

**SURGICAL PATIENT
EDUCATION PROGRAM**

Prepare for the Best Recovery

Wound Home Skills Kit: Surgical Wounds



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SAMPLE

SURGICAL PATIENT EDUCATION PROGRAM

Prepare for the Best Recovery

Welcome

This wound home skills kit provides information and skill instructions for the care of **Surgical Wounds**.

 Watch the accompanying skills videos included online at facs.org/woundcare

The goals of wound care after surgery are:

- ✓ Let the wound heal rapidly without infection or complication
- ✓ Let the affected area return to the best level of function and appearance



Your Wound

Types of Wounds

Your Skin

Types of Wounds

Home Care Information

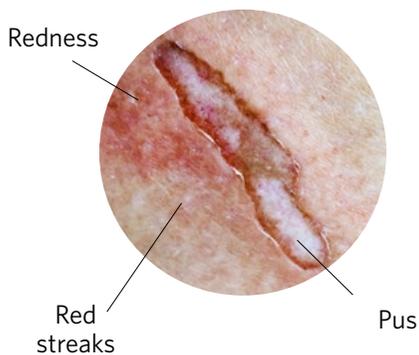
Taking care of a surgical incision, managing your pain, and increasing your activity level are important concerns after surgery. You should also know the warning signs of a surgical site infection (SSI) and how to prevent complications with proper hand cleaning and wound care. It is important that you understand all of your discharge instructions and follow them carefully. You may ask your health care provider to simplify the instructions for you if you have difficulty understanding them. You may need to request a translator if you speak a different language.

Your Wound

There are 4 types of wounds that may need to be surgically repaired:

1. **Clean wounds** show no signs of infection or inflammation and do not involve repairing or removing an internal organ. They often involve the eyes, skin, or vascular system. The risk for an infection in this type of wound is usually less than 2%.
2. **Clean-contaminated** wounds have no signs of infection at the time of surgery but do involve repairing or removing an internal organ. Examples of this type of wound include surgery on your lungs and appendix and vaginal procedures. The risk for an infection is usually less than 10%.
3. **Contaminated** wounds include open, fresh accidental wounds and wounds that involve repairing or removing an internal organ. Blood and other fluids can spill from the organ into the wound. The risk for an infection is usually 13% to 20%. Incisions after surgery that involve the gastrointestinal (digestive) tract may be at a high risk of becoming infected.
4. **Dirty-contaminated** wounds have an infection that is already present at the time of the surgery. The risk for an infection in these cases is usually about 40%.

Infected wound



Healed surgical wound



Your Wound after Surgery

There are 2 types of surgical wounds following surgery:

1. **Incisional wounds** are made by cutting through skin, muscle, and fat so that a body part can be repaired or removed. Small incisions are also created during laparoscopic and robotic surgery.
2. **Excisional wounds** are made for the removal of a cyst or other type of tissue

The goals of wound care after surgery are:

- Let the wound heal rapidly without infection or complication
- Let the affected area return to the best level of function and appearance



Surgical incision

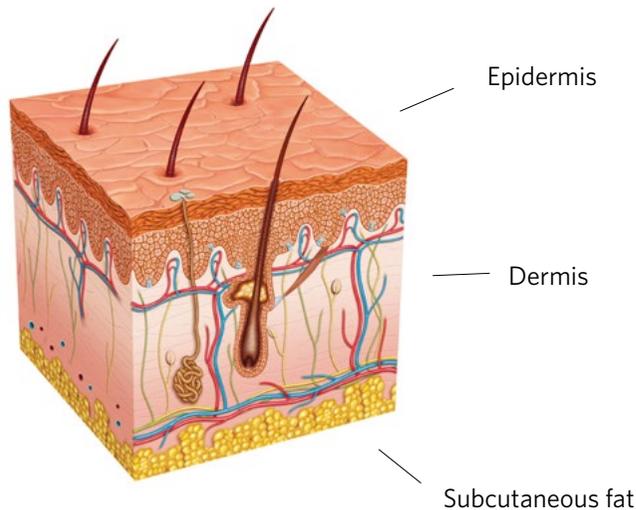
Your Skin²

Your Skin's Structure

Let's talk briefly about your skin. This is important so that you know how to take care of your wound.

Your skin has the job of protecting your body, so it is made to be tough and stretchy. The 3 main layers of the skin are the **epidermis**, **dermis**, and **subcutaneous fat**.

Your Skin's Structure



The epidermis is the top layer of skin, which is the part of the skin you see. New skin cells are made at the bottom of the epidermis. They push their way up and flake off about a month after they form. Your skin is always making new cells—that's why your skin can heal. Just remember that your new skin cells may be a little tender and fragile in the beginning.

The epidermis makes melanin, which is the pigment that gives skin its color. Melanin is increased when exposed to the sun. You will need to protect your wound from the sun—otherwise, the new pigment may be darker and that part of the skin will look different. The epidermis also has immune cells that are there to protect your body. That is why when your skin layer is broken, you are at a greater risk for infection.

The dermis is the second layer of skin. It's much thicker and does several jobs:

- Makes sweat—which comes out of little holes in your skin called pores.
- Contains nerve endings—they help you feel things. If the dermis is damaged, sometimes the skin has less sensation or feeling for a while.
- Grows hair—if your hair roots are damaged, you may have scar tissue that no longer grows any hair.
- Makes oil—this helps keep your skin soft and smooth.
- Brings blood to your skin—it does this through blood vessels. You will have more bleeding when a cut goes into the dermal layer. Damage to the dermis from constant pressure or other causes reduces the blood supply. Then nutrients can't get to the skin, and healing will be slow.

Subcutaneous fat is the bottom layer of skin. This layer:

- Attaches the dermis to your muscles and bones.
- Contains the larger blood vessels and nerve tissue that supply blood and feeling to the rest of your body.
- Contains fat that helps control your body temperature.
- Stores the fat in pads that help protect your muscles and bones. As you age, the fat layer thins out and becomes more delicate. Your skin may be more sensitive to bruising or skin tears.

How Your Wound Heals

There are 3 ways that wounds can heal:

1. **Primary healing:** The wound is clean and all layers of your skin are closed. Your wound will heal in a minimum amount of time, with no separation of the wound edges and with little scar formation.
2. **Secondary healing:** The wound's deep layers are closed, but the superficial (top) layers are left open to heal from the inside out. The wound edges may not be able to be brought together, and the wound may be at a high risk for infection.
3. **Tertiary healing** (delayed primary closure): The wound is first cleaned and observed for a few days to make sure there is no infection before it is surgically closed. These wounds include injuries, such as dog bites, or lacerations, such as jagged stab wounds.



Healing abdominal incision

! **The amount of time it will take your wound to heal depends on your general health and the type of surgery you've had.** Most wounds heal within 2 weeks in healthy children and adults. Healing may take longer if you have a condition like diabetes, you are a smoker, you are taking drugs (such as steroids or chemotherapy), or you have a weakened immune system.



Wound Care

Wound Closures

Wound Care

Wound Closures

Sutures (Stitches)

Sutures (stitches) are fine threads sewn through the skin to bring a wound together. Sutures are either permanent or absorbable (usually absorbed by the body within 4 to 8 weeks). Absorbable sutures, which do not require removal, are used to close incisions of the mouth, tongue, and genitals or deep, multilayered lacerations.³ Nylon and other nonabsorbable sutures should be removed by your health care provider.



Sutures

Staples

Staples are metal clips that are used to close surgical incisions that have fairly straight edges. Medical staples are made of special metal and are not the same as office staples. They often provide the strongest closure. The amount of time they are left in depends upon the wound location and healing rate of the patient. Staples are usually removed at a doctor's office or hospital. There may be some localized redness around the staples for the first few days. If this redness increases, it may be a sign of a wound infection.



Surgical staples

Wound Location	Time until Removal
Face	3 to 5 days
Scalp	7 to 10 days
Arms	7 to 10 days
Trunk/Torso	10 to 14 days
Legs	10 to 14 days
Tops of hands or feet	10 to 14 days
Palms or soles	14 to 21 days

Timing of Suture or Staple Removal

Steri-Strips

Steri-Strips® are adhesive strips used to bring the edges of an incision together. The strips should be placed with enough space between them to allow drainage. Steri-Strips should be kept dry for the first 24 hours, but you may usually shower after that. They will usually fall off in 7 to 10 days.



Steri-Strips®

Tissue or Skin Adhesives

Tissue adhesives (also known as **skin adhesives**, such as Dermabond®) are used to close wounds and may be used alone or with sutures. Your doctor will put a liquid film on the wound and let it dry. The film holds the edges of the wound together and also protects the wound from getting wet. You should leave the film on the skin until it falls off, usually in 5 to 10 days.



Tissue adhesive

- !** It is important to **NOT** put additional stress or strain on a wound closure. If you have an abdominal incision, try not to strain when using the toilet, bending, or lifting. Do not lift objects over 10 pounds—a gallon of milk weighs about 10 pounds.

Wound Care

Introduction

It is important to ask your doctor how to clean and care for your surgical wound. If you have had your wound closed after a clean operation, the skin around your wound may seal by itself in 24 to 48 hours. You may be able to remove the dressing and shower as directed by your physician. These are some general instructions for caring for your wound.

- Use tap water or take a shower for wound cleaning.
- Avoid baths, swimming pools, or hot tubs until your incision is healed.
- Dried dressings may stick to your wound and cause pain and tissue damage when removed. They may have to be moistened to be removed.
- **Do not use** disinfectants and antiseptics—like hydrogen peroxide, rubbing alcohol, or iodine—to clean open wounds. They are more likely to damage tissue than to help it heal.
- Gauze is most likely to cause pain, while products such as hydrogels, hydrofibers, alginates, and soft silicone dressings are least likely to cause pain.
- Pain may be reduced or prevented by using over-the-counter or prescribed pain medications and dressing products.



Gauze dressing

Cleaning Your Wound Skills



- It is important that you follow your doctor's instructions for cleaning your wound.
- Watch the Cleaning Your Wound video online at [facs.org/woundcare](https://www.facs.org/woundcare), and then follow each of the steps.

SKILL

Removing Your Dressing before Showering or Dressing Change

- If your hands are visibly dirty, wash your hands with soap and water for 15 to 30 seconds; if your hands are not visibly dirty, use a 60% alcohol-based hand gel.
- Loosen the tape on the dressing but don't remove the dressing yet.
- Put on a medical glove or use a plastic bag over your hand to grasp and remove the dressing. Place the dressing and the glove or bag in a second plastic bag and discard.^{4,5}
- Wash your hands again or reapply 60% alcohol-based hand gel.



Always wash your hands before caring for a wound

SKILL

Cleaning Your Wound When Not Showering

- If your hands are visibly dirty, wash your hands with soap and water for 15 to 30 seconds; if your hands are not visibly dirty, use a 60% alcohol-based hand gel.
- Soak clean gauze in tap water (or sterile saline solution, if you have been told to do so).
- The suture or staple line should be the least contaminated area, and so you should always clean it first.
- Dab the wet gauze gently around sutures, staples, or Steri-Strips to clean and remove dried blood or drainage from around the incision.
- Rinse the wound well and carefully pat the wound dry with dry gauze or a clean towel.



Caring for a wound closed with sutures

SKILL

Cleaning Your Wound Using the Shower

- Use a shower chair, if needed, and adjust the shower spray to gentle with warm water (rather than hot).
- Shower for 5 to 10 minutes, keeping your wound at least 12 inches away from the shower head.



Important Tips

- Prevent the wound from re-opening by keeping activity in that area to a minimum.
- Wash your hands before you care for your wound.
- If the laceration is on your scalp, it is OK to shampoo and wash your hair and scalp. Be gentle and avoid excessive exposure to water.
- Call your doctor if you have any questions or concerns about how to care for sutures or staples at home.

Packing Your Wound Skills



Watch
and
Review

- If a wound is deep or tunnels under the skin, wound packing can absorb drainage and help it heal. Ask your doctor how to pack your wound and how to order wound packing supplies.
- Watch the Packing Your Wound video online at [facs.org/woundcare](https://www.facs.org/woundcare), and then follow each of the steps.

SKILL

Gathering Your Supplies

- Packing material, water, or solution prescribed by your doctor
- Clean gloves
- A clean bowl
- Scissors
- Tweezers
- A clean towel
- Outer dressing material to use as a bandage
- Tape
- Cotton swabs (Q-tips®)
- A small plastic bag



Wound packing supplies

SKILL**Preparing Your Work Area**

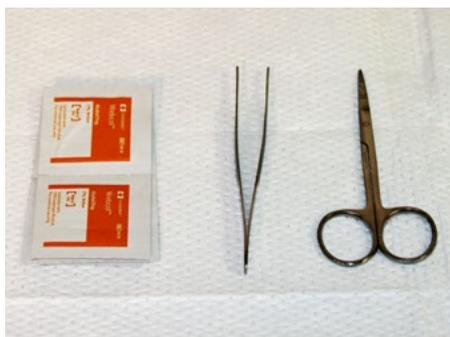
- Clean your work area.
- If your hands are visibly dirty, wash your hands with soap and water for 15 to 30 seconds; if your hands are not visibly dirty, use a 60% alcohol-based hand gel.
- Put a clean towel over your work area and set a clean bowl on it.
- Pour water or the solution prescribed by your doctor into the bowl to wet the packing material, or open your packaged material.
- Clean tweezers and scissors with alcohol or an alcohol wipe before using.



Always wash your hands before caring for a wound



Prepare your work area



Alcohol wipes, tweezers, and scissors



Clean your scissors with alcohol

SKILL

Packing Your Wound

- Cut pieces of tape longer than the length and width of the wound to secure the dressing. Hang one side of the tape from the edge of a table or workspace until needed.
- Carefully remove any tape or unwrap the bandage. Cover your hand with a plastic bag or a glove to remove the existing bandage. Check the bandage for drainage or odor, place in a second bag, and discard.
- Use a 60% alcohol-based gel for removing germs from your hands.
- Put on clean gloves.
- Use clean tweezers to lift the packing out of the container. Cut off the amount needed and place it on a clean piece of gauze.
- Gently push the packing material into the wound to fill the wound space. Use a cotton swab, if needed, to push the packing beneath any tunneled areas.
- You may also use a cotton swab to gently measure the depth of the wound and record it each day.
- Open the outer dressing material package and place the dressing over the packing and wound site.
- Tape the outer dressing in place or wrap a bandage around the wound area to hold the dressing in place.
- Remove your gloves and discard.
- Use a 60% alcohol-based hand gel to remove germs from your hands.



1
Remove the packing material from container

SKILL

Packing Your Wound (continued)

2



Cut some gauze packing

3



Pack your wound



Close-up of a packed wound

4



Tape the outer dressing over your packed wound



Surgical Dressings & Bandages

Your Dressings and Bandages

Dressings and Bandaging

Your Dressings and Bandages

SAMPLE

Introduction

Home care for a surgical wound may involve frequent dressing changes and cleaning.

Dressings are used for several purposes:

- Maintain a moist environment
- Protect from injury and contamination
- Control bleeding
- Decrease chances of an infection



Dressing supplies

▶ Watch the Dressings and Bandaging video online at facs.org/woundcare

Types of Surgical Dressings^{6,7}

There are two types of dressings:

1. A **primary dressing** is placed directly over the wound.
2. A **secondary dressing** is used to cover or hold a primary dressing in place.

Dry dressings (plain gauze), such as 4x4 gauze dressings, are still the most common. Other dressings have a specific purpose to help the wound heal. They include protective, antibacterial, absorbent, and debriding dressings.

A secondary dressing or bandage may be used to hold a primary dressing in place. You may also need tape and either clean or sterile gloves, depending on the type of wound you have.

There are also more advanced products that help create a moist, warm, and protected wound-healing result. Your health care provider will let you know what type of dressing you need.



Plain gauze 4x4 dressing



Gauze bandaging

Protective Dressings

Dressing Type	Wound Type	Use	Considerations
Dry gauze	Draining wounds	Cotton or synthetic fibers absorb drainage; nonocclusive; inexpensive and readily available	Gauze may stick to dry wounds; moisten before removing with saline or warm, soapy water; pull edges gently back to avoid tearing the skin
Silicone	Wounds or incisions with abnormal healing which may lead to raised or hypertrophic scars ⁷	Gel sheets that relax and soften scar tissue; silicone does not stick to the moist wound bed but adheres gently to the surrounding skin; decreases trauma and pain on removal with no residue on the skin	Reduces pain on dressing removal, reducing anxiety and speeding up the healing process ⁸
Hydrogels	Pressure ulcers, partial- and full-thickness wounds, vascular ulcers, burns, abrasions, or skin tears	Water- or glycerin-based dressings that provide moisture to dry wounds; soften and loosen slough and necrotic wound tissue	Not for heavily draining wounds; may feel cool and decrease pain; may dehydrate easily; nonadhesive and requires a secondary dressing
Transparent films	Closed surgical incision sites, small skin tears with minimal drainage, skin graft and donor sites, catheter sites, and areas of friction	Thin, transparent sheets with adhesive backing; protect from water and bacteria; provide a moist healing environment and debride the wound ⁸	Usually has its own adhesive, so less need for tape; does not cause pain or trauma when removed
Impregnated gauze	Skin grafts and donor sites, burns, and skin tears	Gauze treated with substances such as petroleum, iodine, bismuth, and zinc; adds moisture to the wound and promotes healing by decreasing pain during dressing changes	Do not use bismuth gauze with venous leg ulcers; iodine gauze may be used for tunneling/packed wounds but needs frequent dressing change and use for fewer than 5 days; use a secondary dressing to cover

Antibacterial Dressings

Gauze with iodine or silver added helps keep the wound moist, prevents infection, and provides nonstick coverage. This should make changing the dressing much less painful and will not tear the healing wound when the dressing is removed.

Dressing Type	Wound Type	Use	Considerations
Antibacterial ointment	Dry wounds that are or can become infected	Use for the number of days prescribed by your health care provider; do not stop earlier because the infection can come back	Watch for signs of improvement in 3 to 5 days; if no improvement, then notify your health care provider
Iodosorb® (cadexomer iodine)	Pressure ulcers, venous leg ulcers, diabetic foot ulcers, minor burns, and superficial skin-loss injuries	Absorbs fluid and bacteria from the wound, including MRSA*; helps in debridement (removing dead tissue)	Apply to the wound using a cotton swab or gauze; change the dressing as directed or when the medication changes from brown to yellow/gray or colorless; clean the wound before reapplying the next dose; DO NOT USE if you have an iodine sensitivity, you are pregnant, have thyroid or kidney disease, or in newborns
Silver-based dressing	Wounds that may easily become infected, like burns and lacerations	Silver is an agent that is effective against bacteria, fungi, viruses, and yeast; active against MRSA* and VRE**; reduces inflammation of wounds; and promotes healing	Apply with a gloved hand and cover the wound with a thin layer of medication; let your health care provider know if you have a skin reaction (blistering, peeling, or a skin rash anywhere on your body); other reactions may include easy bruising and bleeding, yellow skin, nausea, or upset stomach; you may need to have your blood drawn to watch for side effects

*MRSA (methicillin-resistant *Staphylococcus aureus*) is a form of bacterial infection that is resistant to some antibiotics, including methicillin.

**VRE (vancomycin-resistant *Enterococcus*) is a form of bacterial infection that is resistant to the antibiotic vancomycin.

Absorbent Dressings

Absorbent dressings help to collect moderate to heavy drainage from the wound and provide coverage and protection.

Dressing Type	Wound Type	Use	Considerations
Foam	Moderate to heavily draining wounds, partial- and full-thickness wounds, donor sites, ostomy sites, minor burns, and diabetic ulcers	Polyurethane pads, sheets or cavity packing that may have air- and watertight backing; maintains wound moisture; protects the wound	Not recommended for dry wounds and arterial ulcers because foam may dry wounds further; can be left in place for up to 4 to 7 days; remove and count all foam pieces between dressing changes
Collagen	Moderate to heavily draining wounds; skin grafts or donor sites; chronic wounds and slow-healing ulcers	Woven material that absorbs blood and forms a gelatin mass, which is absorbed within 2 to 7 days	Maintains wound moisture and enables healing at a rapid rate
Alginates	Highly draining wounds: pressure/vascular ulcers, surgical incisions, wound tunnels, skin graft donor sites, exposed tendons, and infected wounds	Nonwoven fibers made from brown seaweed; may also contain ionic silver; forms a gel when placed on the wound; provides a moist environment and may trap bacteria	Available in sheet, ribbon, or rope form; may be kept in place up to 7 days over clean wounds; change infected wounds daily; not used for dry wounds
Hydrofibers	For moderate drainage; pressure ulcers and surgical wounds	Sterile fibrous sheets convert to a solid gel and conform to the wound when moistened	Highly absorbent and allows debridement; collects wound drainage; comfortable and easy to remove



Alginate absorbent dressing

Debriding Dressings

Some wounds require a dressing that helps debride (remove) dead, damaged, or infected tissue to improve healing and protect the healthy tissue.

Dressing Type	Wound Type	Use	Considerations
Hydrogels	Pressure ulcers, partial- and full-thickness wounds, vascular ulcers, burns, abrasions, or skin tears	Water- or glycerin-based dressings that provide moisture to dry wounds; soften and loosen slough and necrotic wound tissue	Not for heavily draining wounds; may feel cool and decrease pain; may dehydrate easily; nonadhesive and requires a secondary dressing
Hydrocolloid	Partial- and full-thickness wounds with low-moderate drainage, necrotic wounds, minor burns, and pressure ulcers	Inner layer is made of colloid gel, paste, powder, or granule particles, such as pectin; provides moist healing and thermal insulation; polyurethane outer layer seals and protects from bacteria and trauma	Wounds with slough or dead tissue; not for infected or heavily draining wounds; may remain in place for 7 days



Medicated dressings

Skin Adhesive Dressings

If your wound was closed with a skin adhesive, DO NOT scratch or pick at the adhesive film on the wound. If your health care provider puts a bandage over the adhesive, be careful to keep the bandage dry. Your doctor will probably want you to put on a clean bandage every day.

Do not put any ointment on a wound that has skin adhesive on it. Ointment could make the adhesive come loose and fall off too soon. You should keep the wound out of sunlight and away from tanning booth lamps.



Skin adhesive

Dressings and Bandaging

SAMPLE

Dressing Skills



Watch
and
Review

- Your doctor may prescribe an antibiotic ointment to help prevent infection and reduce the size of the scar.
- You may have been told to use a special dressing for your wound and should be shown how to apply it. Apply it exactly as instructed.
- Watch the Dressings and Bandaging video online at facs.org/woundcare, and then follow each of the steps.

SKILL

Removing Your Postoperative Dressing

Follow your surgeon's instructions for removing the dressing and cleaning and caring for the wound.

Remove the postoperative dressing if:

- There are signs of excessive redness, swelling, or drainage
- Wound pain or pressure cannot be controlled by medication
- You suspect there is wound separation



Call your doctor for instructions on how to care for your wound if it has any of the signs of inflammation or pain described above. Continue to use tap water for wound cleaning after 48 hours unless you are told to change to another solution.

SKILL**Putting on a New Dressing**

1. After cleaning the wound, place a new primary dressing or clean gauze on the wound.
2. Secure the dressing with tape or by wrapping a secondary bandage completely around the dressing. If you are wrapping a bandage, extend the bandage 1 inch past the primary dressing in all directions to make sure it is completely covered.
3. Tape the bandage ends to the bandage itself to secure.
4. Wash your hands again or reapply a 60% alcohol-based hand gel.



Put on a new dressing



Surgical Drains

Your Surgical Drain

Your Surgical Drain

Introduction

You may have a tube or drain placed in the surgical site to remove excess fluid or blood. The drained fluid is collected into a dressing, bag, or container. You should see the drainage decrease after you go home, and you may see it change color. You should be shown how to empty the drain before you are discharged, and you should ask if you need to measure the drainage.⁸

Types of Drains

1. **Open drainage systems**—like Penrose drains—are inserted into a body cavity or the wound to remove drainage. They may not be sutured in and may have a safety pin at the end to keep the drain from getting pulled into the wound. The end of the drain should be covered by a bandage to collect the drainage.
2. **Closed drainage suction systems**—including Jackson-Pratt (JP) drains and Hemovac® drains—use a vacuum to draw drainage out of the wound into a closed system. These drains may be sutured in place to keep them from falling out.



Penrose drain



Penrose drain



Jackson-Pratt (JP) drain



Hemovac® drain

Surgical Drain Skills


**Watch
and
Review**

Wound drainage may contain blood, and the tubing may get clots or clogs that may keep the fluid from draining. You may hear these terms and see different types of drainage from your wound:

- Clear, watery plasma
- Pale, watery drainage with some traces of blood
- Fresh bleeding
- Thick yellow, green, or brown drainage

Before you empty and measure the fluid, you will need to clear the clots from the tubing each time. This is called stripping or milking the tubing.

- Watch the **Caring for Your Surgical Drain** video online at facs.org/woundcare, and then follow each of the steps.

SKILL

Clearing Your Tubing and Emptying Your Drain

- Gather your supplies:
 - Clean gloves
 - Gauze dressing
 - Measuring cup
 - Tape
- If your hands are visibly dirty, wash your hands with soap and water for 15 to 30 seconds; if your hands are not visibly dirty, use a 60% alcohol-based hand gel.
- Using one hand, firmly hold the tubing near where it comes out of the skin. This will prevent the drain from being pulled out while you are stripping it.
- Firmly pinch the tubing with your other hand, using your thumb and first (index) finger. Squeeze the tubing and slowly slide your fingers down the tubing toward the drain. You may use an alcohol pad or apply lotion around the tubing to make it easier to slide your fingers down the tubing. Squeeze the tubing firmly enough that it becomes flat.



Always wash your hands before caring for a wound

1



Strip the drain tubing

SKILL

Clearing Your Tubing and Emptying Your Drain (continued)

2



Empty the drain

- To empty a closed suction drain, using a gloved hand, open the cap on the drain. Hold the opening pointed away from you and squeeze all of the drainage into a measuring cup or larger measuring container, if needed. Record the amount and color of the drainage. Call your doctor if the fluid is cloudy, bad smelling, or the amount of drainage has increased.
- To close the drain, hold the opening away from you and squeeze until the drain is as flat as possible. Then replace the cap.
- To discard the drainage, pour small amounts down the sink and flush the sink drain with hot water. Larger amounts of drainage can be poured into a toilet—be sure to close the cover when you flush to avoid spraying any drainage.



Jackson-Pratt (JP) drain

SKILL**Changing the Dressing around the Drain**

- If you need to change the dressing but not empty the drain, gather your supplies:
 - Clean gloves
 - Soap and water
 - Gauze dressing
 - Secondary dressing
 - Tape
- Loosen the tape and remove the old dressing. Be careful not to pull the drain out. Look at the dressing for any unusual or bad-smelling drainage. Put the old dressing in a plastic bag and throw it away in the trash.
- If your hands are not visibly dirty, use a 60% alcohol-based hand gel for removing germs from your hands.
- Check the skin around the tubing for any redness, swelling, warmth, or bad-smelling drainage. Clean the skin around the tubing with soap and water.
- If you are using a 4x4 split gauze dressing, open the package and remove the gauze pad. Touching only the edges of the gauze pad, place the opening around the drain as shown below.
- Place a secondary dressing to protect the site and the drain from falling out. Tape dressings or wrap a bandage around them to hold in place.
- For a closed drain, pin the tab on the drain to the dressing to keep from dragging.



Apply a split gauze dressing

Negative Pressure Wound Therapy (NPWT)

If your wound is infected or has a high amount of drainage, you may need to have a type of dressing called **negative pressure wound therapy (NPWT)**. This therapy uses a sealed wound dressing connected to a vacuum pump. NPWT helps draw wound edges together and promotes the regrowth of healthy tissue. This helps increase blood flow to the area and removes excess fluid from the wound. NPWT can be used for a few days to several months.

A medical supply company will set up rental of the equipment and will usually deliver the vacuum pump supplies to your home. A health care provider will change the dressing on a scheduled basis.

NPWT Supplies



Vacuum pump



Foam dressing and tubing

Applying NPWT

1. The wound is cleaned and debrided, if needed.
2. A foam dressing or filler material is fitted to the shape of your wound.
3. The foam is sealed with a clear film.
4. The drain tubing is connected to an opening in the film and attached to a canister.
5. The canister is then attached to a vacuum pump.



Open wound before NPWT



Foam dressing fitted to your wound



Tubing attached to a canister



Canister attached to vacuum pump

Home Management of NPWT

When your NPWT supplies are delivered, the supplier should tell you:

- How to contact them for equipment problems through a support number available 24 hours a day/7 days a week
- How to access supplier staff for 24/7 technical product questions and information
- To call your health care provider or 911 if a medical emergency arises

Things to know:

- **The first time the pump is turned on**, you may feel a slight pulling sensation.
- **The dressing will pull down against your skin** when the therapy is working, and it will also be firm to the touch.
- **The dressing will be changed by a health care provider, usually every 3 to 7 days**, depending on the size, type, and amount of drainage.
- **You may experience some pain during dressing changes.** You may need to take pain medication 30 minutes before your dressing change.⁹
- **Most NPWT systems are portable so that you can move around**, so ask your health care provider how much activity you should be doing.
- **Make sure that the pump is positioned so it cannot be pulled off** onto the floor during sleep.



Negative pressure wound therapy

Bleeding

If you have recently had surgery on your heart or blood vessels, or are taking blood thinners, you may have a higher risk of bleeding, whether you are using NPWT or not.

If you see a sudden increase or a large amount of blood from your wound in the tubing or canister:

1. **Turn OFF the therapy unit right away.**
2. Do not remove your dressing.
3. Apply pressure over the area with gauze or a clean towel.



Call 911 (or local emergency number) and then notify your health care provider.

Wound infection

Call your health care provider right away if you think your wound is infected or if you have any of the following symptoms:

- Fever of 101°F (38.3°C)
- Your wound is sore, red, or swollen
- Your skin itches or you have a rash
- The wound or the area around the wound feels very warm
- You have pus or a bad smell coming from the wound

Serious infection

A wound infection can spread through the rest of your body. Call your health care provider right away if you have any of the following symptoms:

- Vomiting or diarrhea
- Feeling faint or dizzy when you stand up
- Headache
- Sore throat
- Rash
- Confusion
- A fever of 102°F (39°C)

Allergic reaction

Therapy dressings, drapes, and canisters are latex-free and are delivered sterile. Use these items only once and then at the end of therapy, follow directions for waste disposal. It is possible to have a sensitivity or allergic reaction to other wound care products. Call your health care provider right away if you have any of the following signs:

- Redness
- Rash or hives
- Swelling
- Severe itching



If you have difficulty breathing, seek immediate emergency medical assistance. Call 911 (or your local emergency number).

Stability

Devices can degrade over time. They should be labeled with an expiration date and recommended conditions for storage. Check the expiration date on all parts of the equipment and do not use if they are expired. If any parts are expired, notify your medical supplier to replace them.

Daily checks

Check your dressing and NPWT daily to make sure:

- The negative pressure seal is not broken
 - There are no kinks in the tubing
 - The drainage chamber is filling
 - The skin around the dressing has not changed
 - The dressing is clean
 - The drainage level in the canister is not full
-

Low battery

If the therapy pump is battery operated, change the batteries when the battery indicator flashes.

To change the batteries:

1. Press the button to pause the therapy.
 2. Take the battery cover off from the pump and put in new batteries.
 3. Put the cover back on and press the start button to continue your therapy.
-

Low vacuum alarm or light flash

This means there may be an air leak around the dressing.

1. Smooth the dressing and strips to ensure there is no way for air to get in.
2. Press the button to restart the vacuum pump.
3. The alarm will also sound if the canister is full or if the tubing is kinked or blocked. A full canister will need to be removed and replaced by a health care professional. The canister is usually changed with the dressing.
4. If the tubing is kinked or blocked, try to straighten out the tubing or remove the blockage. The alarm should stop.

Disconnecting and shutting off

Disconnect the pump to take a shower or use the toilet. If you feel more comfortable with assistance, you may want to organize your shower times around the days that you have a home health provider visit.

1. Press the button to pause the therapy. There should be a connector built into the tubing between the pump and dressing.
2. Unscrew the two parts of the connector. Place the pump somewhere safe.
3. The dressing on top of the wound is water-resistant. You can shower or wash with the dressing in place, but do not soak the dressing or it may fall off. Point the end of the tubing attached to the dressing down so that water cannot enter the tube.
4. When you are ready to reconnect the pump, screw the two halves back together. Make sure the dressing is smoothed down and has no creases that could cause air leaks.
5. Press the button to restart the pump and a light will flash to show that the pump is starting to apply therapy.

Therapy on/off

- If this button is accidentally turned off, push the same button to turn the unit back on.
- The system should not be off for more than 2 hours each day.



Problem Solving

Help Prevent Surgical Site Infections

Help Prevent Surgical Site Infections

Talk to Your Health Care Provider

Ask your doctor what you can do to reduce your risk for a surgical site infection. Here are some steps you can take:

- Stop smoking before or after surgery—tobacco smoking can decrease the amount of blood, oxygen, and nutrients that go to the surgical site. Smoking after your surgery will decrease your wound healing and increase your risks. Visit [facs.org/education/patient-education/patient-resources/prepare/quit-smoking](https://www.facs.org/education/patient-education/patient-resources/prepare/quit-smoking) online for the American College of Surgeons' resources to quit smoking before surgery.
- Discuss your medical history with your surgical team, especially if you have diabetes or another chronic illness.
- Do not shave the skin area that the surgeon is planning to operate through.
- Visitors should wash their hands or use a 60% alcohol-based hand gel before visiting. Friends and family should not touch your wound or surgical site unless they have been trained to do so.
- Carefully follow your doctor's instructions about wound care after your surgery.



Talk to your doctor about how to prevent a surgical site infection

When to Call Your Doctor



Call your doctor if you experience any of these signs:

- Increased drainage or bleeding that won't stop with direct pressure
- Redness in or around the wound
- Wound tissue that changes from pink to white, yellow, or black in color
- Foul odor or pus coming from the wound
- Increased size or depth of the wound
- Increased swelling around the wound
- Fever about 101°F (38.3°C) or shaking/chills
- Pain at the wound site that does not go away, even after taking pain medicine
- If the wound has split open
- If your stitches or staples have come out too soon (see chart on pg. 10)



Wound infection

You can take pain medications, such as ibuprofen, as directed by your doctor for pain at the wound site.

Follow up with your doctor to make sure the wound is healing properly.



Redness and swelling



Fever



Resources

Your Discharge Plan

Medical Professional Contact Information

My surgeon:

Name _____

Number _____

My home health nurse:

Name _____

Number _____

Other contacts _____

Your Wound Care

I need to clean my wound and change my dressing _____/day.

Wound and dressing changes at _____/_____/_____.

My pain medication is _____.

I need to take my pain medication _____ hours before cleaning my wound or changing the dressing.

My wound care supplies are _____

Instructions for cleaning your wound _____

Have your supplies ordered before you leave the hospital. It may take 1 to 2 days for them to arrive. Leave the hospital with several days of supplies in case there is a delay.

Supplies may be ordered through a local medical equipment store, pharmacy, or a national internet order company. Check with your insurance company to see if they have preferred providers. You may need a prescription for your wound care supplies and pain medication. If you have home health, they may order your supplies. Check with your hospital discharge planner about coverage for the supplies you need.

Notes

Check Your Knowledge

Question 1

After surgery, your wound may take longer to heal if:

- A. You are a smoker
- B. You have a condition like diabetes
- C. You are taking a steroid medication
- D. All of the above

Question 2

Sutures used in wounds on the trunk and legs usually need to be removed after:

- A. 10 to 14 days
- B. 3 days
- C. 5 days
- D. 21 days

Question 3

Which of the following is true?

- A. You can usually swim 48 hours after your surgical wound is closed
- B. You may usually use tap water to clean your wound
- C. Dry gauze is the best dressing for a dry wound
- D. If your hands are visibly dirty before wound care, apply a 60% alcohol-based hand gel

Question 4

What is the best type of dressing to apply to a wound that is draining?

- A. Absorbent dressing
- B. Debriding dressing
- C. Antibacterial dressing
- D. Protective dressing

Answers: Question 1: D Question 2: A Question 3: B Question 4: A

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Wound Care Resources

Founding Organization

American College of Surgeons Surgical Patient Education Program
800-621-4111
facs.org/patienteducation

Collaborative Organizations

American Burn Association
ameriburn.org

American College of Surgeons Advisory Council for General Surgery
and Advisory Council for Pediatric Surgery
facs.org

American College of Wound Healing and Tissue Repair
acwound.org/patients.php

American Association for the Surgery of Trauma
aast.org

American Society of Plastic Surgeons
plasticsurgery.org

Association of periOperative Registered Nurses (AORN)
aorn.org

Wound Healing Society
woundheal.org

Wound, Ostomy and Continence Nurses Society™ (WOCN®)
wocn.org

Additional Resources

Advanced Tissue
advancedtissue.com/the-best-and-worst-ideas-for-open-wounds

Association for the Advancement of Wound Care (AAWC)
Wound Patient/Caregiver Resources
aawconline.org/wound-patientcaregiver-resources

WOCN® Society™
Patient Information section
wocn.org/?page=PatientResources

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Provider Information:



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