

Skin suture removal, ambulatory care

Revised: February 19, 2024

Critical Notes!

Appropriate for use with homecare.

Introduction

A practitioner can use sutures to close a laceration or surgical wound. The practitioner takes into consideration the location of the sutured incision; the presence or absence of inflammation, drainage, and infection; and the patient's general condition in determining the timing of suture removal.^[1] (See [Timing of skin suture removal.](#)) The goal during suture removal is to remove nonabsorbable skin sutures from a healed wound without damaging newly formed tissue.^[2] Sterile technique typically isn't required for removal; no-touch technique usually can be used unless the patient's condition warrants sterile technique.^[3] The technique used for suture removal depends on the method of suturing. Although sutures typically are removed by a practitioner, in many facilities, a nurse may remove them according to a practitioner's order.

TIMING OF SKIN SUTURE REMOVAL	
Although a number of factors determine the timing of skin suture removal, it is generally based on the anatomic location of the sutures. ^{[1][4]}	
Wound location	Timing of removal
Arm	7 to 10 days
Face	3 to 5 days
Leg	10 to 14 days
Palm or sole	14 to 21 days ^[1]
Scalp	7 to 10 days
Trunk	10 to 14 days

Equipment

- Antiseptic cleaning agent
- Facility-approved medical waste container
- Gauze pads
- Gloves
- Light source
- Suture removal kit (sterile forceps or hemostat, sterile curved-tip suture scissors)
- Optional: adhesive strips, dressing supplies, sterile drapes

■ Preparation of Equipment

Inspect all equipment and supplies. If a product is expired, is defective, or has compromised integrity, remove it from patient use, label it as expired or defective, and report the expiration or defect as directed by your facility.

■ Implementation

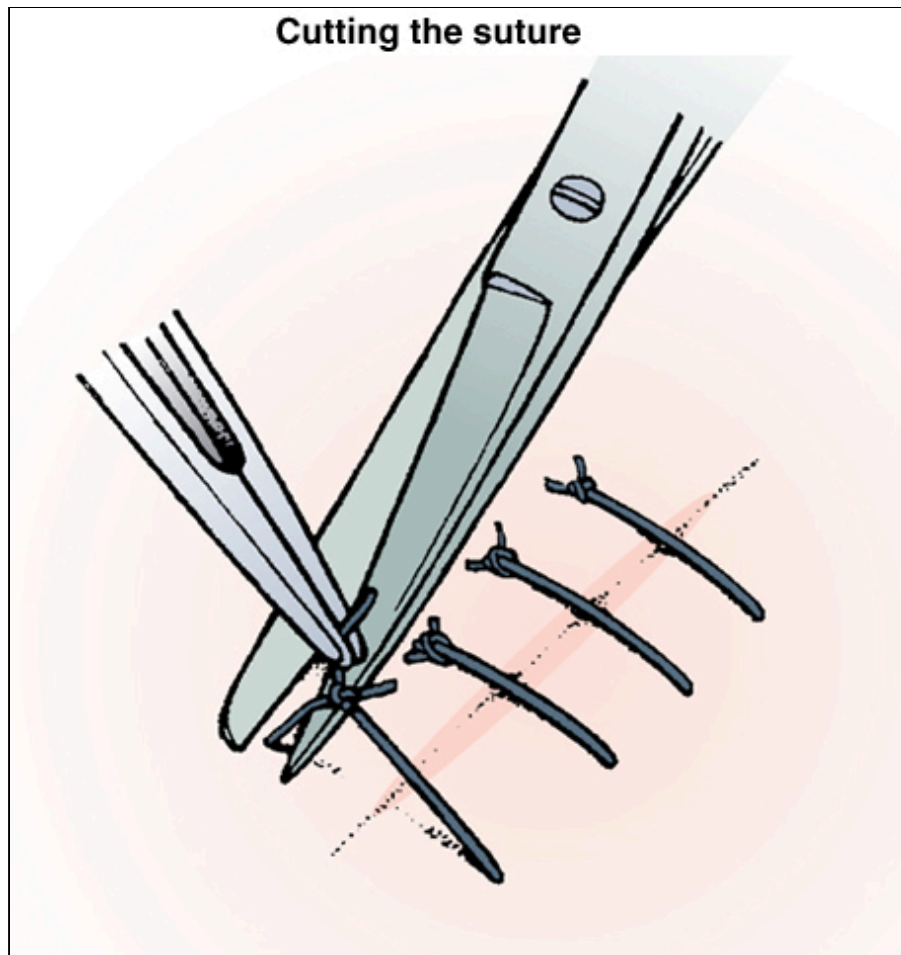
- Verify the practitioner's order to confirm the details of the procedure. If the patient has interrupted sutures or an incompletely healed suture line, remove only those sutures specified by the practitioner. *The practitioner may want to leave some sutures in place for an additional day or two to support the suture line.*^[2]
- Review the patient's medical record for a history of allergies, especially to adhesive tape and povidone-iodine or other topical solutions or medications.^{[5][6][7]}
- Gather and prepare the necessary equipment and supplies.
- Ensure that lighting is adequate.
- Perform hand hygiene.^{[8][9][10][11][12]}
- Confirm the patient's identity using at least two patient identifiers.^[13]
- Provide privacy.^{[14][15][16]}
- Explain the procedure to the patient and family (if appropriate) according to their individual communication and learning needs *to increase their understanding, allay their fears, and enhance cooperation.*^[17] Assure the patient that this procedure typically is painless but that a tickling sensation may occur as the sutures come out. Also emphasize that removal of the sutures won't weaken the incision.
- Position the patient for comfort without placing undue tension on the suture line. *Because some patients experience nausea and dizziness during the procedure, have the patient recline on the examination table, if possible.*
- Place a facility-approved medical waste container within reach. Position the container properly *to avoid reaching across the suture line when disposing of soiled articles.*
- Perform hand hygiene.^{[8][9][10][11][12]}
- Put on gloves *to comply with standard precautions.*^{[18][19]}
- If the patient's wound has a dressing, carefully remove the dressing and discard it in the appropriate receptacle.^[19]
- Assess the wound site:
 - Note any redness, warmth, swelling, and drainage, *which may indicate infection.*^[2]
 - Be aware that a localized reaction to the sutures can cause some faint erythema. This finding is normal, but you must differentiate it from pathologic erythema.
 - Note whether the wound margins are well approximated.^[2]
 - Report abnormal findings to the patient's practitioner. *If the wound isn't adequately healed, the sutures may need to remain in place longer. Evidence of infection may require pharmacologic intervention.*

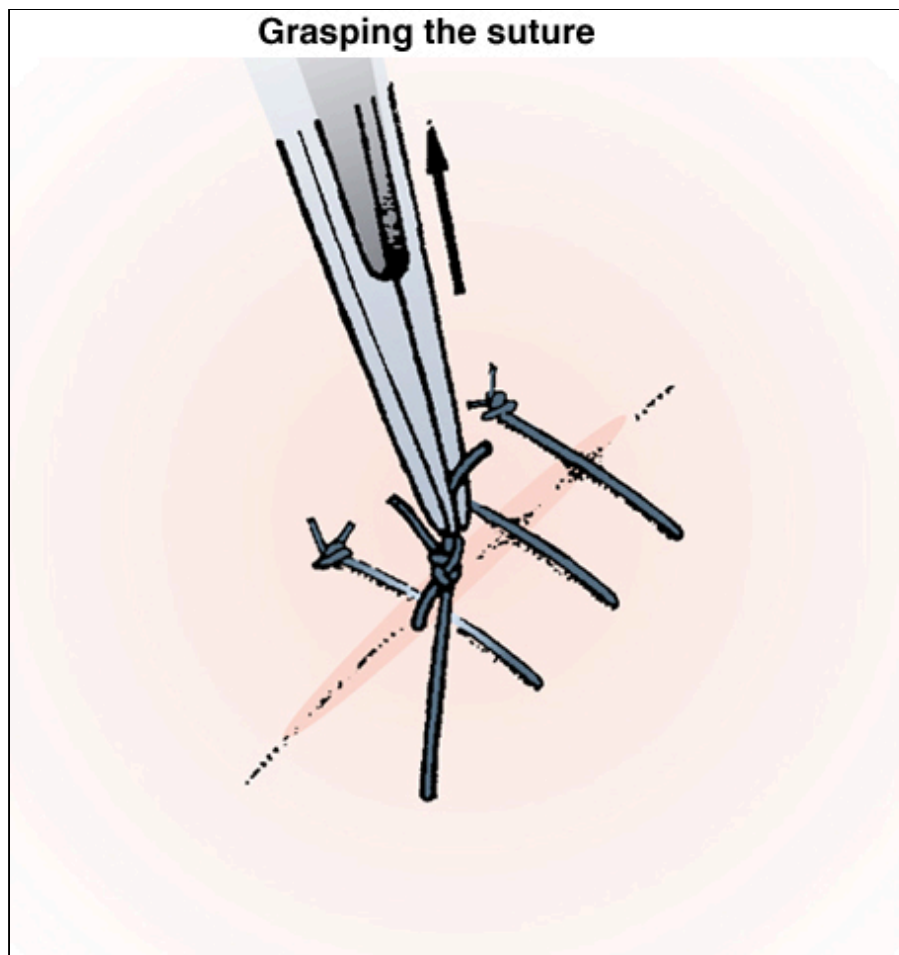
◆ **Clinical alert:** The absence of a healing ridge under the suture line 5 to 7 days after the incision indicates that the line needs continued support and protection during the healing process.^[20] ◆

- Remove and discard your gloves.^[18]
- Perform hand hygiene.^{[8] [9] [10] [11] [12]}
- Open the suture removal kit, maintaining asepsis.
- Place sterile drapes around the site or under the area, if appropriate, *to provide a protective barrier.*^[2]
- Perform hand hygiene.^{[8] [9] [10] [11] [12]}
- Put on gloves *to comply with standard precautions.*^{[18] [19]}
- Clean the suture line with an antiseptic cleaning agent *to decrease the number of microorganisms present and reduce the risk of infection.*^[2] The cleaning process should also sufficiently moisten the sutures *to ease removal and allow for visualization of all sutures.*^[2]
- Grasp and cut each suture at the appropriate place according to the suture type and then remove it. Proceed according to the type of suture that you're removing. (See [Methods for removing sutures.](#)) *Because the visible part of a suture is exposed to skin bacteria and is considered contaminated, cut sutures at the skin surface on one side of the visible part of the suture. Remove the suture by lifting and pulling the visible end off the skin to avoid drawing this contaminated portion back through subcutaneous tissue.*^[21]

METHODS FOR REMOVING SUTURES

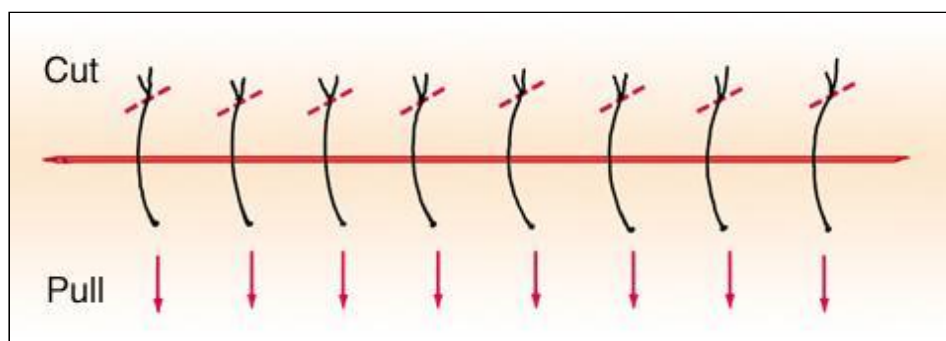
Removal techniques usually depend on the type of sutures. The first two illustrations depict how to cut and grasp the suture; the next four illustrations show removal steps for four common suture types. Be sure to grasp and cut sutures in the correct place *to avoid pulling the exposed (contaminated) suture material through subcutaneous tissue.*^[2]





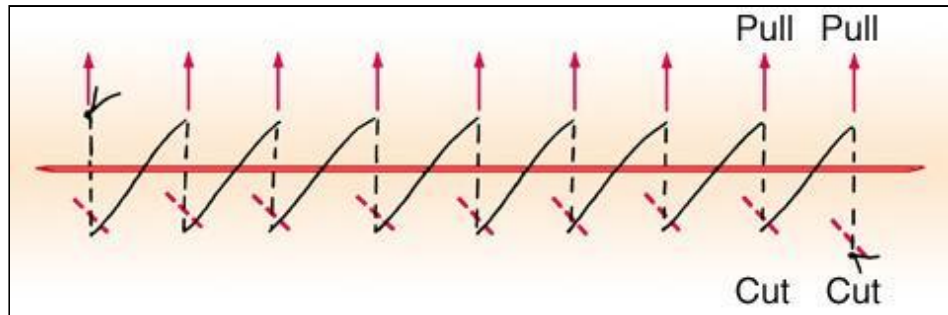
Plain interrupted sutures

Using sterile forceps, grasp the knot of the first suture and raise it off the skin. *Doing so exposes a small portion of the suture that was below skin level.* Place the rounded tips of sterile curved-tip suture scissors against the skin, and cut through the exposed portion of the suture. Then, still holding the knot with the forceps, pull the cut suture up and out of the skin in a smooth, continuous motion *to avoid causing pain.* Discard the suture. Repeat the process for every other suture (alternating sutures) initially; if the wound doesn't gape, remove the remaining sutures, as ordered.²



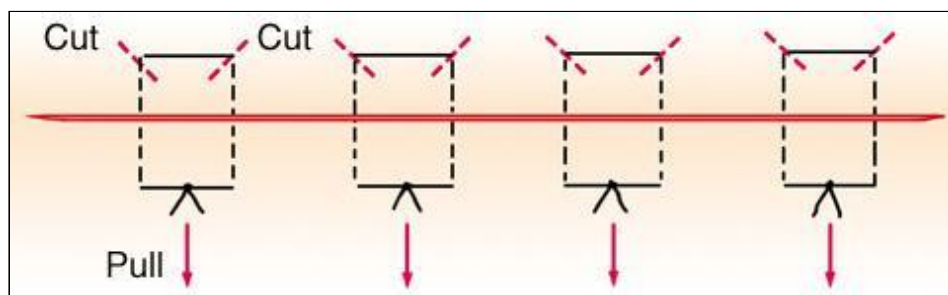
Plain continuous sutures

Cut the first suture on the side opposite the knot. Next, cut the same side of the next suture in line. Then lift the first suture out in the direction of the knot. Proceed along the suture line, grasping each suture where you grasped the knot on the first one.^[2]



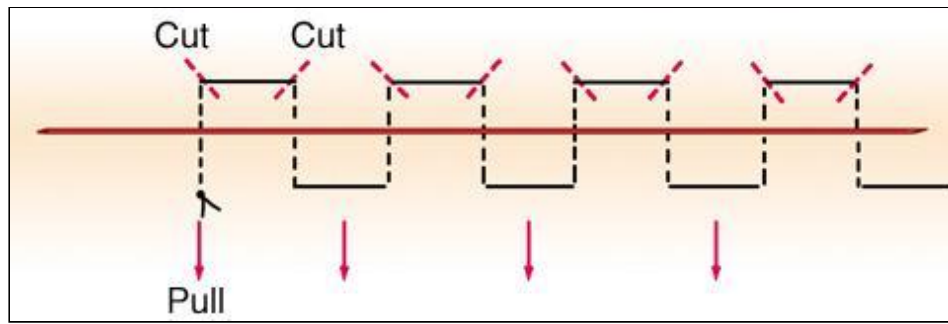
Mattress interrupted sutures

If possible, remove the small, visible portion of the suture opposite the knot by cutting it at each visible end and lifting the small piece away from the skin *to prevent pulling it through and contaminating subcutaneous tissue*. Then remove the rest of the suture by pulling it out in the direction of the knot. If the visible portion is too small to cut twice, cut it once and pull the entire suture out in the opposite direction. Repeat these steps for the remaining sutures. Carefully monitor the incision for infection.^[2]



Mattress continuous sutures

Follow the procedure for removing mattress interrupted sutures, first removing the small visible portion of the suture if possible *to prevent pulling it through and contaminating subcutaneous tissue*. Then extract the rest of the suture in the direction of the knot.^[2]

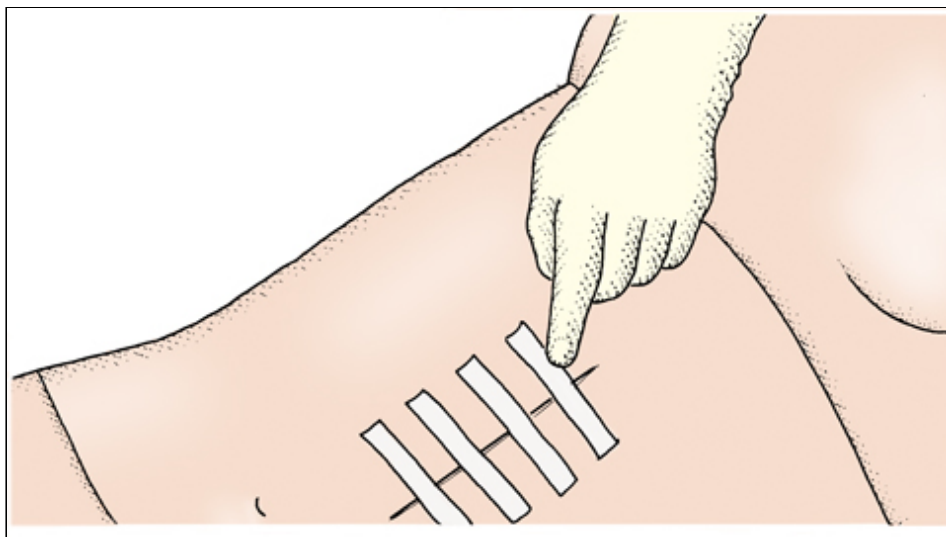


- Remove every other suture *to maintain some support for the incision*. Then go back and remove the remaining sutures if no dehiscence is observed.^{[2][22]}
- After removing the sutures, gently clean the incision with gauze pads soaked in an antiseptic cleaning agent.^[2]
- Assess the site for approximation of margins *to determine whether adhesive strips are needed*.
- Apply adhesive strips, if needed. (See [Applying adhesive strips](#).)

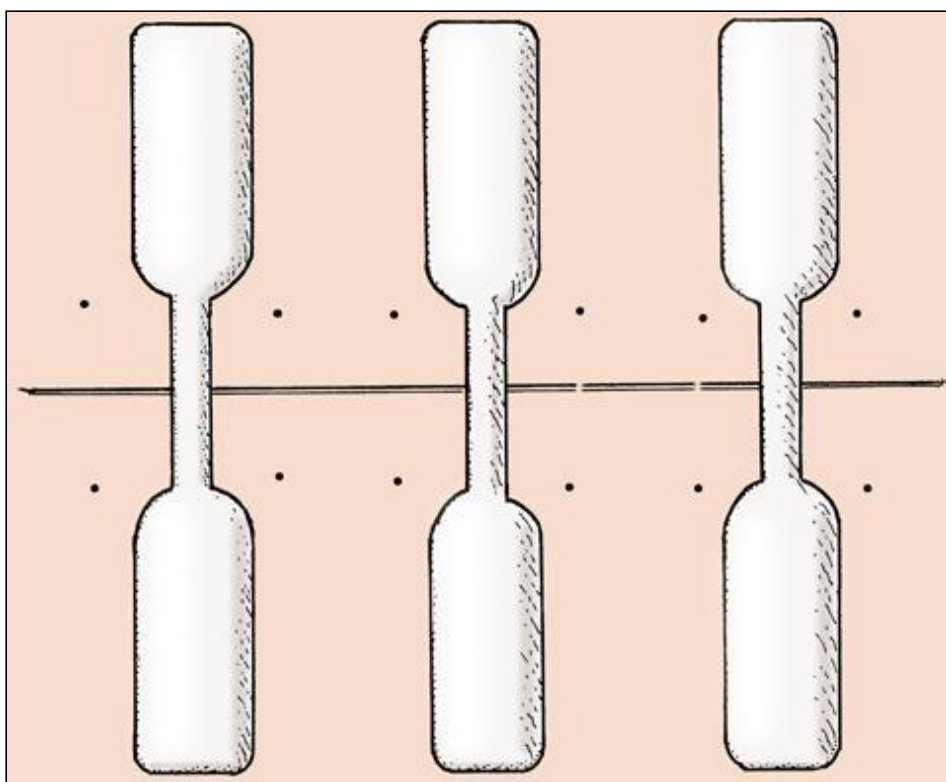
APPLYING ADHESIVE STRIPS

Some incisions may still be gaping or incompletely healed upon suture removal. In such cases, use these steps to apply adhesive strips to the site:

- Apply alcohol-free skin protectant, as ordered, to the outside of the incision according to the manufacturer's instructions.
- Allow the skin protectant to become tacky before placing the adhesive strips *to ensure that the adhesive strips will stick to the skin*.
- Bring the edges of the patient's skin together using your fingers, as needed.^[23]
- Attach one end of an adhesive strip to one side of the incision line, gently pull the strip across the incision line, and then attach it on the opposite side. Don't pull adhesive strips tightly *to avoid skin shearing, blistering, and loss of adhesion from excessive tension*.^[23]
- Continue to place the adhesive strips about ½" (1.3 cm) apart or closer, depending on the size and location of the incision line.^[23]



Butterfly adhesive strips consist of sterile, waterproof adhesive strips that have a narrow, nonadhesive bridge connecting the two expanded adhesive portions. These strips help close small wounds and assist healing after suture removal.



- Assess the need for a dressing; apply one, as needed.²
- Discard used supplies in appropriate receptacles.¹⁹
- Clean nondisposable items and prepare them for sterilization.²⁴

- Remove and discard your gloves.^[19]
- Perform hand hygiene.^{[8] [9] [10] [11] [12]}
- Document the procedure.^{[25] [26] [27]}

■ Special Considerations

- If the patient has retention and regular sutures in place, check the practitioner's order for the sequence for removal.^[21] *Because retention sutures link underlying fat and muscle tissue and give added support to an obese or slow-healing patient, they usually remain in place for 14 to 21 days.*
- Be particularly careful to clean the suture line before attempting to remove mattress sutures *to decrease the risk of infection when the visible, contaminated part of the stitch is too small to cut twice for sterile removal and must be pulled through the tissue.* After you have removed mattress sutures this way, carefully monitor the suture line for subsequent infection.
- If a wound dehisces during suture removal, apply adhesive strips *to approximate the wound edges* and immediately call the practitioner *to repair the wound.*^{[2] [21]}

■ Patient Teaching

Instruct the patient or family (if applicable) to immediately call the practitioner to report wound discharge, gaping, or increased inflammation. Tell the patient that redness surrounding the incision should gradually disappear and that only a thin line should be visible after a few weeks. Encourage the patient to use sunblock products consistently on the wound *to protect the skin and reduce darkening of the scar.*

■ Complications

Complications associated with skin suture removal may include:

- infection
- loss of range of motion or sensory perception
- abnormal appearance
- wound dehiscence
- incomplete removal.^[2]

■ Documentation

Documentation associated with skin suture removal includes:

- assessment findings before and after skin suture removal
 - appearance of the suture line
 - approximation of wound margins
 - presence or absence of redness, warmth, swelling, and drainage
- date and time of suture removal
- type and number of sutures

- application of a dressing or adhesive or butterfly adhesive strips
- tolerance of the procedure
- wound complications
 - date and time of practitioner notification
 - any prescribed interventions
 - response to those interventions
- teaching provided to the patient and family (if appropriate)
 - understanding of that teaching
 - follow-up teaching needed.

This procedure has been co-developed and reviewed by the American Academy of Ambulatory Care Nursing.



■ Related Procedures

- [Skin suture removal](#)
- [Skin suture removal, pediatric](#)
- [Skin suture removal, pediatric, ambulatory care](#)

■ References

([Rating System for the Hierarchy of Evidence for Intervention/Treatment Questions](#))

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[Abstract](#) | [Complete Reference](#) | [Full Text](#)
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Rating System for the Hierarchy of Evidence for Intervention/Treatment Questions

The following leveling system is adapted from *Evidence-Based practice in nursing & healthcare: A guide to best practice*, Fifth edition, by Bernadette Mazurek Melnyk and Ellen Fineout-Overholt (2023).

Level I	Evidence from a systematic review or meta-analysis of all relevant randomized controlled trials (RCTs)
Level II	Evidence from well-designed single RCTs (experimental)
Level III	Evidence from well-designed nonrandomized controlled trials (quasi-experimental), systematic reviews of a complete body of evidence, and intervention studies using mixed methods
Level IV	Evidence from well-designed case-control and cohort studies (observational)
Level V	Evidence from systematic reviews of qualitative and descriptive studies
Level VI	Evidence from single descriptive and qualitative studies, evidence-based practice implementation, and quality improvement projects
Level VII	Evidence from expert opinion, expert committee reports, and literature reviews

Data from Gyatt, G., & Rennie D. (2002). *Users' guides to the medical literature*. American Medical Association; Harris, R. P., et al. (2001). *Current methods of the U.S. Preventative Services Task Force: A review of the process*. *American Journal of Preventative Medicine*, 20, 21-35.