

**NO. 91527-R4**

# EXTRACORPOREAL SHOCK WAVE THERAPY (ESWT)

**Effective date:** 03/01/2026**Last reviewed:** 02/2026

**Instructions for use:** This document is for informational purposes only. Coverage is subject to member's specific benefits. Group specific policy will supersede this policy when applicable. Eligibility and benefit coverage are determined in accordance with the terms of the member's plan in effect as of the date services are rendered. It is not an authorization, certification, explanation of benefits, or contract. Receipt of benefits is subject to satisfaction of all terms and conditions of coverage. Priority Health's medical policies are developed with the assistance of medical professionals and are based upon a review of published and unpublished information including, but not limited to, current medical literature, guidelines published by public health and health research agencies, and community medical practices in the treatment and diagnosis of disease. Because medical practice, information, and technology are constantly changing, Priority Health reserves the right to review and update its medical policies at its discretion. Priority Health's medical policies are intended to serve as a resource to the plan. They are not intended to limit the plan's ability to interpret plan language as deemed appropriate. Physicians and other providers are solely responsible for all aspects of medical care and treatment, including the type, quality, and levels of care and treatment they choose to provide.

**Policy scope:** This policy addresses the use of extracorporeal shock wave therapy (ESWT) including extracorporeal shock wave lithotripsy (ESWL) and low-intensity ESWT (Li-ESWT).

## Related policies:

- Category III Current Procedural Terminology (CPT®) Codes # 91636
- Foot care # 91121

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## SUMMARY OF CHANGES – R4

### Additions:

- Added Extracorporeal Shock Wave Lithotripsy as medically necessary for treatment of urolithiasis
- New Medical/Professional Society Guidelines section
- New Government Regulations section listing applicable CMS NCDs or LCDs
- New Policy Scope Section
- New FDA/Regulatory section
- Added additional non-covered services for extracorporeal shock wave therapy (ESWT)

### Clarifications:

- Policy was restructured to first specify addition of extracorporeal shock therapy (lithotripsy) may be considered medically necessary (inclusions), and second to indicate extracorporeal shock wave therapy conditions that are considered not medically necessary
- Moved literature background on low-intensity extracorporeal shockwave therapy (Li-ESWT) to separate section so all therapies were organized
- Added updated references

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**I. MEDICAL NECESSITY CRITERIA**

- A. Extracorporeal Shock Wave Lithotripsy (ESWL) may be considered medically necessary for the treatment of urolithiasis.
  
- B. Extracorporeal Shock Wave Therapy (ESWT) is not medically necessary for the following conditions:
  - 1. Orthopedic or musculoskeletal applications including but not limited to plantar fasciitis, wound healing, epicondylitis of the elbow due to insufficient evidence of the effectiveness of ESWT on musculoskeletal conditions or tissue injuries
  - 2. Coronary Artery Disease
  - 3. Peripheral Artery Disease
  - 4. Lymphedema
  - 5. Multiple Sclerosis
  - 6. Spasticity
  - 7. Stress Urinary Incontinence
  
- C. Low intensity ESWT (Li-ESWT) is considered experimental and investigation for the treatment of erectile dysfunction.

**II. CENTERS FOR MEDICARE & MEDICAID SERVICES (CMS) COVERAGE DETERMINATION**

Any applicable federal or state mandates will take precedence over this medical coverage policy.

Medicare: Refer to the [CMS Online Manual System \(IOMs\)](#) and Transmittals. For the most current applicable CMS National Coverage Determination (NCD)/Local Coverage Determination (LCD)/Local Coverage Article (LCA) refer to [CMS Medicare Coverage Database](#).

The information below is current as of the review date for this policy. However, the coverage issues and policies maintained by CMS are updated and/or revised periodically. Therefore, the most current CMS information may not be contained in this document. MAC jurisdiction for purposes of local coverage determinations is governed by the geographic service area where the Medicare Advantage plan is contracted to provide the service. Please refer to the Medicare [Coverage Database website](#) for the most current applicable NCD, LCD, LCA, and CMS Online Manual System/Transmittals.

<b>National Coverage Determinations (NCDs)</b>	
<a href="#">NCD - Treatment of Kidney Stones (230.1)</a>	
<b>Local Coverage Determinations (LCDs)</b>	
CGS Administrators, LLC	None identified
First Coast Service Options, Inc.	None identified
National Government Services, Inc.	None identified
Noridian Healthcare Solutions	None identified
Novitas Solutions, Inc.	None identified
Palmetto GBA	<a href="#">LCD - Extracorporeal Shock Wave Therapy (ESWT) (L38775)</a>

WPS Insurance Corporation	None identified
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### III. BACKGROUND

Extracorporeal shock wave therapy (ESWT) is a non-invasive treatment using low- or high-energy pulses from 3-dimensional acoustic energy or shock waves, which can be focused and then propagated through water within body tissues (Schmitz et al., 2013). ESWT is performed in an outpatient setting, usually with the use local anesthesia or a regional block. ESWT has been used in the treatment of musculoskeletal conditions that are not responsive to conservative measures with the goal of reducing pain and promoting healing of the affected soft tissue. ESWT is intended as a noninvasive alternative to surgical treatment for chronic plantar fasciitis, chronic epicondylitis of the elbow, and other chronic musculoskeletal conditions. Chronic musculoskeletal conditions include a wide range of inflammatory and degenerative conditions of the musculoskeletal system. These disorders sometimes respond poorly to conservative treatments such as rest, medications, physical therapy, and/or corticosteroid injections. Surgery is an option but involves recovery time and possible morbidity. ESWT has also been proposed as a treatment for various chronic orthopedic conditions including tendonitis of the shoulder. Current theories include stimulation of healing after increased release of growth factors and neovascularization in the environment of local tissue injury. Many of these trials are not of sufficient quality to provide a reliable assessment of the effectiveness of ESWT (Wright, 2009). There are no established treatment protocols for ESWT, including energy density, number of sessions and shocks used, localization of shock waves, and whether local anesthesia is used.

Plantar fasciitis, also referred to as heel spurs, is thought to result from a biomechanical imbalance that puts abnormal tension on the plantar fascia, causing inflammation of the fascia, and tension on the calcaneal periosteum. Shock waves may be focused or radial. Focused shock waves are capable of high tissue penetration and may be generated using electrohydraulic, electromagnetic, or piezoelectric technology. Both focused and radial ESWT have been proposed as treatments for plantar fasciitis. Radial ESWT uses pneumatic waves generated from air pressure that causes a projectile to hit the end of the applicator at high speed. Pneumatic devices deliver radially expanding shock waves to a wider area at a relatively low energy level (Dizon et al., 2013; Schmitz et al., 2013; Lohrer et al., 2016). It is hypothesized that the shock waves may reduce transmission of pain signals from sensory nerves in the plantar fascia through the rapid buildup of positive pressure or a more indirect effect through the implosion of bubbles in the interstitial fluid, causing calcium deposits to disintegrate, break down scarring, leading to transient inflammatory response, and/or stimulate tissue healing (Perez et al., 2003; Roehrig et al., 2005). However, the mechanism by which ESWT provides benefit is investigational because there are no established treatment parameters for ESWT. Substantial heterogeneity in treatment protocols and outcome measures used to assess efficacy of ESWT contribute to the inconsistent findings across studies. Additionally, there is insufficient evidence concerning long-term safety and efficacy.

A randomized controlled study (Wan, Guo, Li, et al., 2025) found that combining cardiac shock wave therapy (CSWT) with exercise-based rehabilitation in patients with coronary heart disease improved anti-inflammatory and anti-atherosclerotic markers, reduced anxiety, enhanced sleep quality, controlled blood pressure, and increased exercise capacity and oxygen uptake. No major adverse cardiovascular events occurred during

the study. These findings suggest CSWT may offer a safe, non-invasive adjunct to cardiac rehabilitation, though further research is needed to clarify mechanisms and confirm long-term benefits.

A meta-analysis of four randomized controlled trials (Munir et al., 2023) found that extracorporeal shock wave therapy (ESWT) improved pain-free walking distance, maximum walking distance, and stenosis in patients with peripheral artery disease (PAD). No significant improvement was observed in ankle-brachial index. While ESWT appears promising as a non-invasive treatment option, further research with larger sample sizes is needed to confirm long-term efficacy, safety, and cost-effectiveness.

A prospective randomized controlled trial (Zhou, Lin, Zhu, Situ, & Wang, 2025) evaluated extracorporeal shock wave therapy (ESWT) combined with complex decongestive therapy (CDT) for lower limb lymphedema following cervical cancer surgery. Sixty-four patients were randomized to CDT alone or CDT plus ESWT. After four weeks, the combined therapy group showed significantly greater reductions in skin stiffness and limb circumference, as well as improved pain scores and quality of life compared to CDT alone. No major adverse events were reported. These findings suggest ESWT combined with CDT may be more effective than CDT alone for reducing edema and fibrosis and improving patient outcomes, though further studies are needed to confirm long-term efficacy and safety.

A systematic review of 29 studies and meta-analysis of 25 randomized controlled trials evaluated the effectiveness of physiotherapy (PT) interventions for spasticity in individuals with multiple sclerosis. Interventions included exercise therapy, electrical stimulation, vibration, standing therapy, and radial shock wave therapy (RSWT). Findings indicated that RSWT improved Modified Ashworth Scale (MAS) scores after four sessions, but not after a single session or at four-week follow-up. Similarly, trials reported greater benefit with three sessions compared to one. In contrast, previous analyses suggested MAS improvement at four weeks. The absence of RSWT effects on H-reflex and acute and long-term measurements suggests that mechanical stimuli primarily influence non-reflex components of hypertonia, such as muscle-tendon stiffness and extensibility. Overall, the optimal parameters and duration for PT modalities remain unclear, and further research is needed to establish efficacy and define treatment protocols (Etoom et al., 2018).

A network meta-analysis compared the effectiveness of various non-surgical therapies for spastic cerebral palsy (SCP). Extracorporeal shock wave therapy (ESWT) demonstrated significant efficacy across different spasticity severities, likely through mechanotransduction mechanisms in which acoustic waves stimulate nitric oxide synthesis and reduce inflammatory cytokines such as tumor necrosis factor- $\alpha$ . The analysis concluded that ESWT provides consistent pain and contracture relief, positioning it as a promising non-surgical treatment strategy. However, the authors emphasized the need for future multicenter, standardized randomized controlled trials to refine treatment protocols, explore combination therapies, and assess long-term safety and effectiveness, ultimately aiming to improve quality of life for patients with spastic cerebral palsy (Xu, Zhuang, Chen, et al., 2025).

A systematic review and meta-analysis of 16 studies evaluated the effectiveness of extracorporeal shock wave therapy (ESWT) for reducing spasticity in upper limbs among post-stroke adults and children with cerebral palsy. The findings indicate that ESWT

provides the greatest benefit immediately after treatment, with effects maintained for up to 12 weeks. The therapy was reported as safe and well-tolerated, non-invasive, painless, and without complications, while contributing to reduced spasticity and improved quality of life. However, the authors emphasized the need for additional randomized controlled trials with larger sample sizes to confirm efficacy and support broader clinical application (Otero-Luis, Caverro-Redondo, Álvarez-Bueno, et al., 2024).

A multicenter, single-blind randomized controlled trial (Lin, Chueh, Lu, et al., 2021) evaluated low-intensity extracorporeal shock wave therapy (Li-ESWT) for stress urinary incontinence (SUI) in 60 women. Li-ESWT (0.25 mJ/mm<sup>2</sup>, 3000 pulses, weekly sessions) significantly reduced urine leakage after 4 weeks compared to sham treatment, with greater improvements after 8 weeks. Benefits included reduced leakage, improved bladder control, and decreased urgency symptoms, with effects sustained up to 6 months. Li-ESWT was well-tolerated, non-invasive, and associated with improved quality of life. Further studies are needed to confirm long-term efficacy and optimize treatment protocols.

Low-intensity extracorporeal shockwave therapy (Li-ESWT), a form of ESWT, has been proposed as a treatment for erectile dysfunction (ED). It is proposed that increased penile angiogenesis induced by Li-ESWT may increase penile blood flow and erectile function. A major limitation to most Li-ESWT studies is the lack of randomization to a sham control cohort, most studies include small and heterogeneous cohorts. There are currently three types of Li-ESWT generators available on the market: electrohydraulic, electromagnetic, and piezoelectric (Liu, 2021). Studies have varied by shockwave generator types and protocols (e.g., energy settings, dosing, frequency of use, probe locations, and duration of therapy) thereby making comparison difficult. Clinical practice guidelines and position statements, guidance appears to confer no or unclear support for Li-ESWT for treatment of ED. The American Urological Association (AUA) considers Li-ESWT investigational for men with ED (Burnett, 2018). Sexual Medicine Society of North America (SMSNA) holds the position that there is an absence of robust clinical trial data supporting restorative therapies' efficacy in humans (Liu, 2021).

Extracorporeal Shock Wave Lithotripsy (ESWL), is a safe, noninvasive medical procedure utilized for calculi located anywhere in the ureters or kidneys, although it is favored for renal and proximal ureteral calculi. ESWL utilizes energy shock waves to fragment the calculi. The American Urological Association surgical management of kidney and ureteral stones guideline notes that for all shockwave lithotripsy (SWL) procedures (adult and pediatric), clinicians should use a slow shockwave delivery strategy to optimize stone clearance and minimize complications, and that when performing SWL for kidney stones to start with low-energy shockwaves and gradually increase energy to reduce bleeding risks.

#### IV. GUIDELINES / POSITION STATEMENTS

Medical/Professional Society	Guideline
National Institute for Health and Care Excellence (NICE)	<a href="#">Overview   Extracorporeal shockwave therapy for calcific tendinopathy in the shoulder   Guidance   NICE</a>
American Academy of Family Physicians (AAFP)	<a href="#">Management of Chronic Tendon Injuries   AAFP</a>

American College of Foot and Ankle Surgeons (ACFAS)	<a href="#">The Diagnosis and Treatment of Heel Pain: A Clinical Practice Guideline— Revision 2010 - The Journal of Foot and Ankle Surgery</a>
Orthopaedic Section of the American Physical Therapy Association (APTA)	<a href="#">Heel Pain—Plantar Fasciitis: Revision 2014</a>
American Physical Therapy Association (APTA)	<a href="#">Rotator Cuff Tendinopathy Diagnosis, Nonsurgical Medical Care, and Rehabilitation: A Clinical Practice Guideline   Journal of Orthopaedic &amp; Sports Physical Therapy</a>
Sexual Medicine Society of North America	<a href="#">Restorative Therapies for Erectile Dysfunction: Position Statement From the Sexual Medicine Society of North America (SMSNA)</a>
European Association of Urology (EAU)	<a href="#">European Association of Urology Guidelines on Male Sexual and Reproductive Health: 2025 Update on Male Hypogonadism, Erectile Dysfunction, Premature Ejaculation, and Peyronie’s Disease - European Urology</a>
European Society of Sexual Medicine (ESSM)	<a href="#">Low intensity shock wave therapy in sexual medicine – clinical recommendations from the European Society of Sexual Medicine (ESSM) - ESSM</a>
American Urological Association (AUA)	<a href="#">Erectile Dysfunction: AUA Guideline</a>  <a href="#">Surgical Management of Kidney and Ureteral Stones: AUA Guideline (2025) - American Urological Association</a>

**V. REGULATORY (US FOOD AND DRUG ADMINISTRATION)**

See [U.S. Food & Drug Administration \(FDA\) Medical Device Databases](#) for the most current information.

Device	Premarket Approval, 513(f)(2)(De Novo), or 510(k) Number	Notice date
Dornier Epos Ultra (Dornier MedTech)	<a href="#">P000048</a>	01/15/2002
EMS Swiss Dolorclast (Electro Medical Systems)	<a href="#">P050004</a>	05/08/2007
Orbasone Pain Relief System (Orthometrix Inc.)	<a href="#">P040039</a>	08/10/2005
Orthospec ESWT System (Medispec Ltd.)	<a href="#">P040026</a>	04/01/2005
OssaTron® lithotripter (HealthTronics Inc.)	<a href="#">P990086</a>	10/12/2000 03/14/2003

Sonocur® Plus (Siemens Medical Solutions USA Inc.)	<a href="#">P010039</a>	07/19/2002
Storz Medical Duolith SD1 Shock Wave Therapy	<a href="#">P080028</a>	01/08/2016

## VI. CODING

### ICD-10 Codes that may support medical necessity

- N20.0 – Calculus of kidney
- N20.1 – Calculus of ureter
- N20.2 – Calculus of kidney with calculus of ureter
- N20.9 – Urinary calculus, unspecified
- N21.0 – Calculus in bladder
- N21.1 – Calculus in urethra
- N21.8 – Other lower urinary tract calculus
- N21.9 – Calculus of lower urinary tract, unspecified

### CPT/HCPCS Codes

- 0101T Extracorporeal shock wave involving musculoskeletal system, not otherwise specified
- 0102T Extracorporeal shock wave performed by a physician, requiring anesthesia other than local, and involving the lateral humeral epicondyle
- 0512T Extracorporeal shock wave for integumentary wound healing, including topical application and dressing care; initial wound
- 0513T Extracorporeal shock wave for integumentary wound healing, high energy, including topical application and dressing care; each additional wound (List separately in addition to code for primary procedure)
- 0864T Low-intensity extracorporeal shock wave therapy involving corpus cavernosum, low energy
- 28890 Extracorporeal shock wave, high energy, performed by a physician, requiring anesthesia other than local, including ultrasound guidance, involving the plantar fascia
- 28899 Unlisted procedure, foot or toes (*Explanatory notes must accompany claim*)
- 20999 Unlisted procedure, musculoskeletal system, general (*Explanatory notes must accompany claim*)
- 50590 Lithotripsy, extracorporeal shock wave

## VII. MEDICAL NECESSITY REVIEW

Prior authorization for certain drugs, devices, services and procedures may or may not be required. In cases where prior authorization is required, providers will submit a request demonstrating that a drug, service or procedure is medically necessary. For more information, refer to the [Priority Health Provider Manual](#).

Individual case review may allow coverage for care or treatment that is investigational yet promising for the conditions described. Requests for individual consideration require prior plan approval. All determinations of coverage for experimental, investigational, or unproven treatment will be made by a Priority Health medical director or clinical pharmacist. The exclusion of coverage for experimental, investigational, or unproven

treatment may be reviewed for exception if the condition is either a terminal illness, or a chronic, life threatening, severely disabling disease that is causing serious clinical deterioration.

## VIII. APPLICATION TO PRODUCTS

Coverage is subject to the member's specific benefits. Group-specific policy will supersede this policy when applicable.

- **HMO/EPO:** This policy applies to insured HMO/EPO plans.
- **POS:** This policy applies to insured POS plans.
- **PPO:** This policy applies to insured PPO plans. Consult individual plan documents as state mandated benefits may apply. If there is a conflict between this policy and a plan document, the provisions of the plan document will govern.
- **ASO:** For self-funded plans, consult individual plan documents. If there is a conflict between this policy and a self-funded plan document, the provisions of the plan document will govern.
- **INDIVIDUAL:** For individual policies, consult the individual insurance policy. If there is a conflict between this medical policy and the individual insurance policy document, the provisions of the individual insurance policy will govern.
- **MEDICARE:** Coverage is determined by the Centers for Medicare and Medicaid Services (CMS); if a coverage determination has not been adopted by CMS, this policy applies.
- **MEDICAID/HEALTHY MICHIGAN PLAN:** For Medicaid/Healthy Michigan Plan members, this policy will apply. Coverage is based on medical necessity criteria being met and the appropriate code(s) from the coding section of this policy being included on the [Michigan Medicaid Fee Schedule](#). If there is a discrepancy between this policy and the [Michigan Medicaid Provider Manual](#), the Michigan Medicaid Provider Manual will govern. If there is a discrepancy or lack of guidance in the Michigan Medicaid Provider Manual, the Priority Health contract with Michigan Medicaid will govern. For Medical Supplies/DME/Prosthetics and Orthotics, please refer to the Michigan Medicaid Fee Schedule to verify coverage.

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