Policy
*Please see amendment for Pennsylvania Medicaid at the end of this CPB.

Aetna considers surgical treatment using a type of dynamic muscle transfer medically necessary for functional impairment related to winged scapula when symptoms do not resolve after 12 months (traumatic cause) to 24 months (non-traumatic cause) of conservative therapy. Surgical correction for a winged scapula resulting in a cosmetic deformity is considered cosmetic.

Aetna considers neurolysis of the long thoracic nerve or spinal accessory muscle for the treatment of winged scapula experimental and investigational because there is inadequate evidence in the peer-reviewed published clinical literature regarding its effectiveness.

Aetna considers polyester tape scapulopexy experimental and investigational for scapular stabilization because its effectiveness has not been established.

Background
The scapulae or shoulder blades are bony structures on the upper back that connect the upper arms to the thorax. Each
scapula is surrounded by thick layers of muscle that are responsible for the smooth movement of the shoulder joint. A winged scapula is characterized by protrusion of the medial border of the scapula from the thorax as the scapula rotates out and is caused by paralysis of the anterior serratus muscle. It is most commonly caused by damage or a contusion to the long thoracic nerve of the shoulder and/or weakness of the serratus anterior muscle as a result of blunt trauma to the shoulder, traction of the neck or sometimes from a viral illness. Scapular winging has been classified as either static or dynamic. Static winging is attributed to a fixed deformity of the shoulder girdle, spine or ribs and is present when the patient’s arms are at their sides. Dynamic winging is attributed to a neuromuscular disorder and is produced by active or resisted movement and usually not observed at rest. Scapular winging has also been classified anatomically based on whether the etiology of the causative lesion is related to nerve, muscle, bone or joint disease. Scapular winging is the result of neuropraxic injuries in most patients with symptoms spontaneously resolving within 6 to 9 months after traumatic injury and within 2 years after non-traumatic injuries. Conservative treatment of at least 12 to 24 months has been advocated consisting of pain control, immobilization, and rehabilitation. Localized injections are not routinely used for isolated scapular winging. A cosmetic deformity may occur in the upper back as the result of winged scapula.

Surgical treatment using a type of dynamic muscle transfer may be indicated for functional impairment related to winged scapula when symptoms do not resolve after 12 months (traumatic cause) to 24 months (non-traumatic cause) of conservative therapy.

Surgical treatment is divided into 2 categories:

- **Static stabilization procedures** involve scapulothoracic fusion and scapulothoracic arthrodesis in which the scapula is fused to the thorax. These procedures may be effective in cases of generalized weakness (e.g., facioscapulohumeral...
muscular dystrophy) when the patient has disabling pain and functional loss and no transferable muscles. They can relieve shoulder fatigue and pain and allow functional abduction and flexion of the upper extremity. Static stabilization procedures have fallen out of favor for scapular winging related to isolated muscle weakness because the results deteriorate over time with recurrence of winging. The usual incidence of complications associated with some of these procedures is high.

- Dynamic muscle transfer procedures have shown better results for correction of scapular winging and restoration of function. Several different muscles have been used in various muscle transfer techniques to provide dynamic control of the scapula and to improve scapulothoracic and glenohumeral motion. Transfer of the sternal head of the pectoralis major muscle to the inferior angle of the scapula with fascia lata autograft reinforcement is the preferred method of treatment for scapular winging related to long thoracic nerve injury. The surgical procedure of choice for scapular winging related to chronic trapezius muscle dysfunction involves the lateral transfer of the insertions of the levator scapulae and the rhomboid major and minor muscles. This procedure enables the muscles to support the shoulder girdle and to stabilize the scapula.

Surgical procedures for the treatment of winged scapula include:

- Scapulothoracic arthrodesis (fusion)
- Scapulopexy (surgical fixation of the scapula to the chest wall or to the spinous process of the vertebrae)
- Nerve transfer to the serratus anterior muscle   Eden-
- Lange procedure or modified Eden-Lange procedure (transfer of the levator scapulae to the acromion and the rhomboid muscles to the infraspinatus fossa).

Surgical correction for a winged scapula resulting in a cosmetic deformity only would be considered not medically necessary.
Neurolysis is the destruction of nerves to promote analgesia or pain relief. The spinal accessory nerve is the eleventh cranial nerve. It emerges from the skull and receives an extra root (or accessory) from the upper part of the spinal cord. This nerve supplies the sternocleidomastoid and trapezius muscles. The sternocleidomastoid muscle is in the front of the neck and turns the head while the trapezius muscle moves the scapula, turns the head to the opposite side, and helps pull the head back. Neurolysis of the spinal accessory muscle for the treatment of winged scapula is investigational/experimental because there is inadequate evidence in the peer-reviewed published clinical literature regarding its effectiveness.

Marie et al (2013) noted that scapular winging secondary to serratus anterior muscle palsy is a rare pathology. It is usually due to a lesion in the thoracic part of the long thoracic nerve following violent upper-limb stretching with compression on the nerve by the anterior branch of thoraco-dorsal artery at the "crow's foot landmark" where the artery crosses in front of the nerve; scapular winging causes upper-limb pain, fatigability or impotence. Diagnosis is clinical and management initially conservative. When functional treatment by physiotherapy fails to bring recovery within 6 months and electromyography (EMG) shows increased distal latencies, neurolysis may be suggested. Muscle transfer and scapula-thoracic arthrodesis are considered as palliative treatments. These investigators reported a single-surgeon's experience of 9 open neurolyses of the thoracic part of the long thoracic nerve in 8 patients. At 6 months' follow-up, no patients showed continuing signs of winged scapula. Control EMG showed significant reduction in distal latency; Constant scores showed improvement; and visual analog scale (VAS)-assessed pain was considerably reduced. Neurolysis would thus seem to be the first-line surgical attitude of choice in case of compression confirmed on EMG. The authors stated that the present results would need to be confirmed in larger studies with longer follow-up, but this is made difficult by the rarity of this pathology.

*Polyester Tape Scapulopexy for Scapular Stabilization:*
Leechavengvongs et al (2015) reported the results of scapular stabilization for winging in patients with chronic upper brachial plexus injury (BPI). A total of 8 patients, mean age of 36 years, who had a winged scapula after successful restoration of major shoulder function by nerve transfer underwent scapular stabilization to the ribcage using polyester tape. The follow-up period ranged from 24 to 40 months (mean of 38). Data collection included radiographic analysis, active range of motion (ROM) measurement, University of California Los Angeles shoulder score, and VAS pain score. All patients had clinical improvement with resolution of scapular winging; 5 patients had no winging and 3 had mild winging after the surgery. Mean active forward flexion increased from 101° pre-operatively to 127° post-operatively. Mean active shoulder abduction increased from 91° pre-operatively to 121° post-operatively. Mean University of California Los Angeles shoulder score improved from 17 to 27 and mean VAS pain score improved from 6.1 to 0.7. In addition, mean lateral deviated angle increased from 4° from neutral pre-operatively to 9° at the last follow-up. All patients reported satisfaction with post-operative appearance. The authors concluded that outcomes of polyester tape scapulopexy in the short- to intermediate-term were favorable in terms of improved appearance, upper extremity function, and pain reduction in patients with winged scapula resulting from chronic upper BPI, and with successful restoration of shoulder motion by previous nerve transfers (Level of Evidence = IV). This was a small (n = 8) study with short-to-intermediate follow-up (24 to 40 months). These findings need to be validated by well-designed studies with larger sample size and long-term follow-up.

**CPT Codes / HCPCS Codes / ICD-10 Codes**

*Information in the [brackets] below has been added for clarification purposes. Codes requiring a 7th character are represented by "+":*

*ICD-10 codes will become effective as of October 1, 2015:*

*CPT codes covered if selection criteria are met:*
Muscle transfer, any type, shoulder or upper arm; single

multiple

Scapulopexy (eg, Sprengels deformity or for paralysis) [not covered if cosmetic only]

CPT codes not covered for indications listed in the CPB:

Neuroplasty, major peripheral nerve, arm or leg, open; other than specified [long thoracic nerve]

Internal neurolysis, requiring use of operating microscope (List separately in addition to code for neuroplasty) (Neuroplasty includes external neurolysis) [long thoracic nerve]

ICD-10 codes covered if selection criteria are met:

Other specified acquired deformities of unspecified limb [winged scapula]

The above policy is based on the following references:

7. Jeon IH, Neumann L, Wallace WA. Scapulothoracic fusion for painful winging of the scapula in nondystrophic...


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AETNA BETTER HEALTH® OF PENNSYLVANIA

Amendment to
Aetna Clinical Policy Bulletin Number: 0859
Winged Scapular Surgery

There are no amendments for Medicaid.

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Updated 06/2017