

Macromastia and Breast Reduction

A GUIDE FOR FAMILIES



Boston Children's Hospital
Plastic and Oral Surgery

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Our Program

The Adolescent Breast Center at Boston Children's Hospital is the first program in the nation dedicated exclusively to evaluating and treating breast conditions in children, teens and young adults. Our center uses a broad, research-driven approach focused on restoring self-confidence and improving quality of life.

Adolescent Breast Center - Meet Our Team

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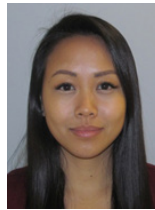
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Overview of Macromastia (Overly enlarged female breasts)

Overview of the condition

- Patients with macromastia often feel that their breasts are too large for their body frame. As a result, they might experience significant physical symptoms including back, neck, shoulder, and breast pain, especially when participating in physical activity. They also may suffer from difficulty finding appropriately fitting clothing, and other psychological impacts related to unwanted attention regarding their breast size. Research has shown that “macromastia has a substantial negative impact on health-related quality of life, self-esteem, physical symptoms,” (Cerrato et al., 2012).
- There is often no medical reason why some girls develop macromastia. For this reason, no further medical work up is typically required. If your provider feels that further work up would be appropriate, our team will facilitate coordination of this care.
- During your consultation appointment you will meet with a physician assistant as well as your surgeon. We gather information regarding your health history, family history and how macromastia affects your life including both physical and mental or social symptoms. We will discuss conservative management options and surgical options if appropriate. If you are seriously considering surgery, we will take photographs and measurements at the consultation appointment to submit to insurance. Insurance companies require these photographs to determine whether or not they will cover the procedure. We never include a patient’s face in these photographs; they are kept confidential and not used for any other purpose.

Conservative Management (Non-surgical solutions)

Surgery isn't the only treatment option for breast conditions. We work closely with the Division of Adolescent Medicine to investigate the underlying causes of breast-related problems in teens. If hormonal problems are suspected, our doctors can refer patients to some of the nation's leading experts, right here at Boston Children's Hospital. Occasionally, additional evaluation is needed in order to investigate hormonal imbalances or any issues tied to weight or eating habits. However, most commonly, there is no medical reason that breasts become overly enlarged.

Professional Bra Fitting

We often find that our patients with macromastia are wearing the wrong size bra. To optimize comfort and support and to minimize back neck and shoulder pain, it is important to wear a bra which fits based on measurements of your chest circumference and breast cup size. We have found that stores such as Soma, Nordstrom, and Lane Bryant are reliable in fitting patients with larger breasts. It is common that patients with cup sizes larger than DDD have to order their bra online through these stores.

Physical Therapy

Patients with macromastia often have related upper back, neck and shoulder pain. A trial of physical therapy may be recommended. Physical therapists can provide patients with exercises to improve posture and strengthen muscles, which can offer some relief of discomfort. We are happy to provide prescriptions and referrals for physical therapy to patients who would benefit from these services. Of note, lower back pain is not as reliably relieved with breast reduction surgery because it is often multifactorial. If lower back pain is a primary concern for our patients, we often recommend additional workup through their Primary Care Physician and/or an Orthopedic or Spine Surgeon.

Asymmetry

Some patients with macromastia also have breast asymmetry, or a noticeable difference in breast size. Through a unique partnership with Friends' Place at the Dana-Farber Cancer Institute, we offer our patients with breast asymmetry the option to explore prosthetic bra and swimsuit inserts that can help them feel comfortable

in their bodies. This pioneering nonsurgical approach was originally developed to help breast cancer patients after mastectomies, and we're proud to be able to help adolescents in a similar manner.

Over the counter prosthetics are also available at both Target.com and Walmart.com for patients with a 1 to 2 cup size difference between the breasts. For a greater degree of asymmetry, custom prosthesis through a Friends Place allows for a more closely matched volume from side to side.

Psychological support

Breast conditions can affect more than just physical health. We understand that living with a breast disorder can cause body-image problems and low self-esteem in teens. Our research indicates that breast reduction surgery (reduction mammoplasty) greatly improves physical and psychosocial wellbeing in those affected by macromastia, making their quality of life equal to (or in some cases, better than) their unaffected peers. We have found that these improvements are sustained for at least a decade after surgery (Nuzzi, Firriolo, Pike, DiVasta, & Labow, 2019).

If you or your child is already seeing a therapist or other mental health professional, our team will work with them to evaluate treatment options and coordinate follow-up care. Macromastia can be associated with obesity and disordered eating. Adolescents who are obese or struggling with disordered eating can take advantage of programs right here at Boston Children's Hospital, such as the Optimal Weight for Life program, that help manage those issues.

A breast reduction is a dramatic physical change for patients who have suffered with macromastia. The change can be unexpectedly emotional. We are always here to support our patients through this adjustment, but we also encourage the option of therapy with a mental health provider to help manage these feelings if they arise after surgery.

Surgical Management- Reduction Mammoplasty (Breast Reduction Surgery)

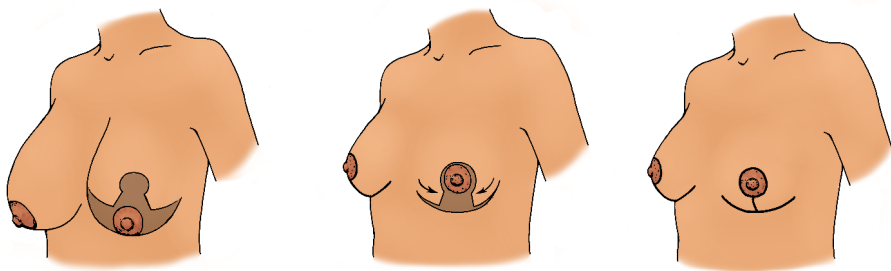
- Macromastia can be successfully treated with surgery. Our experts will conduct a thorough evaluation and advise patients on the surgical options that may be appropriate for their condition, age and physical maturity. We consider surgery when excessively large breast size is interfering with quality of life and/or causing pain. Breast reduction surgery may be performed on an outpatient basis or with an overnight stay in the hospital. We carefully evaluate each patient on a number of factors to make sure they're an appropriate candidate for surgery.

Appropriate Timing

- It is important that pubertal breast development is completed before surgery. Stable breast size for at least 6 months to 1 year is a good indicator that pubertal breast growth has stopped.
- For patients considering weight loss, it is important that this is done prior to surgery. After a breast reduction, the breasts will still undergo the normal physiological changes of natural breast tissue. If weight is gained, the breasts will become larger. With weight loss, the breasts often become more ptotic (saggy). For the best overall aesthetic outcome, it is important that our patients are at their ideal weight prior to surgery.

Surgical Technique

- A breast reduction involves surgical removal of skin, fat and breast tissue (gland). There are several different ways to perform a breast reduction, resulting in different scar patterns. They are named based on the location of breast tissue that stays behind (the pedicle) and the skin removal pattern. The most commonly used are the inferior and superomedial pedicle techniques and the Wise Pattern (inverted T or "anchor-shaped" scar) and vertical pattern ("lollipop" scar).
- Wise Pattern, inferior pedicle technique or superomedial technique



(Above, left) Shaded area represents tissue which will be removed.

(Above, Middle) Arrows represent the repositioning of the skin of the breast and the repositioning of the nipple.

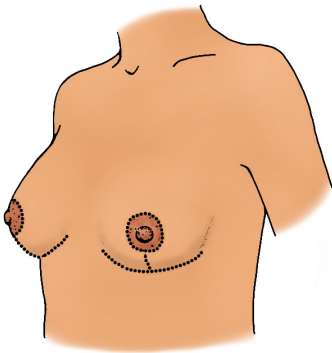
(Above, right) Represents the scar pattern after the procedure.

- After the incision is made, the nipple (which remains attached to its original blood and nerve supply) is then repositioned. The areola size is reduced by removing skin at the perimeter.
- Occasionally, for extremely large pendulous breasts, the nipple and areola may need to be removed and transplanted to a higher position on the breast (free nipple graft).
- Skin, fat and breast tissue is removed. The remaining breast tissue is lifted and reshaped. Dissolving stitches placed deep within the breast support the tissue as it heals in its new location.
- The skin is brought back together over the now smaller breast. Dissolving stitches, adhesives and/or surgical tape closes the skin.
- Incision lines (scars) are permanent, but in most cases will fade and significantly improve over time. The most common scar pattern is an “anchor” shape, although in some cases a “lollipop” pattern scar may be possible.
- A vertical incision pattern (the “lollipop” incision) is a technique that involves making an incision around the areola and then a vertical incision from the areola, down the center of the breast, to the inframammary fold (where the bottom of the breast connects to the chest wall).
- Lollipop incisions alone limit the scar but also limit the amount of skin that can be removed.

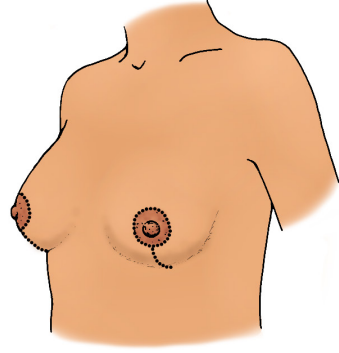
- The “anchor” incision involves making a horizontal incision along the inframammary fold in addition to the incisions around the areola and down the center of the breast. The anchor-shaped incision pattern allows the surgeon to remove some of the great excess of skin that some women have, in order to achieve the best cosmetic result following their breast reduction.
- Your surgeon will determine the most appropriate technique and scar pattern based on your specific breast shape, size and skin quality. There are pros and cons to both techniques.

Possible Scar Patterns

Anchor Shape Scar



Lollipop Scar



Sizing Considerations

- We aim to help you reach your desired cup size as well as to keep you proportionate to your body frame.
- There is sometimes a limit to how much tissue can be removed. Safety is our main goal, and for this procedure that means leaving behind enough breast tissue to provide the nipple-areola complex with adequate blood supply. For this reason, your surgeon will discuss your goal size and any potential limitations during your consultation appointment.

Risks and Complications

- **Scar Formation**
 - The incisions made during surgery create visible and permanent scars, although these are usually well concealed beneath a swimsuit or bra.
 - We will guide you on appropriate scar care and management to help facilitate the most aesthetic scars possible.
 - There are multiple factors that contribute to how a scar heals, and everyone scars differently. Unfavorable scarring, hypertrophic (thickened) or keloid scars are possible.
 - It takes a full year for a scar to mature, meaning that it will slowly improve in appearance throughout that time, typically becoming less pink, less raised and less firm.
- **Sensation changes**
 - Temporary changes in breast and nipple sensation, which often means numbness but sometimes means increased sensitivity (hypersensitivity) is expected after surgery. For most patients, breast and nipple sensation return to normal. Numbness usually improves slowly over the course of a year, while hypersensitivity can resolve more quickly, often in a few weeks to months.
 - Permanent changes in breast or nipple sensation are possible. The most common areas affected are along the scars, the lateral portion of the breast (outside portion of breast closest to the arm) and the nipple- areola complex. This is most often described as a partial decrease in sensation, or slight numbness, although full loss of sensation in parts of the breast including the nipple is possible.
- **Asymmetry**
 - Every female has some natural degree of breast asymmetry before surgery. While we aim to achieve the highest level of symmetry possible during breast reduction surgery, it is common to have some subtle asymmetries after surgery.

Preparing for Surgery

- **Pre-surgical Appointment**

- After your surgery is approved and scheduled, you will have a pre-surgical appointment. During this visit, your physician assistant or surgeon will review the surgical plan, risks, postoperative course and answer any questions you may have.

- **Medications**

- Avoid taking aspirin, anti-inflammatory drugs (NSAIDS such as ibuprofen (Motrin or Advil), Naproxen and herbal supplements as they can increase bleeding) for 10 days prior to surgery.

- **Stop smoking well in advance (at least 6 weeks) of breast reduction surgery. Smoking can cause wound healing issues, compromise blood supply to the nipple areola complex and complicate your recovery.**

Day of Surgery

- **Anesthesia**

- You will meet with your anesthesia team prior to surgery. Please let them know if you have had any history of nausea or vomiting after previous general anesthesia or become car sick. This will help them to preventatively treat any nausea/vomiting you may have. They will start an IV for you after using a numbing spray and can give you medication through this IV that will help you to relax.

- **Surgical Marking**

- You will change into a gown and be in a private area before surgery. Your surgeon will use a surgical marker to draw the surgical plan on your chest. While some of these surgical markings are areas where incisions will be, others are measurements and landmarks that are used to help give you the best esthetic and symmetrical result possible.

- **Surgical Duration**

- Surgery takes approximately 2.5-4 hours. As soon as you are comfortable in the recovery area, or PACU (post anesthesia care unit) someone will bring your family in to accompany you.

Post-operative Recovery

- After surgery, you'll wake up with padded gauze and a surgical bra in place. Under the gauze and surgical bra, you will have Steri-strips (white adhesive bandages) that cover the incision lines. You will not need to change any bandages after the surgery.
- Occasionally, placement of surgical drains is needed. These are small plastic tubes which help to drain any excess fluid from the breast. These are often removed the morning after surgery before you leave the hospital, and therefore you do not need to care for them at home. It does not hurt to remove drains.
- Every patient is different, but on average patients describe discomfort and soreness of their chest for about 4-5 days. The first 2-3 days are typically the most uncomfortable and should then slowly improve. Most patients feel that their discomfort is gone by about one week.
- You'll need to take about one week off from work or school.
- Don't do any activity that is intense or strenuous. Don't lift anything more than 10 pounds or swim for at least four to six weeks. You can get excuse notes from the surgeon's office at your follow-up appointment.
- Check with your surgeon before starting to exercise.
- You can go back to driving 24 hours after you stop taking prescription pain medication.

Post-Operative Course (After Surgery)

- Day 0: You will wake up from surgery already in your surgical bra with gauze pads in place. As soon as you are awake enough for visitors, we will bring your family in to be with you. You will be monitored in the post anesthesia care unit (PACU) until you are meeting the criteria to go home or to move to your inpatient room where you will spend the night. If you spend the night in the hospital, one person may accompany you over night.
- Day 1: If you spent the night at the hospital after surgery, today you will be discharged after a physical examination and review of post-operative instructions. If you had drains placed, we will show you how to take care of these at home. At home, please take Tylenol and Motrin as instructed to manage discomfort.
- Days 2-7: You will be wearing the surgical bra during this time, including while sleeping. Most patients take this time off from school or work because you will be recovering and may be taking prescription pain medication. You should not drive, operate any machinery, or drink alcohol with taking prescription pain

medication. You can return to school and light duty work 24 hours after you stop taking prescription pain medication.

- Week 1 Follow Up Appointment: Please bring several sports bras in varying sizes and styles with you to this appointment. Sports bras that zip in the front are easiest to get off and on independently. Do not choose a sports bra with underwire. Please keep in mind that your band size will not change, and your breasts, while smaller will be swollen after surgery. If you were a 36 DDD before surgery for example, we recommend bringing in a range of sizes such as 36-38 C-DD. We will help fit you to the bra that offers you the best post-operative support. Please ensure the bra straps are broad and not spaghetti-strap style.
- Weeks 2-4: Continue wearing sports bras only and follow activity restrictions. While your steri-strips (white adhesive bandages) will remain in place, it is okay to shower and get them wet, patting them dry after and replacing the sports bra.
- Week 4 Follow Up Appointment: If the steri-strips have not come off on their own, we will remove them in the office. We will then review scar care (see below).
 - Once the steri-strips come off, some patients may have an open wound along the incision or possibly a stitch that can be felt coming through the skin. These types of issues are typically easily managed and will resolve without any impact to the long-term result. Your surgeon and physician assistant will instruct you on what to do.
 - Your surgeon or physician assistant will also let you know whether or not you may resume normal activities such as strenuous activity, swimming and lifting over ten pounds.
- 3-4 Month Follow Up Appointment: All surgical swelling is typically resolved by this appointment and we will often recommend getting professional fitted for a new bra at this time if you are interested in doing so.

Scar Care and Management

- After the 4-week follow-up appointment, you should begin to take care of your scars. This means moisturizing them daily with a lotion such as Aquaphor, Aveeno, Lubriderm, Eucerin or Vitamin E oil.
- You should also begin daily scar massage. Scars may soften and flatten more

quickly when they are massaged. To do this, use your fingers to apply moderate pressure and massage over the scar in circles. It is most beneficial to perform scar massage routinely, for about 5 minutes every day, rather than doing it sporadically.

- You may also choose to use silicone scar sheeting which can help to flatten scars and increase softness if used for 12 consecutive hours per day or more. Silicone scar sheets are available over the counter at drug stores or via Amazon.com.

- **Insurance Information**

Understanding your insurance coverage and benefits can be challenging as each situation, treatment plan and insurance policy is so widely variable. Our team is here to help you navigate through this process.

- Insurance companies sometimes have an age minimum for coverage of breast reduction surgery. For example, some policies will not cover surgery until a patient is 16 years old, or some may not cover surgery until a patient is 18 years old.
- It is also common for insurance companies to deny authorization for breast reduction surgery if all conservative measures to manage physical discomfort have not been attempted. This generally means that they would like to see if physical therapy or chiropractic care may resolve back, neck, and shoulder pain. If this is the case, and you have not already done so, we are happy to help facilitate this care.

- **References**

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