**Important Note About This Medical Policy:**

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**Skip Background/Definitions and go directly to Guideline**

**Background**

Chest wall deformities result from abnormal growth of the rib cartilages which pushes the sternum either inward or outward, away from the plane of the chest. The deformities can range from mild, symmetric indentions or protrusions, to severe asymmetric deformities. The appearance of the deformity often changes dramatically around the time of adolescent growth. Chest wall deformities may be corrected using various techniques; most require surgical intervention.
### Definitions

| **Pectus carinatum (PC)** | Pectus carinatum (i.e., pigeon breast or chicken breast) is a congenital chest deformity characterized by an anterior protrusion deformity of the sternum and costal cartilages. PC is typically not confirmed until after the growth spurts of early adolescence. This deformity produces a rigid chest and, while symptoms are uncommon, it may result in inefficient respiration as a result of the restrictive chest formation. Three types of PC-related defects have been identified:
- Anterior displacement of the body of the sternum and symmetrical concavity of the costal cartilages
- Lateral depression of the ribs on one or both sides of the sternum
- Pouter pigeon breast (least common deformity) — a defect that consists of an upper or chondromalacial prominence with protrusion of the manubrium and depression of the sternal body

The degree of physiological impairment is related to the degree of chest deformity. Patients with PC may develop symptoms as a result of restricted air exchange; complete expiration of air from the lungs may not occur. In addition, pain may result from the secondary pressures that develop from the overgrowth of cartilage. Other conditions that may be associated with PC include frequent respiratory infections, asthma, rickets, mitral valve disease, Marfan’s syndrome, scoliosis and other cardiac changes. |

| **Pectus excavatum (PE)** | Pectus excavatum is a posterior depression of the sternum and adjacent costal cartilages; often a cosmetic defect, but which may have varied anatomic and symptomatic presentations. Surgical correction of pectus excavatum improves physical appearance in most patients and cardiorespiratory function in some, but the indications for intervention are not fully standardized.

Standard PE surgical procedures; e.g.:
- Ravitch procedure — standard open surgical technique that involves removing the ends of the ribs in the area that is depressed at the sternum. The sternum is then straightened out at the point it turns downward by breaking it horizontally. Stitches and a metal bar are used to hold the sternum in place under the skin. After two to three years, when remolding has taken place, the bar may be removed.
- Nuss procedure (aka minimally invasive repair of pectus excavatum [MIRPE]) — closed procedure that corrects the pectus defect without cartilage resection by applying outward pressure to the sternum at the point of maximal inward deflection using a custom-contoured steel bar ("Nuss bar"). The Nuss bar is placed in the pleural space, passed behind the sternum, rotated 180 degrees, and then attached laterally to the outer edge of the rib cage. The bar is left in place for several months or years.

Investigational PE treatment approaches (see Limitations/Exclusions); e.g.:
- Sternal magnet (Magnetic Mini Mover procedure) — designed to lift the sternum using magnetic attraction between a magnet attached
Guidelines

Note: Coverage for the surgical repair of a chest wall deformity is dependent upon benefit plan language, may be subject to the provisions of a cosmetic and/or reconstructive surgery benefit and may be governed by state/federal mandates. Under many benefit plans, surgery for a chest wall deformity is not covered when performed solely for the purpose of improving or altering appearance or self-esteem or to treat psychological symptomatology or psychosocial complaints related to one’s appearance. This includes, but is not limited to, treatments, drugs, products, hospital/facility charges, anesthesia, pathology/lab fees, radiology fees and professional fees by the surgeon, assistant surgeon, consultants and attending physicians.

I. Surgical procedures performed solely for cosmetic/psychological reasons are not considered medically necessary. (See Limitations/Exclusions)

II. Surgical procedures performed to correct physiologic complications of Pectus Excavatum, Pectus Carinatum, or Poland syndrome are considered medically necessary and reconstructive when the following criteria are met:
Medical Policy: 
Surgical Correction of Chest Wall Deformities (Commercial)

A. Functional impairment documented by one of the following:
   1. Decreased cardiac output and/or abnormal pulmonary function during exercise
   2. Anticipation of future cardiovascular compromise
   3. Signs or symptoms that impair the member's ability to participate in usual activities (i.e., shortness of breath [dyspnea] at rest or on exertion)
   4. Arrhythmias or clinical stigmata of decreased cardiac output

B. The procedure is expected to correct the functional impairment

AND

C. The anatomical criterion for the condition is met:
   1. For treatment of PE, the Haller Index is ≥ 3.25
   2. For treatment of PC, the Haller Index is ≤ 2.0
   3. For treatment of Poland syndrome, when rib formation is absent

Limitation/Exclusion

1. ConnectiCare does not consider surgery for chest wall deformities to be medically necessary when performed for any of the following reasons:
   A. Improve/alter appearance
   B. Increase self-esteem
   C. Treat psychological symptomatology or psychosocial complaints

II. Bracing and surgical procedures to correct PC are considered cosmetic and not medically necessary when the deformity does not cause physiologic disturbances from compression of the heart or lungs.

III. The following surgical procedures for PE are not considered medically necessary due to insufficient evidence of therapeutic value and are therefore not covered:

   A. Magnetic Mini Mover Procedure (3MP)
   B. Sternal suction (e.g., The Vacuum Bell)

Applicable Coding

To access the codes, please download the policy to your computer, and click on the paperclip icon within the policy

Applicable CPT and Diagnosis Codes

References


Baban A, Torre M, Bianca S, et al. Poland syndrome with bilateral features: Case description with review of

Guntheroth WG, Spiers PS. Cardiac function before and after surgery for pectus excavatum. Am J Cardiol. 2007;99(12):1762-1764.


Kobayashi S, Yoda S, Komuro Y, et al. Correction of pectus excavatum and pectus carinatum assisted by
Medical Policy: Surgical Correction of Chest Wall Deformities (Commercial)

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Stavrev PV, Stavrev VP, Beshkov KN. Surgical correction of funnel chest. Folia Med (Plovdiv).


Revision history

<table>
<thead>
<tr>
<th>DATE</th>
<th>REVISION</th>
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<tbody>
<tr>
<td>11/19/2019</td>
<td>- Connecticare has adopted the clinical criteria of its parent corporation, EmblemHealth</td>
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<tr>
<td></td>
<td>- Reformatted and reorganized policy, transferred content to new template</td>
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<tr>
<td></td>
<td>- Removed dynamic compression bracing from Limitations/Exclusions</td>
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<tr>
<td>10/12/2018</td>
<td>- Consolidated separate criteria sets for PE, PC and Poland syndrome into one criterion that emphasizes the presence of functional impairment and differentiated Haller Index parameters for PE and PC.</td>
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<tr>
<td>11/11/2016</td>
<td>Coverage limitations removed for Poland Syndrome.</td>
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