

Burns and Scalds

■ **Burn wounds are coagulative lesions of the surface layers of the skin – usually caused by contact with a solid hot object (contact burn), flames (flame burn), heated liquids (scald), chemicals (corrosions) or physical agents (electricity, radiation, lightning).**

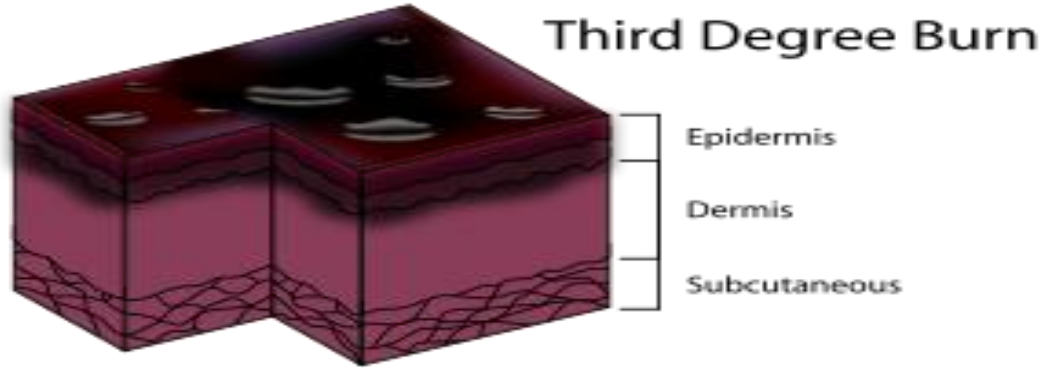
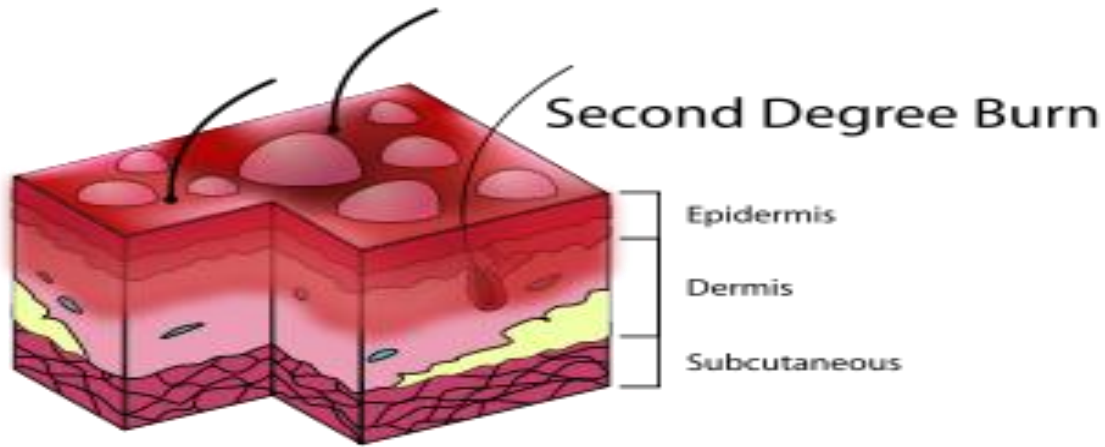
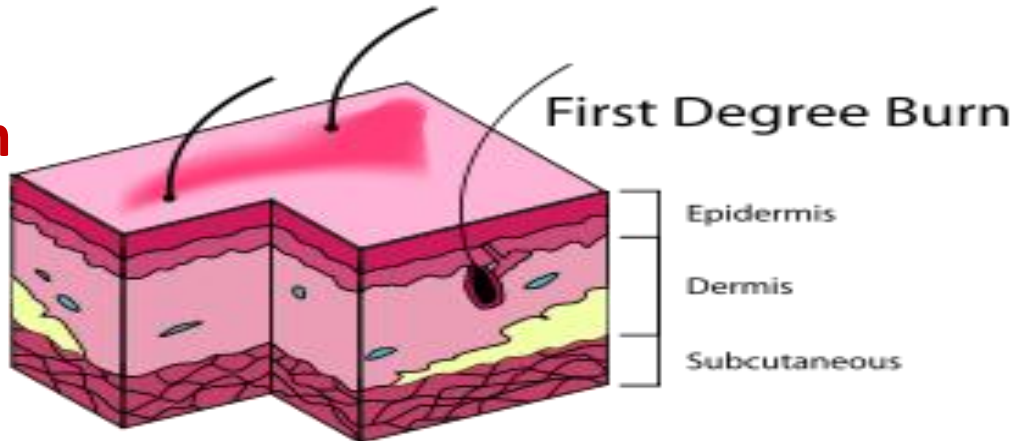
Characteristics of burns and scalds

Wet heat	E.g. bath scalds (may include 'tide marks' over the buttocks, perineum and limbs in children immersed in scalding water); tipping hot water over oneself (may include splash patterns on the upper parts of the body with the appearance of burns from 'running liquid')
Flames	E.g. burns to the hair or skin; burns to the front of the body and hands (especially the dominant arm) where clothes have caught fire at the cooker
Hot objects	E.g. on the hands (accidental)
Chemical	E.g. acid being thrown into the face in an assault or suicidal ingestion (with burns around the mouth and in the oesophagus (e.g. phenol compounds)
Internal burns	E.g. in the mouth/ oesophagus/ airway from inhalation or ingestion of hot fluids or gases

■ M.L. Classification of burns

- 1-First degree : irritation and redness (erythema of the skin) e.g. Sunburn
- 2- Second degree :characterized by vesicle or blister formation
- 3- Third degree : affect superficial layer of skin with exposure of sensory nerves
- 4- Fourth degree: destruction of the whole skin
- 5- Fifth degree: destruction of the whole skin, subcutaneous tissue , muscles
- 6- Sixth degree: complete charring

Burn Degree Diagram





Sunburn



Second degree burn on shoulder



Second degree burn caused by contact with boiling water



Scald



old-3rd-degree-burn

■ Factors affecting gravity of burns

- 1- The extent of the affected surface : > 30% TBS
- 2- The site
- 3- Degree ; Full-thickness burn
- 4- The age (Extremes in age ; very young, very old)
- 5- General health e.g. diabetes

■ Causes of Death in burns

- 1- Injuries caused by fallen objects
- 2-Asphyxia
- 3-Neurogenic shock e.g. from severe pain
- 4-Toxaemic secondary shock
- 5-Fat embolism
- 6-Acute glottic oedema
- 7- Fluids & Electrolyte imbalance
- 8-Haemorrhage in the suprarenal glands
- 9- Inflammation of serous membranes e.g. Peritonitis, endocarditis
- 10- Burn wounds are prone to tetanus.
- 11- Liver Necrosis
- 12- Carling ulcer Curling's ulcer is an acute peptic ulcer of the duodenum resulting as a complication from severe burns when reduced plasma volume leads to sloughing of the gastric mucosa.
- 13- Renal tubular degeneration caused by myoglobin and haemoglobin released from damaged muscles and red blood cells

■ Healing of Burns

- 1- First degree burn : redness remains for 36 hours
- 2- Second degree : Ruptured vesicles heal within few days
- 3- Third degree: Heal within two weeks leaving red scar
- 4- Deep & extensive burns: may cause contracture

■ Difference between burns, scalds & corrosions

	Burns	Scalds	Corrosions
Clothes	Burnt	Wet	Eaten up , discoloured
Hair	Singed	Wet	May be discoloured
Direction	From below upwards	Down wards in streaks	As scalds
Degree	Any degree	First & second degree	Third & fourth degree
Soot	Present in air passages	Absent	Absent
Blood	May contain Co-Hb	Absent	Absent
Scar	Thick , may cause disfigurement	Thinner , cause less disfigurement	According to concentration

■ Difference between Ante & post-mortem burns

Ante-mortem burn	Post-mortem burn
1- Hyperaemia around edge	- No hyperaemia
2- Presence of tense vesicles filled with fluids rich in chloride and albumin	- Small vesicles
3- Presence of soot in air passages	- Absent
4- Blood contains Co-Hb	- Absent
5- Haemoconcentration	- Absent
6- Signs of healing or sepsis	- Absent
7- No other cause of death	- Presence of another cause of death