Breast Reconstruction Surgery

Deciding Whether to Have Breast Reconstruction

Many women choose to have reconstruction surgery, but it might not be right for everyone. Learn more about the risks and benefits of breast reconstruction, as well as other options.

- Should I Get Breast Reconstruction Surgery?
- Breast Reconstruction Alternatives

Breast Reconstruction Options

There are many different types of breast reconstruction procedures. Some are done (or started) at the same time as mastectomy or lumpectomy, while others are done later. Learn more about your options.

- Breast Reconstruction Options

Know What to Expect

If you're planning to have breast reconstruction surgery, it's important to be prepared. Find out what you should ask your surgeon, and what to expect before and after your surgery.

- Questions to Ask Your Surgeon About Breast Reconstruction
- Preparing for Breast Reconstruction Surgery
- What to Expect After Breast Reconstruction Surgery

Should I Get Breast Reconstruction Surgery?

A woman who has surgery to treat breast cancer might also choose to have surgery to rebuild the shape and look of her breast. This is called **breastreconstruction surgery**. If you are thinking about having this done, it is best to talk about it with your surgeon and a plastic surgeon experienced in breast reconstruction **before** you have surgery to remove the tumor or breast. This lets the surgical teams plan the best treatment for you, even if you decide to wait and have reconstructive surgery later.

Reasons to have breast reconstruction

A woman might choose to have breast reconstruction for many reasons:

- To make her chest look balanced when she is wearing a bra or swimsuit
- To help make clothes fit better
- To permanently regain her breast shape
- So she won't have to use a breast form that fits inside the bra (an external prosthesis)
- To feel better about her body

Breast reconstruction often leaves scars, but they usually fade over time. Newer techniques have also reduced the amount of scarring. When you're wearing a bra, your breasts should be alike enough in size and shape to let you feel comfortable about how you look in most types of clothes.

After a lumpectomy or mastectomy, breast reconstruction can make you feel better about how you look and renew your self-confidence. But keep in mind that the reconstructed breast will not be a perfect match or substitute for your natural breast. If tissue from your tummy, back, thigh, or buttocks was used as part of the reconstruction, those areas will also look different after surgery. Before you make your decision, talk with your surgeon about scars and changes in shape or contour. Ask where they will be, and how they will look and feel after they heal.

Risks of breast reconstruction

Of course, it's important to consider the potential risks and side effects of breast reconstruction surgery as well. These are discussed in What to Expect After Breast

Reconstruction Surgery.

Can reconstructed breasts hide cancer or make it come back?

Studies show that reconstruction does not make breast cancer come back. If the cancer does come back, reconstructed breasts should not cause problems finding the cancer or treating it.

If you are thinking about having breast reconstruction, either with an implant or tissue flap (your own tissue), you need to know that reconstruction rarely hides a return of breast cancer. You should not consider this a big risk when deciding to have breast reconstruction.

Some important things to think about

- You might have a choice between having breast reconstruction at the same time as your breast cancer surgery (**immediate reconstruction**) or later (**delayed reconstruction**).
- Some women don't want to make decisions about reconstruction while being treated for breast cancer. If this is the case, you might choose to wait until after your surgery to decide about delayed reconstruction.
- You might not want to have more surgery than is absolutely needed.
- Not all reconstructive surgery is a total success, and the result might not look the way you had hoped. It is important to discuss expectations with your plastic surgeon.
- The cancer surgery and reconstruction surgery will leave scars on your breast and any areas where tissue was moved to create the new breast mound, such as the buttocks, tummy, thigh, or back areas.
- A rebuilt breast will not have the same feeling as the natural breast. Sometimes, it may have little or no feeling at all. The places the tissue to rebuild the breast was taken from (donor sites) might also lose some feeling. Over time, the skin might become more sensitive, but it won't feel the same as it did before the surgery.
- You might have extra concerns if you tend to bleed or scar more than most people.
- Poor blood flow might cause some or all areas of the breast skin or flaps to die after reconstructive surgery. This death of the tissue is called **necrosis**. If it happens, healing is delayed and more surgery is often needed to fix the problem.
- Healing could be affected by previous surgery, chemotherapy, or radiation therapy. It can also be affected by smoking, diabetes, being obese[1], and other factors.

- Surgeons might suggest you wait to have reconstruction, especially if you smoke or have other health problems. It's often recommended to quit smoking at least 2 months before reconstructive surgery to allow for better healing. You might not be able to have reconstruction at all if you are obese, actively smoke, or have blood circulation problems.
- The surgeon might suggest surgery to reshape your other breast to match the reconstructed breast. This is a called a **symmetrizing procedure**. This could include reducing or enlarging its size, or even surgically lifting the breast.
- If radiation[2] will be part of a woman's treatment, the types of immediate reconstruction surgery she will be able to have might be limited. Certain types of reconstruction done before radiation can cause problems and lower the chances the rebuilt breast will look and feel as natural as possible, after the radiation is given. You should discuss your best options with your plastic surgeon before surgery.
- Meeting with a plastic surgeon and knowing your reconstruction options before surgery can help you have more realistic expectations for the outcomes.

Help and support from someone who's been there

It's important to know that there is advice and support out there to help you understand your reconstruction options as well as cope with the changes you're going through if you have chosen reconstruction. Speaking with your doctor or other members of your health care team is often a good place to start. If you would like to talk with someone who has had your type of reconstruction, ask about our Reach to Recovery® program[3]. Reach To Recovery volunteers are breast cancer survivors trained to support others facing breast cancer, as well as those who are thinking about having breast reconstruction. They can give you suggestions, reading material, and advice. Ask someone on your cancer care team to refer you to a volunteer or program in your area or call us at 1-800-227-2345.

Hyperlinks

1. www.cancer.org/healthy/eat-healthy-get-active/take-control-your-weight/body-mass-index-bmi-calculator.html
2. www.cancer.org/cancer/breast-cancer/treatment/radiation-for-breast-cancer.html
3. www.cancer.org/support-programs-and-services/reach-to-recovery.html

References

American Society of Plastic Surgeons. Breast Reconstruction. Accessed at https://www.plasticsurgery.org/reconstructive-procedures/breast-reconstruction on July 20, 2021.

Clemons MW and Horwitz SM. NCCN Consensus Guidelines for the Diagnosis and Management of Breast Implant-Associated Anaplastic Large Cell Lymphoma. Aesthet Surg J. 2017; 37(3): 285-289.

Djohan R, Gage E, Bernard S. Breast reconstruction options following mastectomy. *Cleve Clin J Med*. 2008;75 Suppl 1:S17-23.

Farhangkhoee H, Matros E, Disa J. Trends and concepts in post-mastectomy breast reconstruction. *J Surg Oncol*. 2016;113(8):891–894.

Jagsi R, King TA, Lehman C, Morrow M, Harris JR, Burstein HJ. Chapter 79: Malignant Tumors of the Breast. In: DeVita VT, Lawrence TS, Lawrence TS, Rosenberg SA, eds. *DeVita, Hellman, and Rosenberg's Cancer: Principles and Practice of Oncology*. 11th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2019.

Ho AY, Hu ZI, Mehrara BJ, Wilkins EG. Radiotherapy in the setting of breast reconstruction: types, techniques, and timing. *Lancet Oncol.* 2017 Dec;18(12):e742-e753.

Leberfinger AN, Behar BJ, Williams NC, Rakszawski KL, Potochny JD, Mackay DR, Ravnic D. Breast Implant-Associated Anaplastic Large Cell Lymphoma: A Systematic Review. *JAMA Surg*. 2017 Dec 1;152(12):1161-1168.

McCarthy CM, Loyo-Berríos N, Qureshi AA, Mullen E, Gordillo G, Pusic AL et al. Patient Registry and Outcomes for Breast Implants and Anaplastic Large Cell Lymphoma Etiology and Epidemiology (PROFILE): Initial Report of Findings, 2012-2018. *Plast Reconstr Surg*. 2019 Mar;143(3S A Review of Breast Implant-Associated Anaplastic Large Cell Lymphoma):65S-73S.

Nahabedian M and Gutowski KA. Complications of reconstructive and aesthetic breast surgery. In Collins KA, ed. *UpToDate*. Waltham, Mass.: UpToDate, 2021. https://www.uptodate.com. Accessed July 19, 2021.

National Cancer Institute. Breast Reconstruction After Mastectomy. 2017. Accessed at https://www.cancer.gov/types/breast/reconstruction-fact-sheet on July 20, 2021.

National Comprehensive Cancer Network (NCCN). Practice Guidelines in Oncology: Breast Cancer. Version 5.2021. Accessed at https://www.nccn.org/professionals/physician_gls/pdf/breast.pdf on July 20, 2021.

US Food and Drug Administration. Breast Implant Surgery. Updated March 31, 2021. Accessed at https://www.fda.gov/medical-devices/breast-implants/breast-implant-surgery on July 20, 2021.

US Food and Drug Administration. Questions and Answers about Breast Implant-Associated Anaplastic Large Cell Lymphoma (BIA-ALCL). Updated October 23, 2019. Accessed at https://www.fda.gov/medical-devices/breast-implants/questions-and-answers-about-breast-implant-associated-anaplastic-large-cell-lymphoma-bia-alcl on July 20, 2021.

US Food and Drug Administration. Risks and Complications of Breast Implants. Updated September 28, 2020. Accessed at https://www.fda.gov/medical-devices/breast-implants/risks-and-complications-breast-implants on July 20, 2021.

US Food and Drug Administration. Things to Consider Before Getting Breast Implants. Updated September 28, 2020. Accessed at https://www.fda.gov/medical-devices/breast-implants/things-consider-getting-breast-implants on July 20 2021.

Weathers WM, Wolfswinkel EM, Hatef DA, et al. Implant-associated anaplastic large cell lymphoma of the breast: Insight into a poorly understood disease. *Can J Plast Surg*. 2013;21:95-98.

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Breast Reconstruction Alternatives

Some women who have breast cancer surgery as part of their breast cancer treatment decide not to have breast reconstruction.

They might decide they don’t want to have any more surgery than they need to treat the cancer, or that they want to be able to get back to their normal activities as soon as possible. Some women are just more comfortable with how they look and feel after the surgery to remove their cancer. Cost might also be an issue, especially for women who

don’t have insurance coverage. If a woman changes her mind later, reconstruction is usually still an option. But keep in mind that it may be easier to get the result you want if you make the decision before you have the breast cancer surgery.

For other women, breast reconstruction might be difficult, or even not possible, because of other health issues they have. For example, you might not be able to have reconstruction if you are obese or have blood circulation problems, such as from continued smoking or poorly controlled diabetes.

Women who don’t want breast reconstruction after surgery have two options:

- Using a breast form or prosthesis (inside the bra or attached to the body to wear under their clothes)
- Going flat (not wearing a breast form)

Using a breast form or prosthesis

A **breast form** is a prosthesis (artificial body part) worn either inside a bra or attached to the body to simulate the look and feel of a natural breast. Wearing a breast form is an option for women who have decided not to get reconstructive surgery but want to keep the same look under their clothes. If you haven’t decided about reconstruction, or are having reconstruction later, you might decide to use a breast form for a while.

Most breast forms are made from materials that try to copy the movement, feel, and weight of natural breast tissue. A properly weighted form provides the balance your body needs for correct posture and anchors your bra, keeping it from riding up. At first, these forms may feel too heavy, but in time they should begin to feel natural.

If you are planning to use a breast form, your doctor will tell you when you have healed enough to be fitted for a permanent breast form or prosthesis.

Choosing the right bra for your breast form

The right bra for you may very well be the one you have always worn. It may or may not need adjustments. If there is tenderness during healing, a bra extender (small pieces of fabric that attach to your bra fastener) can help by increasing the width of the bra so that it does not wrap around the chest too tightly. Women with large, heavy breasts can lessen pressure on shoulder straps by sliding a bra shoulder pad under one or both straps.

If you decide to wear your breast form in a pocket in your bra, you can have your regular bra altered. There are also special mastectomy bras with the pockets already sewn in. If the breast form causes any kind of skin irritation, use a bra with a pocket. If your bra has underwires, you may be able to wear it, but be sure to clear this with your doctor.

If you want to wear your prosthesis under sleepwear but would like something more comfortable than a regular bra, look for a soft bra, sometimes called a **leisure** or **night bra**. These are in most department stores.

Finding and paying for breast prostheses

Prices for breast forms vary considerably. High price doesn't necessarily mean that the product is the best for you. Take time to shop for a good fit, comfort, and an attractive, natural appearance in the bra and under clothing. Your clothes should fit the way they did before surgery.

Insurance coverage of breast prostheses is not all the same. Be sure to contact your health insurance company to find out what will be covered and how you must submit claims. Also, ask your doctor to write prescriptions for your prosthesis and for any special mastectomy bras. When purchasing bras or breast forms, mark the bills and any checks you write "surgical." Medicare and Medicaid[1] can be used to pay for some of these expenses if you are eligible. The cost of breast forms and bras with pockets and the cost of having a bra altered might be tax deductible. Keep careful records[2] of all related expenses.

Some insurance companies will not cover both a breast prosthesis and reconstructive surgery. That can mean that if you submit a claim for a prosthesis or bra to your insurance company, in some cases the company **will not** cover reconstruction, should you choose this procedure in the future. Make sure you get all the facts before submitting any insurance claims.

Going flat

Some women, who do not have reconstruction surgery, decide not to wear a breast form, either.

For most women, there aren’t likely to be any added health issues from going flat, especially if both breasts were removed. But if you’ve only had one breast removed, you might notice issues with balance, posture, or back pain, especially if you have large breasts. This is one reason some women prefer to wear a breast form – to balance out

the weight on their chest. Talk to your doctor about your options if you think this might be an issue for you.

Some women might use a breast form when they are out, but not when at home. This might be because they find breast forms uncomfortable or too expensive, or just because they're comfortable with how they look and feel without a breast form and don't feel the need to wear one.

If the idea of going flat appeals to you but you're worried about what others might think, try going without a breast form in different situations, such as at home, out with friends, or while out running errands. You might find that most people won't notice a difference. If you find you still feel self-conscious, you can always go back to wearing a breast form.

If you decide to go flat, you might want to consider wearing clothing that might help you feel more comfortable with your appearance. Try wearing tops that are not tight fitting and that have busy patterns, or layer sweaters or jackets over close-fitting tops. Scarves and shawls can also cover all or part of your chest.

Some women might like the idea of going flat but are uncomfortable about not having nipples. Some companies now make **nipple prosthetics**, which are made of silicone or other materials and look and feel like real nipples. They can be attached to the chest and then taken off when you choose.

Hyperlinks

1. www.cancer.org/treatment/finding-and-paying-for-treatment/understanding-health-insurance/government-funded-programs/medicare-medicaid.html
2. www.cancer.org/treatment/finding-and-paying-for-treatment/managing-health-insurance/managing-health-insurance-when-someone-has-cancer.html

References

American Society of Plastic Surgeons. Breast Reconstruction. Accessed at https://www.plasticsurgery.org/reconstructive-procedures/breast-reconstruction on July 20 2021.

De La Cruz L, Blankenship SA, Chatterjee A, et al. Outcomes after oncoplastic breast-conserving surgery in breast cancer patients: A systematic literature review. Annals of Surgical Oncology 2016; 23(10):3247-3258.

Jagsi R, Jiang J, Momoh AO, et al. Trends and variation in use of breast reconstruction in patients with breast cancer undergoing mastectomy in the United States. *J Clin Oncol*. 2014;32(9):919–926.

Jagsi R, King TA, Lehman C, Morrow M, Harris JR, Burstein HJ. Chapter 79: Malignant Tumors of the Breast. In: DeVita VT, Lawrence TS, Lawrence TS, Rosenberg SA, eds. *DeVita, Hellman, and Rosenberg's Cancer: Principles and Practice of Oncology*. 11th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2019.

Mehrara BJ, Ho AY. Breast Reconstruction. In: Harris JR, Lippman ME, Morrow M, Osborne CK, eds. *Diseases of the Breast*. 5th ed. Philadelphia: Wolters Kluwer Health; 2014.

National Cancer Institute. Breast Reconstruction After Mastectomy. 2017. Accessed at https://www.cancer.gov/types/breast/reconstruction-fact-sheet on July 20, 2021.

National Comprehensive Cancer Network (NCCN). Practice Guidelines in Oncology: Breast Cancer. Version 5.2021. Accessed at https://www.nccn.org/professionals/physician_gls/pdf/breast.pdf on July 20, 2021.

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Breast Reconstruction Options

Women who have had surgery to treat breast cancer can choose from several types of breast reconstruction. When deciding what type is best for you, you and your doctors should discuss factors including your health and your personal preferences. Take the time to learn what options are available to you and consider talking to others who have had that procedure before you make a decision.

Types of breast reconstruction procedures

Several types of reconstructive surgery are available, and often the process means more than one operation. Give yourself plenty of time to make the best decision for you. You should make your decision about breast reconstruction only after you are fully informed.

The two main types of breast reconstruction are **implant reconstruction** and **tissue (flap) reconstruction**. Sometimes the implant and flap procedures are used together to rebuild a breast.

For all types of breast reconstruction there is often an opportunity for future “touch up” procedures, such as fat grafting and scar revisions. Breast reconstruction can also recreate the nipple-areolar area that can be done with a small surgical procedure, tattooing, or a combination of both. This is done to help make the reconstructed breast look more like the original breast.

For information about the procedures to reconstruct the shape of your breast or breasts see the following pages:

- Breast Reconstruction After Breast-Conserving Surgery
- Breast Reconstruction Using Implants
- Breast Reconstruction Using Your Own Body Tissues (Flap Procedures)
- Reconstructing the Nipple and Areola After Breast Surgery

Choosing which type of breast reconstruction to have

If you’ve decided to have breast reconstruction, you’ll still have many things to think about as you and your doctors talk about what type of reconstruction might be best for you. Some of the factors you and your doctors will need to think about when considering your options include:

- Your overall health (including issues that might affect your healing, such as smoking or certain health conditions)
- The size and location of your breast cancer
- Your breast size
- The extent of your breast cancer surgery - if you are a candidate for lumpectomy or mastectomy, and the possibility to keep your nipple
- Whether you will need cancer treatments other than surgery
- The amount of tissue available for reconstruction (for example, very thin women may not have enough extra tummy tissue to use this area for breast reconstruction and having a "tummy tuck" in the past makes the tummy tissue not usable for breast reconstruction)
- Whether you want reconstructive surgery on one or both breasts
- Your desire to match the look of the other breast

- Your insurance coverage and related costs for the unaffected breast
- How quickly you want to be able to recover from surgery
- Your willingness to have more than one surgery as part of the reconstruction
- How different types of reconstructive surgery might affect other parts of your body

Your surgeon will review your medical history and overall health, and will explain which reconstructive options might be best for you based on your age, health, body type, lifestyle, goals, and other factors. Talk with your surgeon openly about your preferences. Be sure to voice any concerns and priorities you have for the reconstruction and find a surgeon you feel comfortable with. Your surgeon should explain the limits, risks, and benefits of each option.

References

American Society of Plastic Surgeons. Breast Reconstruction. Accessed at https://www.plasticsurgery.org/reconstructive-procedures/breast-reconstruction on July 28, 2021.

De La Cruz L, Blankenship SA, Chatterjee A, et al. Outcomes after oncoplastic breast-conserving surgery in breast cancer patients: A systematic literature review. Annals of Surgical Oncology 2016; 23(10):3247-3258.

Jagsi R, King TA, Lehman C, Morrow M, Harris JR, Burstein HJ. Chapter 79: Malignant Tumors of the Breast. In: DeVita VT, Lawrence TS, Lawrence TS, Rosenberg SA, eds. *DeVita, Hellman, and Rosenberg's Cancer: Principles and Practice of Oncology*. 11th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2019.

Losken A, Pinell-White X, Hodges M, Egro FM. Evaluating outcomes after correction of the breast conservation therapy deformity. *Ann Plast Surg*. 2015 Jun;74 Suppl 4:S209-13.

Mehrara BJ, Ho AY. Breast Reconstruction. In: Harris JR, Lippman ME, Morrow M, Osborne CK, eds. *Diseases of the Breast*. 5th ed. Philadelphia: Wolters Kluwer Health; 2014.

National Comprehensive Cancer Network (NCCN). Practice Guidelines in Oncology: Breast Cancer. Version 5.2021. Accessed at https://www.nccn.org/professionals/physician_gls/pdf/breast.pdf on July 28, 2021.

Patel K, Bloom J, Nardello S, Cohen S, Reiland J, Chatterjee A. An Oncoplastic Surgery Primer: Common Indications, Techniques, and Complications in Level 1 and 2 Volume Displacement Oncoplastic Surgery. *Ann Surg Oncol*. 2019 Jul 24. doi: 10.1245/s10434-019-07592-5. [Epub ahead of print]

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Breast Reconstruction After Breast-conserving Surgery

Breast-conserving surgery[1] does not remove the entire breast and women are often able to keep their nipples. Most women who have this type of surgery do not need breast reconstruction. However, some women might end up having a breast deformity as a result of the cancer surgery; for example, dimpling caused by removing a large tumor from a small breast. Some doctors are addressing this type of problem by combining cancer surgery and plastic surgery techniques, known as **oncoplastic surgery**. This type of reconstruction can often be done at the same time as your breast cancer surgery without the need for more operations.

These women may be candidates for different types of breast reconstruction to reshape the breast. One or more of the following techniques may be used to get the best results:

- Breast lift (mastopexy)
- Breast reduction (reduction mammaplasty)
- Tissue flaps from areas close by like the back

Hyperlinks

1. www.cancer.org/cancer/breast-cancer/treatment/surgery-for-breast-cancer/breast-conserving-surgery-lumpectomy.html

References

American Society of Plastic Surgeons. Breast Reconstruction. Accessed at

https://www.plasticsurgery.org/reconstructive-procedures/breast-reconstruction on July 28, 2021.

De La Cruz L, Blankenship SA, Chatterjee A, et al. Outcomes after oncoplastic breast-conserving surgery in breast cancer patients: A systematic literature review. Annals of Surgical Oncology 2016; 23(10):3247-3258.

Djohan R, Gage E, Bernard S. Breast reconstruction options following mastectomy. *Cleve Clin J Med*. 2008;75 Suppl 1:S17-23.

Jagsi R, King TA, Lehman C, Morrow M, Harris JR, Burstein HJ. Chapter 79: Malignant Tumors of the Breast. In: DeVita VT, Lawrence TS, Lawrence TS, Rosenberg SA, eds. *DeVita, Hellman, and Rosenberg's Cancer: Principles and Practice of Oncology*. 11th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2019.

Losken A, Pinell-White X, Hodges M, Egro FM. Evaluating outcomes after correction of the breast conservation therapy deformity. *Ann Plast Surg*. 2015 Jun;74 Suppl 4:S209-13.

Mehrara BJ, Ho AY. Breast Reconstruction. In: Harris JR, Lippman ME, Morrow M, Osborne CK, eds. *Diseases of the Breast*. 5th ed. Philadelphia: Wolters Kluwer Health; 2014.

National Comprehensive Cancer Network (NCCN). Practice Guidelines in Oncology: Breast Cancer. Version 5.2021. Accessed at https://www.nccn.org/professionals/physician_gls/pdf/breast.pdf on July 28, 2021.

Patel K, Bloom J, Nardello S, Cohen S, Reiland J, Chatterjee A. An Oncoplastic Surgery Primer: Common Indications, Techniques, and Complications in Level 1 and 2 Volume Displacement Oncoplastic Surgery. *Ann Surg Oncol*. 2019 Jul 24. doi: 10.1245/s10434-019-07592-5. [Epub ahead of print].

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Breast Reconstruction Using Implants

Mastectomy[1] removes the entire breast, but the skin and nipple can sometimes be

saved. Using a breast implant is one option for reconstructing the shape of your breast after mastectomy. It usually means having at least two operations.

- The **first surgery** places a tissue expander, a flat “water balloon” that will be gradually filled (expanded) during office visits until a desired size is reached.
- The **second surgery** replaces the tissue expander with a breast implant. Additional procedures could be done to reconstruct the nipple-areola area or revisions to improve the overall look.

What types of implants are used for breast reconstruction?

Several types of breast implants can be used to rebuild the breast. Most implants in the US are made of a flexible silicone outer shell, and they can contain saline or silicone gel. Other types of implants that have different shells and are filled with different materials are being studied, but these are only available if you are taking part in a clinical trial.

It's important to discuss the benefits and risks of the different types of implants with your doctor.

Saline breast implants

Saline implants are filled with sterile (germ-free) salt water. These types of implants have been used the longest. A newer type, called a **structured saline implant,** is also filled with sterile salt water, but is made with an inner structure to help give the reconstructed breast a more natural look and feel.

Silicone breast implants

Silicone gel implants tend to feel a bit more like natural breast tissue. All silicone breast implants in the US are made of **cohesive gel,** which is a thicker type of silicone implant. Form-stable implants, the thickest ones, are sometimes called **gummy bear** or **highlycohesive** breast implants. The name means that they keep their shape even if the shell is cut or broken. They are firmer than regular implants and might be less likely to rupture (break), although this still might happen.

There are different shapes and sizes of saline and silicone implants, and they can have either a **smooth** or **textured (rough)** surface. Any type of implant might need to be replaced at some point if it leaks or ruptures.

How are implant procedures done?

You might have a choice between having breast reconstruction at the same time as the surgery to treat the cancer **(immediate reconstruction)** or later **(delayed reconstruction)**.

Immediate breast reconstruction

Immediate breast reconstruction starts at the same time as the mastectomy. It is usually completed in stages and at least two operations are needed. The first stage is during the mastectomy, when the plastic surgeon places a tissue expander ("water balloon") under the skin or muscle on your chest. Mesh is sometimes used to hold the expander in place, much like a hammock or sling. The water balloon starts off flat and is then expanded during office visits until the desired size is reached. The second stage removes the tissue expander and replaces it with a permanent breast implant. The timing of the second stage (implant placement) can be planned and safely postponed if needed, because of cancer treatments such as chemotherapy. If necessary, additional procedures could recreate the nipple-areola area or could be revisions to improve the overall look.

A small number of women might be candidates for a **direct to implant** breast reconstruction. This means the breast implant is put in place at the same time as the mastectomy. Women most often suitable for this type of reconstruction are young, have small breasts, and have no health problems. In this situation, a tissue expander is not used. After the surgeon removes the breast tissue, a plastic surgeon puts in a breast implant. The implant can be put under the skin or muscle on your chest. Mesh is sometimes used to hold the implant in place, much like a hammock or sling.

Delayed breast reconstruction

Delayed breast reconstructionmeans that rebuilding happens later, often months, after the mastectomy**.** The reconstruction starts when the chest is flat. A tissue expander is placed under the chest wall muscle or skin. This will help to make a pocket to put the implant into at a later date. The tissue expander is a balloon-like sac that starts off flat and is slowly expanded to the desired size to allow the skin to stretch. Once the skin over the breast area has stretched enough, a second surgery is done to remove the expander and put in the permanent implant.

If radiation therapy after mastectomy is part of your cancer treatment, you might not be a good candidate for implant reconstruction and should discuss other reconstruction options, such as tissue flaps, with your plastic surgeon.

Tissue expanders are filled by the surgeon injecting a salt-water solution through a tiny valve under the skin at regular intervals (every 1, 2, or 3 weeks) to fill the expander over several months.

You might choose to delay breast reconstruction if:

- **You don’t want to think about reconstruction while coping with the cancer treatment.** If this is the case, you might choose to wait until after your breast cancer surgery to decide about reconstruction.
- **You have other health problems.** Your surgeon might suggest you wait for one reason or another, especially if you smoke or have other health problems. It’s best to quit smoking at least 2 months before reconstructive surgery to allow for better healing.
- **You need radiation therapy.** Many doctors recommend that women not have immediate reconstruction if they will need radiation treatments after surgery. Radiation can cause problems after surgery such as delayed healing and scarring, and can lower the chances of success. Flap reconstruction surgery (using other body tissues to create the new breast) is often delayed until after radiation.

Your surgical team will discuss your best reconstruction options, taking into account your medical history, body shape, cancer treatment, and personal goals.

Tissue support for implants

Some plastic surgeons choose to use donated human skin or pig skin to support tissue expanders or implants. These are known as **acellular dermal matrix** (ADM) products because they have had the human or pig cells removed. This reduces any risk that they carry diseases or that the woman's body will reject them. They are mainly made of collagen so the person’s own connective tissue can grow over the framework to extend and support natural tissues and help them grow and heal. ADMs can help support and position the tissue expander or implant.

The use of acellular matrix products in breast surgery first started in the early 2000s. Studies that look at outcomes are still being done, but they have been promising overall. This type of tissue is not used by every plastic surgeon, but it is becoming more widely available. Talk with your doctor about whether these materials will be used in your reconstruction and about their benefits and risks.

Risks of illness from breast implants

In the past, there were concerns about possible health issues from ruptured silicone-filled implants, such as connective tissue disease, breast cancer, or reproductive problems. So far, studies show that silicone implants do not increase the risk of these health problems. Some people with breast implants may have symptoms of joint pain, memory loss, or fatigue. It is not clear if these symptoms are related to the breast implants and more research is being done.

Rare cancers

Breast implants have been linked with some rare types of cancer, which can develop in the scar tissue (capsule) around the implant.

For example, **breast implant-associated anaplastic large cell lymphoma (BIA-ALCL)** is a rare type of non-Hodgkin lymphoma that can develop several years after the implant is placed. It occurs more often when the implants have textured (rough) surfaces rather than smooth surfaces. BIA-ALCL can show up as a collection of fluid, a lump, pain, or swelling near the implant, or as asymmetry (uneven breasts). If you have any concerning symptoms, discuss them with your doctor.

Early-stage BIA-ALCL is often treated with surgery to remove the implant and capsule. Radiation therapy may be used if the lymphoma can't be removed completely. More advanced disease might require chemotherapy and/or other treatments.

There have also been rare reports of other types of cancer forming in the scar tissue around a breast implant, including some types of **lymphomas** (other than BIA-ALCL) and **squamous cell carcinoma**. These reports are fairly recent, so not much is known about these cancers at this time.

Things to think about before getting implants

Most women will do well with implants. But there are some important factors to keep in mind if you are thinking about having implants to reconstruct the breast and/or to make the other breast match the reconstructed one:

- The longer you have breast implants, the greater the chance you might need more surgery to remove and/or replace your implant later.
- You might have problems with breast implants. They can break (rupture) or cause infection or pain. Scar tissue may form around the implant (called capsular contracture), which can make the breast hard or change shape, so that it no longer looks or feels like it did just after surgery. Most of these problems can be fixed with

surgery, but others might not.
- Breast MRIs may be recommended every few years to make sure silicone gel implants have not broken. Your health insurance might not cover this. Talk to your plastic surgeon if you have any questions regarding the indication for breast MRIs.

Hyperlinks

1. www.cancer.org/cancer/breast-cancer/treatment/surgery-for-breast-cancer/mastectomy.html

References

American Society of Plastic Surgeons. Breast Reconstruction. Accessed at https://www.plasticsurgery.org/reconstructive-procedures/breast-reconstruction on July 28, 2021.

Breuing KH, Warren SM. Immediate bilateral breast reconstruction with implants and inferolateral AlloDerm slings. *Ann Plast Surg*. 2005;55(3):232-239. doi:10.1097/01.sap.0000168527.52472.3c.

De La Cruz L, Blankenship SA, Chatterjee A, et al. Outcomes after oncoplastic breast-conserving surgery in breast cancer patients: A systematic literature review. *Annals of Surgical Oncology.* 2016; 23(10):3247-3258.

Hedén P, Bronz G, Elberg JJ, et al. Long-term safety and effectiveness of style 410 highly cohesive silicone breast implants. *Aesthetic Plast Surg*. 2009;33:430-436.

Hillard C, Fowler JD, Barta R, Cunningham B. Silicone breast implant rupture: a review. *Gland Sur*g. 2017 Apr;6(2):163-168.

Jagsi R, King TA, Lehman C, Morrow M, Harris JR, Burstein HJ. Chapter 79: Malignant Tumors of the Breast. In: DeVita VT, Lawrence TS, Lawrence TS, Rosenberg SA, eds. *DeVita, Hellman, and Rosenberg's Cancer: Principles and Practice of Oncology*. 11th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2019.

Macadam SA, Lennox PA. Acellular dermal matrices: Use in reconstructive and aesthetic breast surgery. *Can J Plast Surg*. 2012;20(2):75–89. doi:10.1177/229255031202000201.

Mehrara BJ, Ho AY. Breast Reconstruction. In: Harris JR, Lippman ME, Morrow M, Osborne CK, eds. *Diseases of the Breast*. 5th ed. Philadelphia: Wolters Kluwer Health; 2014.

Nahabedian M. Implant-based breast reconstruction and Augmentation. In Collins KA, ed. *UpToDate*. Waltham, Mass.: UpToDate, 2021. https://www.uptodate.com. Accessed July 28, 2021.

Nahabedian M and Gutowski KA. Complications of reconstructive and aesthetic breast surgery. In Collins KA, ed. *UpToDate*. Waltham, Mass.: UpToDate, 2021. https://www.uptodate.com. Accessed July 28, 2021.

National Cancer Institute. Breast Reconstruction After Mastectomy. 2017. Accessed at https://www.cancer.gov/types/breast/reconstruction-fact-sheet on August 2, 2021.

National Comprehensive Cancer Network (NCCN). Practice Guidelines in Oncology: Breast Cancer. Version 5.2021. Accessed at https://www.nccn.org/professionals/physician_gls/pdf/breast.pdf on July 28, 2021.

Powell LE, Andersen ES, Nigro LC, Pozez AL, Shah PA. Breast Implants: A Historical Review With Implications for Diagnosis and Modern Surgical Planning. *Ann Plast Surg*. 2021;87(2):211-221. doi:10.1097/SAP.0000000000002731.

Regan JP, Casaubon JT. Breast Reconstruction. [Updated 2021 May 4]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2021 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK470317/.

Spear SL, Parikh PM, Reisin E, Menon NG. Acellular dermis-assisted breast reconstruction. *Aesthetic Plast Surg*. 2008;32:418-425.

US Food and Drug Administration. Breast Implant Surgery. Updated March 31,, 2021. Accessed at https://www.fda.gov/medical-devices/breast-implants/breast-implant-surgery on July 28, 2021.

US Food and Drug Administration. Questions and Answers about Breast Implant-Associated Anaplastic Large Cell Lymphoma (BIA-ALCL). Updated October 23, 2019. Accessed at https://www.fda.gov/medical-devices/breast-implants/questions-and-answers-about-breast-implant-associated-anaplastic-large-cell-lymphoma-bia-alcl on July 28, 2021.

US Food and Drug Administration. Risks and Complications of Breast Implants. Updated September 28, 2020. Accessed at https://www.fda.gov/medical-devices/breast-

implants/risks-and-complications-breast-implants on July 28, 2021.

US Food and Drug Administration. Things to Consider Before Getting Breast Implants. Updated September 28, 2020. Accessed at https://www.fda.gov/medical-devices/breast-implants/things-consider-getting-breast-implants on July 28, 2021.

US Food and Drug Administration. Types of Breast Implants. Updated October 23, 2019. Accessed at https://www.fda.gov/medical-devices/breast-implants/types-breast-implants on July 28, 2021.

Valdatta L, Cattaneo AG, Pellegatta I, Scamoni S, Minuti A, Cherubino M. Acellular dermal matrices and radiotherapy in breast reconstruction: a systematic review and meta-analysis of the literature. *Plast Surg Int*. 2014;2014:472604. doi:10.1155/2014/472604.

Zenn MR, Salzberg CA. A Direct Comparison of Alloderm-Ready to Use (RTU) and DermACELL in Immediate Breast Implant Reconstruction. *Eplasty*. 2016;16:e23. Published 2016 Aug 11.

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Breast Reconstruction Using Your Own Tissue (Flap Procedures)

A tissue flap procedure (also known as **autologous tissue reconstruction or tissue-based reconstruction**) is one way to rebuild the shape of your breast after surgery to remove the cancer. As with any surgery, you should learn as much as possible about the benefits and risks, and discuss them with your doctor, before having the surgery.

Advantages of tissue flaps

These procedures use tissue from other parts of your body, such as your tummy, back, thighs, or buttocks to rebuild the breast shape. Tissue flaps look and feel more natural and act more like natural breast tissue than breast implants. Unlike implants, tissue flaps will change like any other tissue in your body. For instance, they may get bigger or smaller as you gain or lose weight. And while breast implants sometimes need to be

replaced (if the implant ruptures, for example), this is not a concern with tissue flaps. Tissue flaps are often used by themselves to reconstruct the breast, but some tissue flap procedures can be used with a breast implant if more volume is needed.

Disadvantages of tissue flaps

Tissue flap procedures can also have some downsides that need to be considered:

- In general, flaps require more surgery and a longer recovery time than breast implant procedures
- Flap operations leave 2 surgical sites and scars – one where the tissue was taken from (the donor site) and one on the reconstructed breast. The scars fade over time, but never go away completely
- Some women can have donor site problems such as abdominal bulging, muscle damage or weakness, and contour distortions such as dimpling of the skin

Types of tissue flap procedures

There are many different types of flap procedures. They are often named by the muscle or artery that is being used and they mainly fall in two groups:

Pedicle flaps: A pedicle flap moves tissue from its site to the breast or chest wall while it is still attached to its original blood supply. The most common pedicle flap used for breast reconstruction is the **latissimus dorsi** (LD) flap, where tissue from the back (skin, fat, and muscle) is used to make a new breast. Tissue from the abdominal wall (tummy) can also be used as a pedicle flap (transverse rectus abdominis muscle or TRAM flap). But this has been largely replaced by its free flap version, where the muscle can be totally or partially saved.

Free flaps: A free flap moves tissue, fat, skin, and some or none of the muscle from one area of the body to make a new breast. This tissue is completely removed from the body and moved up to the chest. The blood vessels (arteries and veins) must then be reconnected to the chest wall vessels for the tissue to survive. This requires the use of a microscope (microsurgery) to connect the tiny vessels, and the surgery takes longer than a pedicle flap. Most of the time, free flaps don't need to take the muscle from the donor site, so there is less risk of losing muscle strength, and the donor site often looks better than if the muscle had been removed. The main risk is that sometimes the blood vessels get clogged and the flap doesn’t work because of poor or no blood supply. The abdominal wall (tummy) is the most popular and common donor site for free flap breast

reconstruction. Other possible donor site areas for breast free flap reconstruction are the thighs, buttocks, and lower back.

Restoring feeling to the reconstructed breast

During a mastectomy, nerves are cut causing a loss of sensation (feeling) on that side. The skin on the chest wall can feel numb (no feeling) or be more sensitive. The feeling might return after a few months or years or not at all. Finding ways to restore the feeling in the reconstructed breast has become a goal of tissue (flap) breast reconstruction. It is often possible to keep a sensory nerve (a nerve that controls feeling) within the flap. On the chest wall, a nerve in between the ribs is isolated and then reconnected with the nerve of the flap. This connection helps stimulate the tissue flap to regain feeling. There are studies that show improvement of sensation using this technique.

Abdominal (tummy) flaps

An abdominal wall flapprocedure uses tissues from the tummy. Most times the tummy provides enough tissue for breast reconstruction, so no breast implants are needed. The tummy flap names are based on how the tissue is transferred and if the abdominal wall muscle is used or not. The donor site of the abdominal wall flap may look like a “tummy tuck,” but it can also reduce the strength in your belly muscles and cause bulging depending on what technique was used. Tummy flaps may not be possible in women who are very thin or who have had a tummy tuck before.

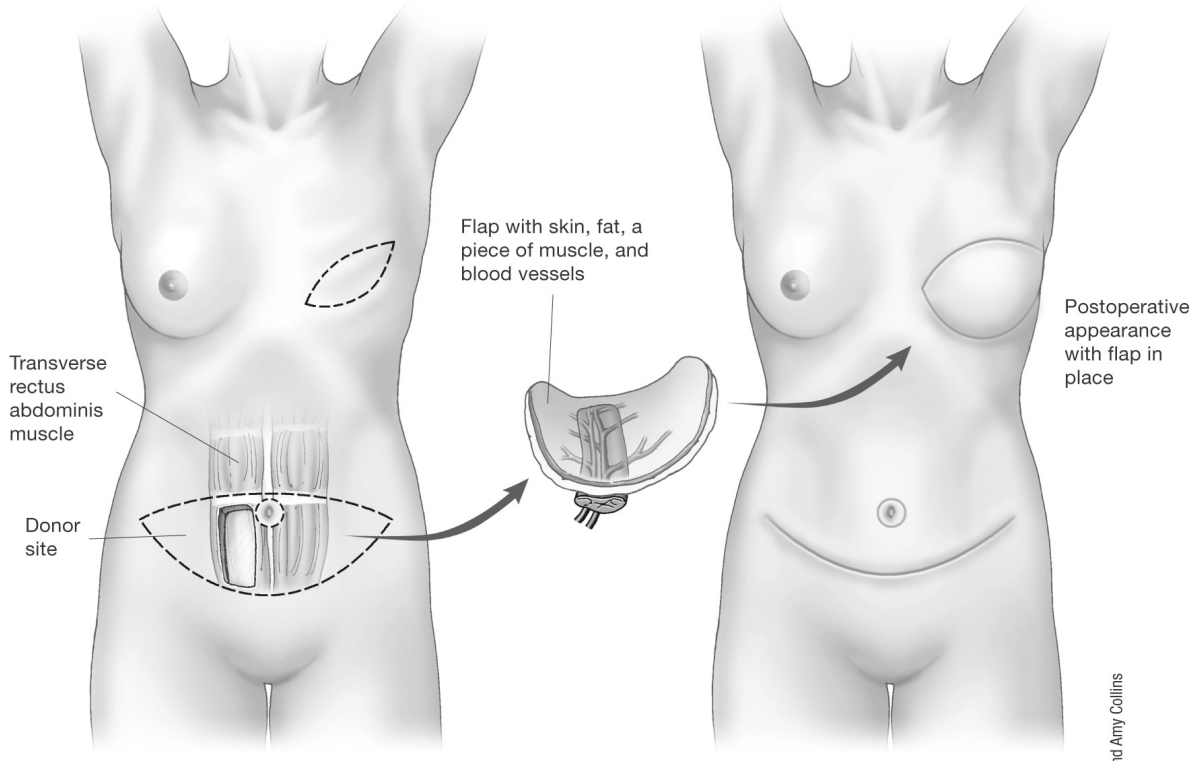
There are different types of abdominal wall (tummy) flaps:

- A **pedicle transverse rectus abdominal muscle (TRAM) flap** leaves the flap attached to its original blood supply and tunnels it under the skin to the chest. It usually requires removing most if not all of the rectus abdominis (6-pack) muscle on that side, which means an increased risk of bulging on one side of the abdomen. This can also mean your abdominal (belly) muscles may not be as strong as before the surgery.
- A **free TRAM flap** moves tissue and most, if not all, of the muscle) from the same part of the lower abdomen as a pedicle TRAM flap, but the flap is completely removed and moved up to the chest. The blood vessels (arteries and veins) must then be reattached. A microscope is required to connect the tiny vessels (microsurgery), and the surgery takes longer than a pedicle TRAM flap. The main advantage of a free TRAM flap is that the blood supply to the flap is usually better than with a pedicle TRAM flap. The main risk of free flaps is that sometimes the blood vessels get clogged and the flap doesn’t work, but this is rare. There is also a

higher risk of abdominal wall weakness and bulging.

A **free muscle-sparing TRAM (MS-TRAM) flap** is like a free TRAM flap except only part of the muscle from the same part of the lower abdomen, is completely removed and moved up to the chest. The blood vessels (arteries and veins) must then be reattached with microsurgery. Here the plastic surgeon saves most of the abdominal wall muscles; only a small piece of muscle is taken with the flap. There is less risk of abdominal wall bulging and losing abdominal muscle strength, and the donor site (abdomen) often looks better.

Transverse rectus abdominis muscle or TRAM flap

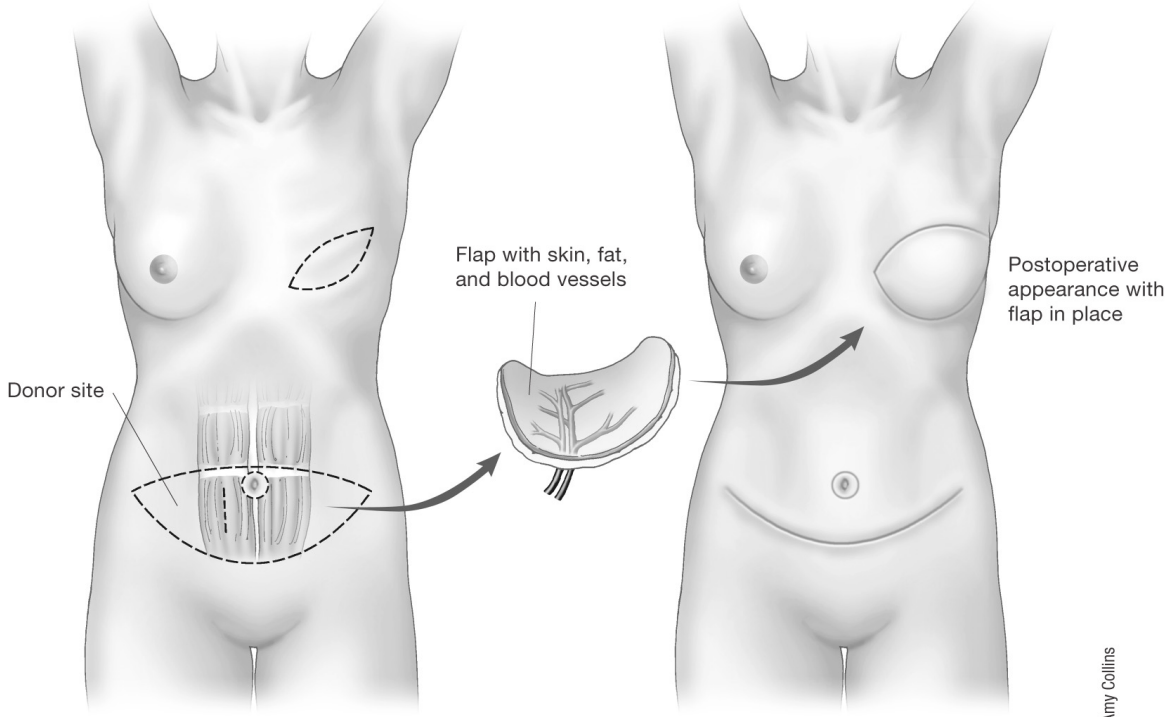


The illustration above depicts a free flap, in which the tissue is cut free from its original location and reattached in the chest area.

The **DIEP (deep inferior epigastric perforator) free flap** uses fat and skin from the same area as the TRAM flap to form the breast shape. The difference compared to a free TRAM flap is that no muscle is taken from the abdominal wall. The tissue is completely cut free from the tummy and then moved to the chest. As in the free TRAM flap surgery, a microscope is needed to connect the tiny blood vessels. There's much

less risk of a bulge because no muscle is taken. The free MS-TRAM flap and DIEP free flap are very similar to each other; in one (MS-TRAM flap) you just take a small piece of muscle, and in the other one (DIEP flap) no muscle.

Another possible abdominal wall (tummy) flap is the **SIEA (superficial inferior epigastric artery) free flap.** Basically, it uses the same tissues as the TRAM and DIEP flaps, but different blood vessels. The blood vessels used for the SIEA flap are more superficial (shallow) and not every person has them. Very few people are candidates for a SIEA flap.



Deep inferior epigastric artery perforator or DIEP flap

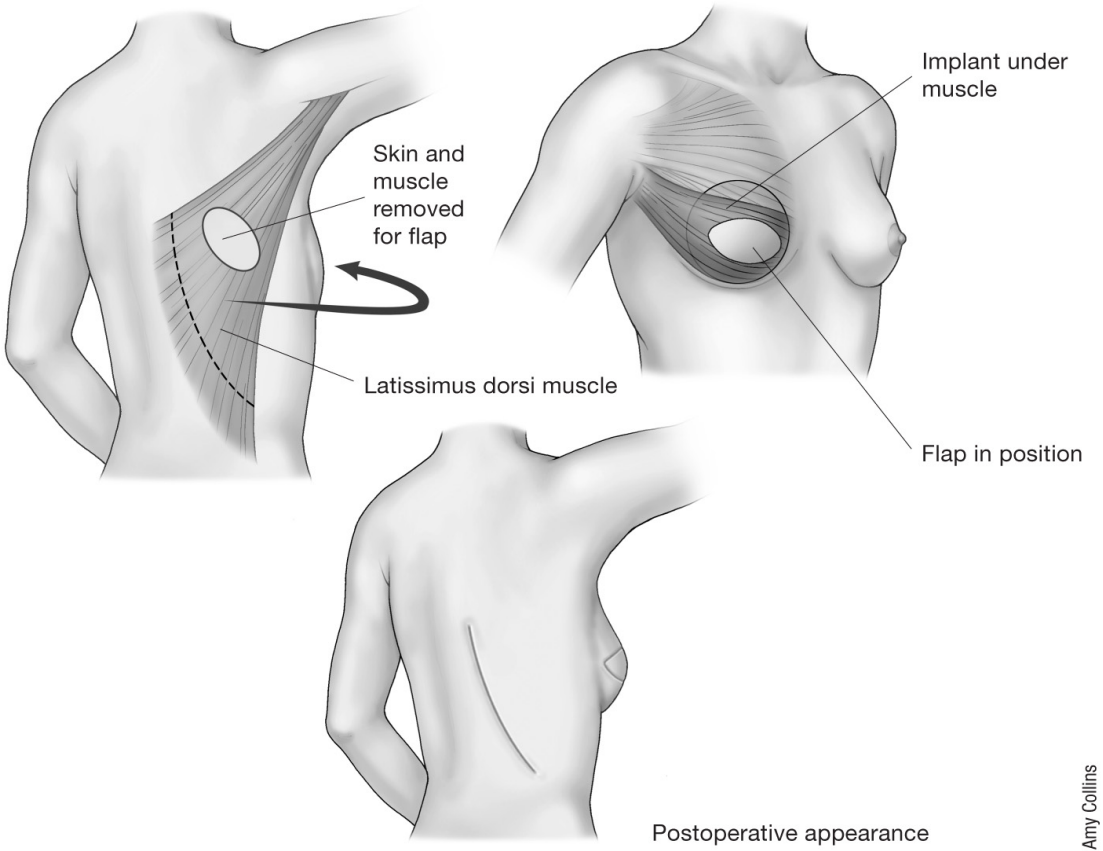
Back flaps

The **latissimus dorsi flap** is a pedicle flap used for breast reconstruction. Since there is usually not as much tissue there as from an abdominal wall (tummy) donor site, this type of flap is often used with a breast implant to add volume (size) to breast reconstruction. For this procedure, the surgeon tunnels muscle, fat, skin, and blood vessels from your upper back, under the skin to the front of the chest. This type of reconstruction can sometimes be used without an implant depending on the amount of

tissue and the desired breast size. Even though one muscle from the back is taken with the flap, rarely do women have weakness in their back, shoulder, or arm after this surgery.

There are also pedicle back flaps that do not take any muscle. The **thoracodorsal artery perforator (TDAP) flap** takes skin and fat from the upper back, but does not take any muscle. It is usually used for reconstruction after lumpectomy or partial mastectomy when needed.

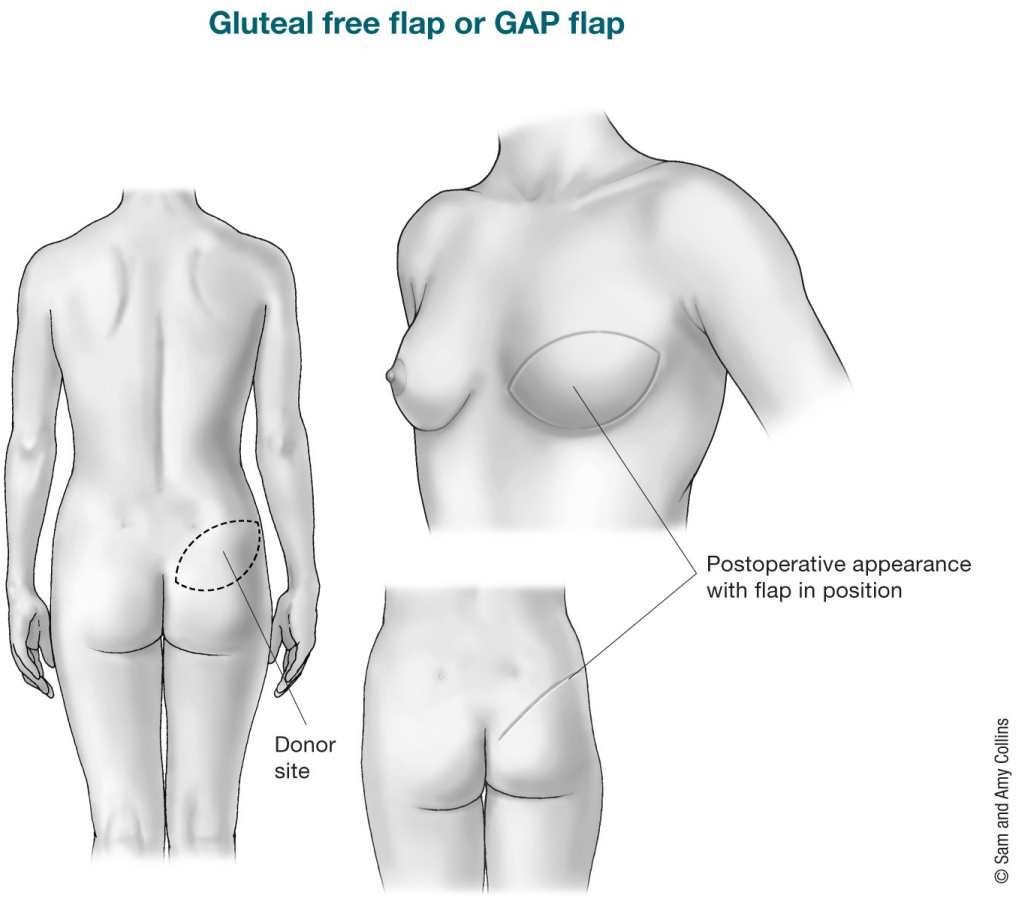
A newer type of procedure, called a **lumbar artery perforator (LAP) free flap,** might be an option if there is not enough abdominal wall (tummy) tissue to use as a donor site . The skin, fat, and blood vessels are removed from the lower back area (also sometimes called “love handles”) and moved to the chest and the blood vessels are reconnected. No muscle is removed. The LAP free flap can only be done on one side at a time (one breast at a time), has an extra step to reconnect the blood vessels, and it is offered only at a few hospitals in the US.



Latissimus dorsi muscle or LAT flap

Buttock (bottom) flaps

The **gluteal free flap** or **gluteal artery perforator (GAP) flap** uses tissue from the buttocks (bottom) to create the breast shape. The gluteal free flap might be an option for women who cannot or do not wish to use the tummy site because they are thin, have previous incisions, have had a previous tummy tuck, or for other reasons, but it's not offered at all surgical centers. The skin, fat, and blood vessels are cut out of the buttocks and then moved to the chest. No muscle is removed. The blood vessels will also be reattached. You might see this type of flap called a **superior gluteal artery perforator (SGAP) flap** if the artery in the upper buttocks is used. The **IGAP flap (inferior gluteal artery perforator flap)** is a similar surgery except the artery in the bottom part of the buttocks is used. The major drawback of this flap is the possible change in the buttock contour, such as skin dimpling. For this reason, it has not become very popular.



Thigh flaps

If tissue from the abdominal wall (tummy) cannot be used, the tissues in the thighs are often looked at for breast reconstruction.

Depending on a women's body build and preferences, there are good free flap options from tissues of the inner and outer thighs. All the options require the use of microsurgery and reconnection of the blood vessels in the chest. Most of the time, the thighs only provide enough tissue to make a small or medium-sized breast. In some cases, two flaps, each one from a different thigh, can be used to reconstruct one breast.

Inner thigh: The main options for free flaps from the inner thighs are.

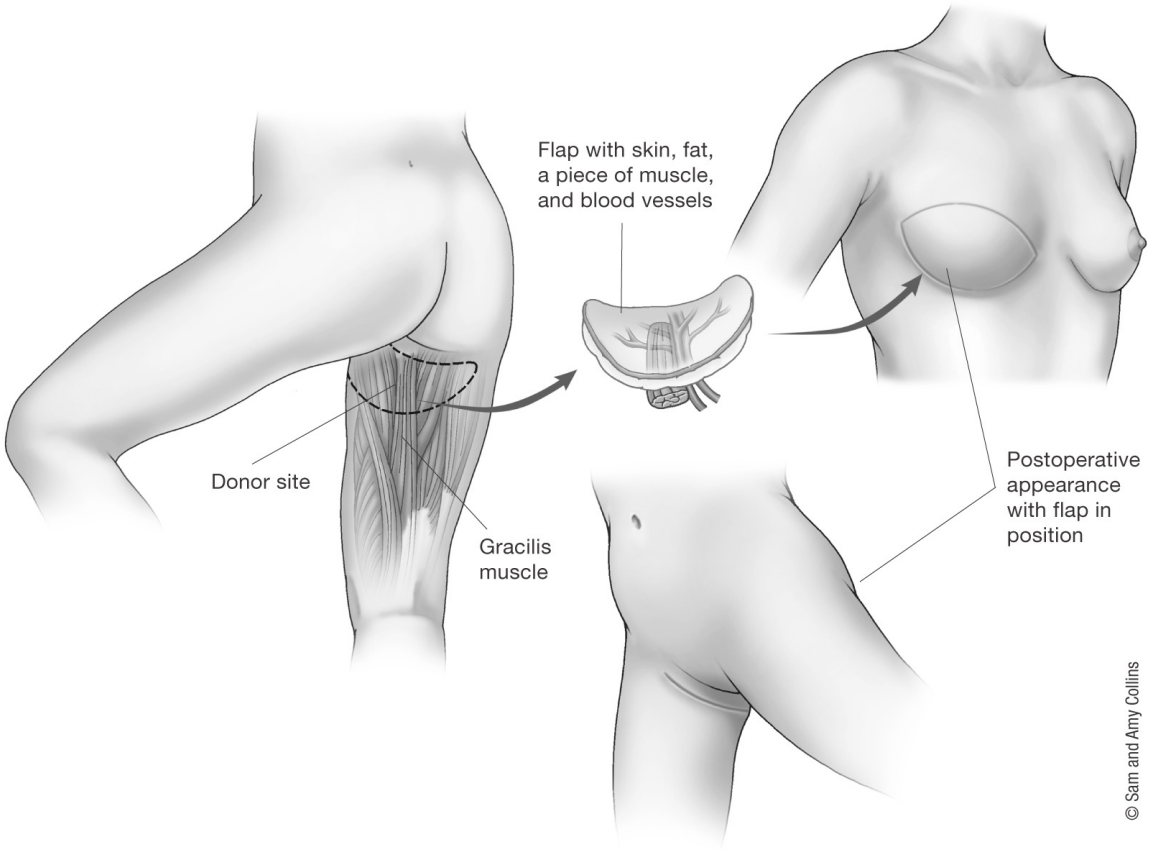
- **Upper Gracilis flap**: Here skin, fat, and part of the gracilis muscle are taken to make a new breast. Depending on the shape and which part of the muscle is used,

it can be called a transverse upper gracilis (TUG) flap, vertical upper gracilis (VUP) flap, or diagonal upper gracilis (DUG) flap.

- **Profunda artery perforator (PAP) flap**: This flap only takes skin and fat. No muscle is removed. It can also be called horizontal, vertical, or diagonal. This flap has gained popularity lately. It spares a muscle from the donor site and the vessels are easier to work with.

Outer thigh: Another option for women who might have more fatty tissue on the outer part of their thighs and cannot have or choose not to have a DIEP flap is the **lateral thigh perforator (LTP) flap**. Also called the “saddlebag” flap. The skin, fat, and other tissue is removed from the area in the upper outer thigh and upper buttock and moved to the chest. No muscle is taken.

Transverse upper gracilis or TUG flap



Fat grafting

Fat grafting is usually used for breast revisions or “touch up” surgeries. Your own fat is used to help fix any shape abnormalities that may be seen after the initial breast reconstruction surgery is done. The fat is not removed with skin, muscle, or other tissues.

The fat is obtained by liposuction, cleaned and then prepared so it can be injected easily into the areas it is needed. This is an outpatient procedure and you can go home the same day. Often, more then one session of fat grafting is needed to correct some contour deformities. This procedure has been found to be safe as far as cancer recurrence in patients who have had mastectomies.

Reconstructing the Nipple and Areola After Breast Surgery

When treating breast cancer with a mastectomy, the nipple is typically removed along with the rest of the breast. (Some women might be able to have a nipple-sparing mastectomy, where the nipple is left in place. This is discussed in more detail on our page about mastectomy[1].)

If you’re having breast reconstruction after your mastectomy, you can decide if you want to have the nipple and the dark area around the nipple (areola) reconstructed through surgery or tattooing, or both.

Nipple and areola reconstruction

The nipple and areola are usually the final phase of breast reconstruction. This is a separate surgery done to make the reconstructed breast look more like the original breast. It can be done as an outpatient surgery or sometimes as an office procedure. It’s usually done about 3 to 4 months after surgery after the new breast has had time to heal.

Ideally, nipple and areola reconstruction tries to match the position, size, shape, texture, color, and projection of the new nipple to the natural one (or to each other, if both nipples are being reconstructed). Tissue used to rebuild the nipple and areola comes

from the newly created breast or, less often, from skin from another part of your body (such as the inner thigh). If a woman wants to match the color of the nipple and areola of the other breast, tattooing may be done a few months after the surgery.

Some women opt to have just the tattoo, without nipple and areola tissue reconstruction. A skilled plastic surgeon or other professional may be able to use pigment in shades that make the flat tattoo look 3-dimensional.

Nipple prosthetics

Another option for women who might not want further surgery or tattooing are nipple prosthetics, which are made of silicone or other materials and look and feel like real nipples. They can be attached to the chest and then taken off when you choose.

Hyperlinks

1. www.cancer.org/cancer/breast-cancer/treatment/surgery-for-breast-cancer/mastectomy.html

Last Revised: October 20, 2021

Questions to Ask Your Surgeon About Breast Reconstruction

If you've been diagnosed with breast cancer and are considering breast reconstruction, it's important to find out as much as you can about what to expect. Your breast surgeon can help you find a plastic surgeon who should be able to explain all of your choices and answer your questions. Here are some questions to ask to help get you started. Be sure you get all of your questions answered, so that you can make the best decisions for you about breast reconstruction.

Finding the right plastic surgeon for your breast reconstruction

If you decide to have breast reconstruction, it is best to find an experienced board-certified plastic surgeon. Your breast surgeon can suggest doctors for you. To find a

board-certified plastic surgeon in your area, or to find out if your surgeon is board certified, contact the American Board of Plastic Surgeons[1].

Getting a second opinion

You might want to get a second opinion[2] before having surgery, so you know all of your options before reconstruction surgery, or even mastectomy.[3] It's important for you to make the right decisions based on complete information.

Questions to ask about breast reconstruction

It's very important to get all of your questions answered by your plastic surgeon before having breast reconstruction. If you don't understand something, ask your surgeon about it. You might want to take notes or bring a partner or friend with you to the doctor's appointment to help remember what was said and to help ask other questions.

Here are some questions to get you started. Write down other questions as you think of them. The answers to these questions may help you make your decisions.

- Can I have breast reconstruction?
- When can the reconstruction be done?
- What are the reasons for and against doing it at the same time as my cancer surgery (immediate reconstruction) versus waiting (delayed reconstruction)?
- Will reconstruction interfere with chemotherapy?
- Will reconstruction interfere with radiation therapy?
- What types of reconstruction could I have?
- What are the risks and benefits of each option?
- What type of reconstruction do you think would be best for me? Why?
- What's the average cost of each type? Will my insurance cover them?
- How long would it take me to recover from each type?
- How many of these procedures have you (plastic surgeon) done each year?
- What resultscan I expect?
- Will the reconstructed breast look like my other breast?
- Should I consider surgery on the other breast also to help them look alike?
- Could I have the nipple reconstructed if I choose to? How would this be done?
- How will my reconstructed breast(s) feel to the touch? Will I have any feeling in my reconstructed breast(s)?
- What possible problems should I know about?
- If using a tissue flap, will there be pain, scars, or other changes in the parts of my

body where the tissue is taken from?
- If using a tissue flap, will you also need to place an implant to give the reconstructed breast a better shape?
- If I get a breast implant, how long will it last?
- What type of implant will you use for my reconstructed breast---smooth or textured? Saline or silicone?
- Will I need to get extra imaging tests depending on the type of implant I get? Will my insurance cover those extra tests?
- What kinds of changes to the breast can I expect over time?
- Will I need more surgery in a few years because of possible complications?
- How will aging affect the reconstructed breast?
- How will I know if the implant is ruptured?
- Are there any new reconstruction options that I should know about, including clinical trials[4]?
- Can you show me pictures of typical results?
- Can I talk with other women who have had the same surgery?

Hyperlinks

1. www.abplasticsurgery.org/
2. www.cancer.org/treatment/treatments-and-side-effects/choosing-your-treatment-team/seeking-a-second-opinion.html
3. www.cancer.org/cancer/breast-cancer/treatment/surgery-for-breast-cancer/mastectomy.html
4. www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html

References

American Society of Plastic Surgeons. Breast Reconstruction. Accessed at https://www.plasticsurgery.org/reconstructive-procedures/breast-reconstruction on August 6, 2021.

Ananthakrishnan P, Lucas A. Options and considerations in the timing of breast reconstruction after mastectomy. *Cleve Clin J Med.* 2008;75 Suppl 1:S30-33.

De La Cruz L, Blankenship SA, Chatterjee A, et al. Outcomes after oncoplastic breast-conserving surgery in breast cancer patients: A systematic literature review. *Annals of*

Surgical Oncology. 2016; 23(10):3247-3258.

Farhangkhoee H, Matros E, Disa J. Trends and concepts in post-mastectomy breast reconstruction. *J Surg Oncol*. 2016;113(8):891–894.

Jagsi R, Jiang J, Momoh AO, et al. Trends and variation in use of breast reconstruction in patients with breast cancer undergoing mastectomy in the United States. *J Clin Oncol*. 2014;32(9):919–926.

Jagsi R, King TA, Lehman C, Morrow M, Harris JR, Burstein HJ. Chapter 79: Malignant Tumors of the Breast. In: DeVita VT, Lawrence TS, Lawrence TS, Rosenberg SA, eds. *DeVita, Hellman, and Rosenberg's Cancer: Principles and Practice of Oncology*. 11th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2019.

Mehrara BJ, Ho AY. Breast Reconstruction. In: Harris JR, Lippman ME, Morrow M, Osborne CK, eds. *Diseases of the Breast*. 5th ed. Philadelphia: Wolters Kluwer Health; 2014.

Nahabedian MY. Factors to consider in breast reconstruction. *Womens Health* (2015) 11(3), 325–342.

National Cancer Institute. Breast Reconstruction After Mastectomy. 2017. Accessed at https://www.cancer.gov/types/breast/reconstruction-fact-sheet on August 6, 2021.

National Comprehensive Cancer Network (NCCN). Practice Guidelines in Oncology: Breast Cancer. Version 5.2021. Accessed at https://www.nccn.org/professionals/physician_gls/pdf/breast.pdf on August 6, 2021.

US Food and Drug Administration. Breast Implant Surgery. Updated March 31, 2021. Accessed at https://www.fda.gov/medical-devices/breast-implants/breast-implant-surgery on August 6, 2021.

US Food and Drug Administration. Things to Consider Before Getting Breast Implants. Updated September 28, 2019. Accessed at https://www.fda.gov/medical-devices/breast-implants/things-consider-getting-breast-implants on August 6, 2021.

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Preparing for Breast Reconstruction Surgery

As you get ready for breast reconstruction surgery, ask your surgeon what to expect. Your surgeon can help you be as prepared as possible. You want to have realistic expectations of how your body will look and feel after surgery, and understand the benefits and risks of the type of reconstruction you are having. Ask questions and follow your surgeon's instructions carefully. Some questions that may help you know what to expect include:

- What should I do to get ready for surgery?
- If I smoke, when is the best time to stop before surgery?
- How much discomfort or pain will I feel after surgery?
- How long will I be in the hospital?
- Will I need blood transfusions?
- How long will it take me to recover?
- What will I need to do at home to care for my incisions (surgical scars)?
- Will I have a drain (tube that lets fluid out of the wound) when I go home?
- How much help will I need at home to take care of my drain and wound?
- Will I be taught exercises to do after surgery? When can I start them?
- How much activity can I do at home?
- What do I do if my arm swells[1]?
- When will I be able to go back to normal activities such as driving and working?

Breast reconstruction can make you feel better about how you look and renew your self-confidence, but keep in mind that the reconstructed breast will not be a perfect match or substitute for your natural breast. If tissue from your tummy, back, thigh, or buttocks will be used, those areas will also look different after surgery. Talk with your surgeon about surgical scars and changes in shape or contour. Ask where they will be, and how they will look and feel after they heal.

Your surgeon or other involved doctors/staff should explain the details of your surgery, including:

- The drugs (anesthesia) that will be used to make you sleep and not feel pain during the surgery
- Where the surgery will be done
- How long the surgery will take

- Possible complications of surgery (long-term and short-term)
- What to expect after surgery
- The plan for follow-up
- Costs associated with the surgery

Understanding your surgery costs

Health insurance policies often cover most or all of the cost of reconstruction after a mastectomy[2], but this might not always be the case if you have reconstruction after breast-conserving surgery[3] (lumpectomy or partial mastectomy). Check your policy to make sure you are covered, and find out what portion of the bill you'll be expected to pay. Also, see if there are any limits on what types of reconstruction are covered.

Before surgery, make sure your insurance company will not deny breast reconstruction costs (for mastectomy or lumpectomy). Your surgeon may be able to help you with this if your insurance plan wants to deny coverage, so be sure to ask if you need help. It may take some time and effort. In the past, health plans have denied coverage for certain reconstruction procedures despite federal laws that require coverage in most cases. They often reverse such decisions on appeal.

Getting ready for surgery

Your breast surgeon and your plastic surgeon should give you clear instructions on how to prepare for surgery. These will probably include:

- Help with quitting smoking,[4] if you smoke
- Instructions to take or avoid certain vitamins, medicines, and dietary or herbal supplements for a period of time before your surgery
- Instructions on eating and drinking before surgery

Plan to have someone take you home after your surgery or your stay in the hospital. You may also need them to stay and help you out for a few days or longer.

Where your surgery will be done

Breast reconstruction often means having more than one operation. The first creates the breast mound. This may be done at the same time as the mastectomy or later on. It's usually done in a hospital.

Follow-up procedures such as filling expanders or creating the nipple and areola are most often done in an outpatient facility. But this decision depends on how much surgery is needed and what your surgeon prefers, so you'll need to ask about this.

What anesthesia will be used

The first stage of reconstruction is almost always done using general anesthesia.This means you'll be given drugs to make you sleep and not feel pain during the surgery.

Follow-up procedures may only need local anesthesia. This means that only the area the doctor is working on will be numbed. A sedative drug may also be used to make you feel relaxed but awake. You might feel some discomfort.

Possible risks of breast reconstruction surgery

Any type of surgery has risks , and breast reconstruction may pose certain unique problems for some women. Your surgeon will go over the possible risks of reconstruction surgery with you. Be sure to ask questions if there's anything you're not sure about. For more on the possible risks after surgery, see What to Expect After Breast Reconstruction Surgery.

Hyperlinks

1. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/lymphedema.html
2. www.cancer.org/cancer/breast-cancer/treatment/surgery-for-breast-cancer/mastectomy.html
3. www.cancer.org/cancer/breast-cancer/treatment/surgery-for-breast-cancer/breast-conserving-surgery-lumpectomy.html
4. www.cancer.org/healthy/stay-away-from-tobacco.html

References

American Society of Plastic Surgeons. Breast Reconstruction. Accessed at https://www.plasticsurgery.org/reconstructive-procedures/breast-reconstruction on August 6, 2021.

Jagsi R, King TA, Lehman C, Morrow M, Harris JR, Burstein HJ. Chapter 79: Malignant

Tumors of the Breast. In: DeVita VT, Lawrence TS, Lawrence TS, Rosenberg SA, eds. *DeVita, Hellman, and Rosenberg's Cancer: Principles and Practice of Oncology*. 11th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2019.

Mehrara BJ, Ho AY. Breast Reconstruction. In: Harris JR, Lippman ME, Morrow M, Osborne CK, eds. *Diseases of the Breast*. 5th ed. Philadelphia: Wolters Kluwer Health; 2014.

Nahabedian MY. Factors to consider in breast reconstruction. *Womens Health* (2015) 11(3), 325–342.

Nahabedian M. Overview of breast reconstruction. In Collins KA, ed. *UpToDate*. Waltham, Mass.: UpToDate, 2021. https://www.uptodate.com. Accessed August 6, 2021.

National Cancer Institute. Breast Reconstruction After Mastectomy. 2017. Accessed at https://www.cancer.gov/types/breast/reconstruction-fact-sheet on August 6, 2021.

National Comprehensive Cancer Network (NCCN). Practice Guidelines in Oncology: Breast Cancer. Version 5.2021. Accessed at https://www.nccn.org/professionals/physician_gls/pdf/breast.pdf on August 6, 2021.

US Food and Drug Administration. Breast Implant Surgery. Updated March 31, 2021. Accessed at https://www.fda.gov/medical-devices/breast-implants/breast-implant-surgery on August 6, 2021.

US Food and Drug Administration. Things to Consider Before Getting Breast Implants. Updated September 28, 2020. Accessed at https://www.fda.gov/medical-devices/breast-implants/things-consider-getting-breast-implants on August 6, 2021.

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What to Expect After Breast Reconstruction Surgery

It's important to have an idea of what to expect after surgery to rebuild your breast,

including the possible risks and side effects. How long it takes you to recover from surgery will depend on the type of reconstruction you have. Most women begin to feel better in a couple of weeks and can return to usual activities in a couple of months. Talk to your cancer care team about what you can expect. Be sure you understand how to take care of your surgery sites and how to follow up with your breast care, including regular mammograms[1] and other breast imaging tests depending on the surgery you have had.

Possible risks during and after reconstruction surgery

Any type of surgery has risks, and breast reconstruction may pose certain unique problems for some women. Even though many of these are not common, some of the possible risks and side effects[2] during or soon after surgery include:

- Problems with the anesthesia
- Bleeding
- Blood clots[3]
- Fluid build-up in the breast or the donor site (for a tissue flap), with swelling and pain
- Infection[4] at the surgery site(s)
- Wound healing problems[5]
- Extreme tiredness (fatigue[6])

Problems that can develop later on include:

- Tissue death (necrosis) of all or part of a tissue flap, skin, or fat
- Loss of or changes in nipple and breast sensation
- Problems at the donor site, such as loss of muscle strength, bulging of the abdominal (belly) wall, and dimples in the skin
- The need for more surgery to fix problems that come up
- Changes in the arm on the same side as the reconstructed breast
- Problems with a breast implant, such as movement, leakage, rupture, rippling (when an implant or the skin over the implant wrinkles), or scar tissue formation (capsular contracture)
- Development of a rare type of cancer in the scar tissue around a breast implant
- Uneven breasts

Risks of infection

Infection can happen with any surgery, most often in the first couple of weeks after the operation. If you have an implant, it might have to be removed until the infection clears. A new implant can be put in later. If you have a tissue flap, surgery may be needed to clean the wound.

Risks of capsular contracture

The most common problem with breast implants is **capsular contracture**. A scar (or capsule) can form around the soft implant. As it tightens, it can start to squeeze the implant, making the breast feel hard and look distorted. Capsular contracture can be treated. Sometimes surgery can remove the scar tissue, or the implant can be removed or replaced.

Additional risks for women who smoke

Using tobacco narrows blood vessels and reduces the supply of blood, nutrients, and oxygen to tissues. Smoking can delay healing in any surgery and is linked to a higher chance of wound complications. This can cause more noticeable scars and a longer recovery time. Sometimes these problems are bad enough that a second operation is needed to fix them. You may be asked to quit smoking[7] a few weeks or months before surgery to reduce these risks. This can be hard to do, so ask your doctor for help. Sometimes your plastic surgeon might choose to delay your surgery until you stop smoking.

Recovering after reconstruction surgery

You're likely to feel tired and sore for a week or 2 after implant surgery, or longer after a flap procedure(which will leave you with 2 surgical wounds). Your doctor will give you medicines to help control pain and other discomfort.

Depending on the type of surgery you have, you will most likely be able to go home from the hospital within a few days. You may be discharged with one or more drains in place. A drain is a small tube that's put in the wound to remove extra fluid from the surgery site while it heals. In most cases, fluid drains into a little hollow ball that you'll learn how to empty before you leave the hospital. The doctor will decide when the drains can be safely removed depending on how much fluid is collecting each day. Follow your doctor's instructions on wound and drain care. Also be sure to ask what kind of support garments you should wear. If you have any concerns or questions, ask someone on your cancer care team.

Getting back to normal

Most women can start to get back to normal activities within 6 to 8 weeks. If implants are used without flaps, your recovery time may be shorter. Some things to keep in mind:

- Certain types of reconstruction surgery do not restore normal feeling to your breast, but in other types some feeling might return over time.
- It may take up to about 8 weeks for bruising and swelling to go away. Try to be patient as you wait to see the final result.
- It may take as long as 1 to 2 years for tissues to heal fully and scars to fade (the scars never go away completely).
- Ask when you can wear regular bras. Talk with your surgeon about the type of bra to wear – sometimes it will depend on the type of surgery you had. After you heal, underwires and lace in your bra might feel uncomfortable if they press on scars or rub your skin.
- Follow your surgeon's advice on when to begin stretching exercises and normal activities, because it's different with different types of reconstruction. As a basic rule, you'll want to avoid overhead lifting, strenuous sports, and some sexual activities for 4 to 6 weeks after reconstruction. Check with your surgeon for specific guidance.
- Women who have reconstruction months or years after a mastectomy[8]may go through a period of emotional adjustment once they've had their breast reconstructed. Just as it takes time to get used to the loss of a breast, it takes time to start thinking of the reconstructed breast as your own. Talking with other women who have had breast reconstruction might be helpful. Talking with a mental health professional might also help you deal with anxiety[9] and other distressing feelings.
- Silicone gel implants can open up or leak inside the breast without causing symptoms. Surgeons usually recommend getting regular magnetic resonance imaging (MRI) of implants to make sure they aren't leaking. (This isn't needed with saline implants.) You'll likely have your first MRI 1 to 3 years after your implant surgery and every 2 years from then on, although it may vary by implant. Your insurance might not cover this. Be sure to talk to your doctor about long-term follow-up.
- Call your doctor right away if you notice any new skin changes, swelling, lumps, pain, or fluid leaking from the breast, armpit, or flap donor site, or if you have other symptoms that concern you.

Talk to your doctor about mammograms

Women who have had a mastectomy to treat breast cancer generally do not need routine screening mammograms on the side that was affected by cancer (although they still need them on the other breast). There isn't enough tissue remaining after a mastectomy to do a mammogram. Cancer can come back in the skin or chest wall on that side, but if this happens it's more likely to be found on a physical exam.

It's possible for women with reconstructed breasts to get mammograms, but experts agree that women who have breast reconstruction after a mastectomy don't need routine mammograms. Still, if an area of concern is found during a physical exam, a diagnostic mammogram may be done. (Ultrasound[10] or MRI[11] may also be used to look at the area closely.)

If you're not sure what type of mastectomy you had or if you need to have mammograms, ask your doctor.

Hyperlinks

1. www.cancer.org/cancer/breast-cancer/screening-tests-and-early-detection/mammograms.html
2. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html
3. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/blood-clots.html
4. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/low-blood-counts/infections.html
5. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/skin-problems/scars-and-wounds.html
6. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/fatigue.html
7. www.cancer.org/healthy/stay-away-from-tobacco/guide-quitting-smoking.html
8. www.cancer.org/cancer/breast-cancer/treatment/surgery-for-breast-cancer/mastectomy.html
9. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/emotional-mood-changes/anxiety.html
10. www.cancer.org/cancer/breast-cancer/screening-tests-and-early-detection/breast-ultrasound.html
11. www.cancer.org/cancer/breast-cancer/screening-tests-and-early-detection/breast-mri-scans.html

References

American Society of Plastic Surgeons. Breast Reconstruction. Accessed at https://www.plasticsurgery.org/reconstructive-procedures/breast-reconstruction on August 6, 2021.

Jagsi R, King TA, Lehman C, Morrow M, Harris JR, Burstein HJ. Chapter 79: Malignant Tumors of the Breast. In: DeVita VT, Lawrence TS, Lawrence TS, Rosenberg SA, eds. *DeVita, Hellman, and Rosenberg's Cancer: Principles and Practice of Oncology*. 11th ed. Philadelphia, Pa: Lippincott Williams & Wilkins; 2019.

Mehrara BJ, Ho AY. Breast Reconstruction. In: Harris JR, Lippman ME, Morrow M, Osborne CK, eds. *Diseases of the Breast*. 5th ed. Philadelphia: Wolters Kluwer Health; 2014.

National Cancer Institute. Breast Reconstruction After Mastectomy. 2017. Accessed at https://www.cancer.gov/types/breast/reconstruction-fact-sheet on August 6, 2021.

National Comprehensive Cancer Network (NCCN). Practice Guidelines in Oncology: Breast Cancer. Version 5.2021. Accessed at https://www.nccn.org/professionals/physician_gls/pdf/breast.pdf on August 6, 2021.

US Food and Drug Administration. Breast Implant Surgery. Updated March 31, 2021. Accessed at https://www.fda.gov/medical-devices/breast-implants/breast-implant-surgery on August 6, 2021.

US Food and Drug Administration. Risks and Complications of Breast Implants. Updated September 28, 2020. Accessed at https://www.fda.gov/medical-devices/breast-implants/risks-and-complications-breast-implants on August 6, 2021.

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