

PHTY5201 PHYSIOTHERAPY ACROSS A LIFESPAN

WEEK 1 PHYSIOTHERAPY FOR THE BURN INJURED PATIENT

EPIDEMIOLOGY

- Unintentional 93%, self harm 3%, assault/ complication of medical treatment/ unspecified 3%, 20% alcohol and drugs.

MECHANISM

- Flame, scald (most common in kids), contact, chemical, friction, electrical, radiant, other.

SCALD

- Mainly superficial to mid dermal, high number of cases in young and elderly from tea and coffee or bath and shower.

FLAME

- Most flame burns are deep dermal to full thickness.
- Generally teenagers and young adults.

CONTACT

- Commonly from contact with irons, oven doors, exhaust pipes, heaters.

ELECTRICAL

- Low voltage – household 240-415 volts.
- High voltage – 1000 to 33000 volts
- Lightning – extremely high voltage

FRICTION

- treadmills, gravel, MBA, varied depths, often deep dermal

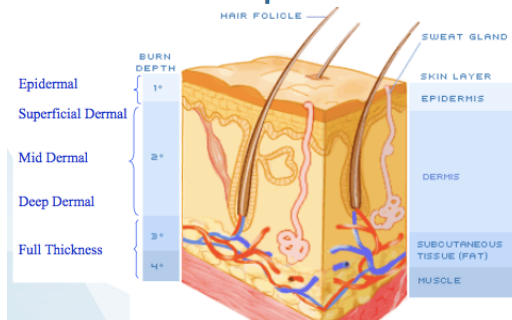
RADIATION

- sunburn, IPL (intense pulse laser), radiotherapy
- predominantly superficial.

BURN INJURY ASSESSMENT

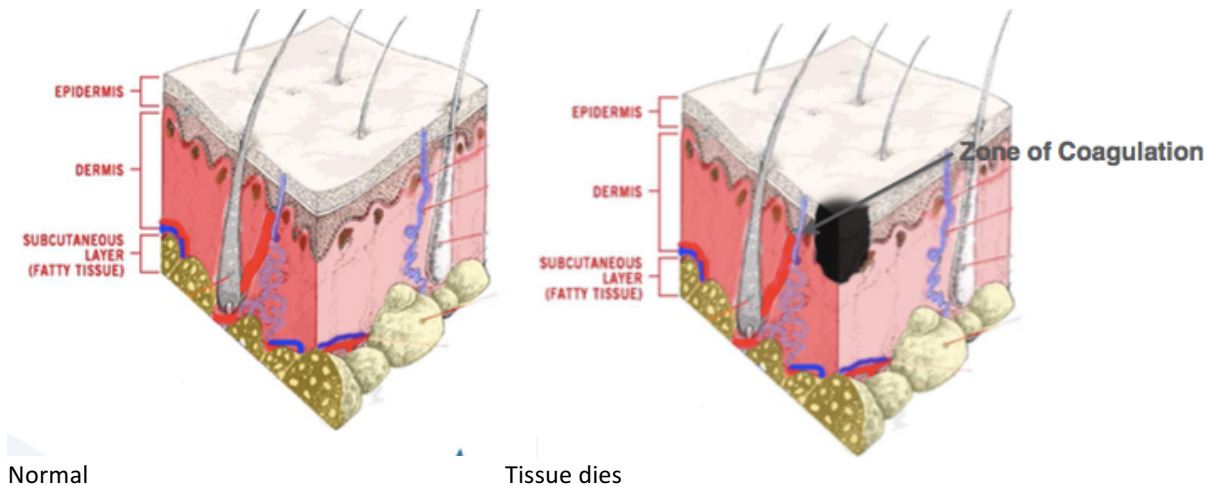
SEVERITY OF BURN- determined by the depth of the burn, % total body surface area (TBSA) and the location or area that is burned.

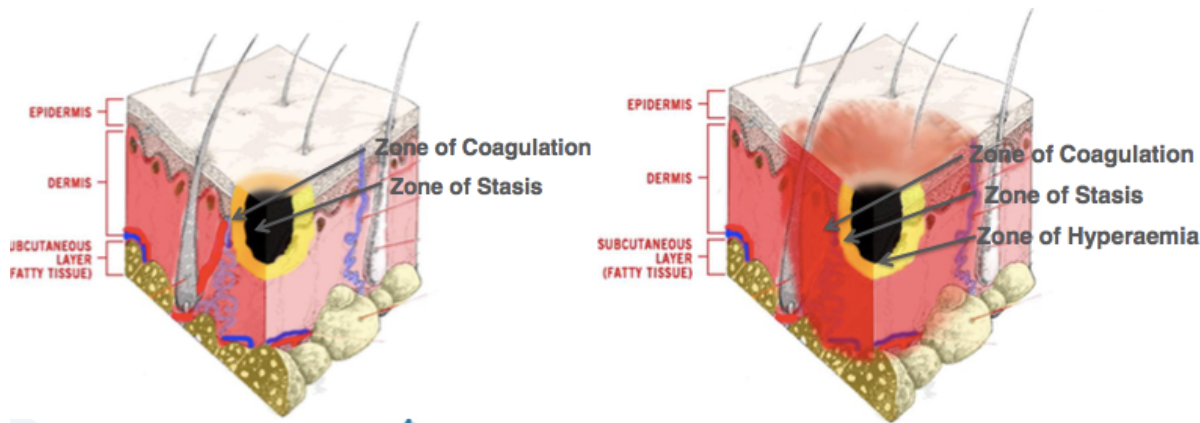
Burn Skin Depth



- Burns are dynamic and they change over a few days. It is better to re-assess over the few days

JACKSONS BURN WOUND MODEL





The best therapy for burns is **20 minutes** of running water.

The above model emphasises the importance of

- Good first aid, correct dressing, re-assessment.

PROCESS OF GRAFTING

1. Clean up pre grafting site and remove debris.
2. Take skin from donor site.
3. Apply skin by sewing it into new site.
4. Inform patient that it may sting.
5. Change dressing 5 days prior to dressing

TECHNIQUES FOR GRAFT IMOBILISATION

- Tie over pack
- Zimmer splint
- Vac Dressing (suction machine that keeps graft stable).

COMMON DONOR SITE LOCATIONS

- Thighs, buttocks, hamstrings, back of head.

SPLINTING, EXERCISE AND SCAR MANAGEMENT

- Burns therapy starts from day 1 post surgery and work to prevent impairment and optimise function.
- Burns tighten for 24 hours a day which makes it harder to move the joint.

INITIAL ASSESSMENT

- Begins straight away and we look for the depth of the burn and the location of the burn.
- Are the joints affected?
- Is the nose, mouth or airways affected?
- Do splints need to be made and positioning started?

Our concern with scarring after burns the the possible ↓ in ROM, ↓ function, ↓ aesthetics.

WHICH BURNS SCAR

The burns that scar are:

- superficial dermal: red, moist, painful, heals in less than 14 days (no scarring: just needs protection from the sun and moisture)
- Mid dermal: healed 14-21 days may scar, >21 days will scar. Any deeper may need surgical intervention.
- Full thickness: should be grafted and will definitely scar. (yellow thickness is dead tissue that needs to be removed).

WHO IS AT HIGHER RISK OF SCARING

- The younger the patient, the more active the scar and the worse it would be due to the tight skin.
- Dark, Asian and Mediterranean skin types.
- The longer the time to heal, the longer to heal the more active the scarring process.

Why do we scar?

- Initially healed burn is pink, flat and soft.
- The healed burn goes into state of "over drive" (tries to keep sending blood and healing which makes skin more pink).
- 2-4 week period of increased vascularity.
- New tissue develops in a knotty fashion (fibrocytes and collagen)
- Results in scars that are raised, hard, dry and have strong contractive forces. = HYPERTROPHIC SCARRING