Clinical Policy Title: Abdominoplasty, panniculectomy and brachioplasty

Clinical Policy Number: 18.03.03

Effective Date: July 1, 2016
Initial Review Date: April 27, 2016
Most Recent Review Date: April 10, 2018
Next Review Date: April 2019

Related policies:

CP# 16.03.08 Cosmetic, plastic, and scar revision surgery
CP# 16.03.05 Breast reduction surgery
CP# 08.03.02 Bariatric surgery for adults
CP# 16.03.07 Reduction mammoplasty for male gynecomastia

ABOUT THIS POLICY: Select Health of South Carolina has developed clinical policies to assist with making coverage determinations. Select Health of South Carolina’s clinical policies are based on guidelines from established industry sources, such as the Centers for Medicare & Medicaid Services (CMS), state regulatory agencies, the American Medical Association (AMA), medical specialty professional societies, and peer-reviewed professional literature. These clinical policies along with other sources, such as plan benefits and state and federal laws and regulatory requirements, including any state- or plan-specific definition of “medically necessary,” and the specific facts of the particular situation are considered by Select Health of South Carolina when making coverage determinations. In the event of conflict between this clinical policy and plan benefits and/or state or federal laws and/or regulatory requirements, the plan benefits and/or state and federal laws and/or regulatory requirements shall control. Select Health of South Carolina’s clinical policies are for informational purposes only and not intended as medical advice or to direct treatment. Physicians and other health care providers are solely responsible for the treatment decisions for their patients. Select Health of South Carolina’s clinical policies are reflective of evidence-based medicine at the time of review. As medical science evolves, Select Health of South Carolina will update its clinical policies as necessary. Select Health of South Carolina’s clinical policies are not guarantees of payment.

Coverage policy

Select Health of South Carolina considers body contouring surgery following massive weight loss to be clinically proven and, therefore, medically necessary when all of the following criteria are met (American Society of Plastic Surgeons, 2017; Mechanick, 2013):

- A plastic surgeon performs the surgical procedure to modify the skin envelope, subcutaneous layer, and/or investing fascia.
- Surgery will correct functional impairment caused by excessive skin and subcutaneous tissue redundancy.
  - A functional impairment is defined as a direct and measurable reduction in physical performance of an organ or body part, resulting in difficulties in physical and motor tasks, independent movement, or performing basic life functions.
- There is photographic documentation of any of the following chronic or recurring conditions related to excess tissue and skin folds:
  - Intertrigo (bacterial or fungal infections).
  - Cellulitis.
- Folliculitis.
- Panniculitis.
- Skin ulceration.
- Skin or subcutaneous abscesses.
- Monilial infection or fungal dermatitis.
- Skin necrosis.

- Documentation of failure of at least three months of conservative non-surgical management by a physician other than the operating physician.
- Maintenance of a stable body weight during the most recent six months or longer.
  - If massive weight loss occurs as a result of bariatric surgery, the procedure should not be performed for at least 12 to 18 months after the bariatric surgery.

Select Health of South Carolina considers panniculectomy after massive weight loss to be clinically proven and, therefore, medically necessary when all of the above criteria are met, and there is photographic documentation (with member standing) of at least a Grade 2 panniculus that hangs to or below the level of the pubis.

Select Health of South Carolina considers abdominoplasty to be clinically proven and, therefore, medically necessary when performed in conjunction with a panniculectomy that meets the above criteria. In this case abdominoplasty is considered part of the panniculectomy procedure and is not separately reimbursable.

**Limitations:**

All other indications for body contouring surgery after massive weight loss are considered not medically necessary, including, but not limited to:

- Improving cosmesis in the absence of a functional impairment.
- Relieving neck or back pain, as there is no evidence that reduction of redundant skin and tissue results in less spinal stress or improved posture or alignment.
- Repairing a diastasis recti.
- Minimizing the risk of hernia formation or recurrence.

Endoscopic abdominoplasty or mini-abdominoplasty is not medically necessary for any reason.

Panniculectomy when performed in conjunction with a primary abdominal surgical procedure will be considered as part of the primary surgery (e.g., incisional hernia repair) and not separately reimbursable.

- Note: All requests for panniculectomy in conjunction with repair of an incisional, umbilical, epigastric, or ventral hernia must be documented by the patient’s medical record and computed tomography scan recording the diameter of the fascial defect.

**Alternative covered services:**

- Analgesics.
• Antibiotics.
• Cortisone ointments.
• Drying agents.
• Topically applied skin barriers and supportive garments.

**Background**

Obesity and its associated medical morbidities carry substantial health risk. Treatments for obesity, including bariatric surgery, often result in massive weight loss. Definitions of massive weight loss vary: 100 pounds (approximately 45.45 kg) or more; 50 percent or greater loss of excess weight; or greater than 100 percent above the person’s ideal body weight (Constantine, 2014; Michaels, 2011; Manahan, 2006).

A sudden change in body mass index can lead to redundant skin and soft tissue with poor tone. Surplus skin and malpositioned adipose deposits result in musculoskeletal strain from increased tissue weight and can cause functional limitation with walking, maintaining adequate hygiene, bowel and bladder habits, and sexual activity, as well as psychological issues associated with poor body image (Giordano, 2015). Bariatric surgery is associated with various metabolic complications and deficiencies that can disturb wound healing and are not typically found in other conditions resulting in massive weight loss such as diet and exercise or post-pregnancy (Giordano, 2015; Chandawarkar, 2006). Reshaping procedures may relieve these symptoms.

The term “body contouring” refers to any surgical procedure used to modify the skin envelope, subcutaneous layer, and/or investing fascia to rid the functional and esthetic impairment from skin. Several surgical techniques, each with its own modifications, may be used to address the needs of these patients, including (Giordano, 2015):

• Rhytidectomy (face and neck lift).
• Brachioplasty (arm lift) with or without liposuction.
• Mastopexy (breast lift) with or without mammoplasty.
• Abdominoplasty.
• Body lift:
  - Belt lipectomy (or lower body lift in which the lower body is treated front and back in its entirety).
  - Upper body lift that treats excess skin folds in the back.
• Panniculectomy.
• Thighplasty.

Skin redundancy and quality, lipodystrophy, and adherent folds, as well as the presence of varicose veins, lymphedema, and overall scar evaluation, must be considered with these complex and extensive procedures. The extent of the procedures and the patient’s health and comorbidities will determine the facility setting, the type of anesthesia needed, recovery time, and physician follow-up visits. Patients may be seen intermittently for one to two years as final body contour continues to mature (American Society of Plastic Surgeons, 2017).
**Searches**

Select Health of South Carolina searched PubMed and the databases of:

- UK National Health Services Centre for Reviews and Dissemination.
- Agency for Healthcare Research and Quality’s National Guideline Clearinghouse and other evidence-based practice centers.
- The Centers for Medicare & Medicaid Services (CMS).

We conducted searches on February 25, 2018. Search terms were: "weight loss" (MeSH), "reconstructive surgical procedures" (MeSH), and free text terms “panniculectomy,” “abdominoplasty,” “brachioplasty,” “mastopexy,” and “body lift.”

We included:

- **Systematic reviews**, which pool results from multiple studies to achieve larger sample sizes and greater precision of effect estimation than in smaller primary studies. Systematic reviews use predetermined transparent methods to minimize bias, effectively treating the review as a scientific endeavor, and are thus rated highest in evidence-grading hierarchies.
- **Guidelines based on systematic reviews.**
- **Economic analyses**, such as cost-effectiveness, and benefit or utility studies (but not simple cost studies), reporting both costs and outcomes — sometimes referred to as efficiency studies — which also rank near the top of evidence hierarchies.

**Findings**

We found six systematic reviews/meta-analyses, 14 additional individual studies, two professional guidelines, and no economic analyses for this policy. The evidence primarily consists of single-arm, retrospective case series with few controls. Most patients were female and had achieved massive weight loss after bariatric surgery. The majority of procedures involved abdominal contouring most commonly performed for the treatment of skin conditions that were unresponsive to or required frequent medical treatment and had a negative effect on quality of life. Study objectives were to identify risk factors for complications, complication rates, and patient-reported outcomes associated with body contouring procedures after massive weight loss.

The optimal patient selection criteria for these procedures are difficult to determine due to the retrospective nature of the studies. In general, weight stability and lower body mass index at the time of the body contouring procedure reduce the rate of complications and lead to better surgical outcomes. However, the evidence conflicts with respect to preoperative body mass index as an independent predictor of surgical complications, and there is no clear body mass index cut-off above which surgery should be refused (Constantine, 2014; van der Beek, 2011; Au, 2008). Based on limited evidence professional guidelines support a stable weight close to normal for at least two to six months, typically requiring 12 to 18 months post-bariatric surgery, or at the 25 kg/mg^2 to 30 kg/mg^2 weight range (Mechanick, 2013;
American Society of Plastic Surgeons, 2007, updated 2017). Assessment tools such as the Pittsburgh weight loss deformity scale and the Regnault breast ptosis scale can facilitate preoperative planning and quantifying improvement after surgery (Giordano, 2015; Zammerilla, 2014).

Complications occurred in up to 50 percent of patients and depended on the extent and type of procedure. Most were related to wound healing and were considered minor and medically treatable. Minor complications included seroma, dehiscence, infection, and hematoma. Other complications following body contouring surgery in general may include (American Society of Plastic Surgeons, 2007, updated 2017):

- Lymphedema.
- Deep vein thrombosis or pulmonary embolus.
- Psychiatric difficulty.
- Residual localized fat and/or fat necrosis leading to contour irregularities.
- Temporary or permanent numbness.
- Unattractive or hypertrophic scarring.
- Malposition of the umbilicus.
- Relapse or recurrent laxity.

Complications after body contouring surgery are likely multifactorial (Hasanbegovic, 2014; Fischer, 2013; Albino, 2009). Multiple comorbidities, bleeding disorders, abnormal preoperative albumin levels, and malnutrition contribute to poor surgical outcomes, as do procedural complexity and pre-operative functional status. Complication rates were higher among patients with post-bariatric massive weight loss than massive weight loss from other causes. Abdominal contouring procedures, in particular, are associated with excessive blood loss and risk for postoperative hypovolemia.

Evidence from research and professional guidelines regarding indications for surgery and choice of surgical techniques is lacking. Surgical approaches vary through incision length, incision placement, use of liposuction, and concomitant body contouring procedures. Surgeon and patient preferences and clinical presentation play major roles in determining choice of procedure. There are few validated patient-reported outcome measures for most body contouring procedures, with the exception of reduction mammoplasty. Troublesome skin condition was the most common indication for surgery, but its status was rarely reported as an outcome. The American Society of Plastic Surgeons (2007, updated 2017) notes there are few alternatives to surgery for such patients, as the excess skin and fat folds are virtually impossible to correct by diet, weight loss, or exercise.

In summary, body contouring procedures appear to be safe and improve well-being and quality of life in carefully selected persons with skin redundancy after massive weight loss. Patient satisfaction is high, but pre-operative counseling is essential to achieving realistic expectations. Patients generally tolerate the potential for minor complications to achieve better functional and aesthetic outcomes. The evidence base with respect to indications, treatment methods, and outcomes should be strengthened through well-planned prospective studies and a patient registry. There is a particular need for documentation of treatment outcomes in patients with body mass index ≥ 30 kg/m², who comprise a significant and growing portion of this surgical population.
Policy updates:

We added an update of a previous Hayes report (Hayes, 2016) and one new meta-analysis of 28 studies with 1,380 total patients that assessed complication rates following circumferential contouring of the lower trunk (Carloni, 2016). Carloni, et al., found an overall complication rate of 37 percent (95 percent confidence interval [CI] 30 percent to 44 percent). Seroma, wound dehiscence, and scar irregularities comprised the majority of complications. Lower body lift-related techniques were associated with a higher rate of overall complications than belt lipectomy-related techniques (P = .002), but the authors had no explanation for that finding. These authors called for higher-quality evidence from randomized controlled trials to confirm these results. The new information is consistent with previous findings. Therefore, no policy changes are warranted.

In 2018, we added an updated guideline by the American Society of Plastic Surgeons (2017). No policy changes are warranted.

Summary of clinical evidence:

<table>
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<th>Citation</th>
<th>Content, Methods, Recommendations</th>
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| Carloni (2016) | Key points:  
- Systematic review of 28 studies (1,380 total patients). All but one study were retrospective cohorts or case series.  
- Overall quality: low.  
- Overall complication rate 37% (95% confidence interval [CI] 30 to 44): seroma, wound dehiscence, and scar irregularities were the most common complications, followed by infection, skin necrosis, hematoma, thromboembolism.  
- Revision rate for complications 5% (95% CI 3% to 8%).  
- Higher overall complication rate with lower body lift-related techniques than belt lipectomy-related techniques (P = .002), but no difference compared to a gluteal augmentation with flap.  
- Confirmation in randomized controlled trials is needed. |
| Hayes (2016) | Key points:  
- Systematic review of 11 retrospective, uncontrolled case series.  
- Overall quality: low.  
- Studies focused on surgical complications, with poor documentation of resolution of panniculus-related skin disorders or pain.  
- Conflicting evidence for effect of body mass index, diabetes, and concurrent surgery on panniculectomy-related complications. Limited evidence suggests patients are generally satisfied following surgery, despite the high rate of complications. |
| De Runz (2015) | Key points:  
- Retrospective case series of 66 patients (mean age, 44.4 years). Average body mass index was 30.2 kg/m; mean weight reduction was 50.72 kg. Thirty-seven patients |
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| Masoomi (2015) | (56.1%) developed at least one complication, including six (9.1%) with a non-aesthetic complication versus 31 (47.0%) with an aesthetic complication.  
- Complications were significantly associated with a longer operative time ($p = 0.015$).  
- Fifty-three patients answered the questionnaire. High overall satisfaction (68%). All patients rated the functional outcome superior or equal to the aesthetic outcome. Quality of life was better after than before the intervention for 77.4%. |
| Srivastava (2015) | Key points:  
- Multivariable regression analysis of clinical data from the Nationwide Inpatient Sample database of 20,130 patients who underwent post-bariatric abdominoplasty from 2007 to 2011.  
- The blood transfusion rate in post-bariatric surgery abdominoplasty patients is significant. Chronic anemia and congestive heart failure are the two major predictors of transfusion.  
- Modifying risk factors such as anemia before abdominoplasty might significantly decrease the possibility of blood transfusion. |
| Vindigni (2015) | Key points:  
- Retrospective review of 42 patients who underwent auto-augmentation and 55 who did not.  
- Overall quality: low.  
- Auto-augmentation in lower body lift procedures has a higher rate of complications, primarily because of dehiscence. Physician’s rate aesthetics higher for auto-augmentation, but patient satisfaction is similar between the groups. |
| Hasanbegovic (2014) | Key points:  
- Meta-analysis of seven studies.  
- Complication rate was 60% higher in patients who had bariatric surgery than diet/exercise (fixed-effects pooled risk ratio [RR] = 1.60; 95% CI 1.30 to 1.96; $P < 0.00001$; $I^2 = 48$%).  
- In patients who had only one body contouring procedure, complication rate was 87% higher in the post-bariatric population (RR = 1.87; 95% CI 1.46 to 2.40; $P < 0.00001$; $I^2 = 0$%). |
| Khavanin (2014) | Key points:  
- Systematic review of 23 studies (4,856 patients). |
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| Zammerilla (2014)            | *Classifying severity of abdominal contour deformities after massive weight loss*:  
  - 1,006 patients from 2002 to 2012, abdomens graded using a modified Pittsburgh weight loss deformity scale.  
  - Patients with a larger change in body mass index had higher deformity grades (p < 0.001). Patients with higher deformity grades were more likely to undergo more aggressive contouring procedures, such as a fleur-de-lis abdominoplasty (p < 0.001). |
| Bossert (2013)               | *Liposuction of the arm concurrent with brachioplasty after massive weight loss*:  
  - Case series of 144 patients (139 women and five men; mean body mass index 29.6 +/- 4.1 kg/m; mean age 46 +/- 10.7 years); 64 patients had concomitant arm liposuction and brachioplasty, 80 patients underwent excisional brachioplasty alone.  
  - No significant differences in complication rates or revision rates between the liposuction and excision-alone cohorts.  
  - Liposuction can be performed safely and effectively outside the region of excision at the time of brachioplasty without the need for prior debulking or staged arm-contouring procedures. |
| Fischer (2013)               | *Incidence and predictors of surgical and medical morbidity following body contouring procedures*:  
  - Analysis of 30-day morbidity rates from the American College of Surgeons National Surgical Quality Improvement Program database of 1,797 patients who underwent body contouring from 2005 to 2010.  
  - 89% female. Average body mass index was 31.6 kg/m; 239 patients had body mass index ≥ 40 kg/m.  
  - Most common area of intervention: 91.9% abdominal contouring and/or hips and buttocks.  
  - Minor wound complications (6.3%); associated with multiple comorbidities, presence of bleeding disorder, preoperative albumin level, and malnutrition.  
  - Major surgical morbidity (6.8%); associated with inpatient procedures and functional status. |
| Staalesen (2012a)            | *Outcomes of abdominoplasty*:  
  - Systematic review of 16 studies published through October 2011.  
  - Overall quality: very low for all studied outcomes. |
| Staalesen (2012b)            | *Complications of abdominoplasty after massive weight loss from bariatric surgery or dieting/post-pregnancy*:  
  - Retrospective case series of 190 consecutive patients from January 2006 to December 2008 at one hospital.  
  - Early complication rates: post-bariatric patients (48%) versus no weight loss surgery (29%). |
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| Reavey (2011)            | Resection weight was significantly higher for patients with early local complications compared with patients without early local complications.  
Max body mass index, change in body mass index or pre-operative body mass index had no influence on complication rates. |  |
| van der Beek (2011)      | Key points:                        |
| Predictors of complications in body contouring surgery in the post-bariatric population |  
- Systematic review of patient-reported outcome measures (questionnaires) developed for patients undergoing body contouring surgery.  
- Five questionnaires identified.  
- Reliable, valid, and responsive measures are available for patients undergoing breast reduction, but are lacking for the majority of body contouring procedures. |  |
| Albino (2009)            | Key points:                        |
| Wound healing complication rates of body contouring procedures after massive weight loss in various populations |  
- Comparative analysis and systematic review of 65 studies.  
- Wound healing complication rates: cancer (45.8%), burn (30.4%), post-transplant (36%), and obesity (43%).  
- Complications after body contouring surgery are likely multifactorial; however, molecular imbalances may contribute to poor surgical outcomes. |  |

**References**

**Professional society guidelines/other:**


**Peer-reviewed references:**


**CMS National Coverage Determinations (NCDs):**

No NCDs identified as of the writing of this policy.

**Local Coverage Determinations (LCDs):**


Commonly submitted codes

Below are the most commonly submitted codes for the service(s)/item(s) subject to this policy. This is not an exhaustive list of codes. Providers are expected to consult the appropriate coding manuals and bill accordingly.

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<td>15828 Rhytidectomy; cheek, chin, and neck</td>
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