

BSC7.21		Skeletal Remodeling	
Original Policy Date:	December 1, 2025	Effective Date:	August 1, 2026
Section:	7.0 Surgery	Page:	Page 1 of 12

Policy Statement

- I. Rib remodeling for body contouring, including but not limited to **any** of the following procedures, is considered **investigational**:
 - A. Waistline aesthetic slimming by puncture (WASP)
 - B. Rib osteotomy with osteosynthesis stabilization (RIBOSS)
 - C. Scarless, ultrasound-guided rib remodeling (RibXcar)
 - D. Ultrasonic- and ultrasound-assisted indentation surgery of the thorax (UUAIST)
- II. Clavicle shortening for body contouring is considered **investigational**
- III. Scapular shaving or scapular contouring is **not medically necessary** when performed for **any** of the following:
 - A. Aesthetic dissatisfaction with silhouette or bone contour
 - B. Gender affirmation
 - C. Reduction of scapular prominence
 - D. Shoulder narrowing
 - E. Upper-back or posterior shoulder feminization or masculinization

NOTE: Refer to [Appendix A](#) to see the policy statement changes (if any) from the previous version.

Policy Guidelines

This policy does **not** apply to procedures involving the scapula when performed for:

- Acute trauma
- Congenital deformity causing functional impairment
- Reconstruction following medically necessary surgery
- Tumor resection

Such cases are reviewed under standard orthopedic or reconstructive policies and **not** under gender-affirming surgery criteria.

Coding

See the [Codes table](#) for details.

Description

Rib remodeling refers to a group of surgical procedures designed to alter the shape and contour of the rib cage, primarily to enhance waist definition and improve body aesthetics. Techniques vary in their approach, invasiveness, and use of imaging guidance, but commonly involve reshaping, fracturing, or stabilizing the lower ribs. The procedures aim to decrease waist diameter and waist-to-hip ratio, with each method presenting distinct risks, postoperative requirements, and suitability for different patient needs. Rib remodeling may also be called rib remodeling, WASP, RIBOSS, RibXcar, UUAIST, H-Curve® rib remodeling, and Ribella procedure, among other names.

Clavicle shortening is a specialized procedure that reduces the width of the shoulders by removing a small segment of the clavicle bone (collarbone) on both sides. The remaining ends are then aligned and stabilized using titanium plates and screws.

Scapular shaving is an aesthetic body-contouring procedure intended to reduce visible bony prominence, commonly performed in conjunction with cosmetic shoulder-narrowing surgery.

Related Policies

- Reconstructive Services

Benefit Application

Benefit determinations should be based in all cases on the applicable member health services contract language. To the extent there are conflicts between this Medical Policy and the member health services contract language, the contract language will control. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage of these services as it applies to an individual member.

Some state or federal law may prohibit health plans from denying FDA-approved Healthcare Services as investigational or experimental. In these instances, Blue Shield of California may be obligated to determine if these FDA-approved Healthcare Services are Medically Necessary.

Regulatory Status

- N/A

Rationale

Background

Rib Remodeling Techniques¹

Rib remodeling includes skeletal contouring procedures aimed at reshaping the rib cage to improve waist definition. Several methods are described below:

- **Floating Rib Resection (e.g., Ant Waist Surgery)**

Floating rib resection is older rib contouring method that involves removal of one or more floating ribs to reduce waist circumference or waist-to-hip ratio. Floating rib resection (resection of the 11th and/or 12th ribs) has been described in the peer-reviewed plastic surgery literature as an "aggressive" body-contouring procedure because it involves permanent alteration of normal skeletal anatomy to achieve waist narrowing. Compared with fracture-based remodeling approaches, it is more invasive because it requires rib removal and may be associated with complications such as hemothorax and pneumothorax.⁹

- **Waistline Aesthetic Slimming by Puncture (WASP)**

A minimally invasive rib remodeling technique that uses a **parallel approach** to induce greenstick fractures in the floating ribs (10th–12th) using either a **mini drill** or **piezotome**. This method avoids deep penetration and reduces risk to the pleural space and intercostal vessels. It enhances the hourglass silhouette by decreasing waist diameter and waist-to-hip ratio (WHR).

- **Rib Osteotomy with Osteosynthesis Stabilization (RIBOSS)**

Combines floating ribs corticotomy with osteosynthesis using titanium plate. This method eliminates need for corset use and is suitable for patients facing issues such as relapse or nonunion fractures.

- **RibXcar Technique**

RibXcar is an ultrasound-guided rib remodeling technique that creates percutaneous monocortical fractures of the 10th–12th ribs to achieve waist narrowing without rib resection or external surgical incisions.¹⁰

- **Ultrasonic- and Ultrasound-Assisted Indentation Surgery of the Thorax (UUAIST)**

UUAIST uses real-time ultrasound (US) to guide piezotome-assisted greenstick floating rib fractures. Effective but may cause severe pain and asymmetry if corset use is neglected.

Literature Review**WASP¹**

Waistline aesthetic slimming by puncture (WASP) is a minimally invasive rib remodeling technique developed to enhance waistline definition in body contouring procedures. It involves creating greenstick fractures in the 10th to 12th ribs using either a mini drill or piezotome via puncture access, guided by anatomical landmarks and ultrasound. The goal is to reduce waist circumference and waist-to-hip ratio (WHR) without traditional incisions or rib resection.

Literature Review

The evidence supporting WASP is limited to a retrospective cohort study conducted across three plastic surgery centers in Colombia and Brazil where WASP was used in addition to other body contouring techniques. The study included 125 patients and reported statistically significant reductions in waist circumference and WHR, with high patient satisfaction. However, since other body contouring procedures were also used, it is impossible to determine the relative impact of WASP on the outcomes; and the study lacks a control group, long-term follow-up, and comparative analysis with other rib remodeling techniques. In addition, as only 3% of the subject were transgender females, the data are not applicable to this population. The level of evidence is classified as Level 3 (Therapeutic).

Populations

The study population consisted of:

- 125 patients (96.8% cisgender females, 3.2% transgender females)
- Mean age: 34.7 years
- Mean BMI: 24.1 kg/m²

Inclusion criteria:

- Adults aged 18–55 years
- Good general health
- Unsatisfactory WHR from conventional body contouring

Exclusion criteria:

- Prior rib surgeries
- BMI >30
- Chronic respiratory diseases
- Calcium metabolism disorders (e.g., osteoporosis)
- Moderate/severe spinal disorders

Interventions

The WASP technique involves:

- Preoperative CT imaging and anatomical mapping
- Puncture access using a 16G needle
- Corticotomy via parallel approach using either a drill or piezotome
- Creation of greenstick fractures with inward manual pressure
- Confirmation of rib angulation via ultrasound
- Postoperative use of compression garments and corsets for up to 16 weeks
- Adjunct procedures: high-definition liposculpture, fat grafting

Comparators

The study does not include direct comparators. WASP is positioned as a safer alternative to:

- Rib resection (e.g., “Ant Waist” technique), which carries risks such as pneumothorax and hemothorax
- RibXcar, which uses perpendicular punctures and may pose higher risks of organ injury
- RIBOSS, which involves osteosynthesis with titanium plates and may be more suitable for patients unable to wear corsets

Outcomes

Reported outcomes include:

- Waist circumference reduction: median from 76 cm pre-op to 65 cm at 3 months
- WHR reduction: median from 0.8 to 0.7
- High satisfaction: 92.9% “very satisfied,” 98.2% would recommend the procedure
- Complication rate: 6.4% (including skin burns, severe pain, relapse, seroma)
- No serious adverse events (e.g., pneumothorax, hemothorax, chronic pain)

Direct Evidence

The study provides observational data from 125 patients with an average follow-up of 8 months who received WASP in addition to other body contouring procedures including liposuction and fat grafting. Measurements were taken preoperatively, immediately postoperatively, and at 3 months. Satisfaction was assessed using the Global Aesthetic Improvement Scale. No validated quality-of-life instruments were used, and no long-term respiratory function assessments were conducted.

Review of Evidence

WASP remains investigational. While early results suggest it is an effective method for waistline reduction with an acceptable safety profile in cisgender females, there were insufficient transgender females to determine efficacy and safety in this population. In addition, long-term safety data are needed for a comprehensive assessment of risk and benefit. Future research should include prospective studies with validated outcome measures and longer follow-up to assess durability and safety in transgender females.

RIBOSS²

Rib osteotomy with osteosynthesis stabilization (RIBOSS) is a surgical technique developed for aesthetic waist narrowing. It involves controlled greenstick fractures of the lower ribs (typically XI and XII) followed by internal fixation using titanium plates. The procedure is intended to enhance body contouring outcomes, particularly in patients with wide chest anatomy where conventional liposuction may be insufficient.

Literature Review

The available literature on RIBOSS is limited to a retrospective case series involving 27 patients (25 female and 2 male). The study reports short-term outcomes over a 3-month follow-up period. While initial results suggest improvements in waist and hip circumference and high patient satisfaction, the evidence lacks long-term data, control groups, and prospective validation.

Populations

The studied population consisted primarily of healthy adults aged 22–45 years with a BMI ≤ 30 kg/m². Exclusion criteria included osteoporosis, systemic illness, prior chest trauma or surgery, psychiatric disorders, and chronic lung disease. Most participants were female and underwent concurrent aesthetic procedures.

Interventions

The intervention involves piezotome-assisted osteotomy of ribs XI and XII (or X and XI in select cases), followed by stabilization with titanium plates. The procedure is performed under general and local anesthesia and is often combined with high-definition liposculpture.

Comparators

No direct comparators were evaluated in the available study. However, the authors suggest that RIBOSS may offer advantages over traditional rib resection techniques and corset-based waist training by reducing risks such as pneumothorax and eliminating the need for prolonged external compression.

Outcomes

Reported outcomes include:

- Mean waist reduction: 12.1 cm at 1 month, 13.0 cm at 3 months
- Mean hip reduction: 6.2 cm at 1 month, 8.7 cm at 3 months
- Pain scores: 2.4/10 at week 1, 0.26/10 at month 1
- Complications: One case of wound dehiscence, one case of moderate pain
- Patient satisfaction: Mean Body-QoL score of 89.5/100

Direct Evidence

The evidence is derived from a single-center retrospective case series without a control group. The study design limits the ability to attribute outcomes solely to RIBOSS, especially given the frequent use of concurrent procedures. No randomized controlled trials or comparative studies are available.

Review of Evidence

Based on the current evidence, RIBOSS remains investigational. While early results are promising, the lack of long-term data, standardized outcome measures, and comparative effectiveness studies precludes definitive conclusions about safety, efficacy, and clinical utility. Further research, including prospective trials and isolated evaluations of the procedure, is necessary to support broader adoption or coverage.

RibXcar³

RibXcar is a novel, minimally invasive surgical technique designed for waist narrowing through ultrasound-guided monocortical rib fractures. The procedure avoids traditional incisions and instead uses puncture access to reshape the 10th, 11th, and 12th ribs. It aims to improve body contouring outcomes by reducing rib angulation and waist circumference without visible scarring.

Literature Review

The evidence for RibXcar is limited to a single case series involving 30 female patients aged 18–35 years. The study was conducted across three private clinics in Peru, Colombia, and Mexico between October and December 2022. While the article reports statistically significant improvements in rib angulation and waist circumference, it lacks comparative data, long-term follow-up, and validated patient-reported outcome measures.

Populations

The study population included:

- Female patients aged 18–35 years
- BMI range: 19–26 kg/m²
- All patients classified as Goldman Risk Index Class I

Exclusion criteria included:

- History of rib surgery
- BMI >28
- Flaccid abdominal or thoracolumbar skin (Matarasso score ≥ 2)
- Complementary liposuction procedures

Interventions

The RibXcar procedure involves:

- Ultrasound-guided identification of rib anatomy
- Puncture with an N18 needle and use of a piezotome for monocortical fracture
- Continuous cooling with 0.9% NaCl solution to prevent burns
- Manual deformation of the rib post-fracture
- Bilateral application across ribs 10–12
- Postoperative use of a compression corset for 6 months

Comparators

No comparators were included in the study. The article references traditional rib removal and liposuction techniques but does not provide direct comparative data. The authors suggest RibXcar may offer aesthetic advantages and reduced risk of scarring compared to rib resection.

Outcomes

Reported outcomes include:

- Waist circumference reduction from 69 cm preoperatively to 58.7 cm at 3 months
- Statistically significant angular reductions in ribs 10–12 ($P < 0.0001$)
- 100% patient satisfaction with aesthetic results and puncture site
- No major complications; two cases of minor skin burns (<0.5 cm) were treated without sequelae

Direct Evidence

The evidence is derived from a non-comparative, retrospective case series with a short follow-up period (3 months). Measurements were performed using ultrasound, and satisfaction was assessed via a non-validated survey. The study lacks control groups, randomization, and standardized outcome instruments.

Review of Evidence

RibXcar remains investigational. While early findings suggest potential benefits in waist contouring and patient satisfaction, the absence of rigorous clinical trials, validated outcome measures, and long-term safety data limits its generalizability. Further research is needed to establish the procedure's efficacy, safety, and comparative value relative to existing body contouring techniques.

UUAIST⁴

Ultrasonic- and ultrasound-assisted indentation surgery of the thorax (UUAIST) is a minimally invasive surgical technique developed for waistline remodeling. It involves ultrasound-guided puncture access to the lower ribs (typically ribs 10–12) and internal tensioning of the rib structure to achieve a narrower waist contour. The procedure is designed to avoid traditional incisions and rib resection, aiming for aesthetic enhancement with minimal scarring and reduced recovery time.

Literature Review

The evidence supporting UUAIST is limited to a single-center retrospective case series. The article reports short-term outcomes and procedural feasibility but lacks randomized controlled trials, long-term follow-up, and comparative data. The level of evidence is considered low, and the findings are preliminary.

Populations

The study population included:

- Adult patients seeking aesthetic waistline enhancement
- Predominantly cisgender females
- BMI under 28
- No history of rib surgery or chronic respiratory conditions

Exclusion criteria included:

- Prior thoracic surgery

- Bone metabolism disorders
- Poor compliance with postoperative garment use

Interventions

The UUAIST procedure involves:

- Preoperative ultrasound mapping of rib anatomy
- Percutaneous access using a fine-gauge needle
- Internal structural tensioning of the ribs via monocortical manipulation
- No external incisions or rib resection
- Postoperative use of compression garments for several weeks

Comparators

No direct comparators were included in the study. UUAIST is positioned as an alternative to:

- Rib resection techniques, which involve permanent bone removal and higher risk of complications
- Other rib remodeling methods such as RibXcar and WASP, which use different access angles and instrumentation

Outcomes

Reported outcomes include:

- Reduction in waist circumference
- High patient satisfaction with aesthetic results
- Minimal complications (e.g., transient discomfort, mild bruising)
- No serious adverse events such as pneumothorax or chronic pain

Direct Evidence

The evidence is derived from a retrospective case series with a short follow-up period. Measurements were taken pre- and postoperatively, and satisfaction was assessed using non-validated surveys. No control group or standardized outcome instruments were used.

Review of Evidence

UUAIST remains investigational. While initial results suggest potential benefits in waist contouring with minimal invasiveness, the absence of rigorous clinical trials, validated outcome measures, and long-term safety data limits its applicability. Further research is needed to establish the procedure's efficacy, safety, and comparative value relative to existing body contouring techniques.

Clavicle Shortening^{5,6}

No studies were identified evaluating the safety and efficacy of clavicle shortening procedures. The impact of clavicle shortening among patients who have sustained clavicle fractures highlights the potential negative long-term complications on shoulder function underscoring the need for prospective clinical trials to determine the safety of clavicle shortening procedures.

Scapular Shaving

Scapular shaving is an aesthetic body-contouring procedure intended to reduce visible bony prominence, commonly performed in conjunction with cosmetic shoulder-narrowing surgery.

Coverage decisions are based on the clinical intent, evidence base, and medical necessity of the procedure and do not vary according to the member's gender identity or diagnosis alone. Scapular shaving, scapular spine reduction, or any surgical contouring of the scapula performed to alter shoulder or upper-back appearance is considered cosmetic and not medically necessary. This determination applies regardless of the member's gender identity, diagnosis of gender dysphoria, or stated gender-affirming intent.

Blue Shield supports evidence-based gender-affirming surgical care. Scapular shaving is not recognized as a gender-affirming surgical procedure in nationally accepted clinical guidelines, including WPATH Standards of Care Version 8, and lacks evidence demonstrating safety, effectiveness, or durable clinical benefit in the treatment of gender dysphoria.⁷

A comprehensive literature search of PubMed using procedure-specific, anatomical, cosmetic, and gender-affirming search terms found no peer-reviewed clinical studies, guidelines, or outcomes data supporting scapular shaving as a medically necessary procedure or as treatment for gender dysphoria. We searched PubMed for using the following search terms:⁸

- "scapula shaving"
- "scapula spine reduction"
- "scapula contouring"
- "scapula bone shaving"
- "scapula AND gender dysphoria"
- "scapula AND transgender"
- "scapula AND gender affirming"
- "shoulder blade AND gender dysphoria"

References

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Documentation for Clinical Review

- No records required

Coding

The list of codes in this Medical Policy is intended as a general reference and may not cover all codes. Inclusion or exclusion of a code(s) does not constitute or imply member coverage or provider reimbursement policy.

Type	Code	Description
CPT®	21600	Excision of rib, partial
	21811	Open treatment of rib fracture(s) with internal fixation, includes thoracoscopic visualization when performed, unilateral; 1-3 ribs
	21812	Open treatment of rib fracture(s) with internal fixation, includes thoracoscopic visualization when performed, unilateral; 4-6 ribs
	21813	Open treatment of rib fracture(s) with internal fixation, includes thoracoscopic visualization when performed, unilateral; 7 or more ribs
	21899	Unlisted procedure, neck or thorax
	22899	Unlisted procedure, spine
	23120	Claviculectomy; partial
	23480	Osteotomy, clavicle, with or without internal fixation;
	23485	Osteotomy, clavicle, with or without internal fixation; with bone graft for nonunion or malunion (includes obtaining graft and/or necessary fixation)
	23490	Prophylactic treatment (nailing, pinning, plating or wiring) with or without methylmethacrylate; clavicle
	23491	Prophylactic treatment (nailing, pinning, plating or wiring) with or without methylmethacrylate; proximal humerus
	23929	Unlisted procedure, shoulder

Policy History

This section provides a chronological history of the activities, updates and changes that have occurred with this Medical Policy.

Effective Date	Action
12/01/2025	New policy.
03/01/2026	Administrative update. Coding update.
08/01/2026	Annual review. Policy statement, guidelines, and literature review updated. Policy title changed from Rib Remodeling and Clavicle Shortening to current one. Coding update.

Feedback

Blue Shield of California is interested in receiving feedback relative to developing, adopting, and reviewing criteria for medical policy. Any licensed practitioner who is contracted with Blue Shield of California or Blue Shield of California Promise Health Plan is welcome to provide comments, suggestions, or concerns. Our internal policy committees will receive and take your comments into consideration. Our medical policies are available to view or download at www.blueshieldca.com/provider.

For medical policy feedback, please send comments to: MedPolicy@blueshieldca.com

Questions regarding the applicability of this policy should be directed to the Prior Authorization Department at (800) 541-6652, or the Transplant Case Management Department at (800) 637-2066 ext. 3507708 or visit the provider portal at www.blueshieldca.com/provider.

Disclaimer: Blue Shield of California may consider published peer-reviewed scientific literature, national guidelines, and local standards of practice in developing its medical policy. Federal and state law, as well as member health services contract language, including definitions and specific contract provisions/exclusions, take precedence over medical policy and must be considered first in determining covered services. Member health services contracts may differ in their benefits. Blue Shield reserves the right to review and update policies as appropriate.

Appendix A

POLICY STATEMENT	
BEFORE <u>Red font: Verbiage removed</u>	AFTER <u>Blue font: Verbiage Changes/Additions</u>
Rib Remodeling and Clavicle Shortening BSC7.21 Policy Statement: I. Rib remodeling for body contouring, including but not limited to any of the following procedures, is considered investigational: A. Waistline aesthetic slimming by puncture (WASP) B. Rib osteotomy with osteosynthesis stabilization (RIBOSS) C. Scarless, ultrasound-guided rib remodeling (RibXcar) D. Ultrasonic- and ultrasound-assisted indentation surgery of the thorax (UUAIST) II. Clavicle shortening for body contouring is considered investigational	Skeletal Remodeling BSC7.21 Policy Statement: I. Rib remodeling for body contouring, including but not limited to any of the following procedures, is considered investigational: A. Waistline aesthetic slimming by puncture (WASP) B. Rib osteotomy with osteosynthesis stabilization (RIBOSS) C. Scarless, ultrasound-guided rib remodeling (RibXcar) D. Ultrasonic- and ultrasound-assisted indentation surgery of the thorax (UUAIST) II. Clavicle shortening for body contouring is considered investigational III. Scapular shaving or scapular contouring is not medically necessary when performed for any of the following: A. Aesthetic dissatisfaction with silhouette or bone contour B. Gender affirmation C. Reduction of scapular prominence D. Shoulder narrowing E. Upper-back or posterior shoulder feminization or masculinization