

WOUND CARE

WOUND HEALING TECHNIQUES

- Primary Closure (Primary Intention): closing the wound as close to the day of injury as possible.
- Secondary Intention: wound heals on its own w/ minimal assistance (maybe steristrips).
- Third Intention (aka Delayed Primary Closure): wound is left open and primary intention is done after a delay.

Phase I Day 1-3

Primary Closure - Inflammatory Response

- Tissue is dependant on closure material to hold appreciation (no collagen there).
 - ie. sutures

Phase II

1-2 weeks

Maturation

- Collagen deposition occurs and

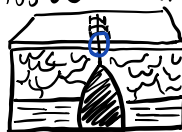
Phase III

Maturation / Remodeling Day 14 - completely healed

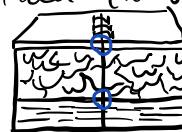
- Fibrous tissue is deposited \therefore making scars.

* If infection or too much tissue has been torn away (ie. chainsaw injury), there might not be enough skin to close the wound, so primary closure might not be an option. You shouldn't close nonviable skin.

- Wounds healed by the inside out (aka Secondary Intention) heal very slowly. Dog bites are usually left open b/c of infection risk.
- Third intention is essentially for nonviable tissue being replaced (ie. skin graft).
 - Typically 4-6 days post-injury.
- Deep wounds should be closed in layers.



Dead space in wound



No dead space; closed in layers

WOUND CLOSURE PRINCIPLES

- * Avoid infection w/ copious irrigation.
- * Eliminate dead spaces by closing in layers. Dead space allows serum or blood to collect.
- * Avoid unnecessary tension on the wound \rightarrow can lead to ischemia $\frac{1}{2}$ or suture can break.
- * Timing - timing for primary closure is up to 24h, and that 24h is more for clean, facial lacerations.

TYPES OF ADHESIVES:

• Tissue Adhesive (Dermabond)

- Indications:

- Tension-free wound
- Sports injuries to control bleeding

- Contraindications:

- High-tension wounds
- Areas with hair
- Wet areas (blood, sweat, drool, inside mouth or around eyes)

- Can get wet briefly, so showers are ok.

- Dermabond will fall off on its own ~5-7d later.

• Staple Closure

- Indications:

- Straight lacerations on scalp, trunk, or extremities.

- Contraindications:

- Face, hands, or foot wounds.
- Irregular edges or deep wounds

- Is painful so need local anesthesia.

SUTURE MATERIALS:

- Monofilaments (nylon, polypropylene, etc)

- less likely to get infected.
- knots will slip more likely - need to put more knots.

- Multifilament (rope, silk, etc) → braided material

- knots held better
- More likely to harbor infection in between braiding.