



Importance of Suturing

Suturing plays a crucial role in surgical and wound management practices. Here are the key points highlighting its importance:

- 1. Wound Closure:** Suturing approximates wound edges, promoting faster and more efficient healing.
- 2. Hemostasis:** Proper suturing helps control bleeding by securing blood vessels.
- 3. Infection Prevention:** Closing wounds promptly reduces exposure to external contaminants and lowers infection risk.
- 4. Tissue Integrity:** Sutures restore the natural continuity and strength of tissues.
- 5. Cosmetic Outcome:** Fine suturing techniques minimize scarring, especially in visible areas like the face.
- 6. Support for Internal Structures:** In deep wounds or surgeries, sutures stabilize underlying muscles, fascia, or organs.
- 7. Prevention of Complications:** Proper suturing prevents wound dehiscence (reopening) and herniation.

Types of Wounds:

1. Incised Wound

Clean, straight edges (e.g., surgical cut)

Suture Used: Absorbable or non-absorbable depending on location (e.g., Vicryl, Nylon)

2. Lacerated Wound



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Torn, irregular edges (e.g., trauma)

Suture Used: Non-absorbable (e.g., Nylon, Prolene) for skin; absorbable for deeper layers

3. Abrasion

Superficial scraping of the skin

Suture Used: Usually not needed; dressing or glue may be used

4. Puncture Wound

Deep and narrow (e.g., nail prick)

Suture Used: Not usually sutured unless large or gaping; absorbable for deep layers if needed

5. Penetrating Wound

Object enters body and may pass through

Suture Used: Layered closure with absorbable (Vicryl) for deep tissues, non-absorbable (Nylon) for skin

6. Contusion (Bruise)

Blunt trauma without break in skin

Suture Used: Not applicable unless associated laceration is present

7. Avulsion

Tissue forcibly detached

Suture Used: Debridement first; layered closure using absorbable and non-absorbable sutures



Types of Sutures Materials:

By Absorbability:

Absorbable: Vicryl, Monocryl, Catgut — used for internal tissues

Non-absorbable: Nylon, Prolene, Silk — used for skin or external areas

By Structure:

Monofilament: Single strand (e.g., Nylon, Prolene) — less tissue drag, lower infection risk

Multifilament: Braided (e.g., Silk, Vicryl) — better knot security but more infection risk

By Origin:

Natural: Silk, Catgut

Synthetic: Vicryl, Nylon, Prolene

Suturing methods refer to the techniques used to approximate tissue edges. Here are the main types of suturing methods:

1. Interrupted Sutures

Each stitch is placed and tied separately.

Advantages: High tensile strength, allows precise tension control.

Uses: Skin closure, deep tissue approximation.

Variants:

Simple interrupted

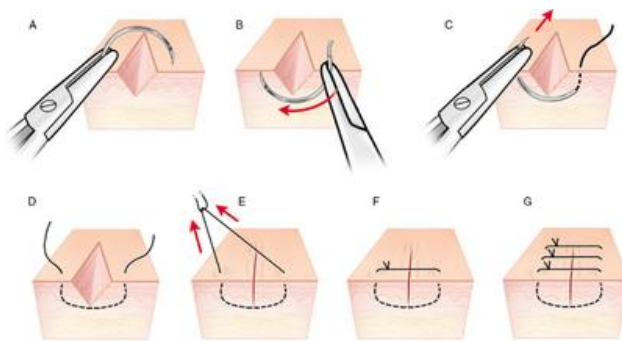
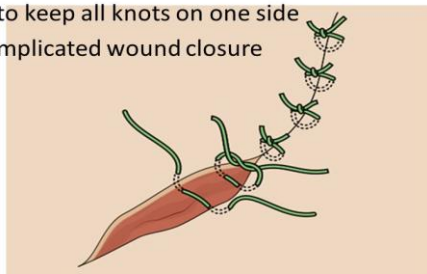
Vertical mattress

Horizontal mattress

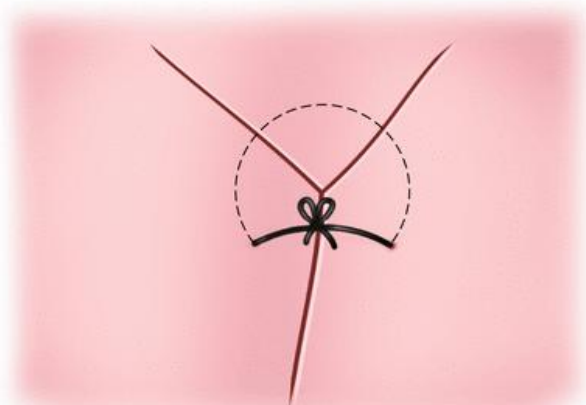
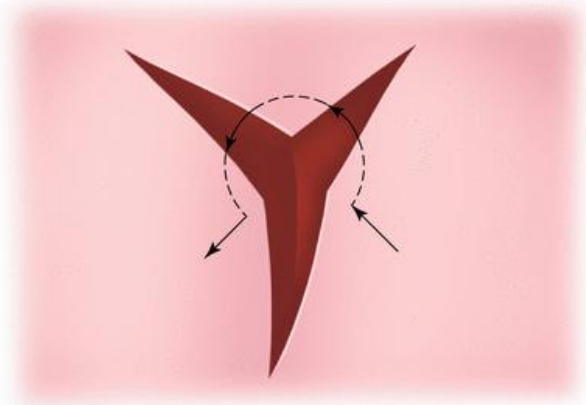
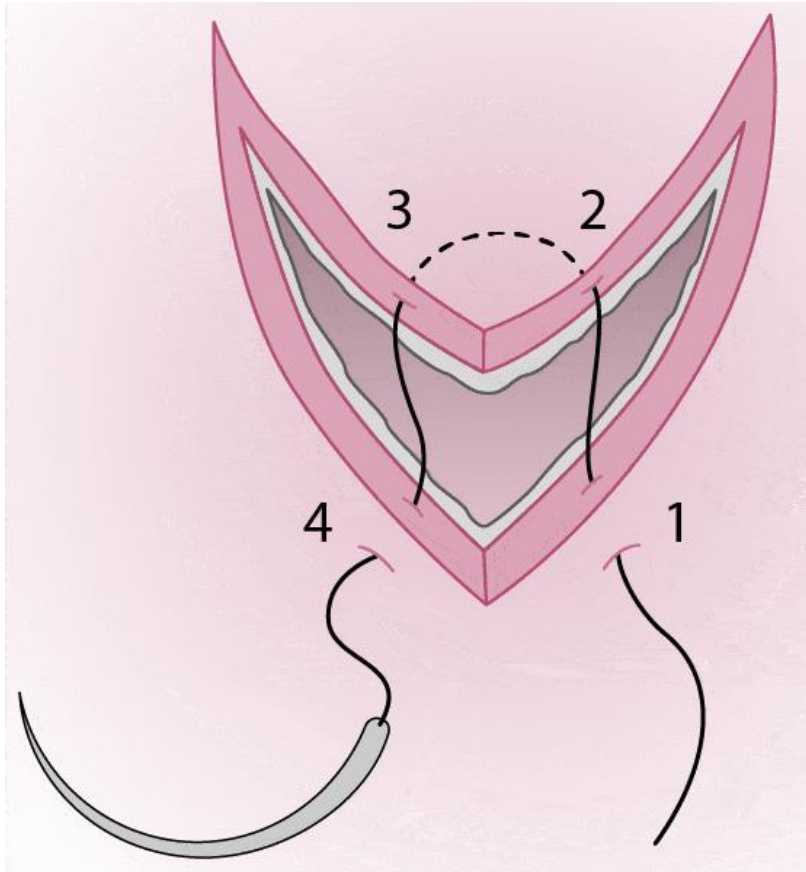
Cruciate (cross) suture

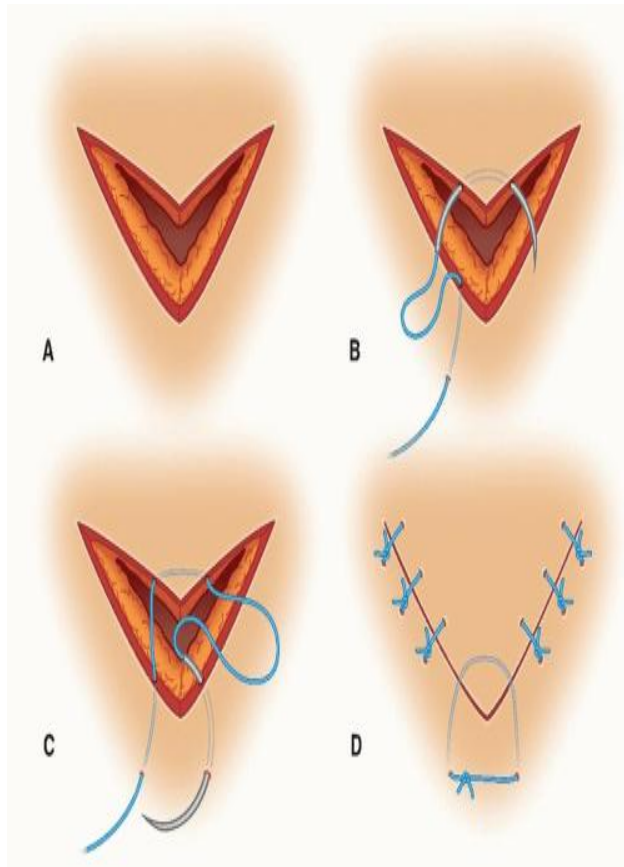
Simple Interrupted

- Most commonly used technique to close skin
- Attempt to keep all knots on one side
- For uncomplicated wound closure



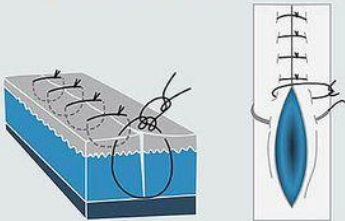
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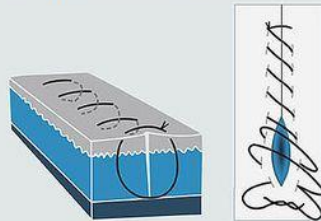


Basic Suture Patterns

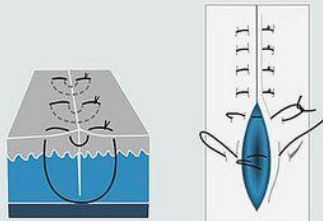
Simple Interrupted



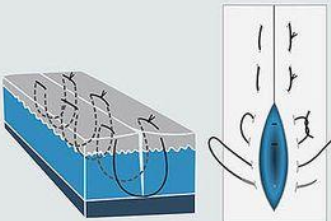
Simple Continuous



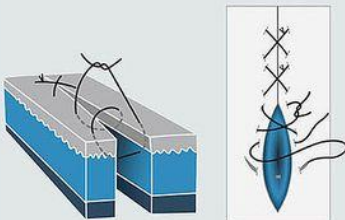
Vertical Mattress



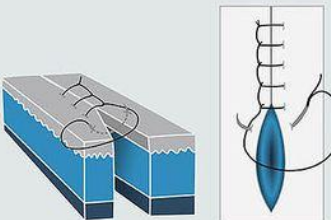
Horizontal Mattress



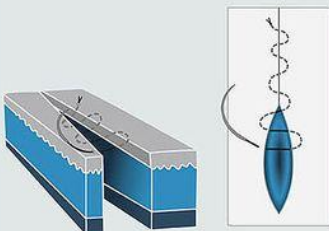
Cruciate



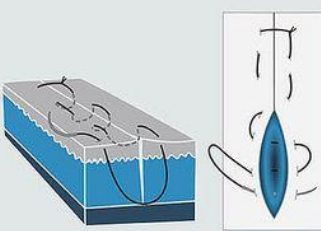
Ford Interlocking



Continuous Subcuticular



Continuous Horizontal Mattress



Study with Confidence with VetPrep.com



2. Continuous Sutures

A single thread runs along the wound with multiple passes, tied only at the beginning and end.

Advantages: Fast, even tension, good for long incisions.

Disadvantages: If broken, the entire closure can fail.

Variants:

Simple continuous

Continuous locking (blanket stitch)

Subcuticular (intradermal)

3. Mattress Sutures

Provide tension relief and wound edge eversion.

Types:

Vertical Mattress: Good for deep and superficial closure.

Horizontal Mattress: Spreads tension; useful in fragile skin.

4. Purse-String Suture

Circular stitch drawn tight to close an opening.

Uses: Appendiceal stump, bowel anastomosis.

5. Subcuticular Sutures



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Placed within the dermis, just under the skin surface.

Advantages: Cosmetic closure with minimal scarring.

Often done using absorbable suture material.

6. Buried Sutures

Knots are placed under the skin surface, not visible externally.

Uses: Deep tissue approximation, layered closure.

An emergency suturing tray is a vital setup for quick wound closure in emergency settings. Below is a categorized list of instruments and materials commonly required:

A. Instruments

1. Needle Holder (Mayo-Hegar or Olsen-Hegar)

2. Tissue Forceps

Toothed (Adson) – for skin

Non-toothed – for delicate tissue

3. Scissors

Operating scissors – for cutting sutures/tissue

Iris scissors – for fine work

4. Hemostats/Artery Forceps (Mosquito or Kelly) – for clamping vessels or holding tissue



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5. Scalpel Handle with Blade (No. 11 or 15) – for debridement or incision

6. Gauze-holding forceps or sponge forceps (optional)

B. Suture Materials

1. Suture Thread with Needle

Absorbable: Vicryl, Chromic Catgut

Non-absorbable: Nylon, Prolene, Silk

Varied sizes: e.g., 3-0 to 5-0 for skin

C. Consumables and Accessories

1. Sterile Gauze Swabs

2. Antiseptic Solution (e.g., Povidone-iodine, Chlorhexidine)

3. Sterile Gloves

4. Syringe and Needle – for local anesthesia

5. Local Anesthetic Agent – typically Lignocaine (2%)

6. Dressing Material

Sterile bandages or adhesive dressings

Micropore tape

7. Suture Removal Kit (optional) – for follow-up

D. Optional Items

Sterile drapes or fenestrated sheet



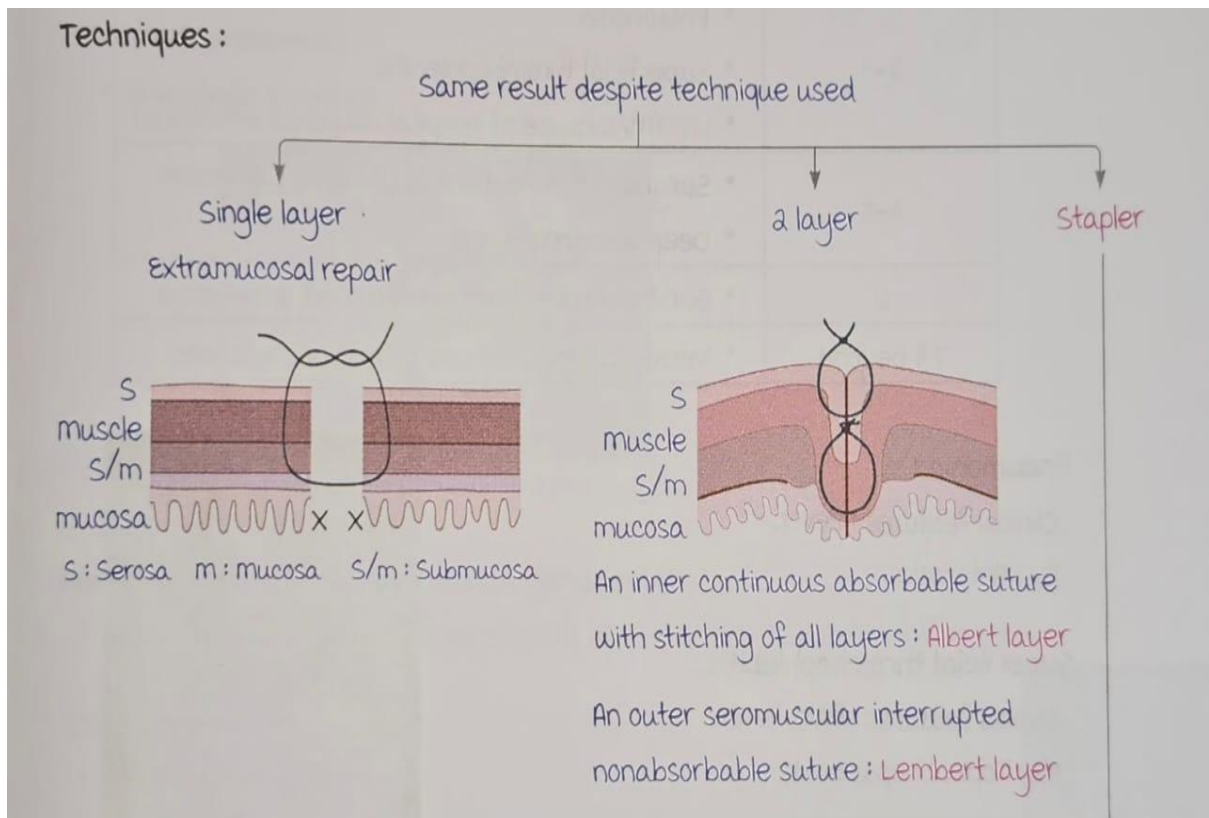
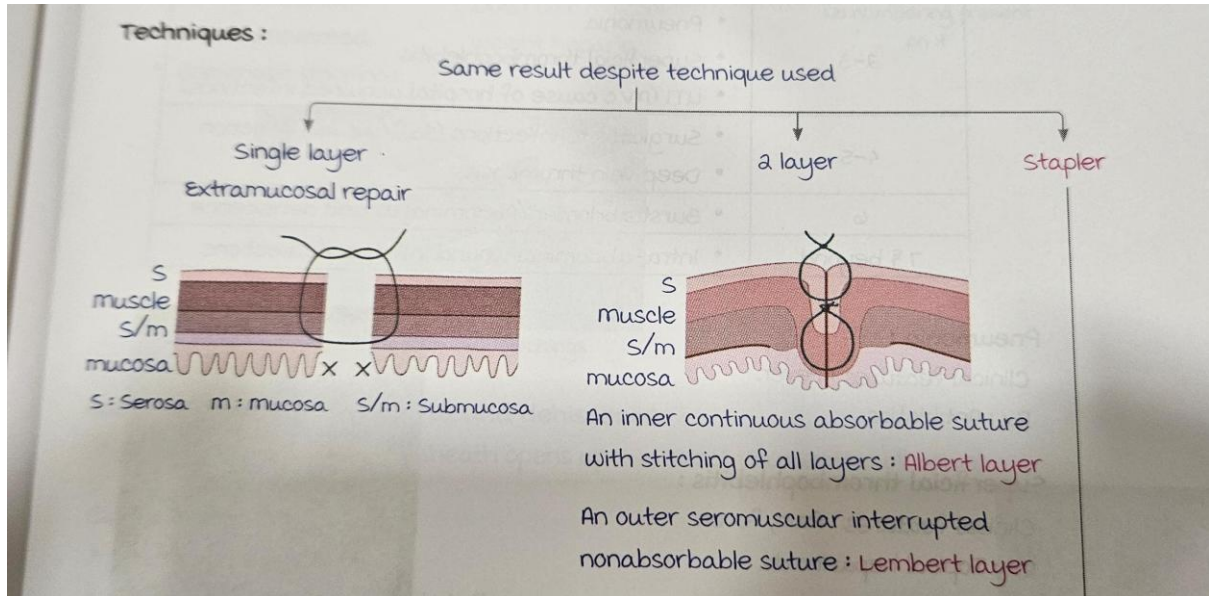
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Skin stapler (in some emergency settings)

Tetanus toxoid injection (for prophylaxis)





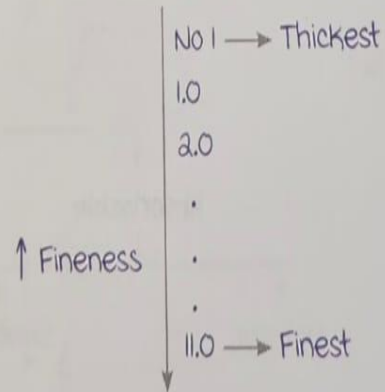
SUTURES

Suture color coding :

| Color | Suture type |
|--------|-------------|
| Brown | Catgut |
| Violet | Vicryl |
| Blue | Prolene |
| Black | Silk |

Suture numbering :

- Suture diameter = $1/10^{\text{th}}$ of a mm.



Needles :

Types :

Round body



• Features :

- Splits tissue.
- Relatively atraumatic.
- Delicate structures (B's).

a. Bowel.

b. Bladder.

c. Blood vessels.

d. CBD

Cutting/reverse cutting



• Features :

- Cuts tissue.
- more traumatic.
- Tough structures (S's).

a. Sheath.

b. Skin.

c. Fascia.

Parts :

