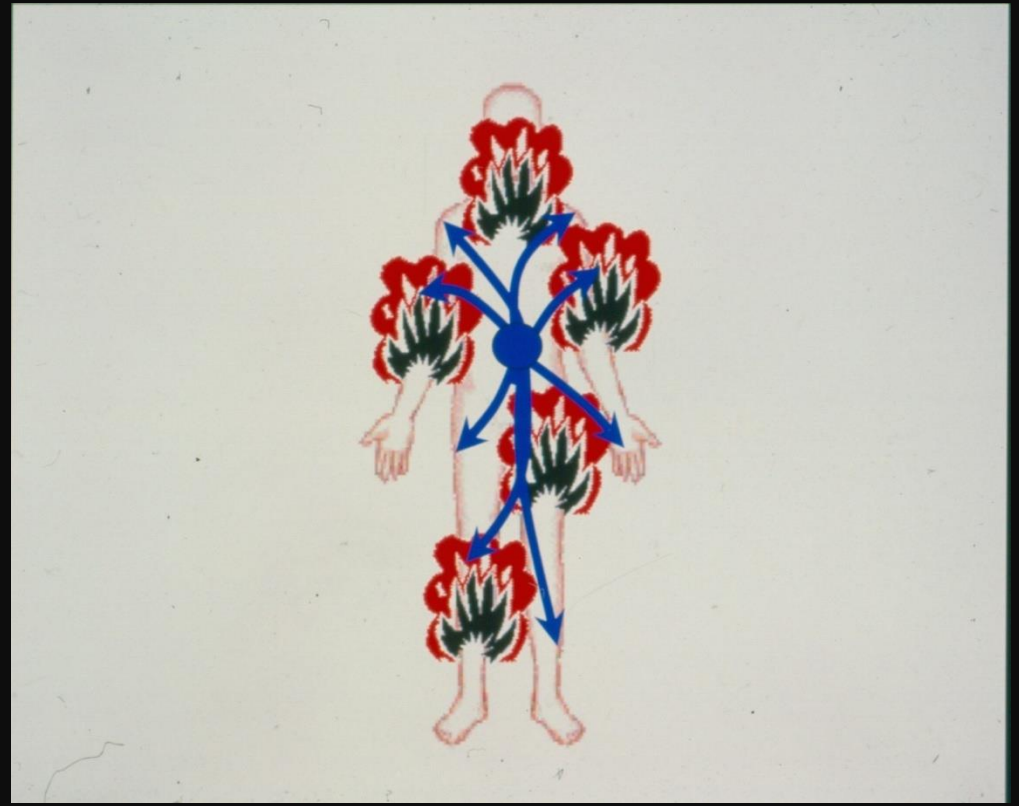


*The burns patient has the same priorities as all other trauma patients.*

# Pathophysiology of burn disease



# Essential management points

- Stop the burning - ABCDE
  - - Determine the percentage area of burn (Rule of 9's)
  - - Good IV access and early fluid replacement.

# Assess

- - Airway
- - Breathing: beware of inhalation and rapid airway compromise
- - Circulation: fluid replacement
- - Disability: compartment syndrome
- - Exposure: percentage area of burn.

- Morbidity and mortality rises with increasing burned surface area. It also rises with increasing age so that even small burns may be fatal in elderly people.

The severity of the burn is determined by:

- - Burned surface area
- - Depth of burn
- - Other considerations.

# Burn Management in adults

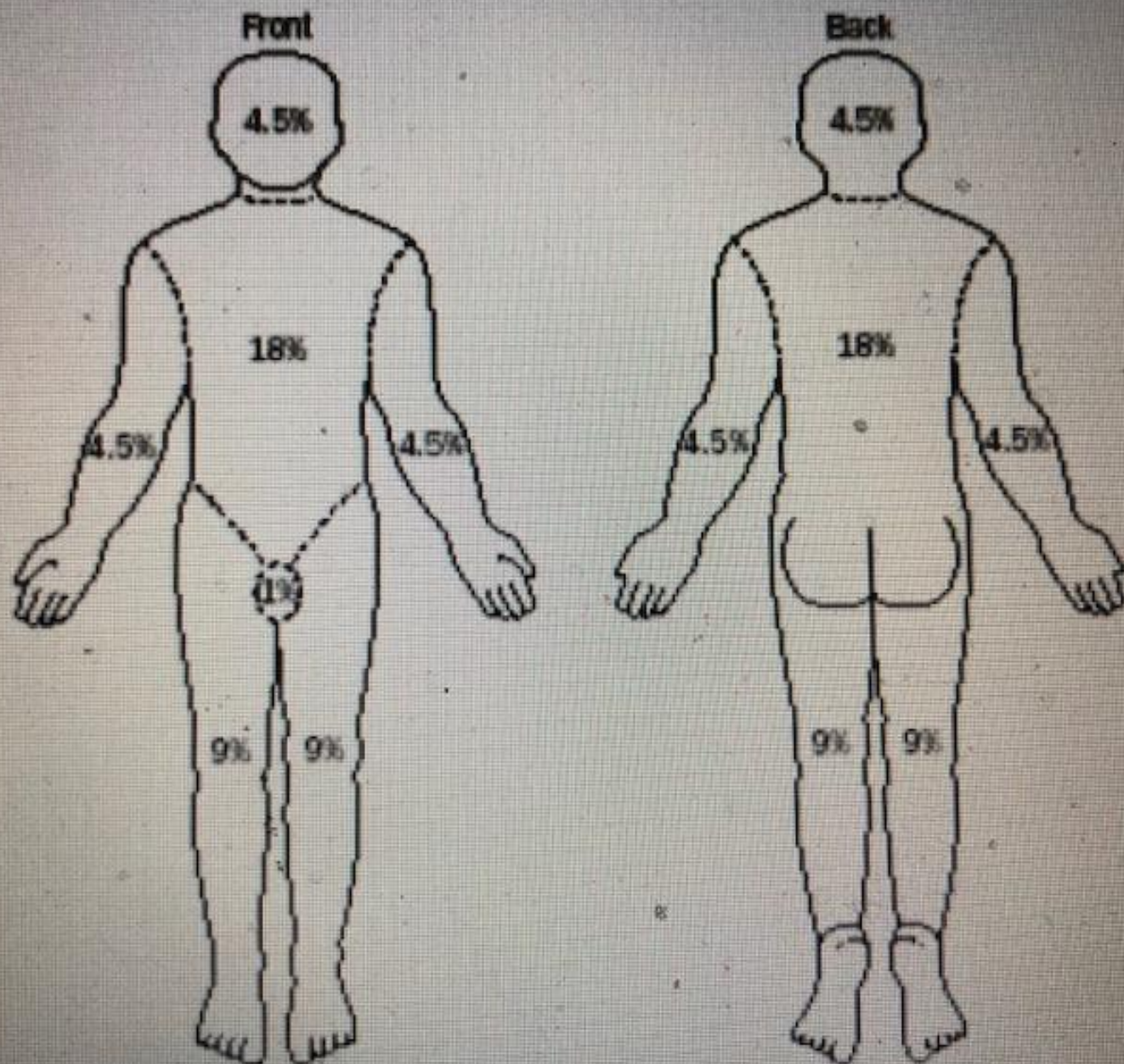
- The "Rule of 9's" is commonly used to estimate the burned surface area in adults.
- The body is divided into anatomical regions that represent 9% (or multiples of 9%) of the total body surface.
- The outstretched palm and fingers approximates to 1% of the body surface area.

- If the burned area is small, assess how many times your hand covers the area.
- Morbidity and mortality rises with increasing burned surface area. It also rises with increasing age so that even small burns may be fatal in elderly people.



# Estimating the burned surface area in adults

## The Rule of 9's



# in Children Burn Management in Children

- The 'Rule of 9's' method is to imprecise for estimating the burned surface area in children because the infant or young child's head and lower extremities represent different proportions of surface area than in an adult Burns greater than 15% in an adult, greater than 10% in a child, or any burn occurring in the very young or elderly are serious.

# Hospitalization

- **Serious burn requiring hospitalization**
- - Greater than 15% burns in an adult
- - Greater than 10% burns in a child
- - Any burn in the very young, the elderly or the infirm
- - Any full thickness burn

# Hospitalization

- Burns of special regions: face, hands, feet, perineum
  - - Circumferential burns
  - - Inhalation injury
  - - Associated trauma or significant pre-burn illness: e.g. diabetes

## Depth of burn

- It is important to estimate the depth of the burn to assess its severity and to plan future wound care. Burns can be divided into three types as shown below.

Depth of burn	Characteristics	Cause
First degree burn	<ul style="list-style-type: none"><li>• Erythema</li><li>• Pain</li><li>• Absence of blisters</li></ul>	<ul style="list-style-type: none"><li>• Sunburn</li></ul>
Second degree (Partial thickness)	<ul style="list-style-type: none"><li>• Red or mottled</li><li>• Flash burns</li></ul>	<ul style="list-style-type: none"><li>• Contact with hot liquids</li></ul>
Third degree (Full Thickness)	<ul style="list-style-type: none"><li>• Dark and leathery</li><li>• Dry</li></ul>	<ul style="list-style-type: none"><li>• Fire</li><li>• Electricity or lightning</li><li>• Prolonged exposure to hot liquids/ objects</li></ul>

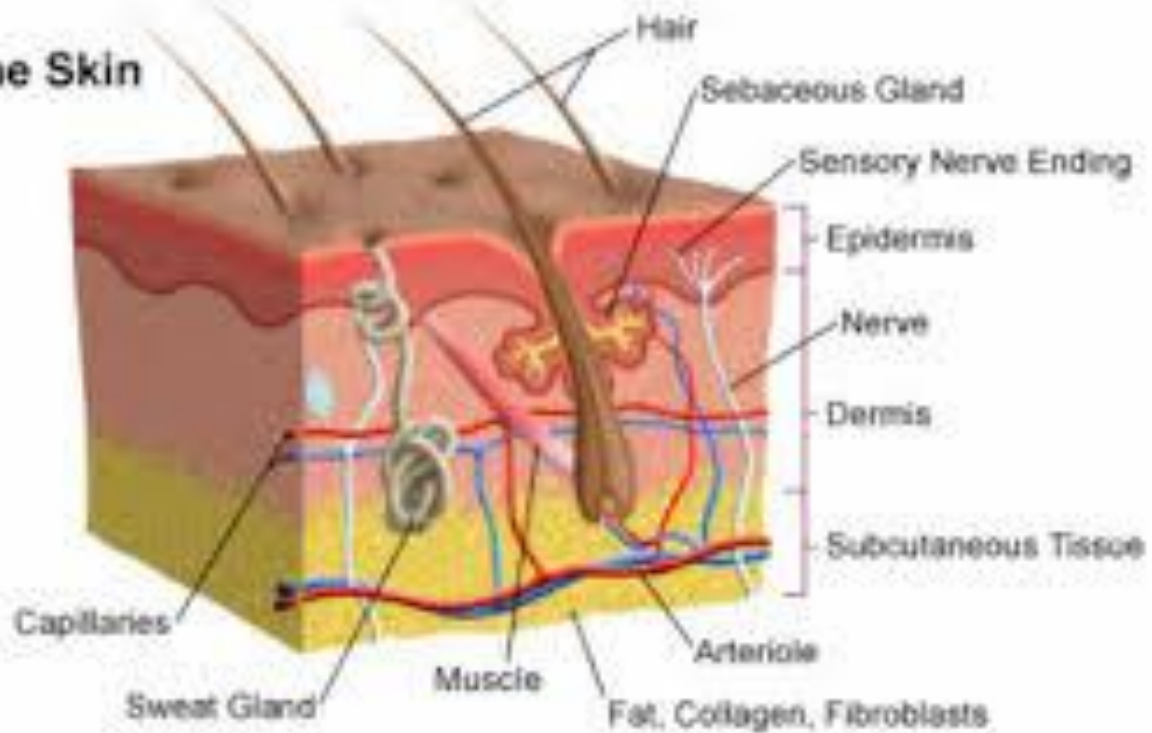
Partial thickness  
superficial

Partial thickness  
deep

Full thickness



## The Skin



- First aid
- Burn Management (continued)
- If the patient arrives at the health facility without first aid having been given, drench the burn thoroughly with cool water to prevent further damage and remove all burned clothing.
- If the burn area is limited, immerse the site in cold water for 30 minutes to reduce pain and oedema and to minimize tissue damage.

- If the area of the burn is large, after it has been doused with cool water, apply clean wraps about the burned area (or the whole patient) to prevent systemic heat loss and hypothermia.
- Hypothermia is a particular risk in young children.
- First 6 hours following injury are critical; transport the patient with severe burns
- to a hospital as soon as possible.



# Local therapy

- Open method (less pain, better healing controlling temperature)
- Closed method ( better control of local situation, better mobilization, needs aseptic environment)

# Hands

- Treat burned hands with special care to preserve function.
  - - Cover the hands with silver sulfadiazine and place them in loose polythene
  - gloves or bags secured at the wrist with a crepe bandage;
  - - Elevate the hands for the first 48 hours, and then start hand exercises;

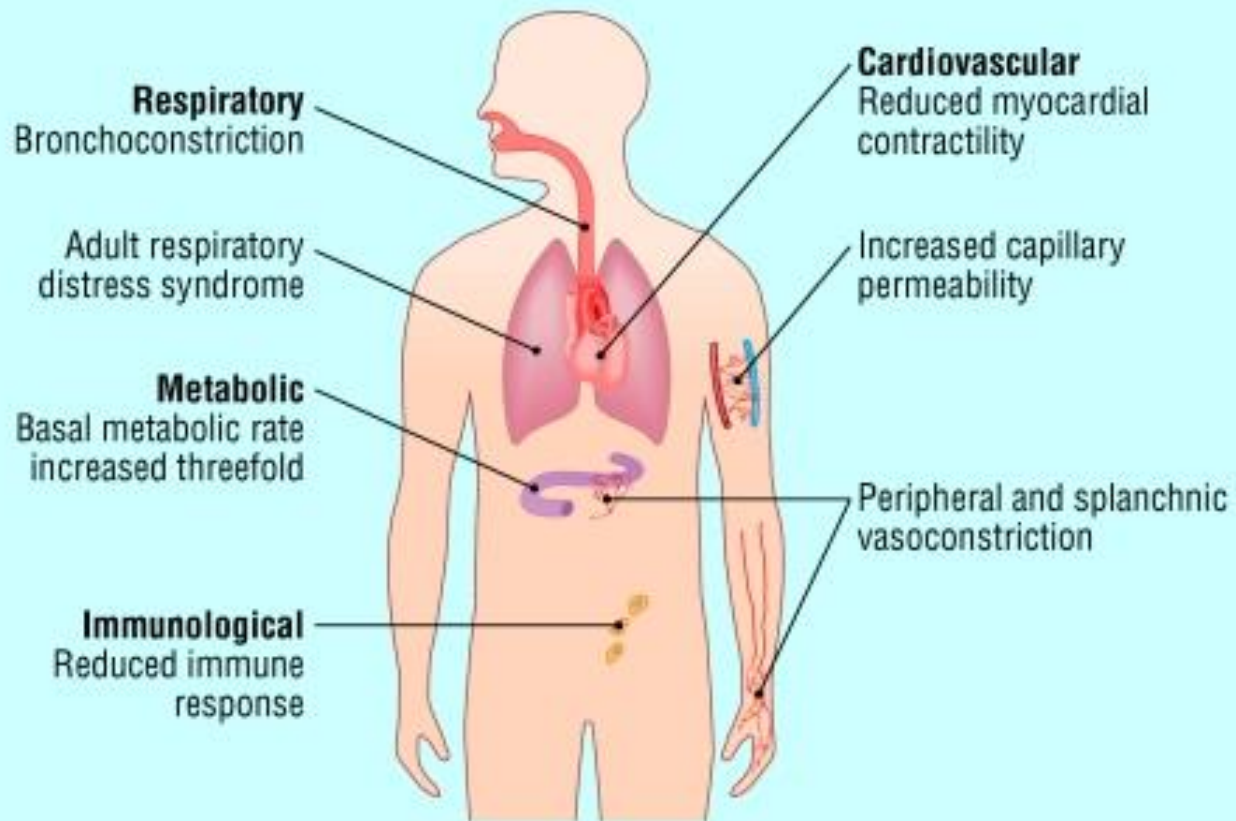
- - At least once a day, remove the gloves, bathe the hands, inspect the burn
- and then reapply silver sulfadiazine and the gloves;
- - If skin grafting is necessary, consider treatment by a specialist after healthy
- granulation tissue appears.

# Full thickness burns

- Surgical procedure
- Debridement
- Skin grafts

When?

Sufficient liquid replacement  
Good resuscitation



## SKIN GRAFTS

- First the wound is excised or debrided
- **STSG** - Split thickness skin graft
  - Thin layer of skin removed from donor site
- **FTSG** - Full thickness skin graft
  - Cutting skin away
  - Donor site heals faster than burn injury
  - Less painful than split thickness graft

## TYPES OF SKIN GRAFTS

- **Autologous (autograft)**
  - Donor and recipient are the same
    - CEA – cultured epithelial autograft
- **Allogeneic (allograft, homograft)**
  - Donor and recipient are the same species
    - Organ donors
- **Xenogeneic (xenograft, heterograft)**
  - Donor and recipient are different species
    - Bovine
- **Prosthetic (prosthetic implants)**
  - Synthetic material (plastic, metal, ceramic)



# Scars

- Hydration creams
- Pressure garments
- Slaps
- Laser
- Physiotherapy
- massage