

Care at Home Series

Preventing and Caring for Your Wounds at Home

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Care at Home Series

Preventing and Caring for Your Wounds at Home

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Preventing and Caring for Your Wounds at Home Using Wounds Canada's Care at Home Resources

Wounds Canada's Care at Home resources provide simply written information on healthy habits and lifestyle choices that can contribute to healthy skin and outline what to look for or do if skin breakdown does occur.

Each resource focuses on a particular type of skin breakdown or area for prevention or treatment and has been developed by experts in skin and wound care, education and knowledge mobilization. The resources present information that addresses these questions:

- What is it? (identifies and describes the potential or actual skin health problem)
- What causes it? (reviews the risks that may lead to this problem)
- What does it look like? (explores the typical characteristics of the problem)
- What can you do to prevent it? (discusses prevention-related actions/options)
- What do you do if you have one? (discusses treatment actions/options)
- When do you call in the professional(s)? (discusses the type of support needed to prevent or resolve the problem)

The resources also contain images, tips, tools and tables that provide even more information, action steps and guidance.

The documents in the series are as follows:

- 1. Caring for Your Wound at Home: Changing a Dressing** walks the reader through a simple, step-by-step process for changing a dressing and checking on how the wound is doing.
- 2. Preventing and Managing Skin Injuries: Minor Trauma (Cuts, Scrapes and Bruises)** provides information on how to keep skin healthy by preventing and/or managing minor skin injuries—especially important for individuals who are at high risk for skin damage or complications from skin damage.
- 3. Caring for Your Swollen Legs at Home: Preventing and Managing Venous Leg Ulcers (VLU)** outlines the possible causes of leg swelling and provides information on what the reader can do at home to prevent or manage swelling should it occur.
- 4. Caring for Easily Injured Skin: Preventing and Managing Moisture-associated Skin Damage (MASD)** reviews the possible causes of MASD and advises the reader on what can be done at home to prevent or manage MASD.
- 5. Caring for Pressure Injuries at Home: Preventing and Managing Pressure Injuries (PI)** outlines actions the reader can take to prevent a pressure injury from developing or to care for an existing pressure injury.
- 6. Caring for Yourself After Surgery: Preventing Surgical Site Infections** gives guidance on actions surgical patients and their care partners can undertake before and after surgery to help prevent infections and to recognize the signs of infections.
- 7. Caring for Your Feet: Safe Foot Care If You Have Diabetes** is a simple guide for persons with diabetes and their care partners on how to care for their feet at home.
- 8. Diabetic Foot Complications: When is it an emergency?** provides guidance for persons with diabetes and their care partners on recognizing the signs of complications and accessing professional assistance when required.
- 9. Caring for Injured Skin: Preventing and Managing Burns** is a guide to help prevent or manage burns that occur at home.
- 10. Keeping Your Home Safe: Preventing Skin Injuries for the Whole Family** identifies many easy, inexpensive changes the reader can make to ensure everyone is comfortable and secure in and around the home.

The Care at Home resources benefit everyone, including:

- The individual—through increased knowledge and confidence in self-management, improved conversations with their health-care team about goals and options for improving their health and well-being, and earlier recognition of the need for professional intervention
- The care partner—through improved knowledge to enable the individualized caregiving that results from increased understanding of the underlying causes of their family member's or patient's current condition and how to address them
- The health-care professional—through improved ability to communicate and co-ordinate positive care planning with patients, for example, by reminding patients that their health and well-being are based on the small choices they make daily and that healthy choices can add quality to their lives
- The administrator—through implementation of strategic policies around preventative care that ensure that making the healthy choice is the easy choice, ultimately resulting in healthier living, healthier individuals and healthier communities

To download individual resources in the Care at Home series, please go to:

www.woundscanada.ca/patient-or-caregiver/care-at-home-series.

For a free online tutorial on how to use the Care at Home resources, check out:

www.youtube.com/watch?v=_iDzqdyLt3w&feature=emb_logo.

The Care at Home resources

- Give individuals the most recent information to prevent or manage skin breakdown
- Provide a common language to connect health-care providers, patients and their families/caregivers
- Provide tools to track wound progress or deterioration
- Provide information on when to call in professional help

Caring for Your Wound at Home

Changing a dressing

Wounds Canada has developed this simple wound assessment and treatment guide that can be used by patients and their caregivers when doing dressing changes at home.

Are you providing wound care at home without hands-on help from a health-care professional? You may be changing your own dressings or changing the dressings of someone else. Each dressing change gives you a chance to check if the wound is healing, staying the same or getting worse and if you need to call in the experts for help.



Here is a simple, step-by-step process you can use at home:

1
Prepare yourself and your supplies



2
Wash your hands



3
Remove and dispose of the dressing



4
Wash your hands again



5
Clean the wound



6
Assess the wound and surrounding skin



7
Apply a new dressing



8
Wash your hands again



9
Follow up – what's next?



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1

Prepare Yourself and Your Supplies

WHERE:

- a. Choose a location in your home to perform the dressing change. It should have good lighting, adequate space, access to running water, a hard surface like a countertop (not the floor or a bed) and be away from children and pets. This location is your “workspace.”
- b. You or the person with the wound should be comfortably located near the workspace.

SET-UP:

- c. Turn on the lights in your workspace, turn off any fans and close all windows.
- d. Place a garbage bag near your workspace.
- e. Clean the hard surface you have chosen (e.g., the countertop) with an antibacterial surface wipe. If you do not have an antibacterial surface wipe, clean the surface with a clean cloth and warm, soapy water.

PREPARE AHEAD:

- f. Place the dressing supplies you will need on your clean, hard surface. The dressing supplies you will need will depend on the type of dressings you are using. Use the Supplies Checklist on page 11 as a guide.
- g. Carefully read the instructions on the dressing packages OR review the instructions given to you by your health-care professional (usually a nurse, doctor or pharmacist). It’s best if you have been able to watch your health provider apply and remove a dressing to the wound at least once to be sure you can repeat it, but it is not necessary. Most dressings are easy to apply and remove if you follow the instructions.



Tips:

- Ideally your home care nurse has left you with a disposable dressing tray that can be used to assemble your dressing supplies. After each use it should be washed with soap and water, rinsed and left to air dry.
- *Do not* boil any instruments that may be in the tray.

2

Wash Your Hands

Hand washing with soap and water is best!

WET:

- Wet your hands with lukewarm water and then apply a small amount of soap to one palm. (Remove rings prior to washing.)

WASH :

- Wash both palms, backs of hands, between fingers on both sides, the fingertips and then the thumbs. Sing the “happy birthday” song twice to make sure you have taken enough time.

WIPE:

- Dry your hands well with a paper towel or clean towel and then use the towel to turn the tap off.

What about hand sanitizer?

You can use alcohol hand sanitizer (60% or higher alcohol content) to replace hand washing if clean, drinkable water is not available. You can also use it *after* hand washing. The procedure is the same for hand washing with soap: squirt a small amount of sanitizer on one hand and then spread to the other hand.

Note: Hand washing is preferred after using the toilet or if hands are visibly dirty.

Tips:

- Take a look at this short video on hand washing:
www.youtube.com/watch?v=lisgnbMfkvI
- After using an alcohol hand sanitizer five or six times, use soap and water to remove the film that gets left behind from the sanitizer.



3

Remove and Dispose of the Dressing

PREPARE:

- If you have access to clean medical gloves, put them on.

REMOVE:

- Take the old dressing off carefully by gently lifting the edge and moving around the edges of the dressing until the entire dressing is off. Be careful to avoid causing injury to the wound and skin around the wound.

- Look at the dressing and answer these questions:

- Did the dressing stay on or was it lifting at the edges?
- Did the dressing leak through or did it contain all of the fluid coming from the wound?
- Was the dressing comfortable to wear or should it be applied in a different way?
- Did the dressing cause any pain during removal?
- Did the dressing cause any injury to the wound or the skin around the wound when it was removed?

Problems? If the dressing is the cause of any of these problems call your health-care professional.

DISPOSE:

- Place the soiled dressing in the plastic bag. If you had put on clean medical gloves, remove them and place them in the plastic bag.



Tips:

- If you have small children or animals, make sure the dressing is placed in a secure container they cannot get into.
- If you have difficulty removing the dressing because it is stuck to the wound, re-moisten the wound with wet gauze or paper towel or use a commercial wound cleanser spray.
- If the tape or adhesive part of the dressing is tearing the surrounding skin as you take it off, slow down and peel it off gently and slowly. In the future you may need to avoid using a dressing with the same strong adhesive. Your health-care professional can help you select a dressing with a more gentle adhesive or suggest a different method of keeping the dressing on the wound.

4

Wash Your Hands **AGAIN**

Wash your hands again the way you did in Step 2.



5

Clean the Wound

SET UP:

- Place a clean towel under the wounded area to catch any cleansing liquid.
- If you have access to clean medical gloves, put them on.

CLEAN:

- Pour the wound cleansing liquid (sterile saline or warm tap water) into the disposable dressing tray (if you have one) or pour it over the wound or spray the wound with the commercial wound cleanser.

Another option: Put the wound under gentle warm running water from the tap in the sink or tub.
- With clean or gloved hands (if available) or with forceps from the dressing tray (if available) use a gauze pad* to gently wipe away any wound fluid (drainage) or bits of dressing found in the wound.
- Repeat these steps (using a new gauze pad each time) until the wound appears clean. You may expect slight bleeding that should stop once cleansing is completed.

DRY:

- After cleaning the wound, gently pat dry the skin around the outside of the wound using clean gauze or a paper towel.

DISPOSE:

- Dispose of the all used gauze or paper towel in the plastic bag.

*The gauze pad may be sterile (a single pad in a wrapper) or non-sterile (in bulk wrap). Either type is fine but only use supplies that are clean and unused. You can buy gauze pads at pharmacies and medical supply stores.



Important:

- Only use tap water that is clean and drinkable.
- *Do not* use antiseptics such as hydrogen peroxide; they can harm a healing wound.
- *Do not* dip or soak the wound in water.
- If you have received instructions from your health-care professional, follow their instructions instead.

6

Assess the Wound and Surrounding Skin

EXAMINE:

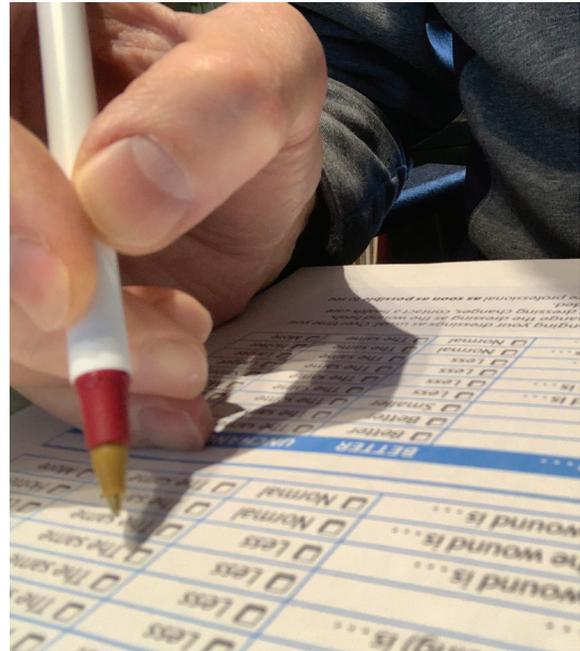
- Now that the wound and surrounding skin are clean you can examine them. Use the Patient and Wound Inspection Chart on page 7 to guide you.

WRITE:

- Print out a page of the Patient and Wound Inspection Charts (3 charts per page).
- In one of the charts write in the date of the dressing change and, for each question, mark the answer that best describes how you and the wound are doing.

KEEP:

- Keep all your charts so you have a record of how the wound has improved, stayed the same or gotten worse. This will help you give your health-care professional a clear picture of the progress or lack of progress of your wound.



Tips:

- Take a photo of the wound at each dressing change if you have a digital camera/phone/tablet. This can help you track changes over time, and if you need to contact a health-care professional you will be able to show them what the wound looks like now and in the past. This will help them decide if treatment needs to change.



Worksheet: Patient and Wound Inspection Charts

Date:

Compared to my last dressing change ...	BETTER	UNCHANGED	WORSE
I am feeling ...	<input type="checkbox"/> Better	<input type="checkbox"/> The same	<input type="checkbox"/> Worse
My wound pain is ...	<input type="checkbox"/> Better	<input type="checkbox"/> The same	<input type="checkbox"/> Worse
The wound's size is ...	<input type="checkbox"/> Smaller	<input type="checkbox"/> The same	<input type="checkbox"/> Larger
The fluid (drainage) coming from the wound is ...	<input type="checkbox"/> Less	<input type="checkbox"/> The same	<input type="checkbox"/> More
The smell from the wound (not the dressing) is ...	<input type="checkbox"/> Less	<input type="checkbox"/> The same	<input type="checkbox"/> Stronger
The swelling around the wound is ...	<input type="checkbox"/> Less	<input type="checkbox"/> The same	<input type="checkbox"/> Larger
The amount of redness around the wound is ...	<input type="checkbox"/> Less	<input type="checkbox"/> The same	<input type="checkbox"/> Larger
The temperature of the skin around the wound is ...	<input type="checkbox"/> Normal	<input type="checkbox"/> The same	<input type="checkbox"/> Hotter
The moisture on the skin around the wound is ...	<input type="checkbox"/> Normal	<input type="checkbox"/> The same	<input type="checkbox"/> More

Date:

Compared to my last dressing change ...	BETTER	UNCHANGED	WORSE
I am feeling ...	<input type="checkbox"/> Better	<input type="checkbox"/> The same	<input type="checkbox"/> Worse
My wound pain is ...	<input type="checkbox"/> Better	<input type="checkbox"/> The same	<input type="checkbox"/> Worse
The wound's size is ...	<input type="checkbox"/> Smaller	<input type="checkbox"/> The same	<input type="checkbox"/> Larger
The fluid (drainage) coming from the wound is ...	<input type="checkbox"/> Less	<input type="checkbox"/> The same	<input type="checkbox"/> More
The smell from the wound (not the dressing) is ...	<input type="checkbox"/> Less	<input type="checkbox"/> The same	<input type="checkbox"/> Stronger
The swelling around the wound is ...	<input type="checkbox"/> Less	<input type="checkbox"/> The same	<input type="checkbox"/> Larger
The amount of redness around the wound is ...	<input type="checkbox"/> Less	<input type="checkbox"/> The same	<input type="checkbox"/> Larger
The temperature of the skin around the wound is ...	<input type="checkbox"/> Normal	<input type="checkbox"/> The same	<input type="checkbox"/> Hotter
The moisture on the skin around the wound is ...	<input type="checkbox"/> Normal	<input type="checkbox"/> The same	<input type="checkbox"/> More

Date:

Compared to my last dressing change ...	BETTER	UNCHANGED	WORSE
I am feeling ...	<input type="checkbox"/> Better	<input type="checkbox"/> The same	<input type="checkbox"/> Worse
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The amount of redness around the wound is ...	<input type="checkbox"/> Less	<input type="checkbox"/> The same	<input type="checkbox"/> Larger
The temperature of the skin around the wound is ...	<input type="checkbox"/> Normal	<input type="checkbox"/> The same	<input type="checkbox"/> Hotter
The moisture on the skin around the wound is ...	<input type="checkbox"/> Normal	<input type="checkbox"/> The same	<input type="checkbox"/> More

- If you and the wound are **BETTER**, continue changing your dressings as usual. Over time you may slowly decrease the number of times you change the dressing as the wound heals.
- If you or the wound is **UNCHANGED** after several dressing changes, contact a health-care professional to see if a change in treatment is needed.
- If you or the wound is **WORSE**, contact a health-care professional **as soon as possible** to see if a change in treatment is required.

7

Apply a New Dressing

OPEN:

- Open the dressing package, taking care not to touch the inside of the dressing. Grasp the edge of the dressing and remove it from its package. Make sure the dressing is large enough to cover the entire wound with 2 cm to spare; no adhesive should touch the wound itself.
- If the dressing is self-adhesive (meaning it will stick to your skin on its own), remove the adhesive protector film.

POSITION:

- Position the dressing over the middle of the wound and gently press it into place.

PRESS:

- Gently smooth the adhesive edges down. Make sure there are no gaps where air, water or dirt might get in.
- If you are using a dressing that is not self-adhesive, place the dressing over the middle of the wound and use medical tape or apply a gauze wrap (wrapped loosely) to keep the dressing in place.

CLEAN UP:

- After using any equipment (e.g., forceps, scissors, dressing tray), wash in warm, soapy, drinkable tap water or cleanse with an alcohol wipe or antibacterial surface wipe. Use this equipment only for your dressing changes. Store it in a clean, resealable plastic bag in your dressing supply container.
- If you are wearing clean medical gloves, remove these and place them in the garbage bag.
- Place any remaining garbage in the garbage bag, close the bag and dispose of it in a garbage bin.
- Clean your workspace with an antibacterial surface wipe. If you do not have an antibacterial surface wipe, clean the surface with a clean cloth and warm, soapy water.



Important:

- If you are using medical tape to hold the dressing in place, be careful not to stretch the tape when putting it on or it may cause blisters.
- If you are using a gauze wrap to hold the dressing in place, do not wrap it too tightly or you may cut off blood flow.

8

Wash Your Hands **AGAIN**

Wash your hands again the way you did in Steps 2 and 4.



9

Follow Up

QUESTIONS?:

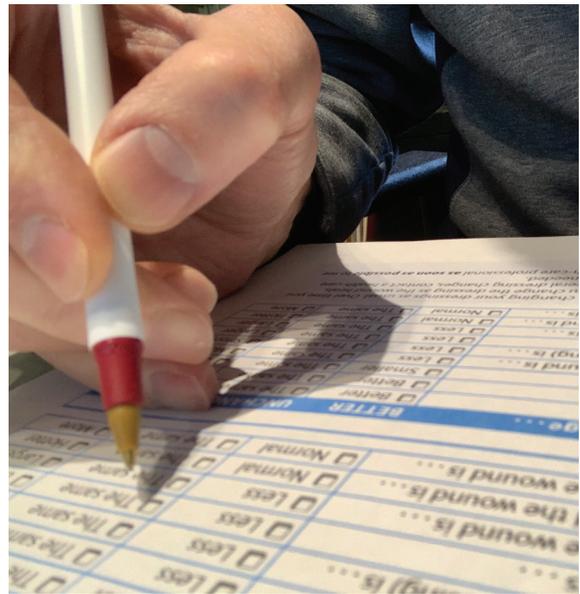
- If you are changing someone else's dressing, ask if they have any questions or concerns.

REVIEW AND ASSESS:

- Discuss or think about whether you need to contact a health-care professional based on what you saw and felt in Step 6. When you looked closely at the wound, was it getting better, staying the same or getting worse? If things are getting worse, contact a health-care professional as soon as possible because it may take time before seeing or talking to someone who can help.

RE-SUPPLY:

- Check your supplies and get/order more if you are running low.



FAQs

1. How often should I change the dressing?

It depends on many things, including the type of dressing you are using and the type of wound you have. Ideally your health-care professional has given you a schedule for changes. Follow that unless your health-care professional gives you different instructions because of changes to your wound.

2. When will I know if I need to call in expert help?

Expert help is needed immediately when:

- You notice an increase in your temperature
- You feel dizzy, lightheaded or like you may fall
- You have chest pain
- You see more redness and/or have more pain in the wound area
- You see unexpected blood or drainage (fluid) from your wound
- You see stool (brown) drainage from an abdominal incision
- You see green pus or drainage that is not expected from your wound

3. My health-care professional told me not to peek at the wound between dressing changes but I'm anxious to see how it's doing more often. Why can't I take a look?

Looking at your wound may be tempting, but opening up the dressing may introduce bacteria into the wound/incision/graft area. Do not peek under the dressing between dressing changes unless there is a problem.

4. Where do I go if I run out of supplies?

It is important that you have enough supplies, so plan ahead and contact your health-care professional regularly. They will be able to tell you how to get the supplies you need, for example from a pharmacy or medical supply store.

5. What if I don't have clean water available?

Clean water is water that is drinkable (also called "potable" water). Look on your Public Health website for information on potable water.

If clean water is not available your health-care professional may:

- Ask you to boil water
- Ask you to get distilled water, sterile water or sterile saline from the store/pharmacy
- Ask you to get a prepared commercial wound cleanser from the pharmacy or medical supply store

6. When will I be able to stop putting dressings on my wound?

It may take some time for the wound to close. Share the information you wrote down in your Patient and Wound Inspection Charts at each dressing change with your health-care professional. This information, along with any photos you have taken, will help them decide how often dressing changes are needed (dressing changes may need to be done less often as the wound heals) and if the type dressing needs to change.

Supplies Checklist

You may not need every item on this list. Check off the ones you will need based on any instructions you have been given, what you have available, or based on your previous experience with the dressing type you are using.

- If possible, store your dressing supplies in a plastic container that has a sealable lid. It should be large enough to fit all your dressing supplies, in good condition, regularly cleaned, and used only for your dressing supplies.
- Store the container in a place that is clean and dry and free from dust, insects and vermin, out of direct sunlight, off the floor and away from heat sources (such as a closet shelf).
- When the time comes to change a dressing, bring your container of dressing supplies to your workspace and select the supplies you will need.
- Print this page and tape it to the lid of your container.



SET-UP

- Antibacterial surface wipe or a clean cloth and liquid dish soap
- Hand sanitizer or liquid hand soap
- Clean medical gloves (if you have access to them)
- Plastic bag for disposing of items
- Container of dressing supplies
- Disposable dressing tray (if available)

WOUND CLEANSING

- Clean towel
- Gauze pads or paper towels
- Tap water, normal saline or commercial wound cleanser

WOUND INSPECTION

- Patient and Wound Inspection Chart (print page 7)
- Pencil or pen
- Digital camera/smart phone/tablet

DRESSING APPLICATION

- Dressing
- Tape and/or gauze wrap
- Clean scissors
- Alcohol swab for cleaning scissors and forceps

Preventing and Managing Skin Injuries

Minor Trauma (Cuts, Scrapes, and Bruises)

Wounds Canada has developed a simple guide that can be used by people of all ages to help keep their skin healthy by preventing minor skin injuries. The information in this resource applies to everyone, but is especially important for individuals who are at high risk for skin injuries.

The skin is the largest organ in your body, covering about 1.6 sq metres and weighing approximately 5.4 kg in the average adult. It is a protective barrier that shields you from heat, light, injury and infection. Skin is always at risk of injury, but it has an amazing ability to heal itself. Some people are at higher risk than others for injury because of their age, health status, activities or other factors.



Who is most at risk for a skin injury?

Most minor skin injuries are preventable—but of course they do happen. For most people, minor skin injuries don't cause major problems. But in certain individuals, minor skin injuries can happen often and can lead to serious discomfort and even other health problems. So who is at highest risk for minor skin injuries? Below are some common reasons a person may be at an increased risk:

Activities: Certain activities—at home, work or play—put a person at higher risk when they involve sharp or hard equipment or tools, fast-moving objects, high rates of contact with others, falls or other dangers like exposure to fire or chemicals.

Fragile skin: Newborn skin is more fragile than the skin of older children and adults. Elderly skin is thin and can be easily injured. Skin that has been previously damaged is at higher risk of further damage.

General health: Because the skin is an organ, it can be affected by a person's general health status. Here are some of the factors that may make skin more prone to damage:

- Some chronic and/or critical diseases, such as rheumatoid arthritis or cancer
- Certain medications, such as steroids and anticoagulants
- Poor nutrition

Inability to see or feel: When a person cannot see well or feel normal sensations of heat, cold or pain, they may be at higher risk of skin injury.

Balance and mobility: Poor balance or mobility can put a person at risk for falling or bumping into objects.

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Common types of skin injuries

Bruises, or contusions, are the result of hard contact with a person or an object. The impact causes an injury to the tissue beneath the skin surface, and blood from the injury settles near the skin. Bruises start out looking red, then within a few hours turn blue or purple, and finally turn yellow as they fade. (See Figure a.)



a. Bruise

Scrapes, or abrasions, are wounds in which layers of skin are scraped off. The most common sites for scrapes are the hands, elbows and knees. A common form of this, caused by a fall from a bicycle or skateboard, is called road rash. Although the scrapes may ooze blood initially, prolonged bleeding should not occur. (See Figure b.)



b. Scrape

Cuts, or lacerations, are wounds that are caused when an object, such as a kitchen knife, slices through the skin. Cuts usually bleed. (See Figure c.)



c. Cut

Stab wounds, or perforations, occur when a pointed object, such as a wood splinter, tack or knife tip, penetrates the skin. Bleeding is common. (See Figure d.)



d. Stab

Skin tears are wounds that happens when the skin separates or is peeled back by bumping into a hard object, like a coffee table. In very fragile skin it can happen even as a result of washing or drying the skin harshly or removing a wound dressing that has a strong adhesive. They most often happen on exposed areas such



e. Skin tear



f. Burn

as the arms or legs. Skin tears are most common in newborns, the elderly and people who are chronically ill. Long-term use of steroid drugs can also increase the risk. (See Figure e.)

Burns can be caused by hot or extremely cold objects, open flame, electricity, chemicals, the sun and other radiation (see Figure f).

How can I prevent a skin injury?

Create a Safe Environment

Creating a safe environment is one of the keys to protecting everyone, particularly those with easily injured skin.

Look around your home, work or play environment taking special note of any sharp or pointed objects, hard or rough surfaces and tripping and slipping hazards. Remove or replace anything that could cause a skin injury. Make sure all areas are well lit. Check electrical cords for exposed wires or damaged coverings. For more information on keeping your home safe, see [Keeping Your Home Safe](#).

Tip:

- If you or someone in your family is at risk for falls due to balance and/or mobility challenges or some other type of functional impairment, consider contacting an occupational therapist to conduct a home assessment and make recommendations on how you can create and maintain a safer environment.

Protect Your Skin

If you take part in activities where skin injuries might occur, use caution and wear appropriate protective equipment. Make sure all equipment is free from damage (like sharp edges) and playing surfaces are level and without tripping hazards.

Protective devices may be necessary to protect those who are most vulnerable. For example, shin pads are a great idea for an elderly person to wear to protect from skin tears that might occur when knocking a shin on a coffee table or lowered dishwasher door. Some other ways to protect those at risk is to wear clothing, such as long sleeves, long pants/trousers, or knee-high socks.

The kitchen is a high-risk location for skin damage, so make sure to use potholders or oven mitts to transfer hot foods and finger guards when cutting and slicing. Do not wear loose fitting clothing around open flames such as candles and gas stoves.

Do not wear tight clothing or jewellery that could damage the skin, through rubbing, scraping or cutting.

Wear sunscreen and/or clothing like hats and long-sleeved tops to protect your skin from the sun.

Maintain Good Skin Health

Follow a few simple steps to keep your skin healthy and lower your risk for injury.

- Use only mild, pH-balanced soap for cleansing skin. Do not over-clean skin as it can remove your skin's normal protective barrier.
- Use moisturizer two times per day, especially after bathing or showering. For the best effect, apply moisturizer after patting (not rubbing) your skin so it is still slightly damp.
- Use warm, not hot, water for bathing and showering.
- Keep fingernails and toenails cut short and filed to remove rough edges.
- Ensure clothing fits well and covers exposed, at-risk skin.

Tip:

- Avoid adhesive products on frail skin. If a person with frail skin needs a bandage (dressing) for an existing wound, use non-traumatic paper/silicone tapes to keep it in place. Make sure to take extra care during removal.

What do I do if I get a skin injury?

- **Bruises:** Apply ice to stop the blood flow to the injury site to help limit the size of the bruise.
- **Scrapes:** Cleanse the scraped area gently but thoroughly to remove any debris (like gravel) and dirt.
- **Cuts:** Control the bleeding by applying gentle pressure to the wound with a gauze pad or clean cloth. If you are unable to control the bleeding, go to your local emergency department.
- **Stab wounds:** Apply pressure with a gauze pad or clean cloth to control bleeding. If you are unable to control the bleeding go to your local emergency department.
- **Skin tears:** Gently move or roll the torn skin with a moistened cotton swab back over the torn area.
- **Burns:** Run cool (not cold) water over the burn site for at least 10 minutes to minimize the extent of the burn.

Then, for all wounds with broken skin:

- Cleanse the wound thoroughly with clean, tepid water or a wound-cleansing solution.
- Remove any dirt and debris from the wound with tweezers. Make sure to clean the tweezers with rubbing alcohol before using them.
- Pat the area dry with a gauze pad or clean cloth.
- Apply a non-stick dressing over the wound or close the wound with closure strips (if advised by a health-care professional).
- Change the dressing if leakage occurs.

CAUTION:

Make sure your tetanus shot is up to date to protect you from a potentially deadly infection caused by a bacterium that enters your body through your broken skin.

When is my skin injury an emergency that requires professional help?

You may need medical attention if the wound:

- is deep—as it may involve blood vessels, nerves, tendons or bone (white)
- has exposed muscle tissue (red) or fat tissue (yellowish)
- opens up if you let go of the sides of the cut
- is on a joint or in an area where healing might be difficult (stitching may be needed)
- is visibly dirty after being cleaned
- has been bleeding longer than 10 minutes even though pressure has been applied
- becomes infected

How can I tell if my skin injury is infected?

A wound that is healing normally will stay closed or get smaller in size over time. If you keep the area clean and protected, your chance of infection is usually low (see Caution below). Some signs of infection include:

- Increased discharge or pus
- Fever
- Increased pain
- Foul odour coming from the injury
- Redness, swelling or warmth in and around the affected area

If any of these signs appear, seek medical attention. To treat the infection your health-care professional will recommend or prescribe an antibiotic cream or ointment or, in more severe cases, a prescription for oral antibiotics.

Tip:

- A non-infected injury to the skin does **not** need an antibiotic unless you are at high risk for infection and/or it is recommended by a health-care professional. (See Caution below.)

Tip:

- Take a photo of the injury so you can compare the wound the next time you change the dressing.

CAUTION:

Some people are at higher risk for infection and may require professional support. These include people who:

- Have weakened immune systems (e.g., from chemotherapy medications used to treat cancer)
- Take medications that make the skin dry and fragile (e.g., prednisone)
- Take medications that decrease blood clotting (e.g., warfarin)
- Have diabetes
- Are elderly, as the skin gets thinner with age and healing happens more slowly

For more instructions on general wound care go to [Caring for Your Wound at Home: Changing a Dressing](#).

Caring for Your Swollen Legs at Home

Preventing and Managing Venous Leg Ulcers

Wounds Canada has developed this simple guide that can be used by patients and their care partners for preventing or caring for venous leg edema at home.

Do you, or someone you are caring for at home, have swollen legs? If you have swollen legs, you are not alone. This is a common problem. As it can be a sign of serious health problems, and also lead to other health problems, it is important that you find out from a health-care professional why your legs (one or both) are swollen.

Swollen legs can have many causes, including:

- injury (like a sprained ankle)
- heart problems
- kidney problems
- deep skin infection (cellulitis)
- chronic edema/lymphedema
- conditions that lower the ability of the veins in your legs to move blood back up to your heart

This last condition is called venous disease or poor venous return. It may result in venous leg edema (leg swelling). Poor venous return can lead to, or put you at risk for, skin damage in the form of **venous leg ulcers**. Venous leg ulcers are often slow to heal—or they may not heal at all without help from a health-care professional. If you have been told by a health-care professional that your swollen legs are due to poor venous function this resource can help you care for legs and prevent ulcers from occurring.



CAUTION:

If you have NOT had a diagnosis of venous leg edema and you have swollen legs, we urge you to contact your health-care professional right away to rule out other causes. Do not use the information in this resource, as it may be harmful if used for conditions other than venous disease.

Disclaimer: The content in this resource is for informational purposes only and is NOT a substitute for professional medical advice, diagnosis or treatment. You should always consult with your health-care professional before starting any new treatment or changing or stopping an existing treatment.

What causes venous leg edema?

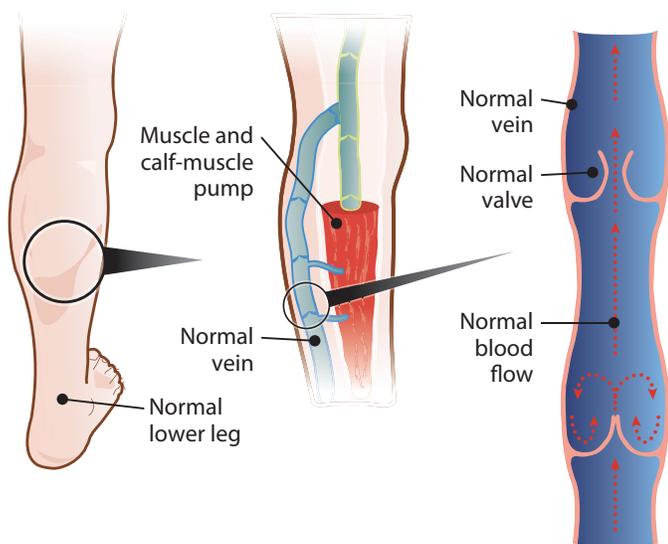
Venous disease, which affects about 30% of the population, is the most common cause of leg edema. Venous leg edema occurs when the valves in the veins in your legs are damaged or the muscles in your lower legs are weak, and blood is not properly pumped up toward your heart. When this happens the blood pools in the veins in your lower legs and the fluid part of the blood leaks into the tissues. This fluid build-up is what causes leg swelling.

Leg edema weakens the skin in the area, making it more likely to become damaged by minor trauma, like knocking your shin on the coffee table, leading to an ulcer. In some cases, the skin breaks down without any trauma because of the damage being done to the tissues from the inside of the leg.

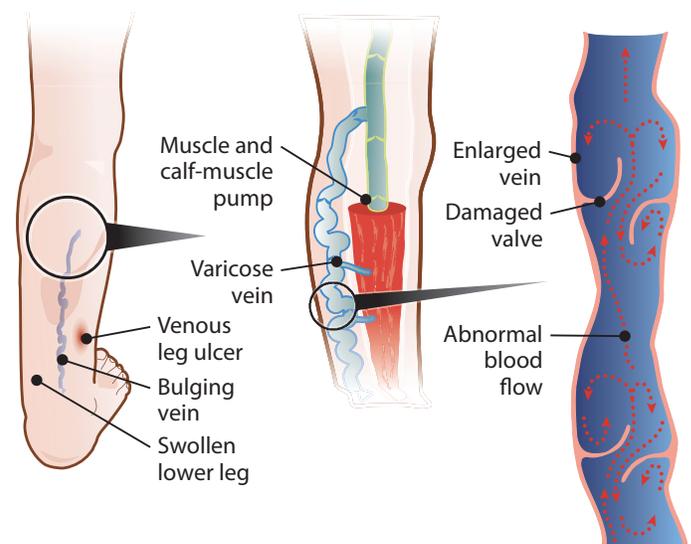
Important:

It is **VERY IMPORTANT** that the cause of the leg edema be identified, and heart disease and kidney or liver failure are ruled out before treatment begins.

Normal Veins



Varicose Veins



CAUTION:

If legs are **swollen above the knees** or if they are also **red, cool and very painful**, there may be additional health concerns. Contact your health-care professional before any treatment begins.

What can lead to venous leg edema?

The following are what are known as “risk factors” for venous leg edema. This means that if you have any of the conditions listed below, you may be at higher risk for getting venous leg edema.

RISK FACTORS:

- **Diseases such as arthritis or injuries such as bone fractures or sprains** to your ankle or foot can be painful. Sometimes pain can affect the way you walk because it hurts to take a full, normal stride. You may end up taking short, shuffling steps instead. Why is this important? A normal stride helps the muscles in your lower leg pump blood back up to your heart. If you are not able to walk properly, blood can pool in your lower legs. Over time, if the way you walk is not corrected you may be at risk for venous leg edema.
- **Sitting or standing too long** may cause damage to your valves and cause your legs and ankles to swell. This can happen during a single long plane flight or car ride, or in the workplace over time.
- **Obesity** may cause increased pressure on the valves in the veins that can cause damage to them and result in leg edema.
- **Multiple pregnancies** can add pressure to the valves in the veins, increasing the risk of venous disease, which can lead to leg edema.
- **Blood clots** in a vein in the past may have caused damage to the vein wall. If swelling occurs suddenly in one leg and the leg becomes painful it might be new blood clots. **This is a serious condition that requires emergency medical help.**

What does venous leg edema look and feel like?

Your legs may:

- have very little swelling, or even look normal, when you get up in the morning, but the swelling gets worse as the day goes on
- have veins you can see easily through your skin; spider veins are small, varicose veins are larger, some varicose veins bump out from the skin **(a)**
- have “pitting edema” when you press on the skin firmly, then release, leaving a dent or pit in the skin **(b)**
- feel itchy and appear dry
- feel heavy, achy or stiff but feel better when you lie down on the sofa or bed and raise them above your heart
- have a darker colour than usual, with brownish staining on the lower leg **(c)**



a. Varicose veins



b. Pitting edema



c. Darker colour than usual, brownish staining

What is cellulitis?

Cellulitis is a skin infection that can occur on swollen legs. It happens when bacteria or fungus get into the skin through damage caused by scratching itchy legs or cracks caused by athlete's foot or other fungal infections.



What are the signs of cellulitis?

Your leg becomes red and warm compared to the other leg.

What can be done about venous leg edema?

Compression therapy is an effective way to manage the swelling of venous leg edema. It **MUST** be recommended by a health-care professional, and **ONLY** after a complete examination has ruled out other causes. It can be dangerous to use compression therapy in individuals with other health problems.

There are two types of compression therapy that your health-care professional will recommend:

1. Compression wraps or pumps (intermittent pneumatic compression or IPC pumps)

Compression wraps or IPC pumps are used first to **get rid of the leg edema**.

- If you have been prescribed compression wraps or pumps, apply them **ONLY** if you have been directed and trained by your health-care professional.
- If you are using wraps and they fall down your leg or get shoved up your foot more than 5 cm (2"), or if your wraps become soiled, remove the wrap and reapply only if the wrap is reusable—otherwise apply a new wrap.



Compression wrap being applied by a health-care professional

2. Compression stockings

Compression stockings are used to **keep the leg edema away** after the compression wraps or IPC pumps have done their job. Usually, compression stockings should come up only as high as the knee and *must* be fitted the first time to an unswollen leg by a professional fitter.

- If you have been prescribed compression stockings, wear them **every day, all day**, except in bed. Put them on *before* you get out of bed in the morning and remove them *just before* you get into bed at night.
- Care for your stockings by reading the manufacturer's instructions. If you've lost the instructions, hand wash them in lukewarm water with a mild, non-scented soap and lay them flat to dry. Remember to replace your stockings every six months (two pairs of stockings should last you one year).
- You may prefer to wear open-toed compression stockings if your feet are very sweaty or prone to athlete's foot.



Compression stocking being fitted by a professional fitter

CAUTION:

If your toes become blue, pale or more swollen than usual, if you develop new pain in your legs or feet, or if you experience sudden shortness of breath, **IMMEDIATELY** discontinue compression therapy (wraps, IPC pumps or stockings) and call your health-care professional. Pale or bluish skin can be the result of not enough oxygen getting to the area.

Tips:

- Make leg health a priority and make it part of your daily routine.
- Most home health agencies have compression stocking fitters and usually require a prescription for stockings from your doctor. They also may have IPC pumps available for rent on a monthly basis.
- Use rubber gloves to make it easier to put your compression stockings on. As well, your fitter can recommend other devices you can use to ease putting on and taking off your stockings.

What can you do every day?

There are many things you can and should do to reduce venous leg swelling (edema) and lower your risk of developing a venous leg ulcer. Follow the steps below every day to keep your leg skin healthy and protected. The Venous Leg Edema Check Sheet on page 6 can help keep you on track.

- **Wash your feet and legs daily.** The best time is before bed when you take off your compression stockings or when your compression wrap is changed. Use lukewarm water, a clean soft washcloth and a mild, unscented soap. Rinse well and pat dry.
- **Look at your lower legs daily,** or when the wrap is changed, to check for new areas of colour change and swelling, rashes, cuts and open sores. If you notice anything unusual contact your health-care professional.
- **Moisturize your feet and leg skin** daily (after washing and inspecting) using a mild, unscented moisturizer. Do not apply moisturizer between your toes. Moisturizing is best before bed since the moisturizer lotion may affect the elastic nature of the compression garment.
- **Protect your skin** from injury by wearing protective clothing, like long pants, long socks and well-fitting non-skid footwear, and by applying sunscreen and insect repellent when outdoors.
- **Avoid scratching or rubbing** your skin if it feels itchy. Doing so may cause damage to your skin.
- **Raise your legs above the level of your heart** a few times a day. Sleep with a pillow under your legs at night or place a pillow between your box spring and mattress at the foot end of your bed.

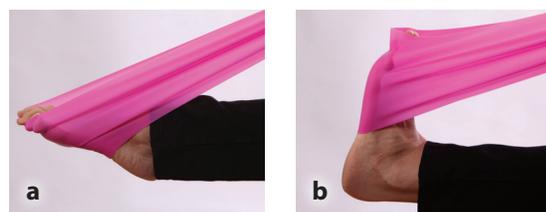
Note: If the swelling (edema) does not go down it could be caused by another condition, such as lymphedema, and should be seen by a health-care professional.

- **Exercise** to strengthen your leg muscles using resistance bands (this strengthens what is known as the “calf-muscle pump,” which is an important part of what the body uses to pump blood back up to your heart from your legs).

1. Hold both ends of the exercise (resistance) band steady with your hands and loop the middle under the ball of your foot (but not too far forward or it will slip off)
2. Push down slowly, as far as you can, pointing your toes (**a**)
3. Allow the foot to slowly rise back up so your toes are pointing at you (**b**)
4. Do 10 repetitions, three times per day on each foot, or as directed by your health-care professional.



Legs raised above heart level



Calf-muscle pump exercise

If you do not have a resistance band you can do simple exercises, such as making circles with your feet (from your ankles) while seated or by going up and down on your tip toes while holding a counter for balance. Your doctor or a physical therapist may suggest other exercises.

- **Avoid crossing your legs.** Crossing your legs can interfere with blood flow.
- **Avoid wearing any shoes or boots that have high heels,** including cowboy boots. High heels can interfere with your calf-muscle pump.
- **Move as much as possible.** Go for walks often and make sure you use a proper stride (i.e., on each step the heel hits the ground first, then the middle of the foot, then a good push-off with the toes). Avoid sitting or standing in one spot for long periods. If your work requires sitting or standing, take breaks often and move around.
- **Reduce weight** if you're overweight to decrease pressure on your lower legs.



Heel-to-toe stride

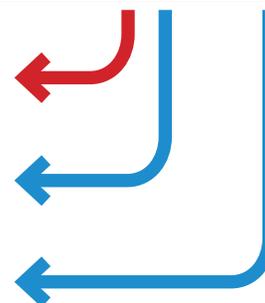
Venous Leg Edema Check Sheet

Today . . .			
1. I washed the skin on my lower legs and patted it dry.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> n/a
2. I moisturized my legs with non-irritating lotion.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> n/a
3. I looked for skin changes, signs of cellulitis and injury.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> n/a
4. I elevated my legs above heart level at least three times.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> n/a
5. I walked or did my calf-muscle pump exercises at least three times.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> n/a
6. I avoided sitting or standing for long periods.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> n/a
7. I contributed to my weight-loss goals.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> n/a
8. I used compression therapy (wraps, IPC pump, stockings) as directed.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> n/a

CAUTION:

9. My legs and feet are red, cool and very painful.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> n/a
10. I see signs of cellulitis.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> n/a
11. I see a leg ulcer or other breaks in the skin on my leg.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> n/a

- If *any* of your responses are **YES** to questions 9–11, contact your health-care professional **as soon as possible**.
- If *all* of your responses are **YES** to questions 1–8, continue with your care as usual.
- If *any* of your responses are **NO** to questions 1–8, think about how to make a positive change. If you don't think you can do it on your own, contact a health-care professional for assistance.



If a dressing change is required go to [Caring for a Wound at Home \(www.woundscanada.ca/docman/public/1680-care-at-home-series-changing-a-dressing/file\)](http://www.woundscanada.ca/docman/public/1680-care-at-home-series-changing-a-dressing/file).

Tip:

- Take a photo of your legs if you have a digital camera/phone/tablet. This can help you track changes over time, and if you need to contact a health-care professional you will be able to show them what the skin and swelling look like now and in the past. This will help them decide if treatment needs to change.



Venous Leg Ulcer Q&A

How long do I have to wear compression stockings?

Stockings are for life. Wear them **all day, every day**. They must be put on every morning *before* getting out of bed and taken off at night *just before* getting into bed.

Sometimes my stockings feel too tight. What does that mean?

Stockings that are too tight might be due to a couple of things:

1. They may be the wrong size. Talk to your fitter or the pharmacy where you purchased your stockings to set up an appointment to get fitted properly.
2. You may be waiting too long each day to put your stockings on. Put them on *before* you get out of bed, when your legs are swollen the least. This may mean you have to take your shower the night before instead of in the morning.

I was told I need to hand-wash my stockings. Why can't I wash them in a machine?

The fabric of these stockings is specially made to provide compression to your legs. Machine washing and drying can break down the fabric so it no longer works the way it's supposed to. **Do not** put them in the washing machine or dryer. Hand wash and lay flat to dry.

Why do I need two pairs of stockings?

You don't NEED two pairs, but it is handy if you have them. Each day you can wear the clean pair while the other is air drying after washing. In this way, you'll always have a clean, dry pair.

My toes are really moist and smelly when I take my stockings off. What can I do?

Stockings with closed toes may cause odour, but you can get stockings with open toes. Talk to your fitter or pharmacist to see what type is best for you. The odour may be caused by athlete's foot (a fungal infection) so you may need to get an ointment from your doctor or pharmacist. **Do not** add gauze between toes or use harsh cleaning products to try to reduce the smell, as these may be harmful to your skin.

I have swelling above my compression stockings. What should I do?

First, make sure your stockings are being put on correctly. This means they are pulled up to their full height of your lower leg to just below your knee and have no areas of wrinkling or bunching. If they are on correctly there could be another reason you may have swelling, so check with your health-care professional as soon as possible. **Do not** fold the top over or it will double the tightness and act like an elastic band!

My legs are itchy a lot of the time. What should I do?

You may be itchy under your compression stocking, wrap or boot. This is fairly common but **do not scratch**. Your skin is extra sensitive because of your venous leg edema, and scratching can easily harm your skin and may cause an infection. Itchiness may be caused by the swelling, so as the swelling goes down your leg will feel better. It can also be caused by irritating lotions or not washing all the soap off your skin when you bathe or shower. So be gentle when you cleanse and moisturize.

I don't usually have leg swelling unless I'm travelling. Is there any way I can prevent this?

Sitting in a car for a long road trip and travelling on an airplane are two common causes for leg swelling. If you already have swelling problems you may be at higher risk for more leg swelling or more serious conditions. Even people with no leg swelling can get swollen legs during travel. So before your trip, have your legs assessed at a home health centre for stockings and then wear them while travelling.

I had swollen legs with my last pregnancy. Should I wear compression stockings during my present pregnancy?

Yes, you should wear them with each pregnancy. If your legs continue to swell after your pregnancies see your doctor.

My feet are red and painful. What's going on?

This may be a sign of a lack of oxygen to your legs due to poor blood flow. Contact your health-care professional as soon as possible for a complete physical examination.

Caring for Easily Injured Skin

Preventing and Managing Moisture-associated Skin Damage

Wounds Canada has developed this simple guide to help patients and their care partners prevent and care for moisture-associated skin damage. It provides guidance on things to do to help prevent this condition and recognize the signs of any complications if they do occur.

What is moisture-associated skin damage (MASD)?

Moisture that stays on the skin too long can put the skin at risk for breakdown in the form of burning, rashes and open sores.

Sources of moisture include:

- Urine and/or stool: Called *incontinence-associated dermatitis* (IAD) or, more commonly, *diaper rash*
- Sweat, saliva or mucous: Called *intertrigo* or *intertriginous dermatitis* (ITD)
- Fluid (drainage) from wounds: Called *periwound MASD*
- Ostomy leakage: Called *peristomal MASD*
- Moisture on a foot: Called *immersion foot* (IF) or *trench foot* (after soldiers in WWI who had to stand for days or weeks in wet trenches)

The result of skin being in contact with too much moisture for too long is generally the same regardless of the type (see the table on page 2): red, shiny, tight or swollen skin that may or may not have broken skin. People with MASD often complain of burning or pain in the affected area.



Periwound moisture-associated skin damage

Disclaimer: The content in this resource is for informational purposes only and is NOT a substitute for professional medical advice, diagnosis or treatment. You should always consult with your health-care professional before starting any new treatment or changing or stopping an existing treatment.

Table 1: Difference Between MASD Types

MASD Type	Appearance	Common causes
A. Incontinence-associated dermatitis (IAD)		IAD is skin damage that occurs when the fluids of incontinence (the inability to control bowels and/or bladder) stay on the skin. Skin damage is generally located in the groin and on the buttocks and thighs. Frequent stools or diarrhea may also cause skin damage in this area.
B. Intertriginous dermatitis (ITD) or intertrigo		ITD occurs in areas where skin is in direct contact with other skin, usually in skin folds such as under arms, in neck folds, under breasts or in the groin. Wearing non-breathable fabrics can contribute to the moisture problem.
C. Periwound MASD		Periwound MASD may be caused by excessive drainage (fluid) from a wound or from irritation of products applied to or around the wound itself. The wrong type of wound dressing may cause this problem.
D. Peristomal MASD		<p>Peristomal MASD may occur around a stoma, an opening in the body created during a surgical procedure called an ostomy. (The new opening may be permanent or temporary.) There are different types of ostomies.</p> <p>Urinary or fecal stomas remove waste from the body and may cause MASD due to poor application or seal of an appliance (pouch). MASD may also occur around tracheostomies (an opening in the neck for airflow to the lungs), which may leak mucous. Gastrostomies create openings into the stomach to deliver nutrients and may leak fluid that can cause MASD. Tracheostomy devices and gastrostomy tubes can also cause skin irritation.</p>
E. Immersion Foot (IF)		If a foot is wet for too long because of moisture—even sweat—that doesn't dry, the skin can break down. Footwear made of materials that don't "breathe" such as rubber boots or plastic shoes can cause this problem.

Photo compliments of
LM Parsons

How can MASD be prevented?

Prevention of MASD is all about protecting the skin from moisture, whether that moisture is from urine and/or stool, sweat, saliva, mucous, wound drainage, ostomy fluid or water. The methods used depend on the type of MASD you are trying to prevent:

A. Incontinence-associated skin damage (IAD)

1. Immediately after an incontinence event, remove soiled clothing or incontinence pads or products.
2. Clean the skin right away with warm, soapy water or a skin-cleansing solution. Pat dry.
3. Moisturize the skin and apply a skin barrier to protect the skin. If zinc-based products are used, do not scrub to remove excess zinc—it is not necessary to remove all of the zinc with each change. Apply product more often if the person has frequent loose stools.

Incontinence products can play a big role in prevention and management of IAD. These days, absorbent products wick leakage away from the skin and help to keep it dry. This is great for babies and others who can't control their bowel and/or bladder.

However, depending on the situation, your health-care provider may suggest the use of a bedpan or commode chair for anyone who has some mobility and/or requires assistance to move. In some cases a bladder catheter may be recommended; there are three types (indwelling, intermittent and external) and the one required will be recommended by your health-care professional. There are also fecal containment products, which again can be recommended by your health-care professional.

Arrange for regular visits to the toilet (a scheduled toileting routine) to prevent incontinence events.

B. Intertriginous dermatitis (ITD):

People whose skin is in constant contact with sweat, saliva or mucous can take several steps to prevent skin irritation, especially where skin-on-skin contact is normal (armpits, under neck and breasts, in groin).

- Wear loose-fitting, lightweight clothing of natural fabrics or athletic clothing that wicks moisture away from the skin.
- Wear supportive garments, such as brassieres, to reduce skin-on-skin contact.
- At least once a day, wash and dry the moist areas in all skin folds such as under the neck, under arms, under breasts, in the groin and anywhere else skin contacts skin. Avoid the use of talc, cornstarch-based powders and barrier creams in these areas.
- Avoid tucking bedsheets, cloths, towels, into these areas as these items may trap moisture and hold it against the skin. Your health-care provider may be able to source a moisture-wicking material to place in these at-risk areas.

C. Periwound MASD:

To prevent damage to the skin around a wound:

- Work with your health-care professional to make sure the cause of moisture coming from the wound is addressed. The cause of an increase in wound drainage may be increased trauma or re-injury or infection. Moisture can usually be addressed with either a more appropriate wound dressing or additional treatments such as an antibiotic.
- Protect the skin around a wound (periwound) with a skin barrier, a film or hydrocolloid dressing. Your health-care provider may be able to help you source the right products.

D. Peristomal MASD:

- Make sure the cause of moisture is addressed with either further instruction on appliance application or changing to a more effective ostomy appliance. It is best to consult with a specialized health-care professional such as a nurse specialized in wound, ostomy and continence (NSWOCC).
- Protect the skin around a gastrostomy or tracheostomy with a skin barrier and an absorbent dressing.

E. Immersion Foot (IF):

If you have really sweaty feet, feet that often spend long periods of time in wet conditions, or wear footwear that keeps moisture in, you may be at risk for immersion foot. The following tips will help you reduce your risk.

- Use breathable material for socks and shoes.
- If you normally do activities that require walking in wet conditions, make sure you wear waterproof footwear and then remove your footwear immediately after finishing the activity.
- Look at your feet every day to make sure they are not damaged.

General Skin Care:

Regardless of the source of the moisture, if you or someone you are caring for is at risk for MASD, daily skin cleansing and inspection are key to preventing skin breakdown. Look for signs of moisture daily and gently cleanse at-risk areas with lukewarm water, a mild pH-balanced soap and a soft, clean washcloth (a no-rinse skin cleanser works too). Rinse well and gently pat dry with a clean, soft towel (do not rub the skin with the towel). Be sure to dry well between toes and beneath skin folds.

How do I treat moisture-associated skin damage?

If you or your loved one does get moisture-associated skin damage, the first thing is to eliminate the cause of the problem so the skin stops being irritated and it has a chance to heal. If the irritation is mild, keep the area clean and dry. Within a day or two, you should see some improvement. Most mild skin damage caused by moisture can be treated this way. However, there are times when you may need to call on a health-care professional for help. If any of the following occur, it's time to call in a professional.

- If the steps above fail to improve the irritated skin
- If your skin is very itchy or if scratching is making it worse
- If you can't control the cause of the moisture damage
- When there is an increase in moisture, pain, odour, redness or wound size

Your health-care professional will assess the skin and provide recommendations to manage the source of the moisture and heal the skin. They may recommend one of the many topical products found on drug store shelves.

CAUTION:

Organisms such as yeasts, fungi and bacteria are drawn to dark, warm, moist areas and are often common where MASD is present. These infections usually need to be treated by a health-care professional.

Caring for Pressure Injuries at Home

Preventing and Managing Pressure Injuries

Wounds Canada has developed a simple guide that can be used by patients and their care partners for preventing or caring for pressure injuries at home.

Do you, or someone you are caring for at home, have a pressure injury? Are you or they at risk of developing a pressure injury? There are many things you can safely do to prevent a pressure injury from developing or to care for an existing pressure injury.

What is a pressure injury?

A pressure injury, also known as a pressure sore or a bed sore, is an area of discoloured or broken skin caused when the skin is pressed against a surface. It can happen because the pressure against the skin is long or intense (strong) or both. It can also be caused or made worse by a force called "shear." Pressure injuries usually occur over bony areas, such as heels, your tailbone and hips (see Figure 1 for the most common areas).

The pressure causes the skin and the tissue underneath to be pressed against the bone. Blood flow to the compressed tissues is reduced or stopped, which can cause damage to the tissues, leading to a pressure injury (see Figure 2).

Common causes of pressure injuries include:

- sitting or lying in one position for too long
- sitting or lying on any object, such as a catheter tube, lift sling, or even wrinkled sheets or clothing
- improper sitting posture
- incorrect methods of moving someone to a new position
- incorrect use, or sustained use without changing position, of equipment like wheelchairs, specialty wheelchair cushions and mattresses

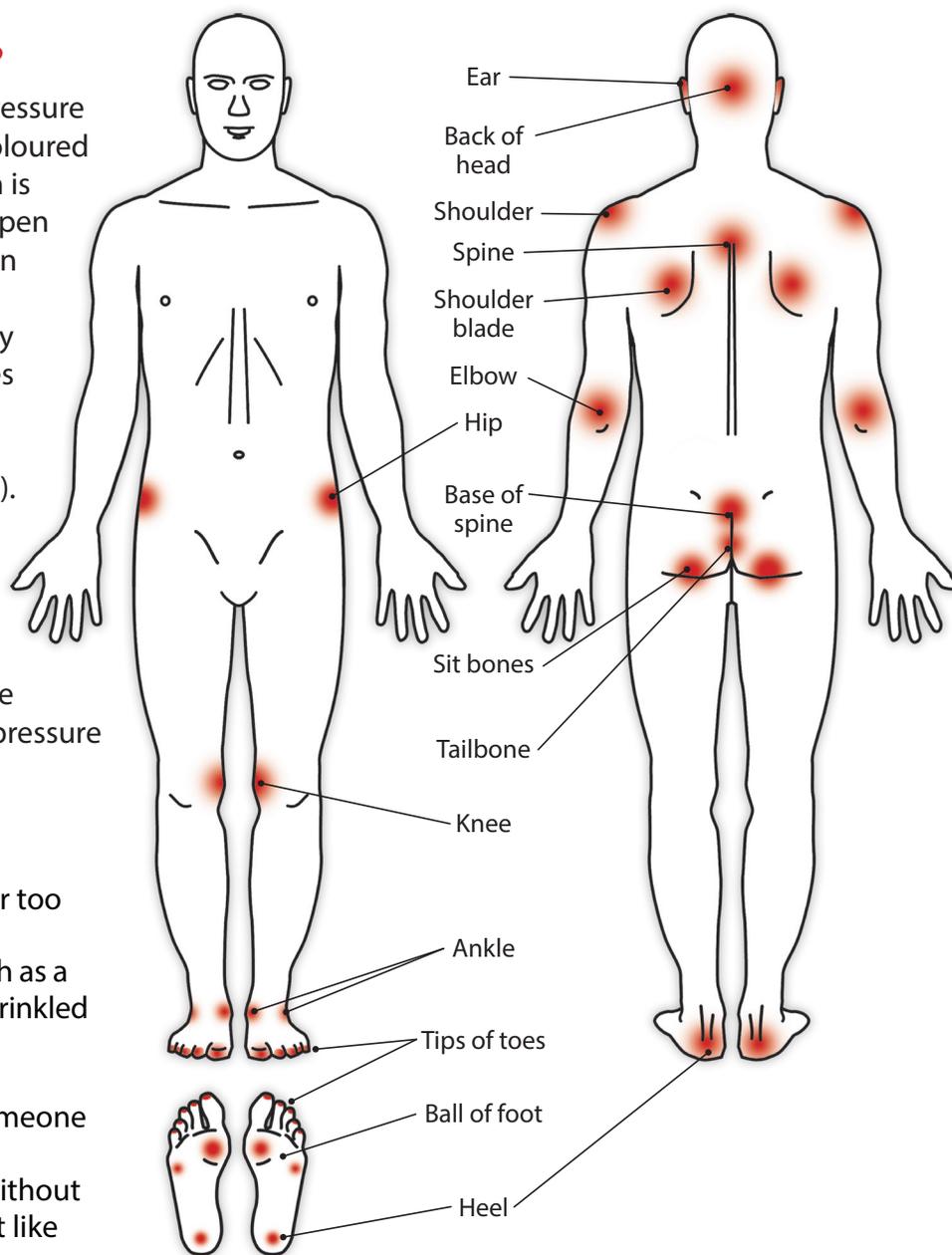


Figure 1: Common areas for pressure injuries

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What can lead to a pressure injury?

Lack of Ability to Feel

Most of the time, when you have been sitting too long in one position and your tissue is being pressed between a bone and the surface you're sitting on, you feel some discomfort and shift your position to relieve the uncomfortable feeling. You probably do this many times every hour and never even think about it. But there are times when this is not easy—or even possible—to do. Conditions such as multiple sclerosis, spinal cord injuries, diabetes, and paralysis from stroke or some medications like pain killers, can increase your risk of a pressure injury, because these conditions may block your ability to feel the uncomfortable feeling caused by the pressure. In these cases you might continue sitting or lying on the area, reducing blood flow and causing damage.

Lack of Ability to Move

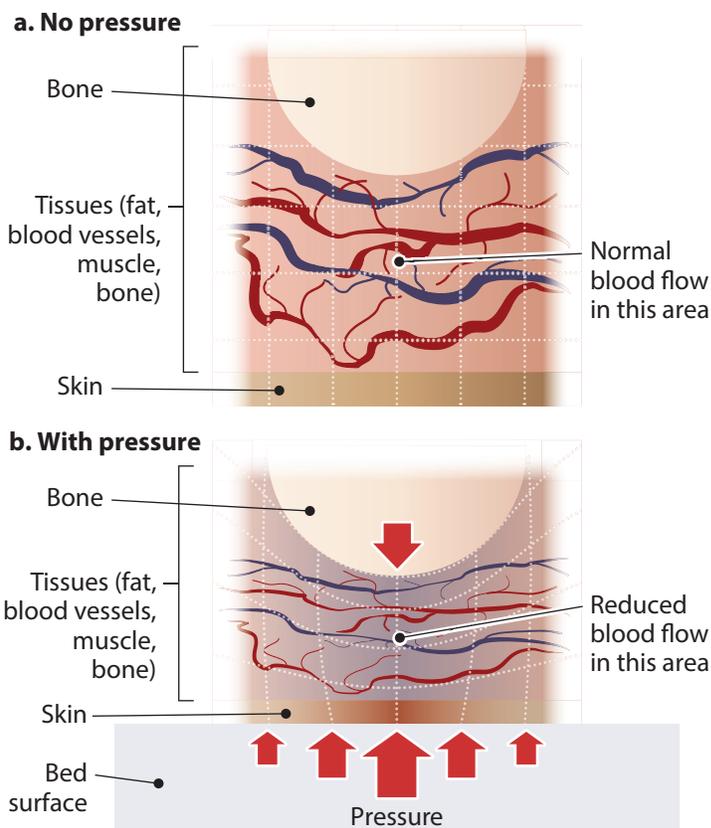
As well, any time you are unable to change your position you are at risk for developing a pressure injury. This can occur if you have paralysis, extreme weakness or if you are unconscious or deeply drugged.

Lack of Ability to Communicate

Dementia, Alzheimer's disease and other similar conditions, along with some medications, can increase your risk of a pressure injury because they may make you less able to communicate that you have skin discomfort. If you can't move yourself and you can't communicate to others that you are uncomfortable and need help to move, a pressure injury may occur.

Poor Skin Health

Other things play a role too. If your skin is often wet from urine, stool, sweat, saliva or wound drainage, it breaks down more easily, putting you at greater risk for a pressure injury. Skin that is too dry is also a problem. So good skin health is important. As well, if you don't drink enough fluids and eat healthy foods you may be at higher risk of a pressure injury.



Figures 2a and b: How pressure affects skin and other tissue



How long does it take to develop a pressure injury?

Sometimes it doesn't take very long. It can take as little as a few minutes to several hours, depending on what is causing the pressure, where it is located on the body, and the health of the person. Areas that often get a lot of pressure, such as heels, elbows and tailbones, may become red or discoloured quite quickly in people who spend most or all of their time in bed or on a chair. If the skin and bony areas are not protected they may worsen and become open sores. Once you have had a pressure injury, that area is more likely to get a new injury, even though the previous injury has healed.

What does a pressure injury look and feel like?

Some pressure injuries have only minor skin damage and some have a complete breakdown of the skin and other tissues, including muscle and even to bone. A pressure injury may appear as:

- A red, warm, tender area of unbroken skin. It may have a blister filled with clear fluid. The redness does not go away when pressure is taken off of the area.
- A purple or maroon, warm, tender area. It may have an unbroken blister filled with blood.
- An area of broken skin that ranges from a shallow hole filled with slightly moist, pink tissue, to a deep hole filled with red, yellow, brown, grey or black tissue that drains a lot of fluid.



Figure 3: An injury from pressure that has caused redness that has not resolved in 10 to 15 minutes and may develop into open areas

Important:

DO NOT rub reddened areas. Doing so can cause more damage.



Figure 4: Pressure injury on the hip



Figure 5: Pressure can cause a break in the skin that may be shallow or deep into muscle and bone. This type of pressure injury can easily lead to infection.



Figure 6: Extensive pressure injury on the tailbone

What can you do?

If you or the person you are caring for is at risk for a pressure injury, follow the steps listed below to prevent skin breakdown caused by pressure.

Look After Your Skin

- **Keep skin clean and dry.** Don't take long, hot baths; short, warm showers are a better choice. Use a mild, fragrance-free skin cleanser and a soft washcloth when cleaning skin. Pat skin dry, but dry well, especially between the toes and in skin folds (under breasts, in groin and armpits and anywhere skin overlaps or where skin touches skin).
- **Moisturize dry skin daily** with a mild, fragrance-free moisturizer (except between the toes and skin folds). It's best to moisturize right after patting skin dry.
- **Look at your skin** at least once a day for signs of pressure damage. Be sure to check parts you can't see—use a mirror or have a care partner help you.
- **Eat** a well-balanced diet and **drink** lots of non-caffeinated fluids.

Tips:

- If you or the person you are caring for is incontinent (they can't get to the toilet in time), remove soiled absorbent pads or incontinence products immediately, cleanse skin right away and replace the incontinence products with clean, dry ones. You may wish to apply a barrier cream such as zinc oxide to protect the skin from getting wet with urine and/or stool. This should be done after cleaning the skin. Regular visits to the toilet (a scheduled toileting routine) can help.
- If you are sweaty, change clothing often or choose clothing with the ability to "wick" moisture away from skin. Wool and bamboo are two natural fabrics that help keep moisture away from skin. Newer materials, such as those used in some sports clothing, do the same and can keep skin dry.

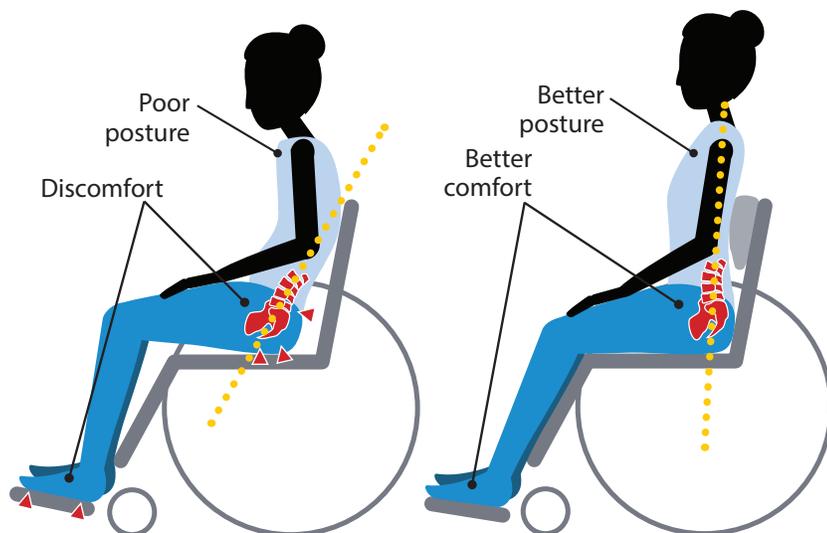


Figure 7: If you are in a wheelchair you are at higher risk for a pressure injury to the base of your spine, sit bones, tailbone and bottoms of feet. Proper posture and regular small movements will help you prevent pressure injuries.

Keep moving! Do small body activities or movements such as moving a hand, arm or leg or chair push-ups often (several times an hour).

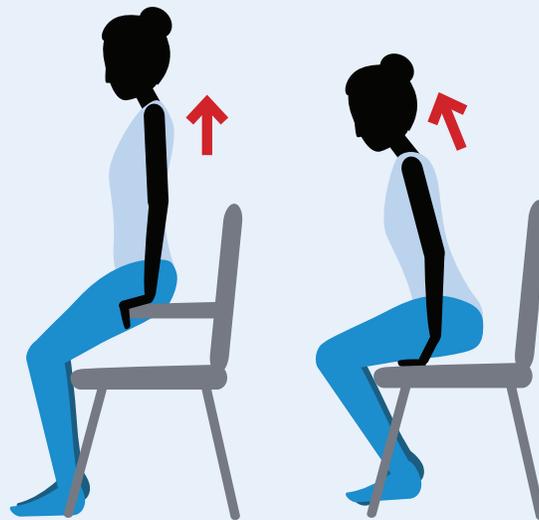


Figure 8a: To do a chair push-up, place your hands or arms on the armrests of the chair, lift your buttocks up off the chair seat and hold for a count of 5.

Figure 8b: You can also reduce pressure by leaning forward or sideways in a chair with no armrests for a count of 5. But **be careful** not to tumble onto the floor.

Keep the Pressure Off

The most important part of preventing or treating a pressure injury is making sure there is no pressure for long periods on any part of your body from sitting, or lying down or any type of equipment, such as shoes, casts and braces, breathing tubes or other medical devices.

The suggestions below can help you keep yourself or the person you are caring for safe from pressure injury.

- **Change positions often**, both when sitting and lying, so pressure is removed from the areas most at risk (over bony spots). Even small shifts can make a difference. This is very important if you have trouble feeling pain or discomfort. Get into the habit of changing positions, even if you don't feel discomfort. If you notice an area of red, warm, tender unbroken skin, change your position more often. Talk to your health-care provider about using assistive devices, such as trapeze bars, bedrails, chair armrests.
- **Place pillows** between your knees and/or ankles to keep them from touching. Keep your heels from touching your mattress by placing a pillow beneath your calves—even if you are using a specialty mattress.
- **Reduce the shear** that happens when you slide down in the chair or bed by making sure you are lying or sitting correctly. If possible, avoid raising the head of your bed more than 30 degrees for long periods.
- **Reposition correctly**. If you are caring for someone who cannot move themselves, you will need to reposition them so pressure does not stay for too long on any body part.
- **Create and use a turning schedule**. Contact your health-care professional to work with you to create a repositioning or turning schedule that will help you remember when and where to reposition in the chair or turn in bed. The schedule needs to be based on the health of the person and the quality of the surfaces they are on. **Note:** If the area of the body the person has been sitting or lying on becomes red, even with a schedule, they may need to be repositioned or turned more frequently or be on a better surface (i.e., better chair cushion or mattress).

Important:

Moving someone can be harmful to them and to you if it is not done correctly. It is best if your health-care professional can train you before you attempt to reposition someone.



Figure 9: Use a turning sheet to reposition someone in bed who cannot move themselves.

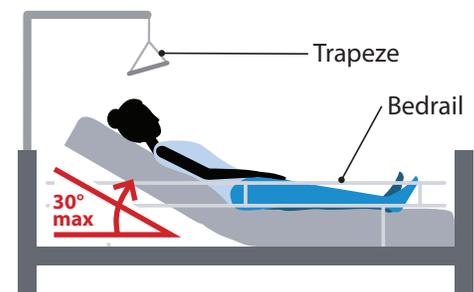


Figure 10: Avoid raising the head of your bed more than 30 degrees for long periods.

Tips:

- Most health-care supply stores have a range of pressure-reducing surfaces for both the chair and the bed. Make sure you use these products the way the manufacturer recommends. Check that they are working properly each time you use them. For the best performance and maintenance, consult an occupational or physical therapist.
- If you have a bed that elevates, lower the head of the bed before repositioning the person you are caring for. This makes it easier to move them.
- A bed with side rails and/or a trapeze bar can help a person reposition themselves.
- Lift, rather than slide, the person being repositioned. You may need two people to do the lifting to avoid injury to everyone.
- Learn how to use a turning sheet to help you in repositioning. Proper use of a turning sheet is safer for you and for the person you are turning.

Quick tips for preventing pressure injury

- Change your body position and make small body movements often. If you cannot do this yourself, ask for help.
- Use special support surfaces if you cannot move yourself.
- Avoid lying for long periods of time on bony areas such as your hip.
- To avoid a shear injury, use lifting or transferring devices such as a transfer board or a trapeze bar.
- Gently clean and pat dry, then moisturize.
- Protect skin from incontinence (loss of bowel and bladder function) by using a skin barrier cream and incontinence pad.
- Eat a well-balanced diet and drink plenty of fluids to keep skin healthy and hydrated.
- Do not rub reddened or discoloured areas of skin. This will cause more damage.
- If you are not sure if you are at risk for a pressure injury, ask your health-care professional to assess you. Then, together create a pressure injury prevention program designed especially for you.

What do you do if you have a pressure injury?

If you do notice that you or the person you are caring for does get a new pressure injury, **contact your health-care professional as soon as possible** to create a plan for treating the wound. Part of the plan will involve following most of the prevention steps listed in this resource because **a pressure injury will not heal if the pressure is not removed first.**

If you need to do your own dressing changes on the wound, go to [Caring for a Wound at Home](http://www.woundscanada.ca/docman/public/1680-care-at-home-series-changing-a-dressing/file) at www.woundscanada.ca/docman/public/1680-care-at-home-series-changing-a-dressing/file for information on how to do so safely.

Taking the Pressure Off

There are many products available to help you prevent pressure injuries—but which one should you choose? Your occupational therapist or home health store representative can help you decide which is the best choice for your situation. Here are some options:

Products to reduce pressure:

- mattresses or chair cushions (air, gel, foam overlay or high-density foam)
- heel and elbow protectors
- padded clothing

Equipment to assist with someone who can't move themselves:

- powered bed/mattress and/or chair
- turning sheets
- transfer boards and/or belts
- patient lifts and slings (ceiling-mounted or portable)

Equipment for moving and repositioning yourself:

- trapeze bars above the chair or bed
- bed side rails
- grab bars in bathroom
- transfer poles in bedroom and bathroom
- chair armrests
- lift recliners
- transfer boards



Many of these products can be very costly, so ask your health-care professional to help you source financial support. Consider financial assistance programs and organizations providing support, such as provincial/territorial aids-to-daily-living programs, private insurance, veteran services and organizations such as the ALS Society of Canada.

Frequently Asked Questions

My mom is in a wheelchair and doesn't move much. I don't want her to develop a pressure injury.

What should I do to help her?

Check her skin often for red spots. For example, your mom may move from her comfortable chair to a wheelchair to go to the car, then to a hard chair or stretcher in a clinic. Each time she comes into contact with a different surface, her skin may be at risk of harm.

What do I do if I see a red spot on the skin?

If you see a red spot immediately move the person so the pressure comes off the area. Contact the person's health-care professional to let them know right away.

My father is paralyzed and in bed all the time. How do I know if he needs to be turned?

When a person can't move themselves you need to do a couple of things to keep their skin from getting damaged. First, make sure you check their skin every day. Second, you will have to turn, or reposition, your father several times every day to make sure no area of his body can get damaged by pressure. Ask his health-care professional to help you create a turning schedule. Follow the schedule as planned. Report any red areas on his skin to the health-care professional as soon as you notice them.

How do I know if my chair cushion or mattress is inflated correctly?

Cushions on chairs and mattresses need to be looked after regularly. Each cushion or mattress has instructions for care that you should follow. Ask your occupational therapist, physiotherapist or the provider of the equipment (such as the pharmacy) for written steps on how to care for any equipment you are using.

My friend is in a coma, and when I visit him I notice his ears and the back of his skull are red. Why is this happening, and is there anything I can do?

Ears have no bones, but the skin over the cartilage that they are made of can become red and tender when they are touching a surface for too long. The back of a person's skull can also get red and tender if they are lying on it too long. Buy your friend a small, soft hat to protect his skin and ask the caregivers in his facility to put it on. Also ask them to make sure they are checking his ears at least every day.

Sometimes I have redness under my breasts. Is this a pressure injury?

No, redness in places where skin touches other skin, like under the breasts or in the groin (between the legs) is not usually caused by pressure. Redness under the breast tissue or in the groin may be due to extra moisture. Over time the area may have an odour, which may smell yeasty, and be painful. Some simple steps can help prevent this type of skin redness:

- Check these areas daily or more often.
- Clean the area and dry carefully.
- Wear breathable clothing that dries quickly.
- Wear a well-fitted bra if you need to hold your breasts up off your chest.

Tip:

- Take a photo of the reddened area or wound if you have a digital camera/tablet/phone. This can help you when you contact a health-care professional. You will be able to show them the new injury.



Caring for Yourself After Surgery

Preventing Surgical Site Infections

Wounds Canada has developed this simple guide that can be used by patients and their care partners when they are looking after a surgical wound. It provides guidance on things to do before and after surgery to help prevent infections and recognize the signs of infections if they do occur.

In the past, people stayed in hospital for days or weeks following surgery. In those days, many of the complications that can occur soon after surgery (like infections, heart problems or bleeding) were treated when patients were still recovering in hospital. Today, patients having surgery get home faster than ever, often even the same day. Surgical site infections (SSIs) that were once treated in hospital are now being managed by patients at home.

The good news is that there are actions you can take before and after your surgery to reduce the chances of developing a serious SSI.



Uninfected, healed surgical incision site. (See page 4 for uninfected and infected surgical incision sites.)

What is a surgical site infection?

A **surgical site infection** is a problem where there are too many bacteria or really dangerous, active bacteria in your surgical incision. SSIs cause pain and delay wound healing. In more severe cases, SSIs can spread into the bloodstream (a condition called *sepsis*), which can lead to tissue loss, organ failure and death. A surgical site infection can be on the surface or deep. How much damage it does depends on how healthy you are as well as how strongly the bacteria affect your tissues. (See page 4 for an infected surgical incision site.)

Things you can do *before* surgery

There are some things that can increase your risk of surgical site infection or make your wound take longer to heal. Table 1 has a list of some of the risk factors you may have. You can improve your chances for smooth wound healing by making sure you do everything you can to “optimize” your situation before your surgery.

Your health-care professional can help you “optimize” by working with you on things like:

- addressing your general health
- adjusting medications that might impair wound healing (like steroids)
- managing diabetes, obesity, heart disease and/or chronic malnutrition
- treating any infections you may already have (like a bladder infection or pneumonia)

Some of these things can take a long time, and you might need a lot of help. Be sure to go to all your medical appointments before your surgery.

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There are simple things you can do on your own **before** surgery that will reduce your risk for wound complications:

1. Reduce or eliminate smoking, substance misuse and/or alcohol consumption.
2. Increase your physical activity. The fitter you are, the less likely you are to encounter complications. If you aren't already active, start by walking down the block (or whatever you can manage) and slowly increase your activity.
3. Eat healthy foods before (and after) your surgery.
4. Follow your surgeon's "before surgery" instructions closely. Do not shave the area where the surgery is to be performed (unless directed by your surgeon). Shower the day of your surgery (you may receive instructions to use a special skin disinfectant).
5. Prepare mentally for your surgery by learning as much as you can about your surgery and what to expect. Ask questions to increase your comfort level and reduce anxiety.
6. Prepare for your return after surgery. Arrange for any equipment, supplies or support you believe you may need.

Table 1:

Risk Factor	Cause and Effect
Stress	Stress affects your immune system and can cause a delay in wound healing. It can also lead to feelings such as anxiety and depression, which may affect your behavior and decision making—leading to poorer general health and wound healing.
Poor blood flow (ischemia)	Poor blood flow to the wounded area means the wounded area doesn't get the oxygen it needs for healing.
Diabetes	Diabetes affects the health of a person in many complex ways. Some of these can affect how well the body can heal wounds. For example, high blood sugar (glucose) levels delay healing, as does poor blood flow (see above) due to changes in blood vessels caused by diabetes.
Obesity	Patients who are obese have a higher rate of surgical site infections than patients who are not obese. The accidental opening of the surgical wound is another complication seen more often in obese patient because of increased pressure or tension on the new incision. Reduced blood flow is more common in obese patients as well.
Medications	Some medications, such as those that interfere with blood clotting, or those that delay a response to injury or wound closure, can also affect wound healing.
Alcohol	Alcohol misuse may slow or stop wound healing and increase the risk of infection. It may also lead to poor decision making and judgement.
Smoking	The nicotine in cigarettes and vape liquids can reduce oxygen to the wound, which it needs for healing. Smoking can also lead to other complications, such as infection.
Nutrition	Nutrition can have a big impact on wound healing after surgery. Poor nutrition can delay or stop wound healing.

(www.ncbi.nlm.nih.gov/pmc/articles/PMC2903966/)

Things you should do *after* surgery

It's important that you follow your surgeon's instructions **after** you're home from the hospital.

General Care

- Continue to manage any medical conditions, stop smoking, eat healthy meals and address other factors you identified before your surgery that may put you at risk for surgical site complications.
- For personal hygiene, in most cases, showering is allowed, but not tub bathing. Follow your surgeon's instructions.
- Your surgeon may have requested you wear a support garment after specific surgeries, such as an abdominal binder after major abdominal surgery. Follow their instructions closely.

Wound Care

- Follow your surgeon's/home health-care nurse's direction for wound care
- For further instruction on how to care for a wound at home, see the Wounds Canada resource, Caring for your Wound at Home: www.woundscanada.ca/docman/public/1680-care-at-home-series-changing-a-dressing/file.
- If you've been instructed to care for your wound at home and find that you cannot, and you do not have a family member or friend who can help, ask your surgeon to refer you to a home health agency that can provide this service.

Pain Management

- Follow your doctor's instructions for the management of pain. This is usually done with medication.
- Consider other methods of pain relief, such as music therapy and meditation, to help reduce anxiety and pain.
- Your wound pain should be less as the wound heals. If you have more pain as time passes after surgery it can be a sign you are either doing too much or you have an infection.

Physical Activity

- Follow your surgeon's instructions about physical activity. Ramping up your physical activity too quickly before your wound is completely healed puts you at risk for complications.
- Too much or the wrong type of physical activity can pull the wound apart (dehiscence), increasing the risk of an SSI.
- Gentle exercise is a good thing unless your surgeon tells you not to do anything. But use common sense! If you're doing something that is hurting you at your surgical site, such as carrying heavy groceries or wet laundry, **stop doing it!** Remember, you've just had surgery and need time to heal!

Follow-up

- Know who (and when) to contact for a follow-up appointment or concerns about your recovery.

Signs and Symptoms of a Surgical Site Infection

Most surgical incisions improve each day after surgery but if you see or experience these signs you should suspect an infection and contact your health-care professional:

- Increased redness at or around the incision
- Increased amount of fluid coming out of the wound
- Change in colour of any fluid coming out of the wound
- Wound odour (smell)
- Fever and/or chills
- Increased warmth at or around the incision
- Increased wound pain
- Increased fatigue (tiredness) and/or a general unwell feeling
- Increased swelling and/or hardness along the incision line.

If you any of these signs notify your health-care professional (GP, surgeon's office or home health office) right away!

What to expect from your health-care professional if you have an SSI

The following actions are typically taken by a health-care professional if an SSI is suspected. They would:

- Inspect the wound and take a swab.
- Send the swab to the lab to find out what type of infection you may have so they will know how to treat it.
- Schedule a follow-up visit or phone call when the results are in.
- Place you on antibiotic medication best suited for the type of infection you have. Usually the antibiotic is in pill or liquid form, but occasionally it would be given intravenously (injected into a vein, usually in your arm or hand). In some cases you may need to go hospital.
- Change your wound dressing routine. This may include the use of a wound dressing that helps fight infections.
- Follow-up to ensure the treatment is working.

Caring for Your Feet

Safe Foot Care if You Have Diabetes

Wounds Canada has developed a simple guide that can be used by patients with diabetes and their care partners for caring for their feet at home.

Over time, diabetes can lead to foot problems such as diabetic foot ulcers (DFUs) (which are wounds or breaks in the skin) which, if not cared for properly, can lead to infection and amputations. Preventing ulcers from occurring is the best strategy for reducing the chances of serious health problems. The information in this guide on how to care for feet is great for people without diabetes too!



Why do people with diabetes have an increased risk for foot problems?

People with diabetes have increased risk for foot problems for two main reasons:

- 1. Nerve damage**, called neuropathy, that prevents the person from feeling when their foot has been injured. Neuropathy is a condition that develops in people who have had diabetes for a long time or whose blood glucose levels are not managed well. The type of neuropathy that people with diabetes have tends to be the loss of the ability to feel the normal pain signals of an injury in the feet (and sometimes in the hands too). It is not usually a total loss of feeling, but rather tingling or numbness. Because of the neuropathy, a person with diabetes may not know when they injure their feet. Even a small injury, left untreated in a person with neuropathy, can lead to a foot ulcer that becomes a serious health threat.
- 2. Slow wound healing.** People with diabetes often have poor blood flow to the feet because of changes in blood vessels caused by the disease. Without good blood flow, wounds can take a long time to heal and may even stop healing altogether, both of which can lead to very serious health problems.

How can I prevent diabetic foot complications?

Start with a healthy lifestyle. Be aware that your blood glucose levels, smoking habits, alcohol use and cholesterol level and are all factors that affect your risk of developing diabetic foot complications. Exercise daily unless you have an ulcer. If you already have foot complications discuss your exercise plan with your care team. Set realistic and practical lifestyle goals that will reduce your risk of developing diabetes-related foot complications.

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Look at your feet—every day! Perform daily foot inspections (use a mirror to inspect the bottom of each foot if it is hard to see or have a care partner assist if you need help to see all parts of your foot—tops, bottoms, sides). Use the worksheet on page 3 to track your inspections and note any changes. This worksheet will be useful if you need to contact your health-care professional about any concerns you have about the health of your feet. Here's what you should be checking:

- **Your skin:** Look for broken skin, redness, callus build-up, cuts, bruises, scratches, cracks, blisters, ulcers and anything else that looks different, is new or is unusual. See the box on page 3 for more details.
- **Your toenails:** Look for tears, irregular edges, colour changes, bruising and trauma.
- **The temperature of your feet:** Use a personal infrared thermometer to see if one foot is hotter than the other or than the day before. This can be an early sign of complications. Infrared thermometers can be ordered online and are available at most auto supply and hardware stores and pharmacies.

Build a team. Get to know your foot care and footwear providers, such as podiatrist/chiroprapist, foot care nurse, pedorthist, as well as the professionals who help you with your general health, such as your doctor and diabetes educator (see page 7). Keep their contact information handy, and don't hesitate to contact them if you notice symptoms that concern you. Managing diabetes can be very stressful. If you are experiencing diabetes-related signs of burnout (anger and frustration, worrying about demands of diabetes), talk to your health-care professionals about support services that can help you.

Take charge of prevention. When you visit your primary care provider, always take off your shoes and socks and have them inspect your feet. Discuss what they have found and work together on a plan to identify and prevent problems based on any new changes.

Care for your feet. You need to take an active role in daily foot skin and nail care. Here are some key things that can help you prevent problems:

- Keep your feet clean and dry, especially between your toes.
- Moisturize the skin on your feet daily, but not between your toes.
- Keep your nails trimmed properly. Talk to your health-care provider about whether you can do this yourself or if you need to get professional help. See page 4 for basic skin and nail care instructions for your feet.

Protect your feet. Foot damage in a person with diabetes may take longer to heal, so it's important that you prevent the damage from happening. Here are some tips.

- Before putting on socks, check for tears or seams that could rub your foot.
- Wear shoes that fit. See page 5 for more information on selecting the right kind of footwear.
- Wear the right type footwear for the activity you are doing. Always wear shoes. You don't need to wear shoes when you are in bed, but you do need to put shoes on when you get up in the night to go to the bathroom. You **will** stub your toes at some point, and your footwear should take that blow, not your toes.
- Shake out and check the inside of your shoes before putting them on—**every time**. Why? Often, people with neuropathy put on shoes that contain objects, such as tacks, or have rough spots such as seams. The objects or rough spots can injure the foot, but the person can't feel it because of the neuropathy.
- Avoid extreme temperatures. For example, do not use heating pads on your feet and always check water temperature before stepping into it. Wear protective warm boots against the cold in winter.
- Do not use adhesive tape, wart treatments, corn plasters or strong antiseptics on your feet unless prescribed by a health-care professional.

Learn to recognize the signs of complications and know where to go for assistance. (See the [Diabetic Foot Complications: When is it an emergency?](#) resource.)

Daily Foot Exam Worksheet

Make copies of this worksheet and follow these instructions to record the condition and progress of your feet every week:

- Examine all parts of your feet daily, including the areas between your toes and the top, sides and bottom. Use a mirror, if you need to, to examine the bottoms of your feet. Look for any changes, such as redness, blistering, callus, scratches and any areas of shape change. Mark these on the drawings below:
 - Mark any areas of **redness** with an **R**
 - Mark any **callus** areas with a **C**
 - Mark any **scratches, blisters or ulcers** (ulcers are wounds or breaks in the skin) with a **U**
 - Mark any **shape change** of your foot with an **S**
- Examine all your toenails to ensure they are the proper length and have no rough edges.
- Measure the temperature of your feet using a personal infrared thermometer to detect signs of temperature change that can alert you to early signs of complication. Infrared thermometers can be ordered online and are available at most auto supply and hardware stores and pharmacies.

Date: _____
 through: _____

Sunday		Monday		Tuesday	
Left Foot	Right Foot	Left Foot	Right Foot	Left Foot	Right Foot

Wednesday		Thursday		Friday		Saturday	
Left Foot	Right Foot						

Basic Skin and Nail Care for Your Feet

SET UP:

1. Get comfortable in a location with good lighting.
2. Arrange your tools: a pumice stone (single use), nail file (preferably single use), a straight-edge nail clipper and a mild pH-balanced, non-scented moisturizer.

CLEAN:

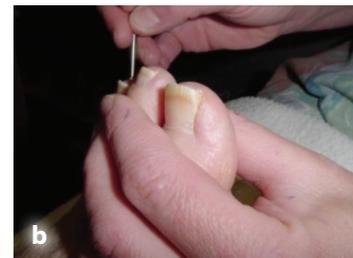
3. Look at your feet and wash them with lukewarm water, a mild pH-balanced soap, and a soft washcloth **(a)**. Dry well, especially between the toes. **Do not soak your feet.**
4. Carefully clean under the exposed or free edge of the nail with the file **(b)**.

TRIM AND CONDITION:

5. Clip your nails straight across, leaving a 3 mm (1/8 inch) free edge across the top of the nail **(c)**.
6. Pumice or file the nail corners so they are not sharp.
7. Decrease callus build-up carefully with a pumice stone **(d)**.
8. Moisturize your feet if they are dry, but not between your toes.

FINISH:

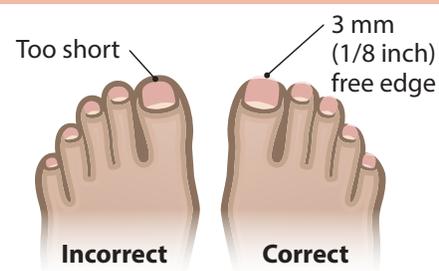
9. Take note of anything unusual (and/or take a photo).
10. Clean all reusable tools with soap and warm water and let them air dry. Once dry, disinfect the tools with 70% isopropyl alcohol by wiping.



Figures a–d: Start with a clean foot, clean under free edge, pumice thickened skin

Important:

Do not cut your nails too short. Leave a 3 mm (1/8 inch) free edge.



CAUTION:

If you have diabetes, you are at higher risk for foot complications than the average person. If you do your own skin and nail care, injuries can happen that can lead to serious harm. If your health-care provider has told you that your risk for complications is low and you can do your own skin and nail care, follow the steps above. However, if you are at high risk, only a trained professional should do the skin and nail care for your feet, beyond daily foot washing, drying and moisturizing.

How to Select Shoes that Fit

Most shoes are designed to give protection to the feet and to help prevent injury. As a person living with diabetes, you must make sure you shoes that fit properly to avoid foot injury. Shoes should be based on your lifestyle (work, home and play) and activity level. The right footwear is one of the cornerstones of healthy feet!

Buying Shoes to Fit Your Feet	
Do ...	Don't ...
<ul style="list-style-type: none"> • Buy shoes that fit the size and shape of your feet. They need to be wide, deep and long enough to accommodate the size and shape of your feet. If you have neuropathy see a footwear specialist (a pedorthist). 	<ul style="list-style-type: none"> • Don't buy shoes that you hope will stretch; this will create pressure. • Don't buy narrow or pointed shoes or shoes with a shallow toe box; this can result in blisters, bunions and other problems. • Don't buy shoes that are too big; your foot will slide in the shoes causing skin damage • Don't wear hand-me-downs (if possible).
<ul style="list-style-type: none"> • Buy shoes at the end of the day when your feet are at their largest. (Some feet will swell during the day.) 	<ul style="list-style-type: none"> • Don't buy shoes first thing in the morning when your feet are at their smallest; the shoes will end up being too tight by the end of the day.
<ul style="list-style-type: none"> • Buy shoes with a full back and with good ankle support. 	<ul style="list-style-type: none"> • Don't buy shoes with high heels, only a strap at the back and/or no ankle support.
<ul style="list-style-type: none"> • Buy shoes with Velcro, buckles or laces and make sure they provide mid-foot support. 	<ul style="list-style-type: none"> • Don't buy slip-on shoes for walking, as they do not give good support and will result in foot strain and toe deformity.
<ul style="list-style-type: none"> • Buy leather shoes or shoes made of other breathable materials. 	<ul style="list-style-type: none"> • Don't buy shoes made with synthetic material, such as plastic, as they do not allow the foot to breathe and may lead to wet, soggy skin, which can break down and result in an ulcer.
<ul style="list-style-type: none"> • Buy shoes with a shock-absorbing sole. 	<ul style="list-style-type: none"> • Don't buy shoes without padding to cushion the force of each step you take.
<ul style="list-style-type: none"> • Buy shoes that suit your activities. 	<ul style="list-style-type: none"> • Don't wear high heels or slip-on shoes for physical activity, as these result in foot strain, pain, foot deformity, corns and calluses.

Adapted from Botros M, Kozody L, Orsted H. Preventative foot care. *Wound Care Canada* 2008; 6(1):68-69.

Shoe Tips:

- Have your feet measured every time you purchase shoes.
- Check that the ball of your foot rests in the widest part of the shoe.
- Wear new shoes around the house on carpeting for about an hour; return them if they cause problems such as redness.
- Replace your shoes regularly. Look for signs of wear, such as rough edges in seams or linings, and worn soles or heels.
- Ask your health-care provider for a prescription for footwear. The cost of some shoes may be covered by your health benefits.

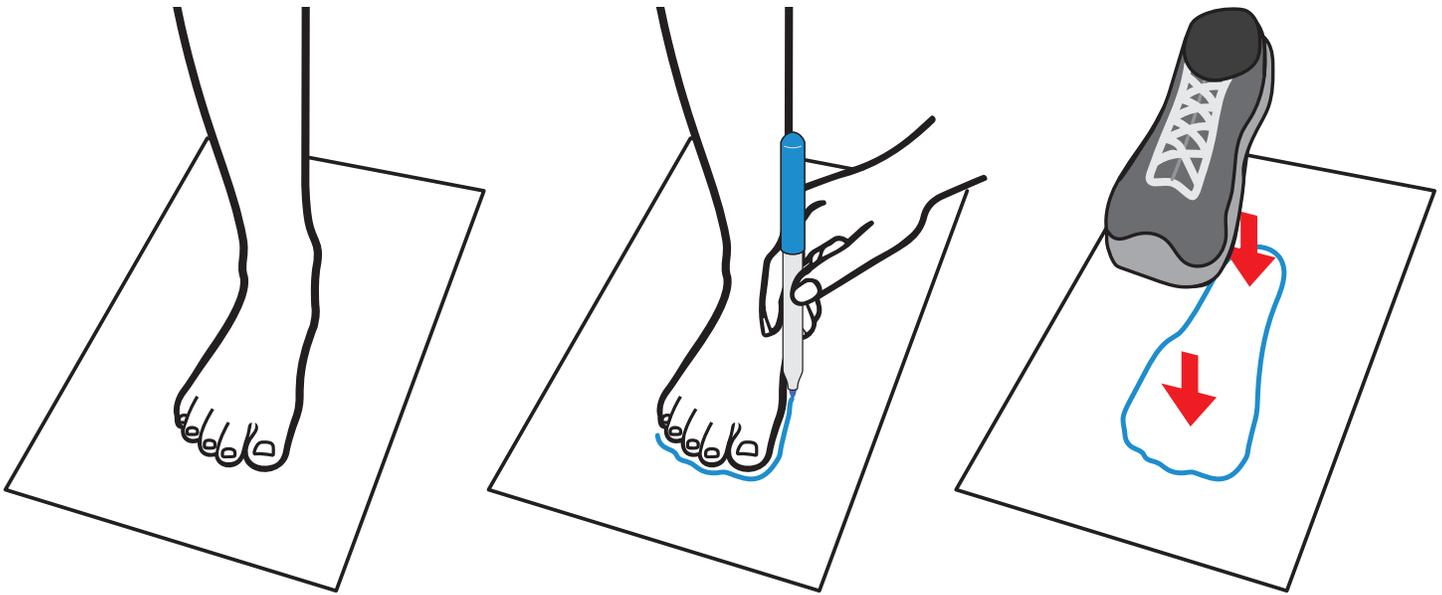
Shoe Fit Test

Use a blank sheet of paper to trace an outline of each of your feet. This will help you determine if your shoes fit properly.

- Remove your shoes and socks.
- While standing, place one foot on the page and trace around the edge of your foot with a pen. Hold the pen snug to your foot and keep it vertical. Your care partner can help if you cannot reach your feet.
- Remove your foot from the page and place your shoe on top of the tracing.

If any part of the tracing line is visible from under your shoe, your shoe is too small.

- Repeat this test for your other foot.



Your Foot Care Team

The table below lists the different types of care providers and settings that may assist you in managing your diabetes and caring for your feet.

What they are called	What they do
Family physician	Your family physician can monitor your health and help you with diabetes control.
Podiatrist/chiroprapist	A doctor of podiatric medicine (DPM) is trained in treating foot and ankle conditions. In Ontario, they are called chiroprapists.
Foot care nurse	This is a nurse with specialized training who can provide foot care for people at high risk for diabetes-related foot complications.
Pedorthist	A certified pedorthist, or Ped. (C), is trained to modify, make or fit special footwear.
Orthotist	A certified orthotist (CO) has specialized training in custom designed or pre-made orthotic devices for treating foot problems.
Diabetes educator	A certified diabetes educator (CDE) can teach you how to best manage your diabetes.
Diabetic foot clinic	This is a specialized clinic where foot problems associated with diabetes are identified and managed.
Dietitian	A registered dietitian (RD) can work with you to develop a healthy-eating plan to control blood glucose and other diabetes-related health issues.
Social worker	Social workers may assist you with the emotional impact of diabetes, your coping skills and finding financial aid and other resources to help you manage your diabetes and related complications.
Endocrinologist	Endocrinologists can help you gain control over your diabetes through medication management.
Vascular specialist	Vascular specialists can help in identifying and treating peripheral arterial disease, which is often found in people with diabetes.
Infectious disease specialist	Infectious disease (ID) specialists help to manage complex infections, such as those that may occur in a person with a diabetic foot ulcer.

Diabetic Foot Complications

When is it an emergency?

Wounds Canada has developed a simple guide that can be used by patients and their care partners for preventing or caring for diabetic foot complications at home.

Diabetes is a complex disease that causes blood sugar (also called blood glucose) levels to rise higher than normal. Over time higher than normal blood glucose levels can lead to changes in the body that can cause the person to have a higher risk for foot complications such as diabetic foot ulcers (DFUs) (which are wounds or breaks in the skin) and broken bones. Diabetic foot complications can have serious consequences if not recognized early and treated promptly and properly. These complications may include the development of ulcers that do not heal and become infected, leading to amputation and even death.



What can lead to a diabetic foot complication?

If you have diabetes, any of the following five conditions, especially when more than one is present, can contribute to a diabetic foot complication, so it is important that you know if any of these are affecting you.

1. Nerve damage, or peripheral diabetic neuropathy (PDN), is the loss of the ability to feel the normal pain from an injury in the feet (and sometimes in the hands too). It is not usually a total loss of feeling, but rather foot tingling or numbness. A person with neuropathy may not know when they injure their feet (through a stubbed toe, stepping on a nail, poor foot or nail care or wearing shoes that rub the skin, for example). Even a small injury, left untreated in a person with neuropathy, can lead to a foot ulcer that becomes a serious health threat.

Neuropathy can be very subtle, and you may not even know you have it. If you answer “yes” to any of the following questions you may have neuropathy in your feet:

- Are your feet ever numb?
- Do your feet ever tingle?
- Do your feet ever feel like they are burning?
- Do your feet ever feel like insects are crawling on them?

2. Less blood flow to the feet caused by peripheral arterial disease, or PAD—a condition that can occur often in those with diabetes—means the body is less able to heal a wound or scratch if an injury occurs, no matter how minor the injury. If you answer “yes” to any of the following questions you may have PAD:

- Has there been a change in the colour of your legs or feet?
- Is one foot colder than the other?
- Do your legs (calves) hurt when you walk?

Disclaimer: The content in this resource is for informational purposes only and is NOT a substitute for professional medical advice, diagnosis or treatment. You should always consult with your health-care professional before starting any new treatment or changing or stopping an existing treatment.

3. Changes in the shape of the foot, such as bunions, or claw, hammer or mallet toes can lead to redness, a thickening or hardening of the skin (corn or callus) and eventually ulcers.

A rare, but more severe, condition, is called Charcot foot. Charcot changes can include crumbling and rearranging of the bones of the foot if not treated early. Once this occurs the foot will be altered for the rest of the person's life and it becomes almost impossible to wear off-the-shelf footwear without causing injury to the foot. Early signs of Charcot include a foot that is hotter and redder than the other.

CAUTION: Acute Charcot foot can easily be misdiagnosed; a medical history and an X-ray can help identify an acute Charcot foot.

If you answer "yes" to any of the following questions you may have changes that are affecting the bones in your feet:

- Do any of my toes have an unusual shape?
- Is one foot warmer than the other foot, and did this happen suddenly?
- Is one foot a different shape than the other?

4. Visual problems can interfere with your ability to perform safe, adequate foot skin and nail care. Diabetes can affect blood flow to the eye and lead to a condition called retinopathy, which is damage to the retina of the eye. If you answer yes to the following question you may have retinopathy:

- When I look at my feet is my vision blurred or are there dark or empty spots?

5. Lack of body flexibility that means you have difficulty reaching your feet or using nail and skin care tools, can also make self care difficult. If you answer "yes" to the following question you may have been putting yourself at risk by doing your own foot and nail care and may need someone else to help you, such as a care partner or foot care professional:

- Can I reach my feet easily enough to be able to see the bottoms, sides and tops, and reach my nails without difficulty?

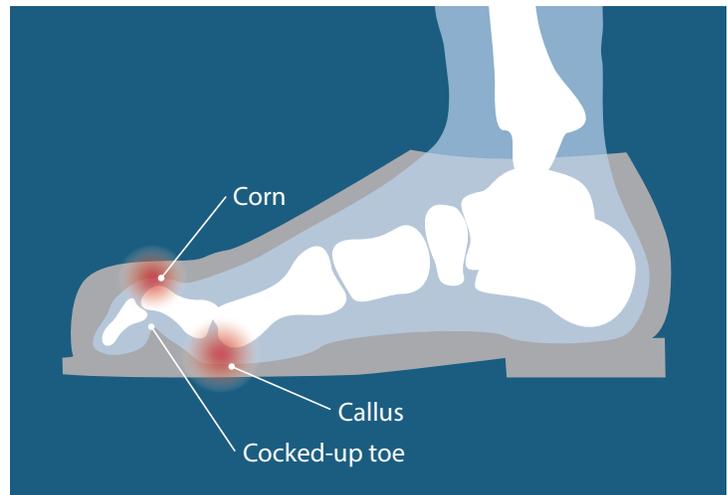


Figure 1: A cocked-up toe (claw or hammer toe) is caused by (a) shortening tendons and/or (b) wearing shoes that are too small. Pressure of the toes and the bony parts of the foot against the inside of the shoe can lead to redness, corns, calluses and even ulcers.

Tip:

- Shoe length should be fitted to the longest toe, not the first toe, and fit the shape of the foot.

How can I prevent diabetic foot complications?

- **Start with a healthy lifestyle.** Eat healthy foods, exercise and manage your blood glucose levels.
- **Take charge of prevention!** Inspect your feet every day. If you have trouble seeing the bottoms of your feet, use a mirror or get a care partner to help. Remove your shoes and socks at every visit to your health-care professional so they can inspect your feet too and test for neuropathy and blood flow.
- **Protect your feet.** Foot damage in a person with diabetes may take longer to heal, so it's important that you prevent the damage from happening in the first place.
- **For more information** on preventing diabetic foot complications, see the [Caring for Your Feet: Safe Foot Care if You Have Diabetes](#) resource.

How will I know if I need help?

If you have diabetes but have healthy feet you can probably look after your feet on your own, with occasional help from a qualified professional. **Perform a daily foot inspection** (see the [Caring for Your Feet: Safe Foot Care if You Have Diabetes](#) resource) to stay on top of any problems that arise. By doing this you will develop a habit that will help you avoid surprises about your foot health.

The longer you have diabetes, or the longer you have high blood sugar, the more likely you are to need professional help more often. Occasionally, something will happen that will put your foot at high risk and you will need emergency care immediately. **Every month or so**, use the information on page 4 to see where you are. If all your checks are in the green area, continue to do what you're doing. If you have even one check in the amber area, see your health-care professional as soon as possible. At any time, if you notice something in the red area, **DO NOT WAIT**. Waiting may put you at greater risk of infection and amputation. See your doctor immediately or go to the emergency department of your nearest hospital.

What is offloading?

Offloading is a method where your body's weight is spread or moved from a small area of your foot to a larger or different area. This is done to prevent problems or allow a wound to heal. Offloading may involve the wearing of a specialized cast or boot and/or the use of a wheelchair or crutches. If you have been prescribed offloading to help you prevent or heal a wound, make sure you wear your offloading device as instructed by your care provider. **Do not** go without it at any time when you are up and walking. Even **one step** can undo the healing that may have occurred.

How do I prevent another ulcer from occurring?

It's important for you to know that if you get a foot ulcer and it heals, you are at a higher risk for developing another one in the same location. Here's why. Once a foot ulcer has healed, the new tissue is only about 70–80% as strong as the skin before the injury occurred. The chances are high that it will open again (called a recurrence of the ulcer). The best thing you can do to prevent recurrence is to keep a healthy lifestyle and do the healthy foot care activities that have been outlined in the [Caring for Your Feet: Safe Foot Care if You Have Diabetes](#) resource.

Tip:

- How much pressure is too much pressure? Imagine you have a grape taped to the bottom of your foot . . . if there is enough pressure at the bottom of your foot to squish the grape, there is enough pressure to open a healing wound!



Figure 2: Offloading device



Figure 3: Charcot foot and foot ulcer

When is it an emergency?

Use this table to rate the condition of your feet and plan a course of action.

	Regular Self Care		Frequent At-risk Care		Immediate, Urgent Care	
	Condition	Actions	Condition	Actions	Condition	Actions
Skin	<ul style="list-style-type: none"> No redness or open areas, minor callus 	<ul style="list-style-type: none"> Look at your feet daily Wash and dry feet daily Moisturize as required 	<ul style="list-style-type: none"> Heavy callus, redness and/or blistering Previous foot ulcer 	<ul style="list-style-type: none"> Seek professional foot care Get footwear reassessed by a professional, such as a pedorthist 	<ul style="list-style-type: none"> Ulcer and/or signs of infection: increased pain, redness, odour, drainage and warmth 	<ul style="list-style-type: none"> Ensure you receive professional care that includes offloading, dressings and infection management
Nails	<ul style="list-style-type: none"> Well kept 	<ul style="list-style-type: none"> Keep nails well groomed 	<ul style="list-style-type: none"> Thickened and/or poorly kept 	<ul style="list-style-type: none"> Seek professional nail care 	<ul style="list-style-type: none"> Ingrown nails and/or nails causing trauma to skin 	<ul style="list-style-type: none"> Get a referral for professional nail care
Changes in the shape of the foot	<ul style="list-style-type: none"> No signs of bony changes 	<ul style="list-style-type: none"> Be aware of changes to the shape of your feet and report them immediately 	<ul style="list-style-type: none"> Hammer toes, claw toes, bunions 	<ul style="list-style-type: none"> Get your footwear fitted or custom made 	<ul style="list-style-type: none"> Skin is red, warm and foot is changing shape 	<ul style="list-style-type: none"> Insist on X-rays and a plan for offloading to prevent further damage
Blood flow	<ul style="list-style-type: none"> Warm feet, no pain 	<ul style="list-style-type: none"> Do not smoke Exercise regularly 	<ul style="list-style-type: none"> Cool and red, feet painful during activity 	<ul style="list-style-type: none"> Get a vascular assessment followed by medical management 	<ul style="list-style-type: none"> Blackened skin, painful legs and feet when at rest 	<ul style="list-style-type: none"> Obtain a referral to a vascular surgeon
Footwear	<ul style="list-style-type: none"> Good-fitting footwear, appropriate for activity 	<ul style="list-style-type: none"> Measure feet before purchasing shoes 	<ul style="list-style-type: none"> Redness on skin where shoe is rubbing 	<ul style="list-style-type: none"> Get your footwear fitted by a trained professional 	<ul style="list-style-type: none"> Footwear causing ulceration 	<ul style="list-style-type: none"> See a health-care professional as soon as possible Get fitted for offloading

Quick Check: Keep Your Feet for LIFE

Lifestyle choices:

- ☑ Eat a healthy diet, exercise daily and maintain blood sugars within your normal range.
- ☑ Cut down or stop smoking.

Inspect your feet and footwear:

- ☑ Look at your feet daily.
- ☑ Check your shoes and socks every time you put them on.
- ☑ Check your socks for blood every time you remove them. Wear white or light-coloured socks so you can see any blood more easily.

Find professional help:

- ☑ Your feet deserve the best professional care you can find. Examples include:
 - Foot care professional (e.g., a podiatrist, chiropodist or specially trained nurse)
 - Foot care professional for function assessment and orthotics fitting (orthotist)
 - Shoe fitter (pedorthotist)

Expect your feet to last a lifetime:

- ☑ If you have reduced feeling (neuropathy) in your feet you need to pay special attention to them. Self caring for neuropathic feet requires continuous mindful thought and action, because the normal warning signal of problems (e.g., foot pain) is not functioning.
- ☑ If you have an open area (or a crack) on your feet see your foot health-care professional immediately.
- ☑ Remember: even if you have diabetic foot problems there is much that can be done to help keep your feet working for you!



Burns

Preventing and Managing Skin Injuries

Wounds Canada has developed this simple guide that can be used by patients and their care partners for preventing or caring for burns at home.

Each year thousands of Canadians sustain a burn injury. Over 95% of these injuries are minor (only affecting the top layers of skin) and rarely require hospitalization. Most non-complicated, minor burn injuries will heal on their own with simple treatment. The two most common causes of burn injuries are:

- **Scalds:** hot beverages and hot water
- **Contact burns:** stoves/ovens and fireplaces/accessories



What is a burn injury?

Burns are injuries that occur when the skin or other tissues are damaged by contact with heat (scalds from liquids, grease or steam; contact burns; and fire, flash or flame), extreme cold, electricity, radiation or chemicals. The damage can vary from reddened skin (superficial) to blistering (partial-thickness) to deep damage (full-thickness) and depends on the:

- temperature of the burning agent
- amount of time the skin was exposed to the burning agent
- type and location of the skin or tissues involved
- extent and depth of skin surface/tissue injured
- age of the person
- pre-burn medical history
- circumstances or complicating factors such as smoke inhalation and other traumatic injuries

Types and Causes of Burn Injuries

Thermal Burns

Heat-related burn injuries have a range of causes and vary in depth and size.

- **Flame injuries** are caused by direct contact with fire, and **flash injuries** are the result of an explosion. Injury can occur at various depths and cover varied amounts of skin.
- **Scalds** are caused by contact with something wet and hot, such as hot water or steam. The damage tends to be shallow and may involve a large area of skin. Scalds from thicker liquids like oil, grease, liquid glue or liquid wax that are splashed on a person's skin tend to cause more severe burn injuries than those from thinner liquids, like hot tap water. Thicker fluids tend to roll off a person's skin at a slower rate and cling to the skin, increasing the amount of time they are on the skin. When the skin is immersed in hot liquid it can be severely damaged due to the increased time of contact between the heat agent and the skin. Such burns can cover a larger skin area.
- **Contact burns** are caused by prolonged transfer of heat from an object to the skin. They tend to cause deep tissue damage and generally involve less skin area.
- **Cold-related burns**, also known as frostbite, can result from contact with super-cooled objects such as ice packs or from exposure to cold air (made worse if it is windy) or cold water.

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Electrical Burns

Electrical burns are the result of electrical currents passing through the body. Temporary or permanent damage can occur to the skin, tissues and major organs. The extent of the damage depends on the strength (voltage, wattage and amperage) and duration of the electrical current. Electrical burns result from contact with exposed parts of electrical appliances, wiring or lightning strikes.

Appliance or wiring injuries may occur when:

- children bite on electrical cords
- utensils or other metal objects are poked into electrical outlets, or appliances such as a plugged-in toaster
- the power supply is not shut down before making home repairs or installation of lighting, for example
- a plugged-in appliance is dropped into water with which a person has contact

Occupational accidents can be the result of electric arcs from high-voltage power lines. Electric arcs occur when a burst of electricity jumps from one electrical conductor to another, creating bright flashes.

Factors that may increase the chances of an electrical burn or injury include:

- having an occupation with exposure to electric currents, such as a utility worker
- having an occupation that involves outdoor work, such as agriculture
- being outside during a thunderstorm
- working with electrical installations or appliances

Radiation Burns

Radiation burns are injuries to the skin or tissue caused by sunburn, radiation therapy for cancer treatment, and, in rarer instances, nuclear emissions or explosions. The damaging effects of radiation depend on the type of radiation, its energy, penetration and ionization power, total dose, number of exposures and overall exposure time. Radiation skin injuries range from redness and shedding or peeling of the skin to deep skin ulceration.

Chemical Burns

A chemical burn, or caustic burn, can occur when skin or tissues come into contact with a chemical irritant. The irritant can cause a reaction on the skin or, if swallowed, can cause burns on the tongue, mouth, esophagus and stomach tissue. Some of the most common products that can cause chemical burns are:

- car battery acid
- bleach
- ammonia
- denture cleaner
- teeth-whitening products
- pool chlorination products
- oven cleaner
- lye

Who is at highest risk for burns?

Did you know a child's skin burns four times more quickly and deeply than an adult's when exposed to hot objects or liquids of the same temperature? In addition, elderly burn patients suffer from poorer health and higher rates of death than younger patients with similar burns (see Table 1).

Did you know:

Both heat and cold can burn a person's skin. If exposure to severe cold causes skin damage, it is called an *ice burn* or *frostbite*.

Table 1: Burn Statistics

Type of Burn	Most Affected
Fire/Flame/Smoke	Males aged 50–64, females aged 20–29
Scalds (hot water, steam, food, oil, grease, liquid glue or hot wax)	Children 1 year of age or younger
Frostbite	Adults aged 30–49
Contact Burn (hot surfaces and objects)	Children 4 years of age or younger, especially less than or one year of age
Electrical	Children less than 1 year of age and males aged 20–29
Sunburn (radiation)	Males and females aged 20–29

What do burns look like?

Burns are typically identified by the degree of tissue destruction, ranging from superficial (first-degree) to full-thickness (third-degree). It is important to note that even when the burn has healed the area will always remain damaged to the full extent of the burn, with major burns (full-thickness/third-degree) resulting in permanent scarring (see Table 2).

Table 2: Typical Clinical Appearance of Burn Depth

Depth of Injury	Appearance	
Superficial (First-degree) Burn	<ul style="list-style-type: none"> • Involves only the outer layer of the skin (epidermis), and never blisters • Appears as a sunburn 	
Partial-thickness (Second-degree) Burn	<ul style="list-style-type: none"> • Goes deeper than the surface but not to muscle or bone • Pink, painful, moist, blisters, intact hair follicles 	
	<ul style="list-style-type: none"> • Deep • Mottled or white, dry, less feeling in the area or a complete loss of feeling, hair follicles damaged 	
Full-thickness (Third-degree) Burn	<ul style="list-style-type: none"> • Dry, white or charred, leathery, complete loss of feeling 	

First Aid and Emergency Management

The treatment of burns depends on the location and severity of the damage. The top priority of care is to *stop the burning process*. Sunburns and small scalds can usually be treated at home. Deep or widespread burns and burns on children need immediate medical attention. Some people may need treatment at a specialized burn centre and months of follow-up care.

Thermal Burns

Fire:

- **If it is safe to do so**, encourage or assist the person to move away from the fire scene.
- If the person's clothing or hair is on fire, encourage them to "stop, drop, and roll" or smother the flames with a heavy blanket or coat (if required and if it is safe to do so).
- Encourage or assist the person to remove any smoldering, hot or burned clothing. If the clothing is stuck to their skin, cut any loose material off.

Scalds and contact burns:

- Stop the burning process by encouraging or assisting the person to stop contact with the hot (or extremely cold) liquid or object.

For all heat-related thermal burns:

- Encourage or assist the person to remove all tight clothing and jewellery near the burn injury.
- Cool the burn:
 - Hold burned skin under cool (not cold) running water or immerse in cool water until the pain subsides (usually around 5 to 15 minutes).
 - Use cool compresses (clean cloths) if running water is not available.

For all cold-related thermal burns (frostbite):

- Encourage or assist the person to get out of the cold and remove any wet clothing. It is important that they **do not** walk on frostbitten toes or feet.
- Protect the affected areas with dry, warm clothing or by tucking hands into the armpits or groin until a safe area is reached.
- Then, warm the affected areas by placing them in warm (not hot) water for about 30 minutes or until the skin becomes its usual colour.

Protect the burned area:

- Cover the burn injury with a sterile, non-adhesive bandage or clean cloth.
- For minor burns that do not require medical attention, consider applying an ointment to the injury two to three times per day as part of the dressing change. Ask your pharmacist or health-care professional for product suggestions. Do not apply butter.

Treat the pain:

- If the burn is minor and you do not plan on going to the emergency room, consider taking an over-the-counter pain reliever to manage any pain associated with the burn injury, such as ibuprofen or acetaminophen. Ask your pharmacist or health-care professional for advice if you are uncertain which pain reliever is right for you.

Seek medical help if:

- You see signs of infection, like increased pain, redness, swelling, fever, or oozing from the burn injury.
- The burn blister is larger than 5 cm or oozes.
- The pain gets worse or lasts for more than a few hours.
- The hands, feet, face, or genitals are burned.

Electrical Burns

- **If it is safe to do so**, cut the power source by throwing a switch or circuit breaker, or unplugging the power. **Do not endanger yourself.**
- For serious electrical burns, call for emergency medical services right away.
- Treatment depends on the voltage, the individual's response to the electric shock and their injuries:
 - Less severe symptoms may only require observation and time to fade.
 - Some symptoms can linger over long periods of time.
 - Severe shocks that have caused the heart to stop, a loss of consciousness, seizures or severe injury will need emergency help, and first aid must be done quickly to restore breathing and prevent further injury or death. Some emergency steps may include:
 - **Cardiopulmonary resuscitation** (CPR) if the heart has stopped beating – until advanced care is attained
 - Airway and breathing support
 - Intravenous fluids to restore balance in the body

Radiation (Sunburn) Burns

- Get out of the sun.
- Take frequent cool baths or showers to help relieve the pain. After showering, gently pat the skin dry (do not rub) and apply a non-scented moisturizer to help trap the water in your skin.
- Consider using a moisturizer that contains aloe vera or soy to help soothe sunburned skin.
- Take over-the-counter pain relievers/anti-inflammatories to help reduce any swelling, redness and discomfort (if required and appropriate). Ask your pharmacist or health-care professional for advice if you are uncertain which pain reliever is right for you.
- Drink extra water to prevent dehydration.
- If you have skin blisters, allow them to heal—do not pop them—as blisters form to help your skin heal and protect you from infection.
- Protect sunburned skin while it heals. Avoid sun exposure if possible, and if not, wear protective clothing.

Chemical Burns

Take these steps immediately, if possible:

- For chemicals in liquid form, flush the chemical off the skin by rinsing the skin under lukewarm running water for 10 to 20 minutes.
- For chemicals in powder form, brush off any remaining powder from the skin before flushing with water.
- If the chemical has come into contact with your eyes, flush your eyes continuously with lukewarm running water for at least 20 minutes and seek emergency care.
- If the chemical is swallowed, dilute the chemical by drinking water or milk and seek emergency care.
- If the burn is on the skin, and after it has been flushed clean, cover the burned area loosely with a dry, sterile non-stick dressing or a clean cloth.
- If the burn is minor and you do not plan on going to the emergency room for assessment, consider taking an over-the-counter pain reliever (if required and appropriate). Ask your pharmacist for advice if you are uncertain which pain reliever is right for you.
- Go to the emergency room immediately if the burn is more serious.

Important:

Have a fire escape plan and practise it with your family once a month. In the event of a fire, make sure to crawl underneath smoke. This will minimize the risk of passing out and becoming trapped in a fire.

Note:

A tetanus or booster shot may be required for some burns. Check with your health-care professional.

How can I prevent burn injuries?

Burn injury prevention should be considered a primary safety goal because all people are at risk for experiencing a burn injury in their lifetime—either at home, work or play. The aim for prevention is to learn about what the risks are for you and your loved ones, and then create a safe environment where everyone knows how to be safe. See [Keeping Your Home Safe](#) for more information.

Fire-related Burns

- Install smoke alarms and consider installing sprinklers.
- Don't smoke indoors.
- Make a fire escape plan and practise regular fire drills.
- Use child-resistant lighters, and safely store lighters and matches.
- Use space heaters carefully – keep them away from anything that can burn.
- Never leave candles unattended. Consider battery-operated flameless candles instead.

Scalds

- Lower water heater temperature (lower than 50 °C).
- Keep hot drinks away from table/counter edges.
- Avoid drinking hot liquids through a straw.
- Turn the handles of saucepans toward the back of the stove.
- Put cold water into baths first, then hot water and test the temperature with your hand before using, or use a visual temperature gauge.

Frostbite

- Wear clothing that is suitable for the temperature and activity.
- Cover vulnerable areas like tips of ears and nose, fingers and toes.
- The wind can increase the risk of frostbite so dress accordingly.

Contact Burns

- Test the temperature of car seats before placing children in them.
- Unplug hot irons and curling irons and keep them out of reach of children.
- Keep children away from hot cooking appliances and grills.
- Use approved glass or metal protective screens in front of fireplaces.
- Wear oven mitts to remove items from the stove.

Electrical Burns

- Put covers on electrical outlets that are within a child's reach.
- Throw out electrical cords that are frayed or damaged.
- Avoid overloading extension cords or outlets.
- If flooding occurs, turn off electrical circuits before stepping into the water.
- Avoid using hairdryers or other electrical appliances near the sink and tub.

Radiation Burns

- Avoid direct sun exposure between 10 a.m. and 4 p.m.
- Wear clothing with SPF 50+ protection.
- Wear sunglasses with UV protection.
- Avoid tanning and UV tanning beds.
- Apply sunscreen 30 minutes before going outside; reapply every 2 hours and after swimming.

Chemical Burns

- Wear protective clothing/equipment when handling chemicals.
- Store chemicals out of the reach of children.
- When possible, purchase chemicals that are less toxic.
- Store chemicals in their original containers with the labels intact.
- Purchase chemicals with child-resistant closures.

Even though certain jobs put you at a greater risk for burns, most burn injuries occur at home. Other preventative measures you can take at home include:

- Keeping young children out of the kitchen while cooking
- Placing a fire extinguisher in or near the kitchen
- Testing smoke detectors once a month
- Replacing smoke detectors every 10 years
- Ensuring all smoking products are stubbed out completely – **don't smoke in bed.**
- Cleaning out dryer lint traps regularly
- Teaching children safety around open fires

When is a burn an emergency?

According to the Canadian Red Cross call EMS/9-1-1 immediately if the burns:

- Make it difficult for the person to breathe
- Causes a great deal of pain or the person becomes unresponsive
- Were caused by chemicals, explosions, or electricity
- Involve a large amount of blistering or broken skin, or the burns cover the face, neck, hands, genitals, or a large surface area

For more information visit the The Canadian Red Cross website at: <https://frontlinefirstaid.ca/first-aid-and-cpr-guide.html>.

To learn more about what should be in a burn emergency kit go to: <https://products.redcross.ca/product/1753/burn-kit-in-abs-box>.

Keeping Your Home Safe

Preventing Skin Injuries for the Whole Family

Wounds Canada has developed a simple guide that can be used by families to prevent skin injuries at home.

You want your home to be a place where every member of your family feels welcome, comfortable and safe. To protect yourself, and any children or aging loved ones you are caring for, from injury, you may need to make some changes around the house. There are many simple, inexpensive updates you can make, or even simple changes in habit, to ensure everyone's comfort and security.

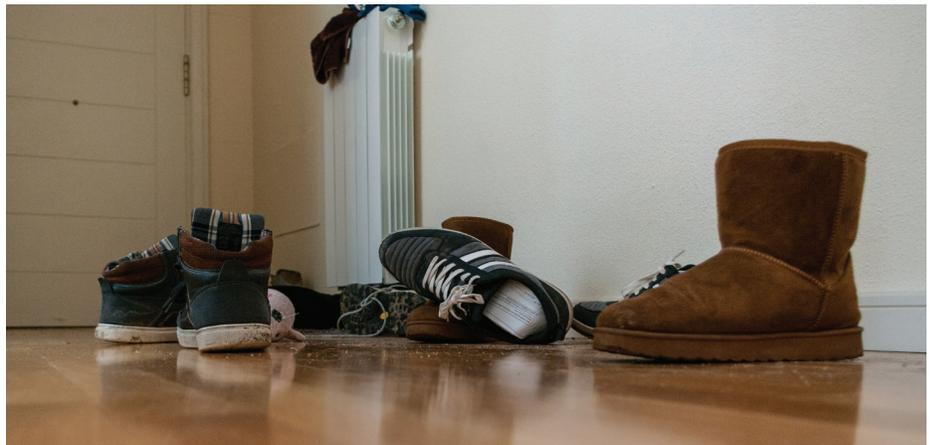
Be skin safe in every room of your house (and outside too!)

Entry/Mud Room

Risks: Poorly lit hallways can result in tripping and bumping into unseen objects. Uneven floors and objects on the floor such as shoes and backpacks are top tripping hazards.

Remedies:

- Check to make sure all entryways are brightly lit to illuminate the steps and other details. Lighting should be installed so it does not create shadows in some areas.
- Make sure all steps are sturdy and in good repair, have adequate tread depth and have a consistent rise that conforms to a maximum of 20 cm (8 in). Sturdy handrails can prevent falls.
- Ensure doorways are wide enough to accommodate wheelchairs (if required) or people carrying bulky items (such as grocery bags or sports equipment).
- Choose hard flooring surfaces like tile, vinyl, hardwood or laminate. Avoid throw rugs and thick carpets. If you decide to have a soft surface select a low-profile carpet with a non-slip underlay to keep it from moving around or bunching up and creating a tripping hazard.
- Remove any clutter lying around the entryway or floor, including electrical cords.
- Place grab bars on the inside and outside of the entryway to help those with stability and balance challenges.



Disclaimer: The content in this resource is for informational purposes only and is NOT a substitute for professional medical advice, diagnosis or treatment. You should always consult with your health-care professional before starting any new treatment or changing or stopping an existing treatment.

Living Room

Risks: Furniture, fireplaces, carpets and electrical devices can pose danger to skin, especially the fragile skin of babies, toddlers and the elderly.

Remedies:

- Anchor vertical furniture pieces like bookcases and media centres to wall studs using brackets or wall straps to prevent them from falling over.
- Replace sharp-edged coffee tables with rounded tables or even a padded ottoman with a tray on top.
- Avoid having glass tabletops, because they are breakable. Even when cleaned up, glass can linger in carpets and cause foot injury days and weeks later.
- Wrap up wires and cords from lamps, televisions and other electrical appliances with electrical tape or ties to prevent tripping.
- Secure unused electrical outlets with childproof covers.
- Move large, heavy or breakable objects away from the edges of tables and off high shelves.
- Secure area rugs with non-slip mats to prevent slipping and tripping. Make sure carpeting lies flat.
- Use boxes and baskets to corral and store clutter such as toys and small objects, to prevent tripping and foot injuries caused by stepping on sharp edges.
- To reduce the chances of burns, identify and correct any potential fire hazards:
 - If you have a fireplace:
 - Make sure it is in good working condition.
 - Replace the mesh screen with glass doors to prevent burns.
 - Consider changing the hearth if it is raised (tripping hazard) or has sharp edges made of bricks or stone (abrasion [scraping] hazard)
 - Regularly check electrical cords to make sure they are not frayed or showing any bare wires or signs of wear.
 - Place space heaters at least 1 m (3 feet) away from anything that can burn.
 - Allow air space around TVs and stereos so they do not overheat.
 - If you must smoke, do so outside. If you smoke indoors, make sure your ashtrays are large and deep. Empty them often. Never smoke anywhere where you are likely to fall asleep.



Dining Room

Risks: Hot foods and sharp implements can lead to skin injury in the dining room.

Remedies:

- Make sure tablecloths are the right length. If they are too long they could get caught when diners are getting up, which can pull hot foods off the table and onto diners.
- Serve food in containers that will protect diners from burns.
- Use potholders or oven mitts to move or carry hot dishes.
- Use extreme care when using open-flame servers like fondue pots and chafing dishes.



- Keep electrical dish warmers on a side table so the electrical cord doesn't reach across open space, causing both a tripping and burn hazard.
- Use chairs that are the right height for children so they don't have to reach or lean, which could cause hot foods to spill on them.
- Keep the dining room floor clutter-free.
- Wipe up spills promptly to prevent slippery floors.
- Remove sharp carving knives from the table once the carving is done. Use electric knives with extra caution.
- Don't place sharp knives inside napkins that diners will have to remove before using.

Kitchen

Risks: The kitchen is said to be the most dangerous room in the house, where mishaps such as cuts, slips and burns are common.

Remedies:

- Store knives in a wooden block or a drawer and out of the reach of children.
- If handwashing sharp knives in the sink, do not place them in the water all at once. Take each knife off the counter and wash them one at a time so you don't lose track of where the "sharks" are in the soapy water.
- When wiping sharp knives (to wash or dry) always face the sharp edge of the blade away from you to reduce the risk of slicing the area between your thumb and first finger.
- Keep knives sharp and learn to hold knives properly to reduce risk of injury.
- Use a hand or finger guard when cutting hard, rounded items to prevent injury if the knife slips off the surface.
- Use extra caution when grating food using a hand grater or slicing food with a mandolin.
- Never cook in loose clothes, especially loose sleeves, or long, loose jewellery, which can knock pots off the stove or absorb hot liquid that can cause burns.
- Keep long hair tied back when using the stove. (This also keeps hair out of the food!)
- Use potholders or oven mitts when handling hot pans, pots and lids. They should not be kept too close to the stove, where they might catch fire.
- Turn pot handles away from the front of the stove so children can't grab them or pull them down, and adults can't bump into them.
- Be aware of the potential for steam injuries that can occur from tea kettles, opening a lid on boiling food or from microwaving.
- Don't crowd breakable items in your upper cupboards; when you are trying to remove just one, they may tumble out, break and cause cuts or bruises.
- Use a proper, sturdy step stool when trying to reach upper cupboards.
- To prevent falls, wipe up spills immediately so floors stay dry.
- Keep a fire extinguisher for your kitchen. Make sure you have quick and easy access to a fire extinguisher near the stove, far enough away that smoke and flames won't block your access to it in an emergency.
- If you keep household cleaners under the sink, make sure to child-proof the cupboard doors if you have small children. In addition to being a poison hazard, many household cleaners can cause burns to the skin, mouth and eyes.



Bedroom

Risks: Fires and falls are the most common causes of wounds in the bedroom.

Remedies:

- Don't smoke in bed.
- Don't place fabric over bedside lampshades.
- Keep a clear space of at least 1 m (3 feet) around any space heaters.
- If you are using candles make sure they have plenty of space around them and are on stable bases so they do not fall or get knocked off. Consider using battery-powered flameless candles instead.
- Attach a safety rail to the bed frame of anyone at risk of falling out of bed—typically young children and seniors with mobility or cognitive issues.
- Move your children to toddler beds as soon as they show interest in climbing out of a crib.
- Place non-slip mats under area rugs and make sure edges lie flat—or avoid them altogether to prevent tripping.
- Keep the floor between the bed and door clear of any objects. Even clothing can be a tripping hazard.
- Provide a nightlight in the bedroom of anyone likely to get up in the dark.



Bathroom

Risks: Thousands of people slip or fall in their bathroom every year, which can lead to serious injuries, including wounds. The most common cause is typical bathroom surfaces that are slippery when wet. Personal hygiene activities such as shaving and nail care can also cause wounds. Burns occur due to water temperature and electrical shocks.

Remedies:

- Prevent slips and falls in the main bathroom by
 - keeping all floor surfaces dry by cleaning up water as soon as possible
 - ensuring floor mats have non-slip bottoms
 - eliminating tripping hazards such as rugs, towels and other objects on the floor
- Prevent slips and falls in the shower or tub by
 - installing a shower bench
 - using non-slip products in the bathtub or on the shower floor
 - installing a handheld or adjustable shower head to allow for a bath chair or bench to be used in the shower by anyone who needs to sit
- If someone in your household has mobility or balance issues, consider upgrading your bathtub to a walk-in tub.



- Keep electrical appliances away from water. Install ground-fault electrical outlets.
- Set your hot water tank to a reasonable temperature. If you have compromised sensation in your hands or feet (you have difficulty feeling hot/cold, pressure/pain) always test the water with you elbow or unaffected limb before use to prevent burns.
- Ensure all towel racks, toilet paper holders, vanities, mirrors, medicine cabinets, grab bars and any shelving or cabinetry are installed securely.
- Install rails, grab bars and other assistive devices to provide extra stability near the toilet, shower and bathtubs.
- Keep chemicals, and cleaning products out of reach of children and in a secure cabinet.
- Ensure all personal care products, such as razors, shavers and scissors, are kept in good repair to prevent cuts.

Laundry Room

Risks: The chemicals in some laundry products can be a risk to skin.

Remedies:

- Keep laundry products in original containers with the original label on them.
- Close containers tightly when not in use.
- Always put laundry products away out of sight and reach of children and pets.
- Read and follow all instructions on the product label. Know where the safety information is located on the label and what to do in case an injury occurs.
- Never combine laundry detergent with other household cleaners. Some chemical mixtures may release irritating or dangerous fumes.
- If a product container is empty, throw it away properly.
- Clean up any spills immediately.
- Keep steam iron safely placed when in use, with no dangling cord and no direct contact with the steam.



Home Office

Risks: Injuries from falls can occur in cluttered, disorganized offices. Faulty electrical devices and outlets with too many devices plugged in can be fire hazards.

Remedies:

- Clear away tripping hazards, such as loose electrical cords.
- Regularly check electrical cords and wires to make sure they are not frayed or showing signs of wear.
- Do not overload any outlets with too many devices.
- Keep paper shredders out of the reach of children.



Garage

Risks: Garages are often one of the most active, and dangerous, places in the home. They require diligence and effort to keep them as safe as possible.

Remedies:

- Store hazardous materials safely, in a locked cabinet.
- Use extreme caution when using power tools to prevent careless accidents!
- Keep portable power tools like saws and drills in a safe place when not in use. For large, stationary tools, disconnect the power cords or remove batteries when you're not using them.
- Make sure to keep all cords in a spot where they won't trip someone walking by or pull the tool off a table or shelf.
- Always use appropriate safety equipment, such as safety glasses, masks, gloves, steel-toed boots and respirators as needed, when working with tools or chemicals.
- Keep a well-maintained garage floor. Make sure the floor is in good repair (no cracks or missing chunks of concrete that could be tripped on) and free of debris that could cause tripping, or liquids that could cause slipping.
- Use well-anchored storage systems that are designed to carry the load you are putting on them.
- Dispose of caustic chemicals (chemicals that can cause burns or erosion) at your local recycling or disposal depot, according to your municipality's bylaws.
- Replace old or damaged electrical cords so they cannot cause electrical burns and fires.
- Yard tools can be surprisingly sharp and can also be tripping hazards. Make sure these are stored safely.

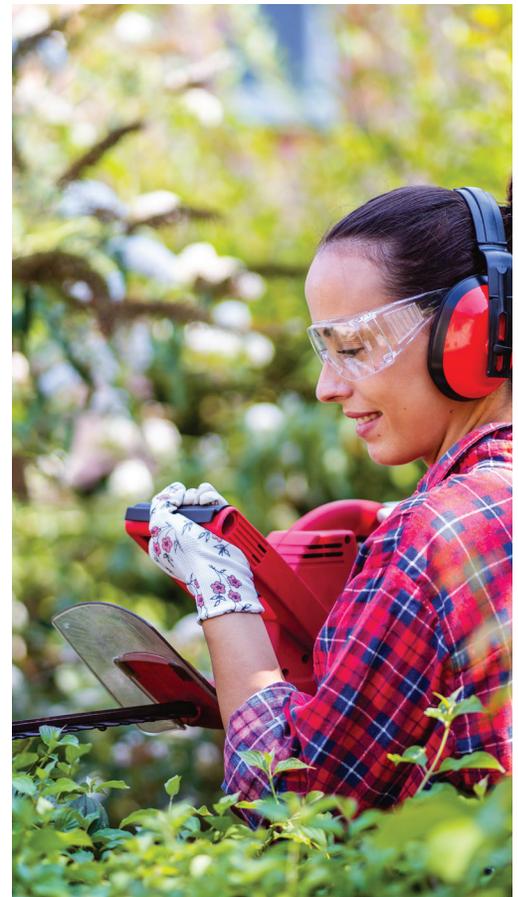


Around the Yard

Risks: Your backyard can be a safe place if you are aware of potential hazards and eliminate them.

Remedies:

- Wear full eye and ear protection, gloves and other protective clothing as appropriate, including closed non-slip rubber-soled shoes, when doing yard work.
- When using a powered hedge trimmer or chain saw, don't trim or cut higher than your shoulders, especially if you're in a tree or on a ladder, to protect your body in case you drop the tool.
- NEVER adjust a powered tool with it plugged in or running.
- Remove objects such as rocks, branches and debris from your yard before using a lawn edger, mower or string trimmer.
- When using equipment such as a string trimmer, work at least 15 m (50 feet) away from people or pets.
- Wear long pants and closed-toed shoes when using the lawn mower—NEVER shorts, sandals or bare feet.
- Never walk backwards while pulling a lawnmower.
- Do not leave garden tools unattended as they can be tripping, cutting or piercing hazards.
- Don't leave sharp garden tools lying out where they may be stepped on or where children can reach them. Store them securely when not in use.



- Outdoor burning can be very risky. Always follow local burning regulations and do not let children get close to fires.
- The barbecue can be a hazard. To avoid fires, always check first that fuel lines are connected properly and in good condition and that burners are not cracked or blocked.
- To avoid falls when using a ladder, ensure it is secured before stepping on it.
- Wear long pants and sleeves and bug repellent to protect from bug bites.
- Beware of locations where stinging insects build their nests or are often present.
- Beware of locations where poisonous, stinging or allergy-causing plants are present.
- Use sunscreen on exposed skin when outdoors and/or wear UV-protective clothing.

Safety Tips for any Room in the House

Fire prevention:

- **Smoke Alarms and Carbon Monoxide Detectors** – Keep at least one smoke alarm and CO detector on every level of your home and inside or near all sleeping areas (or as required by your local building code). Remember to check the batteries regularly. Tip: check batteries twice a year, when the clocks change.
- **Fire Extinguishers** – Make sure you are confident with using one before you need to do so in an emergency. Be aware that there are various ratings for different types of fire.



First aid:

- Before accidents do happen, make sure you are prepared. Keep a fully stocked first aid kit handy so you can quickly care for any injury until you obtain professional assistance, if required.
- For how best to treat minor wounds such as burns and cuts, please see [Minor Cuts \(Cuts, Scrapes and Bruises\)](#).

Adequate lighting:

- Make sure all living areas are bright enough to see any dangers, such as objects you might trip on or sharp objects you might step on. Stairs are a risky place for falls so make sure stairways have good lighting and secure handrails. Have a few flashlights in easy-to-find places as well in case of power outages.
- Consider using a home automation program where lights can be remotely controlled, programmed to turn on and off at certain times of day, and even set up with motion sensors to make sure no one is left in the dark while hunting for a light switch.
- Consider installing lighted switches in key locations so light switches can be found in the dark.

Window safety:

- Children can fall out of a window that is open as little as 12 cm (5 inches). Never leave chairs in front of open windows; children can easily climb onto them and out the window. Consider installing window guards.
- Make sure to keep areas around windows and mirrors clear of objects that could fall and shatter the glass.

Stair safety:

- Adding extra grip to your stairs is another way to avoid stair-related falls and associated skin injury. Add grip tape to non-carpeted stairs or non-slip tread mats.
- Consider a powered stair-assist chair for any family member who has difficulty on stairs.

Tip:

- If you or someone in your family is at risk for falls due to balance and/or mobility challenges or some other type of functional impairment, consider contacting an occupational therapist to conduct a home assessment and make recommendations on how you can create and maintain a safer environment.

Care at Home Series

Preventing and Caring for Your Wounds at Home

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Wounds Canada is the voice for Canadian people at risk of or living with wounds and their providers.

Established in 1995, Wounds Canada is a charitable organization dedicated to the advancement of wound prevention and management for all Canadians. We accomplish this by advocating for a population health approach that promotes best practices to support persons at risk of or living with wounds, health decision makers and frontline clinicians. We develop and provide educational programs and resources, and support research to further advance this holistic, risk-based approach. We foster relationships with interested individuals and organizations to expand and sustain a robust wound community in Canada that with mutually beneficial global connections. Our goal is to reduce the prevalence and incidence of wounds of all types and the negative consequences they bring—including patient suffering and wasted health-care dollars.

WoundsCanada.ca