Medical Policy

Extracorporeal Shock Wave Treatment for Plantar Fasciitis and Other Musculoskeletal Conditions

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Policy Number: 081
BCBSA Reference Number: 2.01.40
NCD/LCD: N/A

Related Policies
- Ultrasound Accelerated Fracture Healing Device, #497
- Electrical Bone Growth Stimulation of the Appendicular Skeleton, #499
- Bone Morphogenetic Protein, #097

Policy

Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity Medicare HMO BlueSM and Medicare PPO BlueSM Members

Extracorporeal shock wave therapy (ESWT), using either a high or low-dose protocol or radial ESWT, is INVESTIGATIONAL as a treatment of musculoskeletal conditions, including but not limited to:

- Plantar fasciitis
- Tendinopathies including tendinitis of the shoulder, tendinitis of the elbow (lateral epicondylitis), achilles tendinitis, and patellar tendinitis;
- Spasticity;
- Stress fractures;
- Delayed union and nonunion of fractures; and
- Avascular necrosis of the femoral head.

Prior Authorization Information

Pre-service approval is required for all inpatient services for all products.
See below for situations where prior authorization may be required or may not be required.
Yes indicates that prior authorization is required.
No indicates that prior authorization is not required.
N/A indicates that this service is primarily performed in an inpatient setting.
### Commercial Managed Care (HMO and POS)
This is not a covered service.

### Commercial PPO and Indemnity
This is not a covered service.

### Medicare HMO Blue<sup>SM</sup>
This is not a covered service.

### Medicare PPO Blue<sup>SM</sup>
This is not a covered service.

#### CPT Codes / HCPCS Codes / ICD Codes
Inclusion or exclusion of a code does not constitute or imply member coverage or provider reimbursement. Please refer to the member’s contract benefits in effect at the time of service to determine coverage or non-coverage as it applies to an individual member.

Providers should report all services using the most up-to-date industry-standard procedure, revenue, and diagnosis codes, including modifiers where applicable.

The following codes are included below for informational purposes only; this is not an all-inclusive list.

The following CPT codes are considered investigational for Commercial Members: Managed Care (HMO and POS), PPO, Indemnity, Medicare HMO Blue and Medicare PPO Blue:

#### CPT Codes

<table>
<thead>
<tr>
<th>CPT codes:</th>
<th>Code Description</th>
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<tbody>
<tr>
<td>28890</td>
<td>Extracorporeal shock wave, high energy, performed by a physician, requiring anesthesia other than local, including ultrasound guidance, involving the plantar fascia</td>
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<tr>
<td>0101T</td>
<td>Extracorporeal shock wave involving musculoskeletal system, not otherwise specified, high energy</td>
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<tr>
<td>0102T</td>
<td>Extracorporeal shock wave therapy; high energy, performed by a physician, requiring anesthesia other than local, involving lateral humeral epicondyle</td>
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#### Description
ESWT, also known as orthotripsy, has been available since the early 1980s for the treatment of renal stones and has been widely investigated for the treatment of biliary stones. ESWT uses externally-applied shock waves to create a transient pressure disturbance, which disrupts solid structures, breaking them into smaller fragments, thus allowing spontaneous passage and/or removal of stones. The mechanism by which ESWT might have an effect on musculoskeletal conditions is not well-defined. Chronic musculoskeletal conditions, such as tendinitis, can be associated with a substantial degree of scarring and calcium deposition. Calcium deposits may restrict motion and encroach on other structures, such as nerves and blood vessels, causing pain and decreased function. One hypothesis is that disruption of these calcific deposits by shock waves may loosen adjacent structures and promote resorption of calcium, thereby decreasing pain and improving function.

Other mechanisms are also thought to be involved in the mechanism of ESWT. Physical stimuli are known to activate endogenous pain control systems, and activation by shock waves may “reset” the endogenous pain receptors. Damage to endothelial tissue from ESWT may result in increased vessel wall permeability, causing increased diffusion of cytokines, which may in turn promote healing. Microtrauma induced by ESWT may promote angiogenesis and thus aid in healing. Finally, shock waves have been shown to stimulate osteogenesis and promote callous formation in animals, which is the rationale for trials of ESWT in delayed union or nonunion of bone fractures.

#### Plantar Fasciitis
Plantar fasciitis is a very common ailment characterized by deep pain in the plantar aspect of the heel, particularly on arising from bed. While the pain may subside with activity, in some patients the pain may
Persist, interrupting activities of daily living. On physical examination, firm pressure will elicit a tender spot over the medial tubercle of the calcaneus. The exact etiology of plantar fasciitis is unclear, although repetitive injury is suspected. Heel spurs are a common associated finding, although it has never been proven that heel spurs cause the pain and asymptomatic heel spurs can be found in up to 10% of the population. Most cases of plantar fasciitis are treated with conservative therapy, including rest or minimization of running and jumping, heel cups, and nonsteroidal-anti-inflammatory drugs. Local steroid injection may also be used. Improvement may take up to 1 year in some cases.

**Tendinitis and Tendinopathies**
ESWT has been investigated for a variety of tendinitis/tendinopathy syndromes. Many tendinitis/tendinopathy syndromes are related to overuse injury. Conservative treatment often involves rest, activity modifications, physical therapy, and anti-inflammatory medications.

**Other Musculoskeletal and Neurologic Conditions**
ESWT has been investigated for a variety of other musculoskeletal conditions, including medial tibial stress syndrome, osteonecrosis (avascular necrosis) of the femoral head, coccydynia, and painful stump neuromas.

Spasticity refers to a motor disorder characterized by increased velocity-dependent stretch reflexes. It is one characteristic of upper motor neuron dysfunction, which may be due to a variety of pathologies.

**Summary**
Extracorporeal shock wave therapy (ESWT) is a noninvasive method that may be used to treat pain using shock waves or sound waves that are directed from outside the body onto the area to be treated, eg, the heel in the case of plantar fasciitis. Shock waves may be generated at high- or low-energy intensity, and treatment protocols may include more than 1 treatment.

ESWT has been investigated for use in a variety of musculoskeletal conditions. For plantar fasciitis, numerous randomized controlled trials (RCTs), including several well-designed-double blinded RCTs, have demonstrated mixed findings, with some studies reporting a benefit and others reporting no benefit. In cases where statistically significant differences are reported, the magnitude of effect for some of the outcomes is of uncertain clinical significance. Given the lack of demonstrated benefit in RCTs, ESWT is considered investigational for plantar fasciitis.

A number of studies, including relatively small RCTs that have some methodologic flaws, have evaluated ESWT for tendinopathies, including lateral epicondylitis, shoulder tendinopathy, Achilles tendinopathy, and patellar tendinopathy. In general, although some RCTs demonstrate benefits in pain and functional outcomes associated with ESWT, the limited number of high-quality RCT evidence precludes conclusions about the efficacy of ESWT for tendinopathies. Similarly, high-quality RCT evidence for the use of ESWT for medial tibial stress syndrome, osteonecrosis of the femoral head, and acute fractures and delayed fracture union is limited. As a treatment for spasticity, several small studies have demonstrated short-term improvements in modified Ashworth scale scores, but direct evidence regarding the effect of ESWT on more directly clinically meaningful measures such as pain or function are lacking. Differences in treatment parameters among studies, including energy dosage, method of generating and directing shock waves, and use or absence of anesthesia, limit generalizations from results of multiple studies. Given the limitations in the evidence base, ESWT is considered investigational for the treatment of musculoskeletal conditions other than plantar fasciitis, including tendinopathies, (lateral epicondylitis, patellar tendinopathy, Achilles tendinopathy, and shoulder tendinopathy), spasticity, medial tibial stress syndrome, osteonecrosis of the femoral head, and for prevention or treatment of fracture nonunion or delayed union.

**Policy History**

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<tr>
<th>Date</th>
<th>Action</th>
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<tr>
<td>7/2017</td>
<td>New references added from BCBSA National medical policy.</td>
</tr>
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</table>
Information Pertaining to All Blue Cross Blue Shield Medical Policies
Click on any of the following terms to access the relevant information:
Medical Policy Terms of Use
Managed Care Guidelines
Indemnity/PPO Guidelines
Clinical Exception Process
Medical Technology Assessment Guidelines

References


