

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.

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.

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.

Surgical site opening up (dehiscence)

Surgeons use staples, stitches, glues and tapes to keep incisions closed so the body can take the time it needs to heal. Too much activity, trauma to the surgical site and infection can all cause the wound to open up. What should you do if you notice the wound is splitting open? If you see the wound opening up notify your health-care professional: family doctor, surgeon's office or home health office to arrange for a visit.



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!



a. A normal, uninfected surgical incision site



b. An infected surgical incision site



c. An infected, dehiscent surgical incision site

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.

CAUTION:

If left untreated an SSI might lead to other complications like an incisional hernia (bulging areas around the incision) and/or a wound dehiscence (opening of the incision).



CARE AT HOME SERIES

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