

# WOUND CARE

## INTRODUCTION

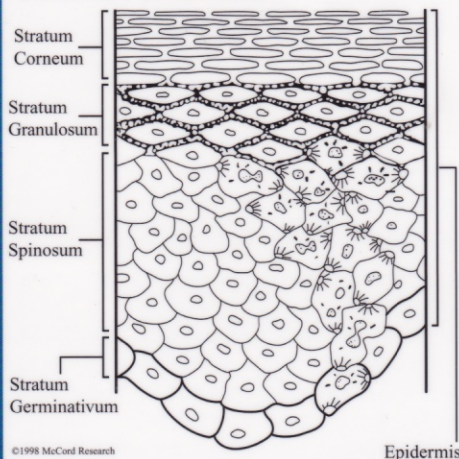
This guide is designed to teach and inform about wounds and their care; the first section covers the **structure of the skin** and describes **general facts** about wounds; **chronic wounds** and their treatment are described on the inside pages, including **diabetic foot ulcers**; **venous leg wounds** and wound care **products** are detailed on the back page; your **healthcare provider** is the best source of information about taking care of your skin; always check with your healthcare provider if your wound is deep, you don't know how you got it, you think it may be infected, or it isn't healing as expected

## GLOSSARY

<b>abrasion:</b>	wearing away of the skin through some mechanical process (friction or trauma)
<b>abscess:</b>	accumulation of pus enclosed anywhere in the body
<b>cellulitis:</b>	inflammation of the tissues, indicating infection
<b>collagen:</b>	main supporting protein of the skin
<b>debridement:</b>	removal of foreign material and dead tissue from a wound
<b>edema:</b>	swelling
<b>epidermis:</b>	outer layer of the skin
<b>erythema:</b>	diffuse redness of the skin
<b>eschar:</b>	thick crust of dead tissue, scab
<b>exudate:</b>	accumulation of fluids in a wound
<b>full-thickness:</b>	tissue damage extending through the dermis
<b>granulation:</b>	formation of connective tissue and many new capillaries; looks red and rough
<b>necrotic:</b>	dead
<b>partial thickness:</b>	wounds that extend through the epidermis but not through the dermis
<b>pus:</b>	thick fluid made up of white blood cells and bacteria
<b>slough:</b>	stringy, necrotic tissue; usually yellow
<b>ulcer:</b>	loss of skin with definite edges
<b>wound:</b>	break in the skin

## THE SKIN

### Structure of the Skin



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Epidermis

The skin is the largest body organ; it varies in thickness from **very thin** (such as on the eyelids) to **quite thick** (as on the soles of the feet); the **epidermis**, or outer layer of the skin, sheds layers and replaces itself every 4-6 weeks; the **dermis** is the layer under the epidermis, containing blood vessels and nerves which provide strength and support to the skin; below the dermis lies **subcutaneous tissue**, providing a cushion and nutritional support for the skin; all layers of tissue below the epidermis are moist; this is why wounds heal three to five times faster when slightly moist than when kept dry

### Function of the Skin

The skin provides **protection** from ultraviolet radiation, infections and other harmful things; **nerve endings** in the skin allow us to feel pain, touch, pressure, heat and cold; the skin helps control our body temperature and helps produce vitamin D when exposed to sunlight

The body is constantly exposed to factors that can **damage** the skin; **ultraviolet radiation** from **sunshine** or **tanning lights**, irritating **chemicals** we handle at work or in the home; even the drying effects of **home heating systems** and use of **alkaline soaps** can contribute to skin problems; adequate nutrition and fluid intake are needed for healthy skin; gentle **cleansing**, use of **moisturizer** on dry areas, and consistent use of **sunscreen** lotion can help your skin stay healthy

## THE BASICS

### What is a Wound?

A wound is a break in the skin caused by **disease, trauma, burns** or **other injuries**; some common minor wounds are scrapes, small cuts and blisters from tight shoes; usually, the body heals quickly after a minor wound, sometimes without needing medical care; an **acute** wound is one that happens suddenly; the cause of the wound is known, and it heals in an orderly way; a **chronic** wound is one that persists for a number of months or comes back again after healing initially; many diseases can cause a chronic wound or affect your body's ability to heal

### Skin Damage Severity

Sometimes, healthcare providers describe the depth of the injury in these terms:

- **Partial Thickness:** The wound extends through the epidermis and into the dermis
- **Full Thickness:** The wound extends through the dermis and epidermis and may affect underlying structures, such as subcutaneous tissue, muscle, and bone

### How Do Wounds Heal?

After an injury, a complex series of events starts the process of tissue repair; **cells** in the skin and **blood vessels** work to stop bleeding, clean up the wound and begin to close it; some of the cells important to this process are **white blood cells, platelets, fibroblasts**, and **epithelial cells**; shallow wounds can begin to cover with new skin within just a day or two, while deep wounds must first fill with new connective tissue, which looks dark-red and rough; new blood vessels are formed and the edges of the wound begin to pull together in a process called **contraction**; the wound eventually covers with new pink skin cells from the outer edges toward the center; up to a year after a deep wound has healed, the scar continues to change as the body remodels the new tissue

### Home Care for Minor Wounds

- Apply pressure and elevate the area to stop any bleeding
- Flush out dirt and debris with clean running water
- Apply a bandage to cover and protect the area
- Change the bandage when it loosens from the skin or the absorbent pad is filled with drainage
- Seek medical care if the wound is deep or may need stitches

## THE BASICS (CONT.)

- Wash your hands before and after wound care
- Wear gloves when doing wound care for someone else

**Some swelling, redness and pain are common with all wounds and normally will go away as the wound heals**

### Correct Use of Simple Bandages and Tapes:

- **Apply** tape gently; do not pull the tape tightly because tension can damage the skin
- When **removing** tape or adhesive bandages, push down on the skin and slowly lift the tape; sudden removal can tear fragile skin
- Follow manufacturer's directions for product use; many of the newer wound care products can be left in place for several days at a time; it is not always necessary to remove and replace the dressing each day

### See Your Healthcare Provider If:

- You have a **traumatic injury** (stitches may be needed)
- A minor wound won't stop **bleeding** (after holding pressure to it at least 10 minutes)
- **Burns** cause blistering or skin loss
- Human or animal bites break the skin
- Insect bites become **dark** in the center or very red and swollen
- You have **signs of infection** (thick drainage, increasing redness or swelling around the wound, severe pain, fever and chills)
- You have not had a **tetanus shot** in the past 5 years
- You have an **unexplained wound** or one that is **not healing** as expected

### Questions to Discuss with your Healthcare Provider:

What caused this wound?

Is it infected?

What can I do to help it heal?

How long does it usually take to heal this type of wound?

How often should I clean the wound and change the bandage?

### Wounds Healing by Granulation (secondary intention):

Some types of wounds require that the doctor make deep surgical incisions which are sutured in the deepest layers, with the upper portions left open; this allows fluid to drain and prevents formation of an abscess

## THE BASICS

The wound is **not usually painful** and can close in several weeks when nutrition is good and proper wound care is used; a bandage that keeps the wound slightly **moist** will help it heal faster than a dry bandage; you may be able to **wash** the wound in the shower; check with **y o u r** healthcare provider for **s p e c i f i c** instructions



**GRANULATING INCISION**

## CHRONIC WOUND CARE

This section of the guide gives general information about **cleansing and dressing chronic wounds**; always consult your healthcare provider before making a change in caring for your chronic wound and with any questions about the progress of the wound

### What to Expect When You See Your Healthcare Provider About a Chronic Wound:

You will be asked how the wound **started**, how **long** you've had it and how it has been **treated**, as well as questions about your **general health** and other **medical conditions** you may have; **before the appointment**, be sure to think about the answers to these questions; it is very helpful to **write them down** ahead of time; also, be sure to gather and bring any **pertinent health records** you may have

- The wound will be **examined** and **measured**
- The area around the wound will be **examined**
- **Diagnostic tests** may be ordered, such as: x-ray, MRI or CT scan, vascular studies, blood tests, samples of fluid or tissue from the wound
- The **oxygen pressure** around the wound may be measured
- **Medications** may be prescribed if infection is suspected
- The wound may be **debrided** (debris and dead tissue removed)
- You will be told how to **clean** and **bandage** the wound
- You **may** receive a referral for continuing care from other providers as needed; some other providers include, but are not limited to:

**Dermatologist**

**Dietician**

**Infectious Disease Specialist**

**Podiatrist**

**Rheumatologist**

**Surgeon**

**Wound Care Nurse**

## CHRONIC WOUND CARE

### Factors That Can Contribute to Slow Wound Healing:

- Repeated use of **harsh antiseptics** (hydrogen peroxide and povidone iodine, for example)
- Poor nutrition
- Smoking
- Untreated infection
- Uncontrolled diabetes
- Diseases that affect the immune system
- Use of **certain medications**, such as anticoagulants and steroids
- Continued injury to the area
- Failure to treat the cause of the wound

### General Guidelines for Care of Chronic Wounds

- Treat the **cause** of the wound
- Prevent **further injury** to the area
- Improve your body's ability to **heal**
- Treat **infection**, if present
- Remove **necrotic tissue**, if present
- Cleanse the wound with **saline** or nontoxic **wound cleansers**
- Use dressings that provide a slightly **moist wound surface**

## PRESSURE ULCERS

A pressure ulcer is an area of tissue that is damaged when soft tissue is pressed between a **bony area** and **another surface** for a long time; pressure ulcers happen most commonly over a bony area, such as the tailbone, buttock, hip, or heel, in people who can't move themselves around because of illness or injury; the **amount** of pressure placed on the area, **how long** it is pressed, and the person's **overall health** all have an effect on the amount of skin damage; once the injury has occurred, it can take weeks or months to heal

**Pressure ulcers can often be prevented; here are some of the things you or your caregiver can do to help:**

- **Look at the skin**; inspect the skin at least once a day, paying special attention to areas over the bony areas of the hip, tailbone, heels, elbows and ankles; if red areas are developing, be sure to turn more frequently and consider use of special cushions to reduce pressure; do not use heat lamps or massage red areas; these practices can further damage the skin
- **Keep the skin clean**; use gentle soap and a soft cloth to wash soiled skin; don't allow urine or stool to stay on

## PRESSURE ULCERS

the skin, as this can cause skin damage; if there is moisture from loss of bowel or bladder control, use a protective cream on the skin and talk with a healthcare provider about ways to manage incontinence

- **Change position** frequently; while in bed, change position at least every 2 hours around the clock; lie alternately on the sides, back and stomach, if possible; while in a chair or wheelchair, change position at least every hour; have the person in the chair shift his/her weight every 15 minutes, if possible
- When sitting, use a pressure-reducing cushion; these cushions vary in price but may be covered by your health insurance
- When in bed, use a **pressure-reducing mattress**; these mattresses distribute body weight evenly; some have electric pumps that continuously circulate air through the mattress
- **Protect the heels and elbows** from pressure and rubbing against the bed; the heels are supporting much of the weight of the leg when a person is on his/her back in bed; lift the heels frequently to relieve pressure and check the skin on the back and sides of the heels for redness or dark discoloration; **discoloration** can be a sign that a special boot or cushion is needed to prevent further injury
- If you are helping an ill person to move in bed, try not to “drag” the skin across the bed
- This causes **friction** and can damage the top layers of skin
- Use a **lifting** technique; you can use a bed sheet folded under the person to lift and turn him/her
- To prop a person in position for a desired length of time, use a **rolled blanket** or **wedge cushion**
- Avoid lying on the hip bone (trochanter)
- Place a **pillow** between the knees and ankles to prevent them from pressing together
- If the **head** is raised too high (more than 30 degrees), pressure will be exerted on the **tailbone** area; avoid this position for extended periods; have the patient sit in a more erect position, if possible; when in bed, keep the head of the bed flat unless it is necessary to elevate the head because of other medical conditions

## PRESSURE ULCERS

- **Provide good nutrition**; people with good nutrition are less likely to get pressure ulcers than those who are malnourished; if unable to take adequate food, ask your healthcare provider about nutritional supplements

### Pressure Ulcer Treatment

If you develop a pressure ulcer, it should be evaluated by a healthcare professional; he or she will develop a treatment plan and teach you how to care for the wound; some key things to remember during treatment are:

- The area must be kept **free of pressure** whenever possible; this will help the wound heal and prevent further injury
- Carefully **watch** other pressure areas on your body to prevent red areas elsewhere
- Follow a **nutritious diet**; your nutrition affects the body’s ability to heal
- **See your healthcare provider regularly** to evaluate how the healing is going; it will take weeks or months to heal a pressure ulcer
- Keep the wounded area **clean and bandaged**; a moist wound heals faster than a dry one

### Pressure Ulcer Stages

Healthcare providers sometimes describe the severity of a pressure ulcer using the following stages; pressure ulcers covered with a scab or other necrotic tissue can’t be staged until they are open and the depth is visible

**Stage I:** Erythema (redness) of intact skin; the area does not blanch when pressed; in individuals with darker skin, discoloration of the skin, warmth, edema, induration or hardness may also be indicators



STAGE I



STAGE II

**Stage II:** Partial-thickness skin loss involving the epidermis, dermis, or both; the ulcer is superficial and looks like an abrasion, blister or shallow crater

## PRESSURE ULCERS



STAGE III



STAGE IV

**Stage III:** Full-thickness skin loss involving damage to or necrosis of underlying subcutaneous tissue that may extend down to the fascia; the ulcer looks like a deep crater with or without undermining

**Stage IV:** Full-thickness skin loss with extensive destruction and damage to muscle, bone or supporting structures

## DIABETIC FOOT ULCERS

Diabetes mellitus affects many body systems, including the **nerves, blood vessels, muscles and immune system**; these factors can make the diabetic person more likely to get a foot infection and a wound; prevention of foot wounds is important because once a wound starts, it can be difficult to heal; if you have diabetes, help **prevent** foot infections by:

- **Controlling your blood sugar level**; this is usually done by careful control of the diet, checking blood sugar levels frequently and taking medications as directed
- **Taking care of your feet**; examine feet daily, including the bottom, heel, and between the toes; wear well-fitting shoes and check for foreign objects before putting them on; keep toenails trimmed and smoothed; see a podiatrist (foot doctor) monthly if you are unable to care for your feet yourself
- **Seeing your healthcare provider for regular check-ups**; remove your shoes so your provider can examine your feet; consult your provider immediately if you develop a wound on your foot, so that treatment can begin promptly

### Treatment of Diabetic Foot Ulcers

When you have a diabetic foot ulcer, your healthcare provider will examine you and begin treatment; the first step is to remove any dead tissue from the wound; this process is called **debridement**; it makes your wound cleaner and less likely to become



## DIABETIC FOOT ULCERS (CONT.)

infected; wounds that have been debrided **heal more quickly** than those with excess necrotic (dead) tissue; if you have excess callus around the area of the foot wound, your provider may remove it to reduce pressure and improve healing; the wound will be **measured** and some **diagnostic tests** (x-rays and lab tests) may be done; if the ulcer is on a weight-bearing part of your foot, you may be asked to use a **special boot** or **cast**, or to keep your feet elevated for a period of time; **pressure relief** is very important to healing diabetic foot wounds on weight-bearing surfaces, so tell your healthcare provider if you can't follow his/her instructions; a **bandage** will be applied to your wound; its main purpose is to provide a slightly moist surface to aid healing; **dressings** absorb excess drainage, help the wound stay clean and help prevent infection; sometimes, **medicated gels** or **creams** are used on diabetic foot ulcers

## VENOUS LEG WOUNDS

There are many diseases that can cause ulcers on the lower parts of the legs; the most common is **venous disease**; **venous** ulcers are caused by vein damage; blood collects in the legs, causing swelling and weeping wounds; the skin on the legs can become discolored and look stained brown; **arterial disease** can also cause wounds on the lower part of the legs; **arterial disease** makes wounds hard to heal because the blood flow to the wounds is reduced

## Care of Venous Leg Wounds

If you have a wound that won't heal on your lower leg, see your healthcare provider, who will determine the cause of the wound and begin treatment; if the wound is due to **venous disease**, the following recommendations may be made:

**Reduce the swelling in your legs**; this will help the wound heal; your healthcare provider may apply special

## VENOUS LEG WOUNDS

wraps to the legs or may ask you to wear stretch support stockings



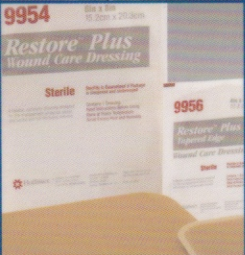

- A **prescription** is necessary for stockings, and they will need to be sized by a certified fitter
- Sizing will be more accurate when done in the **morning**
- It is also helpful to **raise your legs periodically** throughout the day; sit in a recliner with your legs up or use a footstool; avoid prolonged standing or sitting



## Help Your Body Heal

- Do not smoke
- Do not use alcohol excessively
- Keep the wound clean and dressed as directed
- Do not scratch your legs; if itching is a problem, discuss treatment options with your healthcare provider

## WOUND CARE PRODUCTS

PICTURE	PRODUCTS	DESCRIPTIONS/INDICATIONS	HOW TO USE
	<b>Alginate Dressing</b>	Absorbent dressing for use when the wound has moderate amount of drainage; available as flat pads or rope	Gently cover the wound with the alginate, then apply an absorbent dressing, such as gauze; change it daily or when the drainage shows through the outer layer of the bandage
	<b>Hydrogel Dressing</b>	Water or glycerin-base nonadherent dressing that helps keep wounds moist; available in a tube of gel and in flat sheet dressings	Apply the sheet dressing to the wound or, if using gel from tube, apply a 1/8-inch layer of gel over the surfaces of the wound; cover with an absorbent dressing; change it when drainage shows on the outer layer of the dressing
	<b>Hydrocolloid Dressing</b>	Adhesive, moldable wafer which often has a waterproof backing; the adhesive does not adhere to the wound; widely used in care of chronic wounds; available in various shapes and sizes	Remove the paper backing and apply the adhesive side of the dressing to the skin; use a dressing at least 2 inches larger than the wound so the dressing can stick to intact skin all around the ulcer; change the dressing when the wound drainage reaches the edge or the dressing begins to lift
	<b>Wound Cleanser</b>	PH-balanced formulas that clean and deodorize the wound; alternative to saline and harsh antiseptic cleansers	Spray the surface of the wound after removing the dressing; dry the surrounding skin before applying the new dressing

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Customer Hotline # 1.800.230.9522

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