

# Sutures and Their Stitching

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## Introduction

After an injury or surgery, surgical sutures are used to hold body tissues together. Sutures (or stitches) are usually applied with a needle and a piece of thread connected, and surgical knots are used to secure them. Learning and mastering the technique of suturing a wound is an important surgical skill to master. It is critical to suture and close wounds in order to prevent infection.

- Reduce dead space
- Support and strengthen wounds until healing
- Approximation of skin edges to reduce scarring
- Reduce the risk of bleeding and wound infection

## Types

### ■ Interrupted suture

The interrupted suture is the most common wound closure technique. The fact that the individual stitches are not joined gives it its name. This technique's sutures have the advantage of being simple to put and having a high tensile strength. Individual sutures can also be removed without jeopardizing the closure (for example, in the event of infection). However, they take a long time to place and, because each suture has its knot, they have a higher risk of infection.

### ■ Procedures

Begin in the centre of the incision and insert sutures every 1 cm until the wound is approximated without strain.

- For each suture, grasp and evert the skin

edge (gently with the non-dominant hand)

- Pronate the dominant hand so that the needle pierces perpendicular to the skin, then supinate the hand to drive the needle through the skin before taking up the needle with the needle holders (2/3 from the tip). Sharps injury and infection risk are reduced by using a no-touch needle approach
- Before completing a hand or instrument tie, carefully gather the thread to make a long thread (with needle) and a short thread
- To close the wound, repeat with different sutures

## Continuous suture

The stitches of a continuous suture are joined along the length of the wound. This method is usually faster, especially for lengthy wounds. However, if the suture material breaks, the incision is more likely to dehisce.

## Procedure

- Begin at the edge of the wound and work your way along it (traditionally this is done working towards yourself)
- Grip and evert the skin edge for each stitch (gently with the non-dominant hand)
- Pronate the dominant hand so that the needle will puncture the skin perpendicularly, then supinate the hand (using the needle's curve) to drive the needle into the skin before picking up the needle (2/3 from the tip) with the needle

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- Place each suture at 1cm intervals until the wound is approached without tension, as described previously. Carry on like this all the way around the wound
- Before executing a hand tie or instrument tie, carefully gather the thread to make a long thread (with needle) and a short thread

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### Mattress suture

One of the most often utilized methods for skin closure is mattress sutures, both horizontal and vertical. Mattress sutures are utilized when skin margins must be closed under stress and excellent skin eversion is required (which aids wound healing and produces less prominent scarring).

This type of stitch is usually done with non-absorbable suture material, and the sutures are usually removed 10-14 days after the wound has healed (however, typically less than this for closures on the head and neck).

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### Procedure

- With the forceps, grasp the wound's edge
- Pass the suture deep through the dermis by driving the needle through the skin, using the needle holder, around 4-8mm distant from the incision edge

- Before reloading the needle onto the needle holder, pick up the needle with the forceps at the wound edge
- Using the forceps, grasp the opposing wound edge and drive the needle deep into the other side of the cut, piercing the skin to re-emerge 4-8mm away from the wound on the opposite side
- Place your needle in the needle holder backwards
- With the forceps, rasp the second wound edge once again, then drive the needle into the skin in vertical alignment with the other puncture site, about 1-2mm away from the wound edge. This close placement should take place at a shallow depth and through the upper dermis
- Before reloading the needle onto the needle holder, pick it up with the forceps at the wound edge
- Using the forceps, grasp the opposing wound edge and drive the needle deep into the other side of the incision (also in the upper dermis layer), penetrating the skin and re-emerging around 1 mm-2 mm away from the wound on the opposite side (also in vertical alignment with the other puncture site)
- As the incision edges close, gently pull the suture to reach the proper skin tension
- Finish by tying your hands or playing an instrument