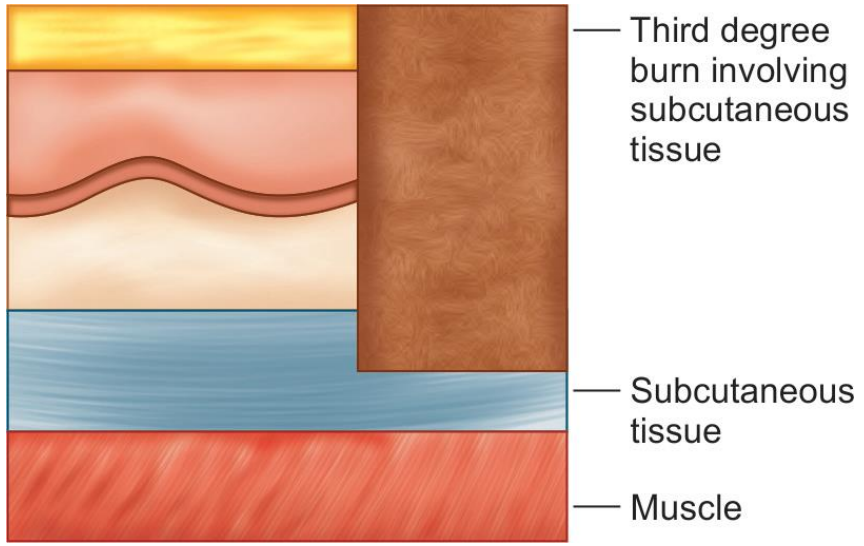
- Depth of burns
- 1st Degree
- **2nd Degree**
- 3rd Degree
- 4th Degree



Schematic diagram showing 2nd degree (deep dermal) burns

Burns

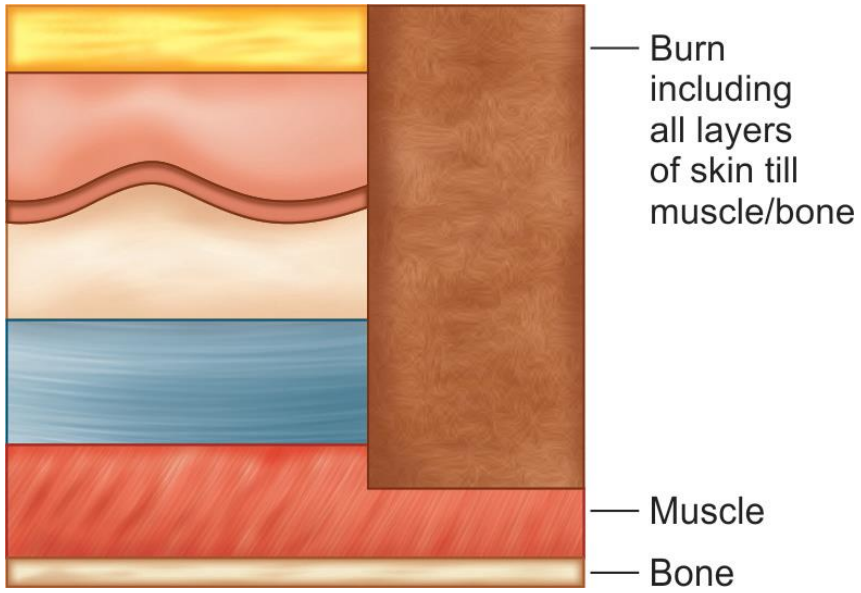
- Depth of burns
- 1st Degree
- 2nd Degree
- **3rd Degree**
- 4th Degree



Schematic diagram showing 3rd degree (full thickness of skin) burns

Burns

- Depth of burns
- 1st Degree
- 2nd Degree
- 3rd Degree
- **4th Degree**



Schematic diagram showing 4th degree (involving deeper structures) burns

Management of Burns

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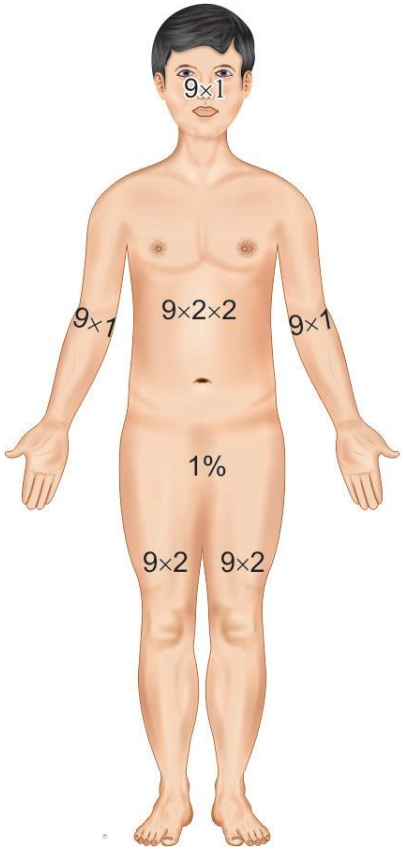
Burn Wound Assessment

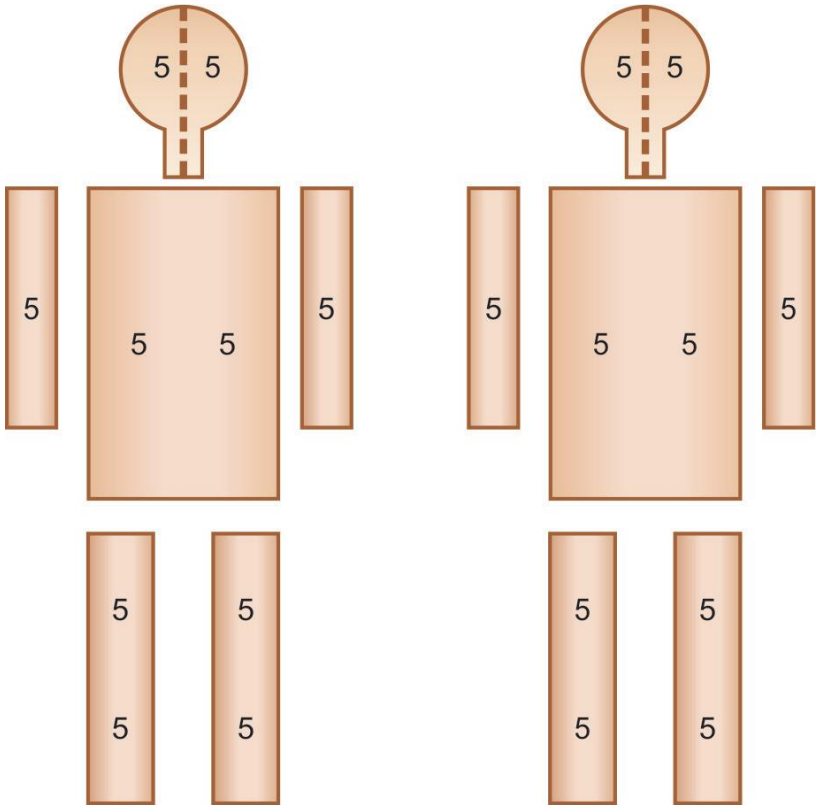
- TBSA (Total Body Surface Area)



Adults = Rule of “Nine”s

Burn Wound Assessment

- TBSA (Total Body Surface Area)



Pediatric Age group:
Rule of “Five”s

Aims

- To Preserve life

- To Promote recovery

First aid training removes the hesitancy of a person to help the victim in an effective manner.

Initial Management

- Protect yourself – scene safety
- Call for help
- Stabilize the patient
- Manage AIRWAY-BREATHING -CIRCULATION
- Safe transfer to appropriate facility

Why you.....

Your role is

very very very very very

Essential and important to us.

- Immediate support given for any injury, or sudden illness before the arrival of an ambulance, doctor or any other qualified person or patient is shifted to an hospital → improves survival.

Human body

- *Respiratory system*
  - Airway and Lungs
- *Cardiovascular system*
  - Heart and blood vessels
- *Nervous system*
  - Brain and spinal cord
- *Locomotor system*
  - Bones, muscles and joints

A---B---C---D

- **Airway**
- **Breathing**
- **Ciculation**
- **Disability**

First response

- Scene safety
- Assess the victim
- Call for help
- Respond – stabilize victim

  protect airway

  safe transfer to appropriate facility

Scene safety

Is the scene safe???

Protect yourself first

Then try to help victim

How to identify?

Burning! - Scene Safety

Burnt!

Technique – What?

Burning!

- **Stop Burning Process!!**
- Cool the Burn
- Pain Relief
- Cover the Burn

Burnt!

- Cool The Burn
- Pain Relief
- Cover the Burn

Hudspith J, Rayatt S. First aid and treatment of minor burns. BMJ. 2004 Jun 19;328(7454):1487-9. Review.

Technique – How?

Stop Burning Process!!

- Dos
  - Call for help (Bystander or Fire Brigade/ Police)
  - Heat source needs to be removed
  - Loose burnt clothes needs to be cut off.
- DONTs
  - PANIC
  - Try to remove adhered nylon clothes, Tar etc
  - Try to do first aid unless source of heat is removed

Hudspith J, Rayatt S. First aid and treatment of minor burns. BMJ. 2004 Jun 19;328(7454):1487-9. Review.

Technique – How?

Cool the burn

- Dos
  - Immerse in cool water for at least 20 minutes; or
  - Running Cool Water for at least 20 minutes
  - Wet Blanket
- DONTs
  - Ice or Ice Cold Water
  - Any other herbal or home remedy or ointment or cream

Zideman DA, De Buck ED, Singletary EM, Cassan P, Chalkias AF, Evans TR, Hafner CM, Handley AJ, Meyran D, Schunder-Tatzber S, Vandekerckhove PG. European Resuscitation Council Guidelines for Resuscitation 2015 Section 9. First aid. Resuscitation. 2015 Oct;95:278-87.

Hyland EJ, Harvey JG, Holland AJ. First aid for burns: Too little, too late and often wrong. Med J Aust. 2014 Feb 3;200(2):85.

Karaoz B. First-aid home treatment of burns among children and some implications at Milas,Turkey. J Emerg Nurs. 2010 Mar;36(2):111-4.

Technique – How?

Pain Relief

- Dos
  - Immobilize affected Area
  - Continue running cool water
  - Early Transport to medical centre
- DONTs
  - Try to touch victim's burn wounds.
  - Puncture Blisters
  - Peel off blisters
  - Apply oil or ghee
  - Do not remove parts of clothing or jewellery that is attached to the burned wounds

Hudspith J, Rayatt S. First aid and treatment of minor burns. BMJ. 2004 Jun 19;328(7454):1487-9. Review.
Mishra SK, Mahmood S, Baig MA. Burn first aid knowledge and its determinants among general population of Rawalpindi. Eur J Trauma Emerg Surg. 2018 Aug 22

Technique – How?

Cover the Burn

- DOs
  - With Clean Cloth
- DONTs
  - Apply any cream, ointment
  - Apply cow dung or any other dung
  - Apply tight bandage

Mishra SK, Mahmood S, Baig MA. Burn first aid knowledge and its determinants among general population of Rawalpindi. Eur J Trauma Emerg Surg. 2018 Aug 22
Kattan AE, AlShomer F, Alhujayri AK, Addar A, Aljerian A. Current knowledge of burn injury first aid practices and applied traditional remedies: a nationwide survey. Burns Trauma. 2016 Nov 2;4:37.

First aid for burns: Too little, too late and often wrong

Article *in* The Medical journal of Australia · February 2014

DOI: 10.5694/mja13.11179 · Source: PubMed

Twenty minutes of cool running water has been proven to be the most effective in reducing progression of burn depth and time to re-epithelisation.[3] Unfortunately, products such as ice and toothpaste, which may have adverse effects, continue to be used on acute burns.

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/burns

Knowledge, attitude, and belief regarding burn first aid among caregivers attending pediatric emergency medicine departments

5. Conclusion

Knowledge of burn first aid among caregivers was limited, with several using nonscientific remedies. Social media, hospital visits, and TV can be used to improve caregivers' awareness of burn first aid. We also recommend a nationwide educational program emphasizing the use of only cold water as first aid while reducing the use of inappropriate home remedies.

BMJ VOLUME 328 19 JUNE 2004 bmj.com

ABC of burns

First aid and treatment of minor burns

Jackie Hudspith, Sukh Rayatt

The aims of first aid should be to stop the burning process, cool the burn, provide pain relief, and cover the burn.

- Thermal burn
  - Stop, drop and roll
  - Running tap water for 10 to 15 minutes

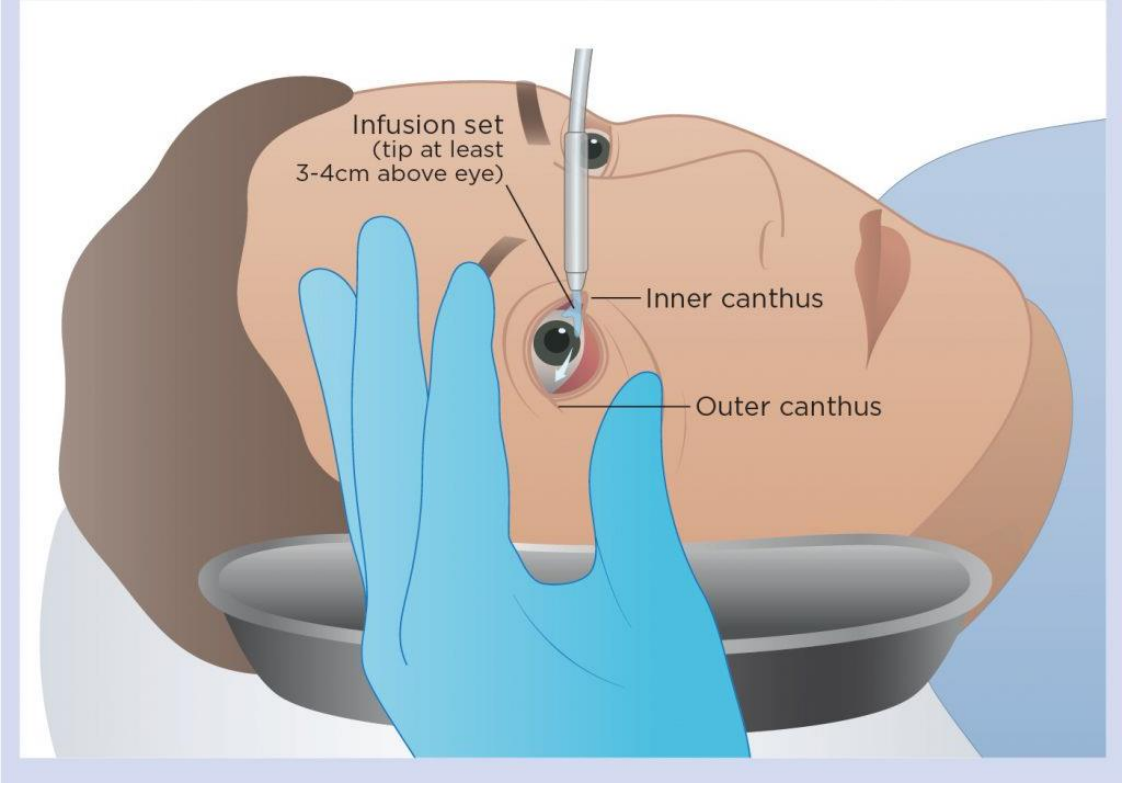
- Chemical burn
  - Running tap water for 10 to 15 minutes (exceptions- heavy metals, white phosphorous)

- Electric burn
  - Switch off the mains
  - Always be in rubber boats or slippers
  - Use non-insulating material like woodden stick or plastic stick to rescue

First Aid in Chemical Burns

First Aid in Chemical Burns (Dry)

First Aid in Chemical Burns



When to seek medical attention

- Burns are deep, and patient does not feel pain
- Burn involving face, hand, feet or genitalia
- Closed space burn
- All chemical and electrical burns
- Associated injuries
- Pregnant, pediatric and geriatric burns
- Medical conditions

Severity of Burns

Critical Burns

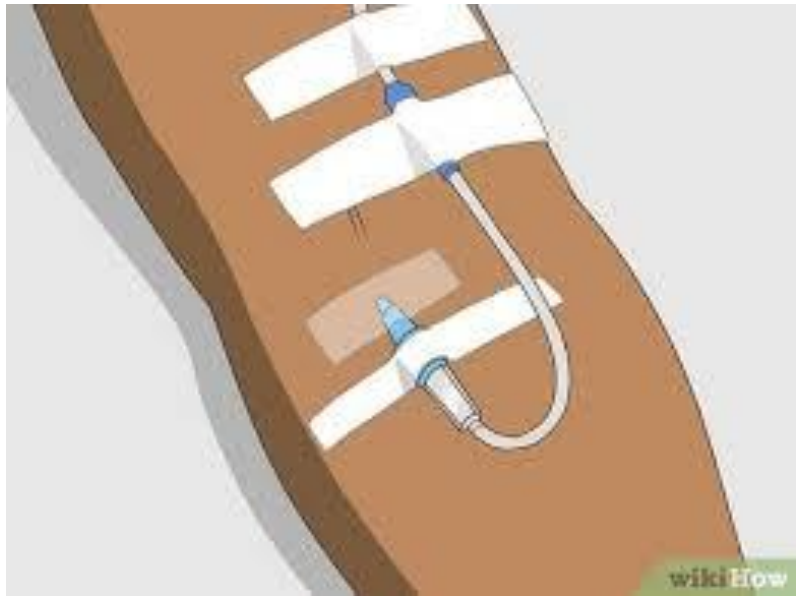
- Partial thickness burns >25% TBSA in adults, >15% TBSA in children and >5% in infants
- Full thickness burns >10% TBSA
- Burns of special sites like hands, face and perineum
- Associated injuries/pre-existing illness
- Electrical burns
- Inhalational burns

Moderate Burns

- Partial thickness burns 15-25% TBSA
- Full thickness burns 1- 3% TBSA

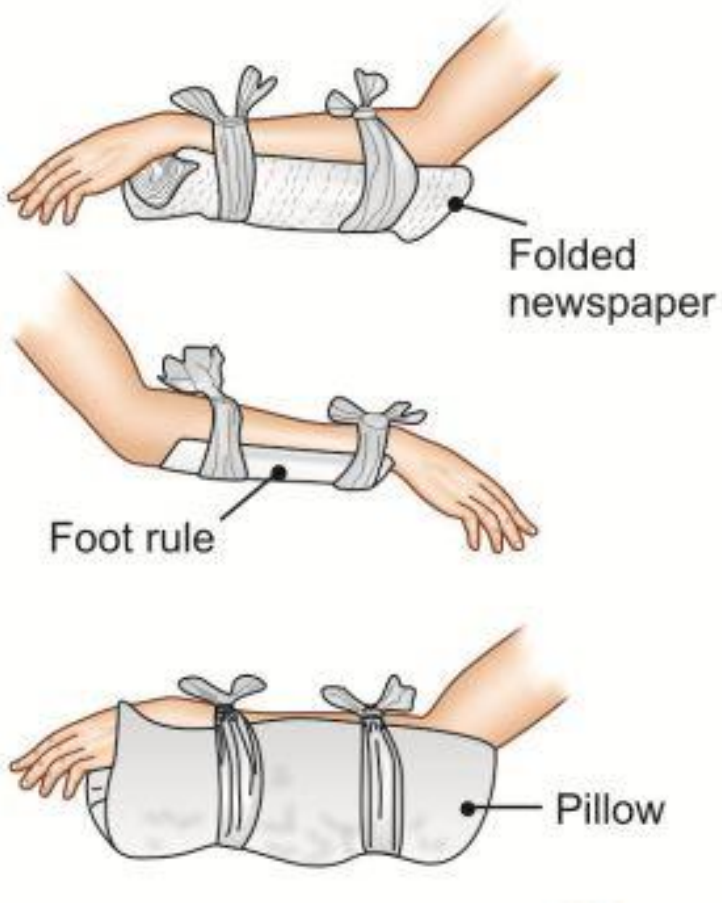
Minor Burns

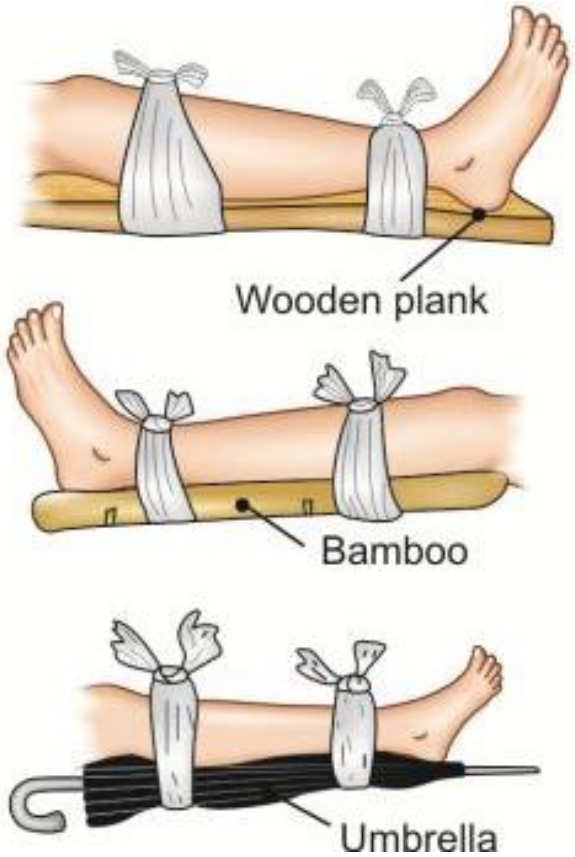
- Partial thickness burns <10- 15% TBSA



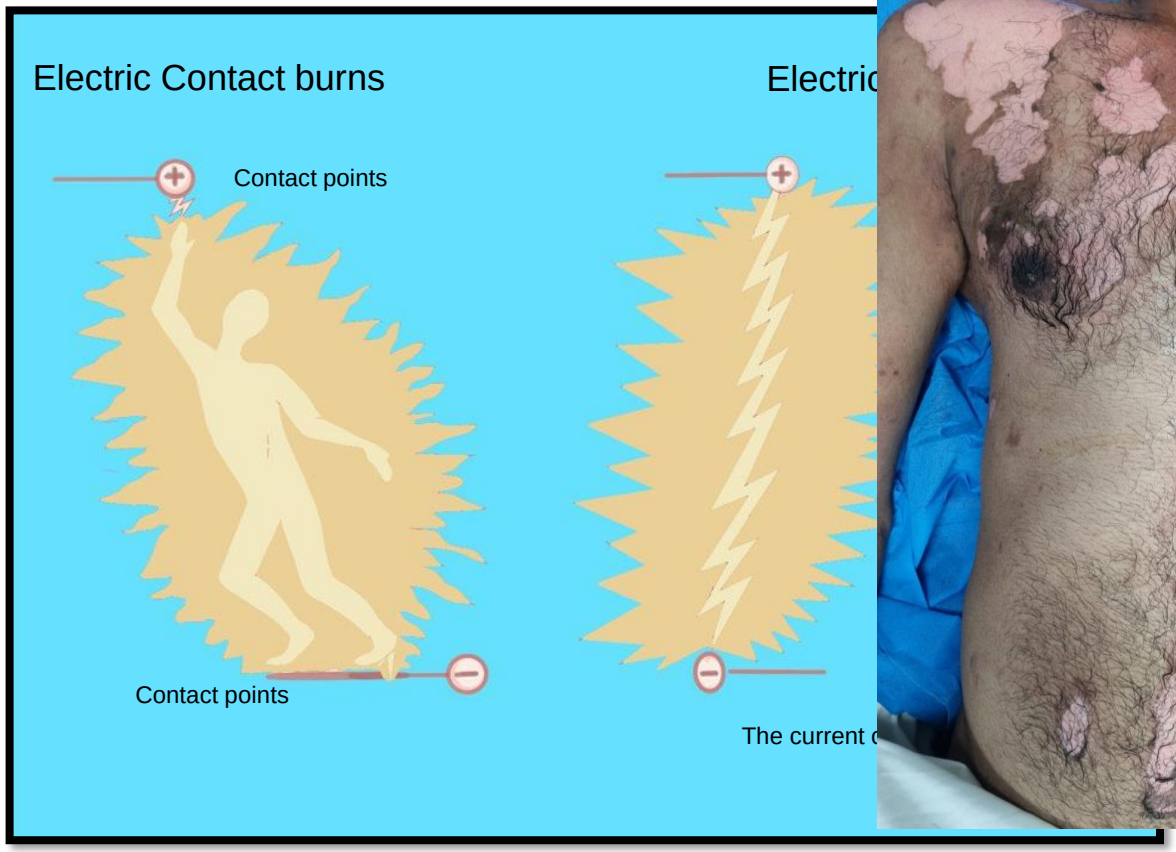
In-transit

While transporting





Electric Burns

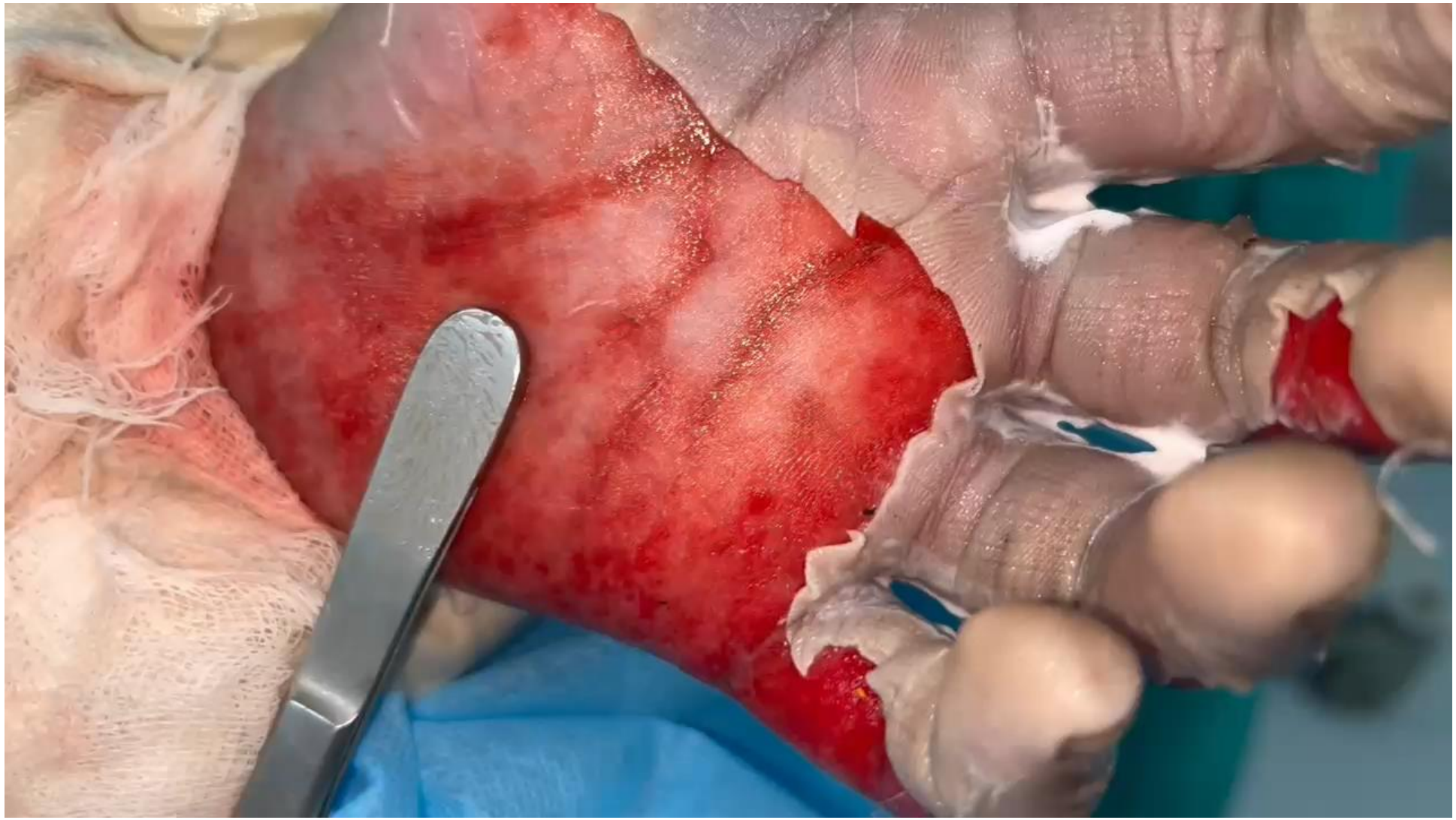


Flash Burn

Contact points

Superficial partial thickness burns

Deep partial thickness burns



Thermal Burns Scenario

- 4 years old boy sustained scald burn at home address, hot water kept in a bucket accidentally fell over the child
- Diagnosis: 45% TBSA mixed 2nd and 3rd degree scald burn involving bilateral upper limb, anterior and posterior trunk, bilateral buttocks, bilateral thigh and upper leg and genitalia




Chemical Burns Scenario

- 24 years young female, homemaker; A/h/o assault with acid Diagnosis- 20% TBSA deep burns involving left side of face (neck, left eye, ear and nose), bilateral upper limbs, chest, abdomen and left thigh

Post Debridement







One month later

Thank you

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•QUESTIONS?

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