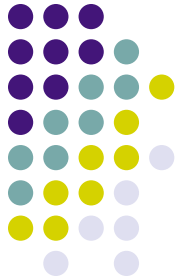
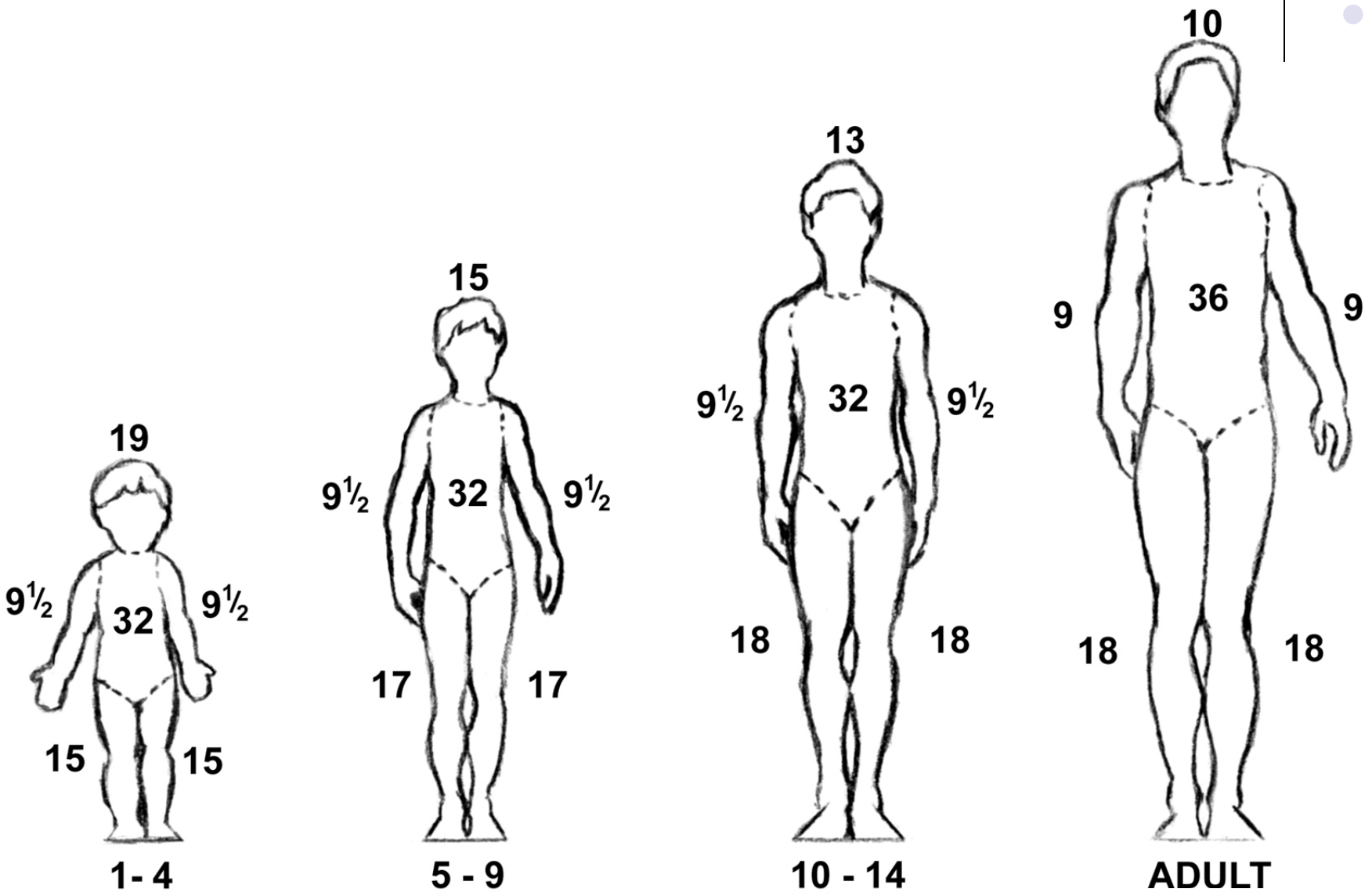
Burn Trauma

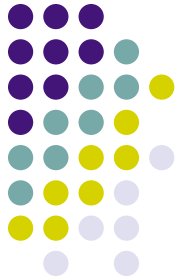


Classification

1. Total Body Surface Area (TBSA) burned
2. Depth of burn
3. Inhalational injury ?

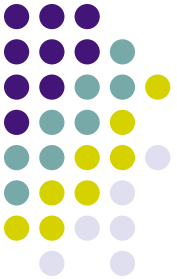
TBSA - rule of 9s





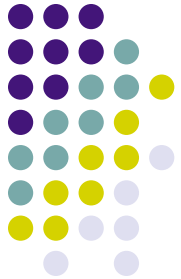
Depth of Burn

- First-degree – epithelium
- Second-degree – dermis
- Third-degree – destroy entire skin thickness



Cardiovascular Effects

- Burn shock - immediate
- Cardiac output decreased
- Increased systemic vascular resistance



Cardiovascular Resuscitation

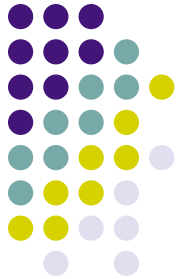
Fluid for 1st 24 hours (ml)

= 4 x Patient's weight in kg x %TBSA

50% in first 8 hours

50% in the remaining 16 hours

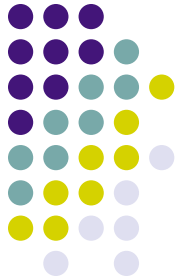
Goal = 1 ml/kg/h urine output



Inhalational Injury

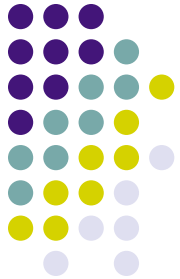
Inhalational + cutaneous ➔ doubles mortality

- Superheated air / steam
- Toxic compounds in smoke



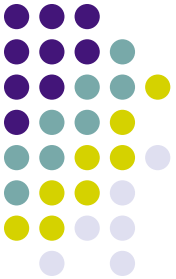
Clinical features

- Stridor
- Dyspnea
- Hoarseness / dysphagia
- Burns to face / perioral region
- Carbonaceous sputum
- Oropharyngeal edema



Airway Management

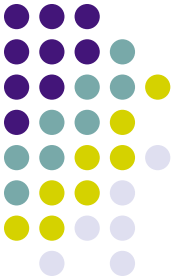
- Normal airway:
  - RSI
  - Succinylcholine ?
- Abnormal airway:
  - Awake pt (inhaled induction in children)
  - In OR
  - Surgical approach ?



Smoke Inhalation Injury

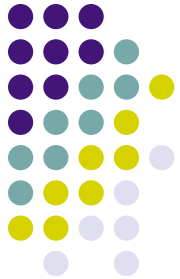
- Ammonia
- NO_2
- SO_2
- Cl

➔ strong acids / alkalis



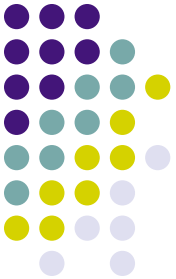
Smoke Inhalation Injury

- Bronchospasm
- Pulmonary edema
- Necrosed epithelial lining → obstruction
- Reduced surfactant → atelectasis



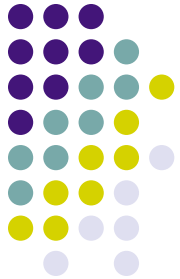
Airway Management

Early tracheal intubation



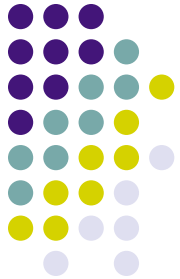
Carbon Monoxide Poisoning

- 80% deaths assoc w/ smoke inhalation
- Tissue hypoxia:
  - 250 times more affinity for Hb than O_2
  - O_2 dissociation curve to left ➔ ⬇ O_2 unloading
- Pulse oximeter falsely high



CO Poisoning - Treatment

100% O_2



Excision / grafting anesthesia

Preoperative	Brief NPO
Airway	Alternatives to DL ? Awake / release if facial / neck contractures
Ventilation	Hypermetabolic, so hyperventilate ARDS ?
Vascular access / fluids	Rapid blood loss during excision Large bore iv Coagulation status ?
Temperature	Warm fluids and room
Anesthetic	Opioids ! Increased catecholamines
Muscle relaxation	Avoid succinylcholine Resistant to non-depolarising