

# BURNS

# Classification of burns in children

- **According to depth of burn injury**
  - Superficial burns (partial thickness burns)
    - a) Superficial partial thickness burns
    - b) Superficial deep dermal burns
  - Full thickness burns
- **According to extent of burn injury**
  - ❖ First degree burns
  - ❖ Second degree burns
  - ❖ Third degree burns

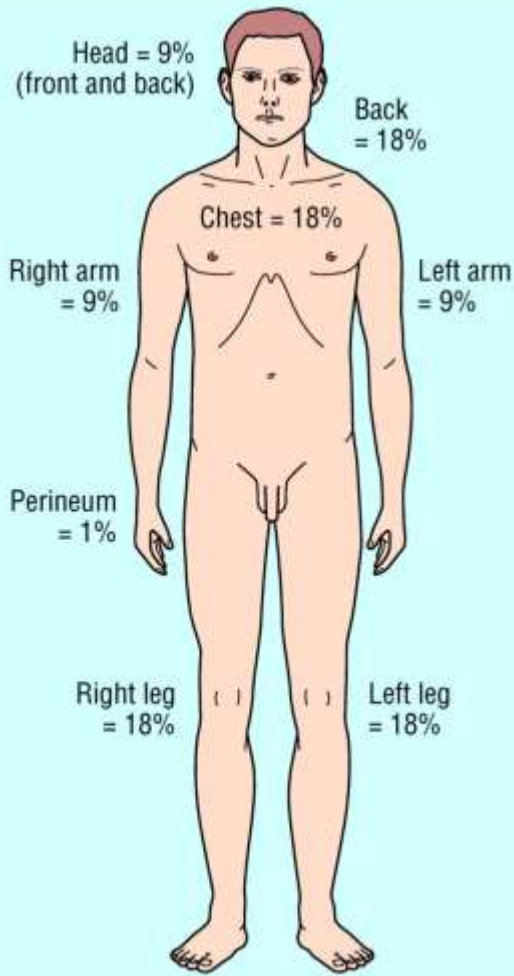
Contd...

## According to severity of burn injury

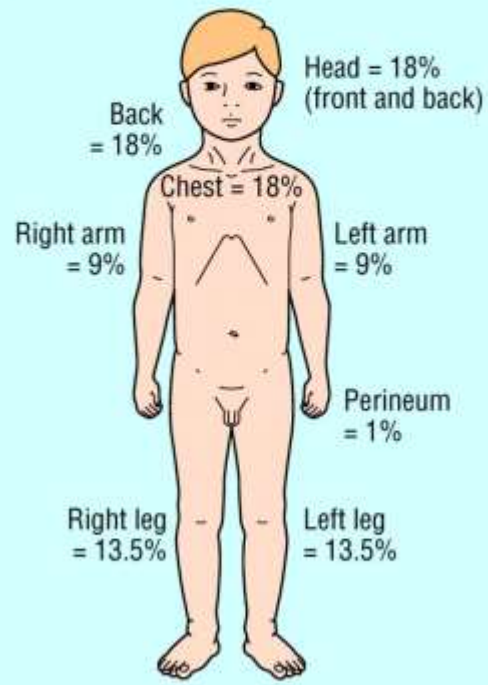
- Minor burns- 10% of total body surface area (TBSA) burnt with first and second degree burns.
- Moderate burns- 10 to 20% TBSA burnt and second degree burns.
  - 2 to 5% TBSA burnt and third degree burn, but not involving eyes, ears, face, genitals, hands, feet or circumferential burns (over chest or abdomen).
- Major burns- 20% or more TBSA burnt and second degree burns.
  - All third degree burns greater than 10% TBSA burnt.
  - All burns involving face, eyes, ears, feet, hands, and/or genitals.
  - Complicated burns with trauma, fracture, head injury, cancer, diabetes mellitus, pulmonary diseases and all at-risk patients.

# Estimation of extent of burns surface area

1. Rule of hand
  - One hand surface (child's own hand) with closed fingers amounts to 1% of body surface area and this can be used for calculation of the extent of burns.
2. Rule of five (Lynch and Blocker, 1963)
3. Lund and Browder chart
4. Rule of Nine- applicable for children above 10 years of age, same as like adults.



**Adult**



**Child**

# “Rule of five” estimation of burns surface area

| Area          | Age 0-5 years        | Age 5-10 years                  | Age 10 years onwards |
|---------------|----------------------|---------------------------------|----------------------|
| Head and neck | 20%                  | 10%                             | 10%                  |
| Trunk – front | 20%                  | 20%                             | 20%                  |
| Trunk – back  | 20%                  | 20%                             | 20%                  |
| Upper limbs   | $10 \times 2 = 20\%$ | $10 \times 2 = 20\%$            | $10 \times 2 = 20\%$ |
| Lower limbs   | $10 \times 2 = 20\%$ | $15 \times 2 = 30\%$            | $15 \times 2 = 30\%$ |
|               | 100% (20 x 5)        | 100% (20 x 5)<br>= (105-5)=100% | 100% (20 x 5)        |

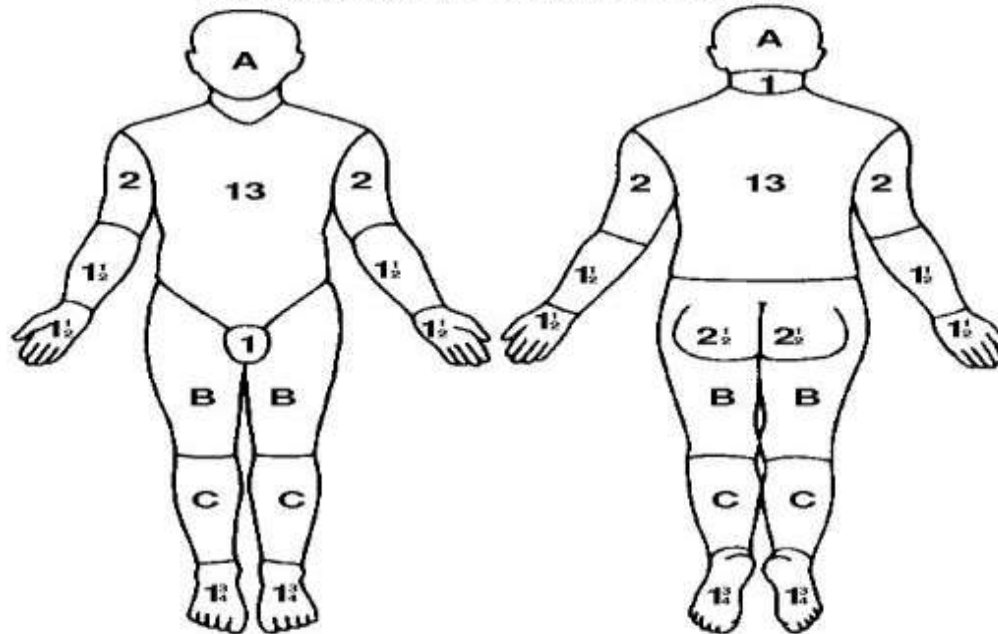
N.B. \* 5% to be deducted from trunk

# A BURN CHART

NAME \_\_\_\_\_ WARD \_\_\_\_\_ NUMBER \_\_\_\_\_ DATE \_\_\_\_\_

AGE \_\_\_\_\_

## LUND AND BROWDER CHARTS



Ignore simple erythema.



| REGION      | % |
|-------------|---|
| HEAD        |   |
| NECK        |   |
| ANT. TRUNK  |   |
| POST. TRUNK |   |
| RIGHT ARM   |   |
| LEFT ARM    |   |
| BUTTOCKS    |   |
| GENITALIA   |   |
| RIGHT LEG   |   |
| LEFT LEG    |   |
| TOTAL BURN  |   |

RELATIVE PERCENTAGE OF BODY SURFACE AREA AFFECTED BY AGE

| AREA                     | AGE 0 | 1     | 5     | 10    | 15    | ADULT |
|--------------------------|-------|-------|-------|-------|-------|-------|
| A = 1/2 OF HEAD          | 9 1/2 | 8 1/2 | 6 1/2 | 5 1/2 | 4 1/2 | 3 1/2 |
| B = 1/2 OF THIGH         | 2 3/4 | 3 1/4 | 4     | 4 1/2 | 4 1/2 | 4 3/4 |
| C = 1/2 OF ONE LOWER LEG | 2 1/2 | 2 1/2 | 2 3/4 | 3     | 3 1/4 | 3 1/2 |

# Clinical manifestations

## ❖ Shock

### **Symptoms of shock:**

- Pallor
- Cyanosis
- Prostration
- Poor muscle tone
- Failure to recognize familiar people
- Rapid pulse
- Low BP
- Subnormal temperature

Contd...



Inhalation injury causes:

- Inflammation of edema of glottis, Vocal cords, Upper trachea- leading to upper airway obstruction

Symptoms:

- Dyspnea,
- Tachypnea
- Hoarseness
- Stridor
- Chest retractions
- Nasal flaring
- Restlessness
- Cough
- Drooling

Contd...

- Smoke inhalation may produce no symptoms or mild bronchial obstruction, but suddenly within 48 hours, may develop pulmonary edema, severe airway obstruction and bronchiolitis

Symptoms of toxemia-develops after burns within 1 or 2 days:

- Fever
- Vomiting
- Edema
- Decreased urinary output
- Prostration
- Rapid pulse
- Glycosuria
- Unconsciousness