

# Enhanced Recovery After Surgery (ERAS) and DIEP Flap Breast Reconstruction

---

DIEP stands for Deep Inferior Epigastric artery Perforator flap. It is surgery that uses your own fat and skin from the area around your stomach to make a breast mound. You will get more information about the surgery from your surgical team and in the booklet “DIEP Flap Breast Reconstruction.”

This booklet will give you more information about Enhanced Recovery After Surgery (ERAS), which is in place at Sunnybrook Health Sciences Centre.



# Table of Contents

---

What is Enhanced Recovery After Surgery (ERAS) Following DIEP Flap Breast Reconstruction? .....	1
Planning for a DIEP Flap Reconstruction .....	3
Months Before Surgery .....	3
Weeks to Months Before Surgery.....	3
24 Hours Before Surgery .....	5
The Day of Your Surgery.....	8
At the Hospital.....	9
Exercises .....	11

# What is Enhanced Recovery After Surgery (ERAS) Following DIEP Flap Breast Reconstruction?

---

Enhanced Recovery After Surgery streamlines your care to help give you the best outcome from your surgery. It involves all members of your team, like your surgeon, anesthesiologist, therapists, and nurses. The most important person in this pathway is you.

The pathway will happen in steps. These steps are:

## 1. Preadmission Education

As you get ready for surgery, it is important that you have information about your surgery, and that you understand what to expect around the time of your surgery. You will come to education classes and meet with members of the team to talk about all parts of the surgery and care.

## 2. Prehabilitation

Getting ready for your surgery starts months before your surgery. This is called prehabilitation. It means getting you in the best physical shape before your surgery. In this booklet, we will show you the exercises you need to do after your surgery. We suggest you review these exercises 6 weeks before your surgery, so that it is easier to do them after the surgery. The rehabilitation team (physiotherapist or occupational therapist) will contact you before your surgery to discuss how you can improve your physical strength.

## 3. Pain Control

Your pain control will start on the morning of your surgery when you arrive at the hospital. You will get a combination of pain medication that will usually include the following:

- a. Acetaminophen – a powerful pain reliever, particularly when taken regularly for a week after surgery.
- b. Celecoxib – an anti-inflammatory medication. It is started on the morning of surgery, and continues for 5 days. It is best to take anti-inflammatory medications on a scheduled basis for 5 days to give a baseline of pain relief. If an anti-inflammatory drug is required after this, you can take ibuprofen as required.

- c. Pregabalin – is a nerve medication that lowers pain. We suggest continuing this medication for one month as it also helps to lower the risk of long-term (chronic) pain.

We want you to be as comfortable as possible after your surgery. After your surgery, you will keep taking these medications, along with opioids (narcotic drugs, such as morphine). Opioids work best when taken with other medications but can have side effects like constipation, and dependence/addiction. Enhanced recovery pathways try to lower your need for opioid pain relief but opioids are sometimes needed to help with pain control.

Your comfort after surgery is very important and will be managed by a team of specialists, which will include surgeons, anesthesiologists, nurses, and the Acute Pain Service (APS) team.

## **4. Nausea Prevention**

Nausea is very common after breast reconstructive surgery. Before your surgery, your anesthesiologist will work with you to lower your risk of nausea and vomiting after your surgery. Staying well-hydrated by ensuring you have enough fluid in your body will also help prevent nausea. Antiemetic drugs (like ondansetron) can help nausea after surgery.

## **5. Regional Anaesthesia**

With regional anesthesia, part of your body is made numb with a local anesthetic. While you are asleep, your surgeon will give you a long-acting local anesthetic drug that will help to reduce your pain after surgery.

## **6. Reducing Surgical Infections**

We will give you information on an antimicrobial soap to use before your surgery, which may lower the risk of a wound infection.

You will also get antibiotics during your surgery, and your surgical team will thoroughly cleanse your skin in the operating room before your surgery begins.

## **7. Venous Thromboembolism Prevention**

You can get clots in the legs (Deep Venous Thrombosis) or the lungs (Pulmonary Embolism) after surgery. To lower the risk of developing a clot, you will get heparin (an injection to reduce the risk of clots) every day while you are in hospital. We will also encourage you to start moving the day after your surgery. You will receive compressive calf pumps/stockings while in hospital to improve circulation in the legs and reduce the risk of developing this complication.

# Planning for a DIEP Flap Reconstruction

---

In the pages ahead, you will learn how to prepare:

- a. **Months / Weeks before surgery** ..... Page 7
- b. **24 hours before surgery**..... Page 8

You'll also find information about:

- a. **What to expect on the day of the surgery** ..... Page 11
- b. **Exercises to start before surgery and continue after surgery** ..... Page 14

**Note: What to expect during your stay in hospital and for your post-operative (after your surgery) care is discussed in the DIEP Flap Breast Reconstruction booklet that you will also receive.**

Your recovery will take about 8-12 weeks after DIEP reconstruction. By getting yourself ready, both physically and mentally, you can help lower the risk of complications.

## Months Before Surgery

---

- **Stop smoking.** Smoking lowers the ability of your body to heal after surgery and puts you at greater risk of severe, major complications after this type of surgery. If you need help with ways to stop smoking, contact your doctor or pharmacist for advice or visit [sunnybrook.ca/quitsmoking](http://sunnybrook.ca/quitsmoking)
- **Healthy diet.** A healthy, well-balanced diet is important to make sure that your body has energy and the building blocks needed for wound healing and for the stress of surgery. Clinical Nutrition Services are part of your care at the Odette Cancer Centre. You do not need a referral from your doctor. You can visit the Nutrition Centre (across from Druxy's) in the Odette Centre, or call 416-480-5000 (ext. 3438)
- **Exercise** is an important part of your treatment and can help you with your recovery after breast reconstruction. It can help:
  - Improve muscle strength
  - Reduce fatigue
  - Reduce pain and tightness
  - Begin your daily activities again
  - Improve your overall well-being

Getting regular aerobic exercise is essential prior to surgery. Aerobic exercise is activity that gets your heart, lungs and muscles working, like walking, swimming or dancing. The rehabilitation team will contact you to help set up a daily exercise routine before your surgery. Attempt to exercise every day to help you heal after your surgery.

At the end of this booklet you will find the exercises that you will need to do after your surgery. We recommend that you review these exercises before your surgery.

During your hospital stay, the physiotherapist will meet with you and guide you through your post-operative (after surgery) exercise program.

- It is important that you get out of bed with assistance from your nurse the day after your surgery.
- The physiotherapist will guide you through the exercises that you will begin when you return home.
- Plan to take your pain medication 20 to 30 minutes before you do your exercises.
- Do the exercises 3 times per day, every day, until you are back to your full normal activity level.
- Try to do the exercises at the same time each day, so that you do not forget. For example, you could do the exercises after breakfast, lunch and dinner.

You will also meet with the occupational therapist who will give you advice on what modifications you should consider in order to help you perform your activities of daily living after surgery. An example of this can be found on our website, where you will find advice on how to manoeuvre out of bed after a DIEP breast reconstruction.

Link to video: [sunnybrook.ca/breast-recon](http://sunnybrook.ca/breast-recon)

Speak to your healthcare team about exercise. We can connect you with an exercise program that can help to improve your exercise tolerance prior to surgery.

## Weeks to Months Before Surgery

---

- If you drink coffee or other drinks with caffeine, you should wean off of these entirely before surgery, as caffeine can negatively affect your reconstruction by causing vessel narrowing.
- If you are on Tamoxifen, you will stop 3 weeks before your surgery. You may start to take Tamoxifen again when you return home from the hospital.
- You should stop taking any supplements, vitamin E, or anti-inflammatory medications 10 days before surgery.

# 24 Hours Before Surgery

---

## 24 hours before surgery



- Showering
- Packing your hospital bag
- Fasting before surgery

## Showering

It is very important to clean your skin before surgery to reduce the risk of infection.

### How many times must I shower or bathe before my surgery?

To get your skin ready for surgery, you must shower using a surgical soap at least 2 times:

1. The evening before your surgery
2. The morning of your surgery.

### What should I use?

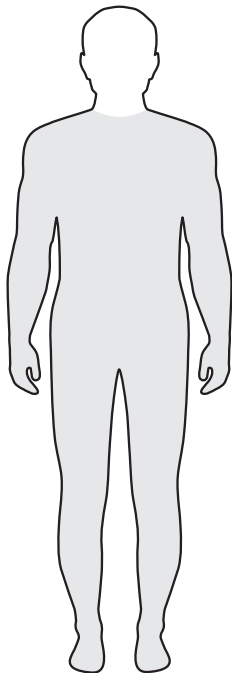
Surgical soap is available without prescription from local pharmacies. You should use 4% w/v Chlorhexidine Gluconate Soap, such as Scrub-Stat 4% or Dexidin 4.

- Use soft and clean washcloths and towels for each shower or bath.
- Remove all jewelry and body piercings.
- Clean your belly button well with a cotton swab.



## How do I apply the soap?

1. Use your regular soap and shampoo to wash your face and hair.
2. Wash your body from neck to feet, finishing with the groin and genitals. Rinse. Step away from the water.
3. Apply the surgical soap, from the neck down. Leave the soap on for 2 minutes, and then rinse your body well.
4. Use a back and forth scrubbing motion to wash from below your neck downwards. **DO NOT USE THIS SOAP ON YOUR FACE.** Begin at your neck, working down to your feet. Pay particular attention to the breasts, abdomen, belly button and skin creases (including the armpits and groin). Wash your genital and anal areas last.
5. When application is complete, use warm water to thoroughly rinse the cleanser from your body.
6. Use a clean towel to pat your skin dry.



**Use the Chlorhexidine soap below the neck only.**

**Do not** shave the area of your body where your surgery will be done.

**Do not** use a rough scrub brush and do not scrub your skin.

**Do not** get any soap in your eyes, ears and mouth.

**Do not** use lotion, cream, powder or perfume after washing.

# Packing Your Hospital Bag

## Make sure you pack:

- Loose-fitting comfortable clothing
- Supportive slip-on shoes to wear home (shirts with buttons/zippers in the front are easier to put on after surgery)
- Toiletries
- A robe for your hospital stay

## Fasting Before Surgery

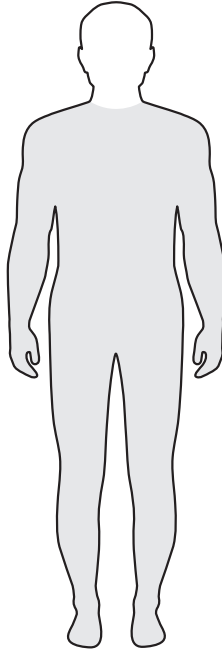
- Do not eat any food 6 hours before your surgery.
- Drink as much water as you want up to 2 hours before your surgery.

# The Day of Your Surgery

---

## Shower

Shower again in the morning, using the 4% w/v Chlorhexidine Gluconate surgical soap, as directed above.



## What to drink on the day of your surgery

You can drink clear fluid on the day of your surgery up to 2 hours before the surgery.

Your surgeon will advise you of a carbohydrate drink that you should take on the morning of your surgery. PREcovery is one example. It can be purchased from the M1 hospital pharmacy. This drink helps give you energy before your surgery.

## Prepare and drink the PREcovery 2-3 hours before surgery

- Prepare **one serving** of PREcovery by stirring one package into 400mL (13.5 fl oz) of water until completely dissolved.
- **Drink immediately within 20 minutes or less.**
- Make sure you do not drink anything 2 hours before your surgery time.

# At the Hospital

---

On the day of your surgery, go to the Surgical Services Registration area. It is in the M Wing, Ground Floor, Room 502 (MG 502).

Check-in instructions will be given to you by the surgeon's office.

What to expect:

- Your name, birth date, and your Ontario Health Card will be checked
- An armband will be put on your wrist
- You will be seated in the waiting room until your name is called
- You will be taken to the Pre-operative Room where you will be prepared for surgery by a Registered Nurse. This may take up to an hour. You will get cannula (a needle placed into the vein to allow for the administration of fluids and medications), and your paperwork will be completed. You will receive pain medication at this point.
- You will be brought to the operating room. Here, you will be met by 3 teams – surgical, nursing, and anesthesia. Your paperwork will be checked by the teams.
- Your surgeon will then use a skin marker to mark your skin prior to your surgery. This will happen while you are awake, before your surgery. Your surgeon will mark your breasts and your abdomen with a blue marker.
- You will be brought into the operating room. The team will place compressive stockings on your legs before the surgery which help to reduce the risk of developing clots in your legs. Anesthetic monitors will be connected. This machine monitors your pulse and blood pressure during the surgery. You will then receive anesthetic medication, and your surgery will begin.

Surgery typically lasts 6 – 8 hours. During this time, you will not feel any pain as you will be asleep under anesthesia.

After your surgery, you will recover in the PACU (Post Anesthetic Care Unit). You will stay in this ward until approximately 8pm on the day of your surgery. No visitors are allowed in the PACU. Your companion will have to wait in room A148, and will not be able to visit until you are transferred to your ward bed on the 6th Floor (C6 ward) on the night of your surgery.

On the ward, we will set up your bed so that you can sit while in bed, as this helps with the pressure on your abdominal wounds. You will be connected to monitors.

Discomfort at the site of your surgery (breast and abdomen) is expected. Dressings will be in place over your abdomen and breasts. Compressive stockings will stay on your legs to help minimize the risk of clots. A catheter (tube) stays in your bladder until you are able to walk to the toilet. You will get intravenous fluid overnight, while you remain fasting overnight.

Overnight on the ward, you will be checked frequently by the nursing and medical staff. Frequent checks will include monitoring your breast(s) and abdomen. This is routine, and normal, and will continue throughout the night.

The surgical team will check you the next morning, and guide you through the next steps in your recovery from surgery.

# Exercises

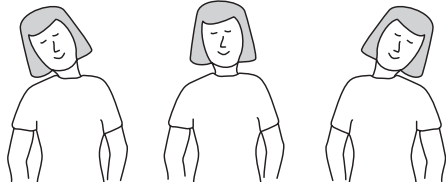
---

## Exercises after Surgery – First 2 weeks after surgery

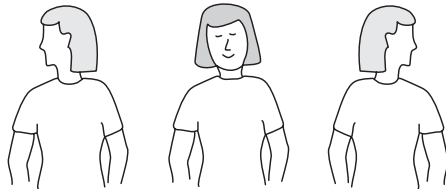
### Exercises After Breast Reconstruction

- These exercises were created to help you keep or restore normal arm movement and function after your surgery.
- Begin these exercises the day after you return home from the hospital.
- Do each exercise 3 times a day, 5 repetitions of each exercise.
- These exercises should be relaxing. Take deep breaths and take your time. Don't rush.
- If you experience pain, take your pain medication 20-30 minutes before exercising.
- Do not lift your arm past 90 degrees (shoulder height) for 2 weeks.
- 2 weeks after surgery, you can progress to **STAGE 2 Exercises**.

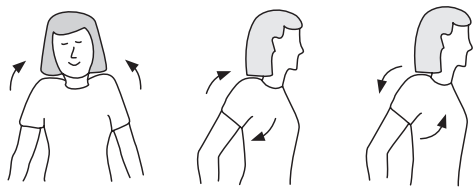
## Exercises after Surgery – First 2 weeks after surgery



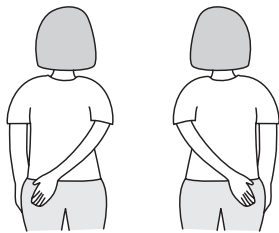
Tilt your head toward one shoulder until you feel a stretch on the opposite side. Hold for 15-30 seconds and then repeat to the other side.



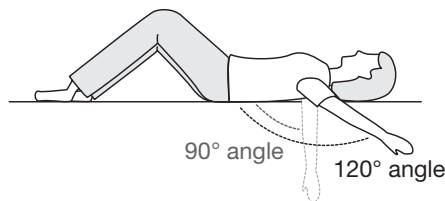
Turn your head to look over your shoulder. Hold for 15-30 seconds and then repeat to the other side.



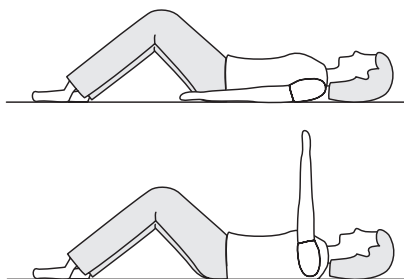
Roll your shoulders forwards, then backwards.



Slide your arm on the side behind you and try to touch the opposite buttocks. Repeat with the opposite arm.



Start with your arms at your side, lying on your back with your palms facing the ceiling. Slowly slide your arms along the surface like a “snow angel” until you get to shoulder height. Return to the starting position and repeat.



Start with your arms at your side, lying on your back with your palms facing the floor. Slowly lift your arms up as shown in the diagram until you get to shoulder height. Return to the starting position and repeat.

**Hold for \_\_\_\_\_ seconds. Repeat \_\_\_\_\_ times. Do \_\_\_\_\_ times per day.**

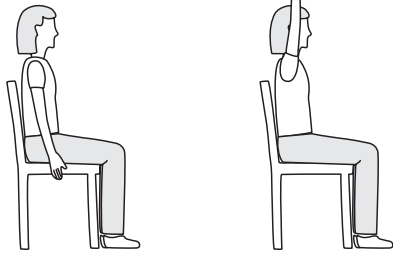
# Stage 2 Exercises: Two to Four Weeks After Surgery

## Exercises After Breast Reconstruction

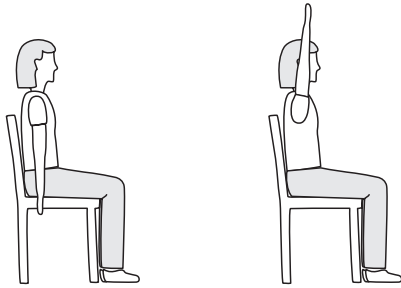
- These exercises were created to help you maintain or restore normal arm and body movement after your surgery.
- Continue with these exercises until you get normal movement back in your arm and your body.
- At this time, you should be able to sit/stand straight .
- Some of the exercises below are to begin after 2 weeks; others after 4 weeks. Please read the instructions carefully
- Do each exercise 3 times a day, 5 repetitions of each exercise.
- These exercises should be relaxing. Take deep breaths and take your time. Don't rush.
- If after 6 weeks you have not regained normal movement, speak to your surgeon. They might refer you to a physiotherapist.



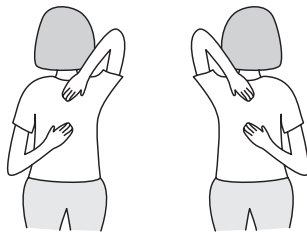
**Begin these exercises after 2 weeks**



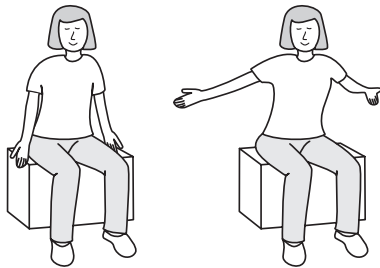
Standing or sitting. Start with your arms at your side. Slowly lift your arms up as shown in the diagram as high as you comfortably can. Return to the starting position and repeat.



Standing or sitting. Start with your arms at your side, palms facing forward. Lift your arm up sideways with thumb leading the way. Return to the starting position and repeat.

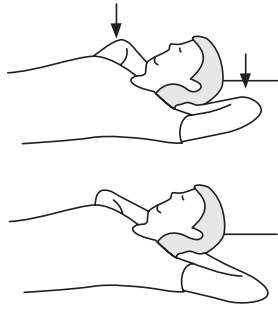


Bring your arms alternately behind your neck and back. Try to bring your finger tips close together.

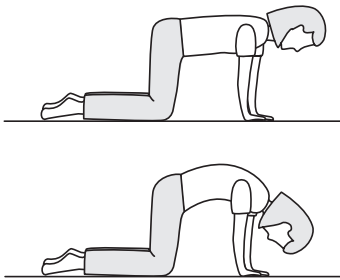


Sit with your feet on the floor. Keep your arms at your side, palms facing forward. Try and bring your shoulder blades together and hold for 2-3 seconds. Return to the starting position and repeat.

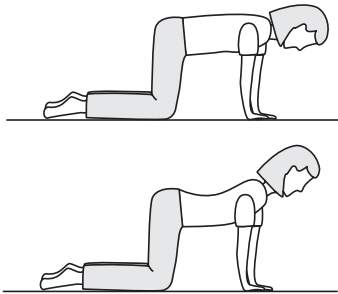
**Begin these exercises after 4 weeks  
(you can continue with the ones above if you find them helpful)**



Lying on your back with your arms behind your head, bring your elbows down to touch the floor. If your elbows cannot touch, then put a pillow/towel under your elbow so you can relax. Hold for 3 deep breaths, relax and repeat.



Crawling position. Arch your spine upwards while letting your head relax between your arms. Hold for 2-3 deep breaths then return to the starting position and repeat.



Crawling position. Hollow your back. Keep your neck long and elbows straight. Hold for 2-3 deep breaths then return to the starting position and repeat.



Stand straight with one hand on your hip and the other straight up. Bend to the side with opposite arm reaching overhead. Keep your pelvis in mid-position.



# Who do I Contact if I Have Questions:

If you have questions or concerns regarding your surgery, please contact your surgeon's office. If you require any clarification of information in this booklet, please contact the office.

## Sunnybrook Health Sciences Centre

2075 Bayview Avenue, M1 500  
Toronto, ON M4N 3M5

Phone: 416-480-6069

Fax: 416-480-5795

If you need additional emotional support, call your surgeon's office and ask for a referral for support services. Your surgeon will refer you to a psychologist or social worker in the Odette Cancer Centre.

## Bayview Campus

2075 Bayview Avenue, M1 500  
Toronto, ON M4N 3M5

[sunnybrook.ca](http://sunnybrook.ca)



PR 60702 (2020/03/06)

*Fully affiliated with the University of Toronto*

