Form: D-5810

Breast Reconstruction

An information booklet for patients who are thinking about having breast reconstruction surgery

Breast reconstruction is a personal choice. This booklet gives you information to help you decide what's right for you. Please use it along with information you get when you meet with your plastic surgeon.

Read this booklet to learn more about:

- What breast reconstruction is
- Most common techniques used
- What to expect
- Where to find more information

About this Booklet

Breast reconstruction is surgery that most patients can have to make a new breast shape after a **mastectomy** (removing the entire breast). You could also have breast reconstruction as part of your breast cancer with surgery or as a way to prevent breast cancer if you test positive for breast cancer gene.

Although breast reconstruction is optional, it can have many benefits. It can increase your confidence and self-image after mastectomy. You can have breast reconstruction at the same time as you have breast cancer treatment. Or, you can have it later, after your breast cancer treatment.

The decision is yours. It's important to know that breast reconstruction may not be possible for everyone or not all types of reconstruction are possible for everyone. Depending on your body type and past treatments, you and your surgeon will decide what type of reconstruction is right for you.

This booklet provides you with important information as you think about your options. You will learn more about:

- ✓ how breast reconstruction works
- ✓ what types of reconstruction we do
- ✓ what you can expect in terms of recovery and results

Many patients ask

- What does a reconstructed breast look and feel like?
- Will it look the same as before cancer surgery?
- Will it match my other breast?
- Does the nipple have feeling?

There are many types of breast and nipple reconstruction, but none of them will be able to give you back the exact same breast that you had before.

After a mastectomy, only muscle and a thin layer of skin remain. So your surgeon will make a new breast mound for you.

The breast feels and looks different from the original breast and you may need to have other surgeries to make it look more like the other breast.

Also, patients have less feeling on the skin of their chest after a mastectomy. Nerves that were removed cannot be replaced and the loss of feeling lasts. But, most patients who have breast reconstruction say they feel whole again. They can also stop wearing a breast prosthesis.

Table of Contents

Page

About Breast Reconstruction

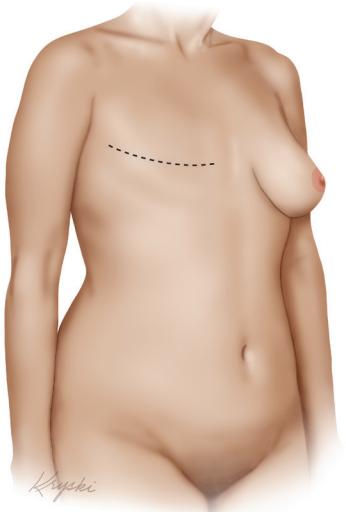
Who can have breast reconstruction?

Breast reconstruction is possible for most patients who had their whole breast removed or just some of the breast tissue and/or nipple removed.

In some cases your surgeon may advise you to wait until your other treatments are finished.

Some patients need chemotherapy before or after their mastectomy.

This can also affect when you can have your reconstruction.



This picture shows a total mastectomy
of the right breast.

3 main steps in breast reconstruction

1. Creating a new breast shape.
2. Making small changes to the new breast, and possibly changing the other breast to match it (such as doing a lift or reduction). This is optional and happens after a mastectomy of one side.
3. Creating a new nipple and areola in the new breast. This is optional.

Your options for breast reconstruction

3 types of breast reconstruction

- Using a breast implant filled with silicone gel to make the new breast shape.
- Using your own tissue to make a new breast shape (autologous reconstruction).
- Using your own tissue from your back and an implant to make a new breast shape (Latissimus Dorsi flap and implant).

Your plastic surgeon and the surgery team will talk with you about the 3 types of breast reconstruction. They will help you decide which one is best for you.

Things to think about

When to have breast reconstruction

You can have reconstruction at the same time as your breast cancer surgery (immediate) or at a later time (delayed).

Your decision may depend on the type of breast cancer you have and the stage of your breast cancer. You and your breast surgeon will make this decision together. In many cases, immediate reconstruction is a reasonable and safe choice.

Immediate reconstruction

An immediate reconstruction is done at the same time as the mastectomy. Some patients find that immediate reconstruction helps them cope better with the negative feelings they may have about losing a breast.

Immediate reconstruction has been shown to be safe. If you are interested in this choice, talk to both your breast surgeon and plastic surgeon. If you may need radiation therapy, they may advise you to wait until the radiation treatment is finished.

Delayed reconstruction

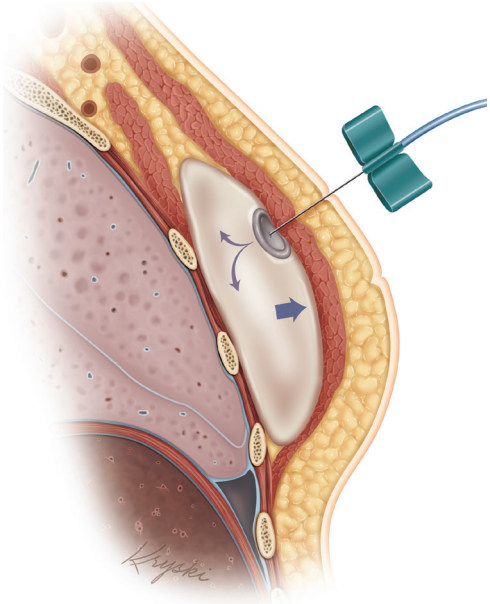
Delayed reconstruction can be done a few months or even years after the mastectomy and other cancer treatments are finished. Usually, we wait months after the surgery or radiation therapy before doing breast reconstruction. This allows time for the chest skin to heal properly.

1. Using an implant to make a new breast shape

This surgery is usually done in 2 steps.

Step 1

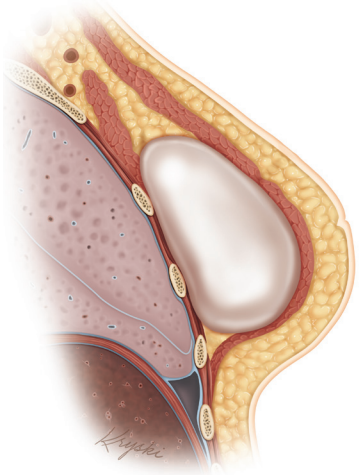
- Part or none of the skin and all breast tissue is removed.
- The surgeon puts a saline-filled (salt water) tissue expander under the skin and possibly the muscle of the chest.
- Usually the surgeon needs to stretch the skin and possibly the chest muscle before putting the breast implant in.
- The temporary implants (called tissue expanders) are slowly inflated using needles with saline.



This picture shows a temporary tissue expander under the chest muscle to prepare the skin for a breast implant. A needle with saline (salt water) is put into the tissue expander to slowly stretch the muscle and the skin on the chest.

Step 2

- Once the tissue expander is completely filled, which can take up to 8 to 12 weeks, it will be another 3 to 6 months before the surgeon takes out the temporary tissue expander and puts an implant in its place. The expanded skin is now made into the final breast shape.

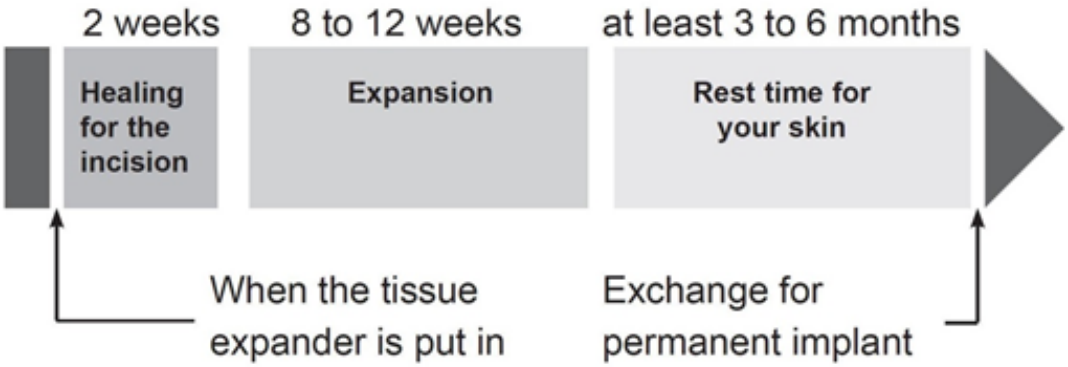


This picture shows the final new breast shape.

Between steps 1 and 2, you need to come to the clinic every 1 to 2 weeks. During each visit the surgeon inflates your temporary tissue expander with saline. This creates a space (or pocket) to make room for the implant. You do not need to stay overnight at the hospital for this procedure.

You may want to reduce or lift the opposite breast at the same time. Talk to your surgeon about this.

How long it takes for the tissue to expand



Please note: There is a 3 to 6 months' waiting period between the end of expansion of the tissue expander to the implant exchange surgery.

Direct to implant

In only a few cases the plastic surgeon may determine that an implant may be inserted at the time of mastectomy without tissue expansion. This type of reconstruction will use a biologic mesh product to help with the reconstruction.

Direct to implant reconstruction is possible and can be done safely in only a small number of patients. Your plastic surgeon will assess you before and at the time of the mastectomy surgery to see if you are eligible.

New techniques

New ways of breast reconstruction with implants are continuously developing. Your surgeon may suggest a slightly different way of doing the reconstruction than mentioned in this guide. The principles are the same but the materials used for the implant and the way the surgery is done may differ slightly.

The implant can be below the muscle (subpectoral) or above the muscle (prepectoral). Your surgeon will decide whether it is safe to place the implant above the muscle (prepectoral) by assessing your skin.

If the implant is placed above the muscle (prepectoral), a biologic material called acellular dermal matrix will cover the entire tissue expander or implant to make sure it is securely in place. Using the matrix can make the chest feel less tight. However, it's possible to have wrinkling or rippling because it is close to the skin. Your surgeon will discuss if this is a safe option for you.

Usually, the tissue expander or implant is placed below the muscle (subpectoral) to provide more support and coverage for the implant. Placing the device below the muscle (subpectoral) does not cause chest muscle weakness.

Implant basics

Implants come in many shapes and sizes. Your surgeon chooses the implants based on different measurements as opposed to cup size, including base width, projection (how much the implant extends out) and volume.

About breast implants

What are implants?

Saline implants are plastic shells made of silicone and filled with salt water. Reconstructions using permanent saline implants tend to make the new breast look and feel unnatural. They only last about 10 years, which is shorter than silicone implants. Except for certain cases, we usually do not recommend using saline implants for permanent breast reconstruction.

Are they safe?

Although there were questions about the safety of silicone gel implants in the 1980s, many trustworthy studies published since then have found them to be safe. Both saline and silicone gel implants are safe and can be used in Canada. Also, the chance that an implant would be rejected by the body is very low.

Uncommon risks or health issues associated with breast implants

Breast Implant Associated Anaplastic large cell lymphoma

Anaplastic large cell lymphoma (ALCL) is an extremely rare form of cancer of the lymphatic system (lymphoma) that may be caused from the body constantly touching the coating around a breast implant. Someone with ALCL may notice sudden swelling in the breast, or a new hard lump over the breast implant. ALCL generally happens after the implant has been in the body for years (8 years on average).

ALCL has been linked to implants that have textured surfaces such as silicone and saline implants, and not implants with smooth surfaces. This condition is extremely rare. If you have Biocell textured surface implants, your chance of developing ALCL in your lifetime is 1 in 3600. Biocell textured surface implants were banned in Canada in April 2019.

Breast Implant Associated Squamous Cell Carcinoma

Recently there have been reports of other types of cancer found in the scar tissue that is formed around the implant. We don't know the risks and how common this type of cancer is at this time. The reports have been found with both smooth and textured implants either saline or silicone.

We are watching for this type of cancer and learning as much as we can.

Breast Implant Illness

Breast implant illness is a controversial condition that is not well known or understood. It can be linked with all types of breast implants (silicone or saline). Symptoms of breast implant illness varies from person to person. Although we do not know who can develop it, if you think you may be having symptoms, speak with your plastic surgeon. Removing the implant(s) may or may not get rid of symptoms or improve them.

What are the common side effects?

Pressure or tightness in the chest

- You may feel pressure or tightness in your chest when the surgeon adds the fluid by needle. Remember: the amount of fluid in your permanent implant will be less than the amount in your tissue expander.

Capsular contracture

- The breasts slowly get harder with the silicone or gel implants. This happens because the body usually forms a layer of scar tissue around a foreign object (the breast implant). This is called capsular contracture. In most patients, the scar tissue stays soft. But 1 in 10 patients (10%) have thicker skin than usual and a hard and painful breast. In these cases, surgery may be needed to help with the symptoms.

Other complications

- Infection (about 4 out of every 100 women)
- Implant not in the right position (about 3 out of every 100 women)
- Visible wrinkling from the implant (about 2.5 out of every 100 women)
- Too much movement or bending of the breast implant (up to 8 out of every 10 women — this varies from person to person)

In general, a new breast created by an implant will feel harder than a natural breast. It will always feel different than a natural breast. Implants are not lifelong devices and may need to be replaced in a person's lifetime.

2. Using your own tissue to make a new breast shape (Autologous)

Your surgeon may be able to use your own body tissue to make a new breast. This is called a **flap reconstruction**.

The surgeon can do the reconstruction by:

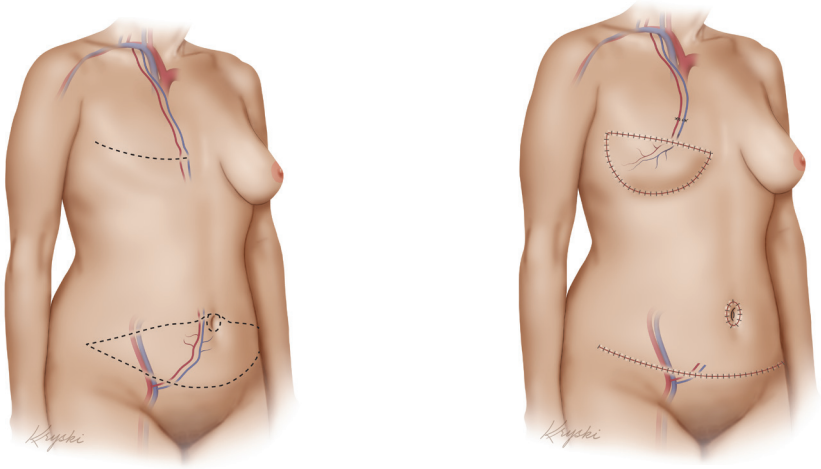
- Using fat and skin from your abdomen (DIEP flap)
- Using fat, skin and some muscle from your abdomen (TRAM flap)
- Using fat and skin from the buttock (Gluteal free flap)
- Using fat, skin and muscle from the inner thigh (TUG)

DIEP flap

This way of doing breast reconstruction uses your own skin and fat in the abdomen (stomach area) to make a new breast shape. We use blood vessels and the fat and skin from your lower abdomen.

The advantage of this surgery is that the muscles from your abdomen stay together. This keeps the abdominal wall stronger after your surgery.

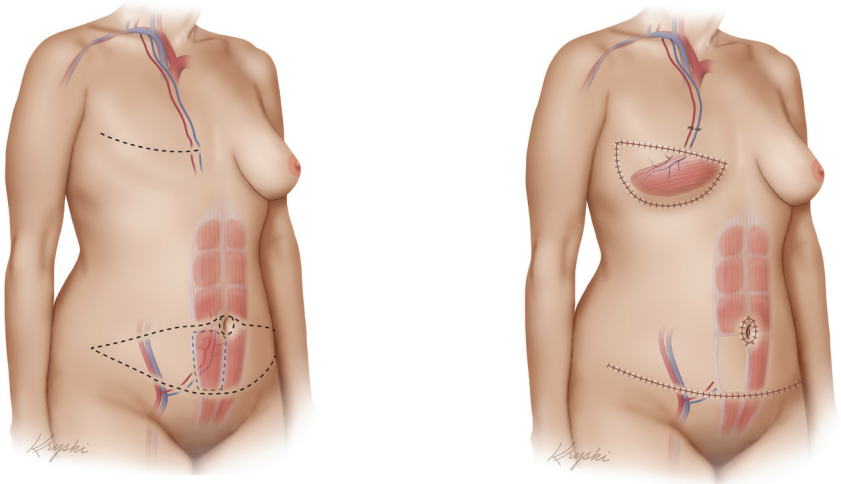
DIEP flap



Free Muscle-Sparing TRAM flap

Free muscle-sparing TRAM flap uses the abdominal fat, skin and some of the abdominal muscle to create the new breast shape. The decision to take a little or all of your muscle is made during your surgery and depends on your body type. The surgeon will try to leave your muscle if possible and safe to do so.

TRAM flap



During the free TRAM or DIEP flap, the surgeon takes skin, fat (with or without muscle) and moves it to the chest to make a new breast shape.

What are the risks?

In every 1 to 3 patients out of 100, the abdomen tissue that is moved to the chest does not reconnect. If this happens, the reconstruction does not work. This means you will need to do another type of breast reconstruction later on.

These flap surgeries may not work for you if you smoke, carry more body weight, or you have diabetes or clotting disorders.

What to expect

Look and feel of the new breast

- The new breast shape has a natural feel and look.
- The new breast lasts forever.
- The new breast will be fully built into your body so as your body weight changes, it will change too — just like a natural breast.

Scar

- The scar goes from side to side above your pubic hairline.
- This surgery removes extra skin and fat from your stomach, but it will not make your stomach flat. The reason for this surgery is to reconstruct the breast after cancer surgery, and not flatten the stomach.

Recovery

It takes about 6 – 8 weeks to recover from DIEP or TRAM.

- While most of the pain goes away in the first 2 weeks, the feeling of being very tired may last for the full 6 – 8 weeks.
- It’s common for the skin in the stomach area to feel full, tight or numb. These symptoms will get better over time, but it may take up to 6 months or more.

What are the risks for DIEP or TRAM?

Bulge or hernia

- In about every 5 out of 100 women (5%), especially those who need both breasts to be reconstructed, there is a higher chance of getting a bulge or hernia in your abdomen after the abdominal flap procedure. The risk of this is higher for the TRAM flap than the DIEP flap.
- Your surgeon will tell you what to expect in case of a bulge or hernia.

Fat necrosis

- Sometimes after a DIEP or TRAM flap, fat necrosis can happen in the new breast. That is when the fat from the flap does not get enough blood and forms a scar. It will look and feel like a hard lump under the breast skin. This can be scary for some patients who think that their breast cancer has come back.
- Your plastic surgeon can usually tell the difference between fat necrosis and cancer recurrence when they examine you. If there is any doubt, you will have a needle biopsy or a breast x-ray to make sure.

Gluteal free flap

Your surgeon may not be able to use the flap in your abdomen if you don't have enough fat or you have scarring from past surgeries.

This type of reconstruction will not be possible for every patient and depends on the amount of extra tissue available in your buttock area. But, the new breast shape will be softer and have a more natural shape than an implant.

Taking tissue from the buttock leaves a dent in that area that you can notice when you wear clothes. It also leaves a scar.

TUG (Inner thigh free flap)
The Transverse Upper Gracilis (TUG) flap is tissue from the inner thigh to create a smaller sized breast. Sometimes tissue from both inner thighs can be taken to create one breast. There is little change in shape in the inner thigh after this surgery.

In both the buttock and thigh flaps, the surgeon cannot take a lot of skin, so these surgeries are mostly used for immediate breast reconstruction, where the breast skin is not removed as the breast tissue is taken.

The buttock and thigh flaps are more difficult to do. You may see a different surgeon on the team with the specific skill to do this procedure. The success rate is similar to a TRAM or DIEP flap.

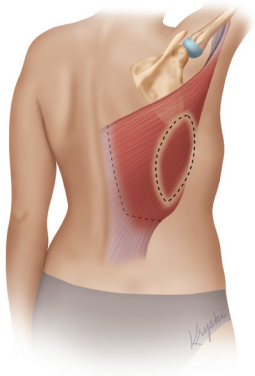
3. Using tissue from your back and an implant to make a new breast (Latissimus Dorsi flap)

What is the latissimus dorsi flap?

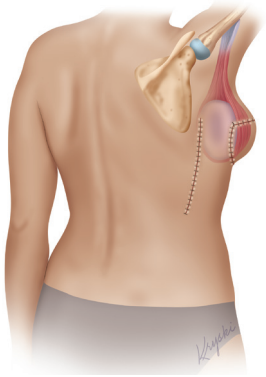
The latissimus dorsi flap is a muscle in your back, under your shoulder blade.

What happens during this reconstruction surgery?

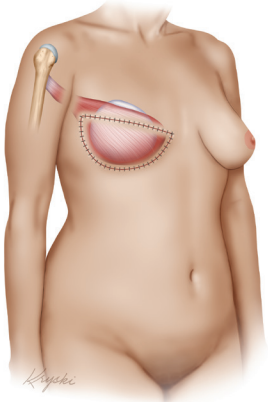
This type of breast reconstruction uses a smaller tissue expander or implant with your own tissue to make a new breast shape. This is because of the smaller size of your back tissue.



Your surgeon takes part of this flap from the upper back and moves it underneath the skin to the chest. But there is usually not enough flap to make the new breast shape by itself.



The surgeon then uses either a tissue expander or implant to stretch the muscle and skin from the back. Later you can replace the tissue expander with a permanent implant.



This picture shows the new breast shape after using tissue from the back (latissimus dorsi) with implant reconstruction.

This type of surgery may work for you if you had:

- a mastectomy on one of your breasts and radiation
- your surgeon says you should not have a TRAM, DIEP, TUG or gluteal flap

You should not have this surgery if you do a lot of activities where you have to move your arms over your head.

How to choose what type of reconstruction is right for you

The type of reconstruction you choose depends on:

- Size and shape of your breasts
- One or both breasts removed
- How much body tissue you have in other parts of your body such as your abdomen, thigh, and buttock
- Whether you had radiation therapy or need it.

Your plastic surgeon will recommend one or more options based on these factors. It is important that you understand the benefits and drawbacks of each method. The following table compares the different types of implant and tissue reconstruction.

Comparing different types of breast reconstruction

	Implant and expander	Autologous tissue	Latissmus Dorsi and expander
Surgery	2 shorter surgeries (both last 2 hours).	1 longer procedure (4 to 8 hours).	2 surgeries (3 hours and 2 hours).
Time in hospital	1 overnight stay for the first surgery. Day surgery for the second procedure.	About 3 to 4 days.	1 to 2 night stay for first surgery. Day surgery for second procedure.
Recovery	4 weeks after the first surgery. 2 to 4 weeks after the second surgery.	6 to 8 weeks.	3 to 4 weeks after the first surgery. 2 weeks after the second surgery.
Scars	Mastectomy scar only.	Mastectomy scar and scar where tissue was removed.	Scar on back. Flap insert at mastectomy scar.
Shape and feel	No natural sag. Gets firmer over time.	Very natural feel, soft.	More natural than implants alone.
Opposite breast	More changes needed to match the implant.	Fewer changes needed to match the other side.	Fewer changes needed to match the other side.
Problems	Breast feels more firmer and looks less natural over time. Possible risk of ALCL for textured implants.	Surgery doesn't work for 1 to 3 people out of 100. Weak abdomen. Bulge, hernia.	Less strength when you do overhead activities. Can be a collection of fluid where tissue removed (seroma).

Other Options

Matching the opposite breast

A reconstructed breast will not look exactly like your natural breast. If you have large breasts, you may need surgery to make your opposite breast smaller so it can match the reconstructed breast.

If you have smaller breasts that sag, you may need surgery to lift the natural breast. Or, you may need an augmentation with an implant to make the breasts match better. Both reductions and lifts leave permanent scars on your breasts.

Your plastic surgeon will talk to you about the exact location of the scars and the type of surgery you will need to balance the breasts.

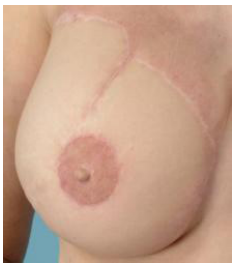
Reconstructing the nipple and areola

A surgeon can usually make a nipple and areola (the area around the nipple) from the tissue and fat of the reconstructed breast. This is done months after your breast reconstruction so the reconstructed breast can “settle”. If you have it done earlier, the nipple and areola may not be in the right place.

What to expect

- Usually, you only need local anesthesia (freezing medicine on the area of skin being operated).
- Usually, it is not painful.
- You do not need to stay overnight at the hospital.

The last step is a tattoo procedure to match the colour of your natural nipple and areola. You can do this either in our hospital or by a medical tattoo artist 10 weeks after your nipple and areolar reconstruction.



Reprinted with permission

This is a picture of the reconstructed nipple and areola using a local flap and tattoo.

3D nipple areola tattoo

3D tattoo is another option to recreate a nipple and areola. These tattoos are done by a medical tattoo artist outside of your surgeon's office. This option is not OHIP covered. A tattoo artist uses techniques of shading and colouring to make the nipple(s) look realistic.

Making your choice

Breast reconstruction is an elective surgery. This means it is not an emergency but it has been planned. You may have breast reconstruction to improve your self-image and confidence after a mastectomy.

If you are thinking about breast reconstruction, please make an appointment with one of our plastic surgeons to find out what options are available. Also, talk with your breast surgeon to find out if you are able to have breast reconstruction at the same time as mastectomy.

The decision to have breast reconstruction is personal. There are benefits, but you must be completely sure before you begin. If you are not sure now, remember that you can always choose to have breast reconstruction later.

Where to Get More Information

For more information about your reconstruction, please visit these websites:

University Health Network (UHN) Breast Reconstruction Program
www.myreconstruction.ca

UHN's Surgery and Critical Care: Plastic Surgery
UHN's Plastic Surgery provides additional support and resources.
www.plastics.uhnsurgery.com

BreastReconstruction.org
www.breastreconstruction.org

Canadian Cancer Society
The Canadian Cancer Society provides resources and additional support services.
www.cancer.ca

The Breast Reconstruction Guidebook
This guidebook deals with issues and questions you may have about mastectomy and reconstruction.
www.breastrecon.com

Cancer Care Ontario Breast Reconstruction Guidelines
Cancer Care Ontario provides policies and guidelines for cancer care in Ontario. See the link below to learn more about the breast reconstruction guidelines led by Dr. Zhong.
Call toll-free: 1 888 939-3333/TTY 1 886 786-3934
https://www.cancercareontario.ca/en/guidelines-advice/types-of-cancer/31721

Wellspring
Wellspring centres offer programs and services to anyone and at any stage in their cancer journey. No referral needed.
https://wellspring.ca

Cancer Rehab and Survivorship Program at Princess Margaret Cancer Centre
Ask your breast or plastic surgeon for a referral you to this Program.
https://www.uhn.ca/PrincessMargaret/Clinics/Cancer_Rehab_Survivorship

Psychosocial Oncology Clinic and Palliative Care
Staff in the Psychosocial Oncology Clinic and in the Department of Supportive Care can help patients and family members with a range of services including counselling and therapies to help with emotional well-being as well as pain management and more.

- www.uhn.ca/PrincessMargaret/Clinics/Psychosocial_Oncology
- www.uhn.ca/PrincessMargaret/Health_Professionals/Programs_Departments/Department_Supportive_Care

Rethink Breast Cancer
The first Canadian breast cancer charity to bring awareness to people under 40. Responds to the unique needs of young (or youngish) women going through cancer.
https://rethinkbreastcancer.com

The University of Toronto Division of Plastic and Reconstructive Surgery
Clinical, teaching and research programs available.
https://www.uoftplasticsurgery.ca

For more trusted information about breast cancer and breast reconstruction, go to:

Princess Margaret Patient & Family Library
Main Atrium, Princess Margaret Cancer Centre
Phone: 416 946 4501 extension 5383
www.library.theprincessmargaret.ca

You can help make a difference

Donating to our Program

Some of our patients ask if they can make a donation to support the Breast Restoration Program. Donations are very important to us. Your generous donations go towards funding our clinic and research program to improve the level of care for our breast reconstruction patients. You can make a donation through the Princess Margaret Hospital Foundation.

Please contact the Senior Campaign Director, The Princess Margaret Cancer Foundation.
Phone: 416 946 2353
Website: www.pmhf.ca

Taking part in research

We know that having your breasts reconstructed affects how you feel about yourself and your body. Our research focuses on understanding how breast reconstruction affects your satisfaction and quality of life. You may not benefit directly from the research, but we hope that what we learn will help us to improve patient care and help other patients and breast cancer survivors who choose breast reconstruction surgery.

For questions about any of our studies, contact:
Kate Butler, Clinical Research Coordinator
Phone: 416 340 4800 extension 2343
Email: kate.butler@uhnresearch.ca

Cancer Rehab and Survivorship Program

The Cancer Rehab and Survivorship Program provides many services to support you during and after your cancer treatment. You will access the Cancer Rehab and Survivorship program as an outpatient. This means you will not stay in the hospital to access the program.

Your doctor can suggest the Cancer Rehab and Survivorship Program for many reasons. Your reason for referral must be cancer-related.

Contact Information

The OneWalk Cancer Rehabilitation and Survivorship Centre
2nd floor – Princess Margaret Cancer Centre
610 University Avenue
Hours: Monday to Friday 9:00 am – 5:00 pm
Website: www.uhn.ca/PrincessMargaret/Clinics/Cancer_Rehab_Survivorship
Phone: 416 946 4501 ext. 2363
Email: survivorship@uhn.ca

Meet Your UHN Breast Reconstruction Plastic Surgeons & Program Team

Dr. Stefan O.P. Hofer M.D., Ph.D., FRCS(C)
Chief of the Division of Plastic Surgery

Katrina Aquino, Executive Assistant
Phone: 416 340 3449
Email: Katrina.Aquino@uhn.ca

Dr. Anne O'Neill MBBCh., MedSci., FRCS(Plast), MSc., PhD
Plastic and Reconstructive Surgeon

Mary Cabaron, Executive Assistant
Phone: 416 340 3143
Email: Mary.Cabaron@uhn.ca

Dr. Toni Zhong M.D., M.H.S., FRCS(C)
Director for the UHN Breast Reconstruction Program

Francisca Castro, Executive Assistant
Phone: 416 340 3858
Email: Francisca.Castro@uhn.ca

Agnes Wisniewski RN, BScN, MN
Clinical Nurse Coordinator
Toronto General Hospital
200 Elizabeth Street
Toronto, ON, M5G 2N2
Phone: 416 340 4800 ext. 5161
Email: Agnes.Wisniewski@uhn.ca

UNIVERSITY OF TORONTO
FACULTY OF MEDICINE

UHN The Princess Margaret Cancer Foundation

UHN Patient Education & Engagement strives to use gender-inclusive language in our printed and digital resources. We recognize there are limits to applying inclusive language when published studies, research, and other source materials use binary terms. This guide includes the gendered terms used in the source material. As language continues to change in health research, we will reassess and update our content.

Have feedback about this document?
Please fill out our survey. Use this link: surveymonkey.com/r/uhn-pe

All images printed with permission. Visit www.uhnpatienteducation.ca for more health information. Contact pfep@uhn.ca to request this brochure in a different format, such as large print or electronic formats.

Form: D-5810 | Author: Dr. Toni Zhong & Dr. Stefan Hofer, UHN Breast Restoration Program | Revised: 11/2024