Athletic pubalgia (sports hernia) surgery

Clinical Policy ID: CCP.1497

Recent review date: 10/2025

Next review date: 2/2027

Policy contains: athletic pubalgia, core muscle injury; groin pain; sports hernia.

AmeriHealth Caritas VIP Care has developed clinical policies to assist with making coverage determinations. AmeriHealth Caritas VIP Care's clinical policies are based on guidelines from established industry sources, such as the Centers for Medicare & Medicaid Services (CMS), state regulatory agencies, the American Medical Association (AMA), medical specialty professional societies, and peer-reviewed professional literature. These clinical policies along with other sources, such as plan benefits and state and federal laws and regulatory requirements, including any state- or plan-specific definition of "medically necessary," and the specific facts of the particular situation are considered by AmeriHealth Caritas VIP Care, on a case by case basis, when making coverage determinations. In the event of conflict between this clinical policy and plan benefits and/or state or federal laws and/or regulatory requirements, the plan benefits and/or state and federal laws and/or regulatory requirements shall control. AmeriHealth Caritas VIP Care's clinical policies are for informational purposes only and not intended as medical advice or to direct treatment. Physicians and other health care providers are solely responsible for the treatment decisions for their patients. AmeriHealth Caritas VIP Care's clinical policies are reflective of evidence-based medicine at the time of review. As medical science evolves, AmeriHealth Caritas VIP Care will update its clinical policies as necessary. AmeriHealth Caritas VIP Care's clinical policies are not guarantees of payment.

Coverage policy

Surgery for athletic pubalgia/sports hernia is investigational/not clinically proven and, therefore, not medically necessary.

Limitations

No limitations were identified during the writing of this policy.

Alternative covered services

- Cortisone injection.
- Nonsteroidal anti-inflammatory drugs.
- Physical therapy.

Background

The American Academy of Orthopaedic Surgeons defines sports hernia as a strain or tear of any soft tissue in the lower abdomen or groin, typically after sudden changes of direction or twisting movements. While sports hernia may lead to an abdominal hernia, the two conditions are different, and thus many medical experts use the term “athletic pubalgia” instead of sports hernia. Athletic pubalgia is typically a diagnosis of exclusion after history, physical examination, and X-rays or magnetic resonance imaging have ruled out other causes (Witstein, 2022).

Achieving a standard taxonomy of athletic pubalgia has been a challenge. Some experts prefer to use the terms inguinal disruption and athletic pubalgia separately, despite having similar symptoms and pathologies. Some refute the diagnosis due to lack of clinical evidence of hernia or hip pathologic findings in spite of patient-reported pain. Lack of consensus and clear comprehension of basic pathophysiologic features also present obstacles to diagnosis (Zuckerbraun, 2020).

Athletic pubalgia is marked by severe pain at the time of injury; pain resolves with rest but can return after subsequent twisting movements in athletic activities. The condition requires treatment, or pain can become chronic and prevent athletic activity that requires twisting and changes of direction. Treatment of the condition consists of (Witstein, 2022):

- Rest, ice, or a compression wrap for seven to ten days.
- Physical therapy to improve strength and flexibility in the abdomen and inner thigh, starting two weeks after the injury.
- In some cases, a nonsteroidal anti-inflammatory drug, such as ibuprofen or naproxen, to reduce swelling is recommended.
- For persistent symptoms, a cortisone injection.

In many cases, the pain resolves and the athlete returns to sports after four to six weeks of physical therapy. In unresolved cases, surgery has been used as an option. Types of surgery include laparoscopic repair and open repair (including plication of the transversalis fascia, reapproximation of the conjoint tendon to the inguinal ligament, and approximation of the external oblique aponeurosis) (Elattar, 2016). The most common intraoperative finding is a deficient posterior wall of the inguinal canal with injury to the distal rectus abdominis (Forlizzi, 2023).

Findings

Guidelines

Historically, caregivers have struggled to achieve agreement on the terminology, definitions, and classifications that guide diagnosis and treatment of athletic pubalgia. Recent efforts at consensus have shown improvement, but uniform treatment guidelines are still lacking (Bisciotti, 2016; Delahunt, 2015; Weir, 2015).

Evidence review

The heterogeneity in the literature complicates efforts to summarize therapeutic efficacy and determine the optimal surgical candidates. Diagnostic terms include “athletic pubalgia,” “sports hernia,” “femoroacetabular impingement,” “adductor-related pathology,” “inguinal pathology,” and “labral pathology” (de Sa, 2016; Kraeutler, 2021). The most common procedures are open or laparoscopic mesh repair, adductor tenotomy, primary tissue (hernia) repair, and rectus abdominis repair, and both general and orthopedic surgeons performed the procedures (Kraeutler, 2021).

Both conservative and surgical management approaches may achieve successful return to play. In general, conservative management is the preferred initial approach, reserving surgical intervention for demonstrated higher grade injury accompanied with an active postoperative rehabilitation program. There is insufficient evidence to determine the superiority of one approach over another for higher grade injury or the factors leading to more successful outcomes.

Return to play

A systematic review included ten studies of mixed quality (n = 216) of treatment for acute adductor injury in athletes at least 15 years of age. Participants with partial acute adductor tears were treated with physical therapy in all studies and had an average return to play ranging from 1 to 6.9 weeks depending on the injury grade. For participants with complete adductor tears, the average time to return-to-play was shorter for those undergoing nonoperative treatment than surgical treatment (8.9 weeks versus 14.2 weeks). However, those treated surgically had more severe injuries (e.g., greater stump retraction) (Farrell, 2023).

Another systematic review included ten studies (n = 468) of mixed quality. For participants who underwent conservative management, the time to return to play ranged from 9.14 weeks to 18.5 weeks, with a success rate of 14% to 100%. For those who underwent surgical management, the time to return to sport ranged from six weeks to 12 weeks with a success rate of 90% to 100%. The factors affecting the range of return to play timelines, success rates, and the shorter return to play among the surgical cohorts require further study (Serafim, 2022).

A systematic review of 72 studies of patients with long-standing groin pain (n = 3,629), five of which used a comparison group, compared surgical and nonsurgical approaches. Compared to the nonsurgical group (80%), return to habitual activity occurred in 94%, 90%, and 97% after inguinal hernia repair, adductor tenotomy, and a combination. Similar results were observed in the percent of pain-free patients (67% versus 92%, 90%, and 92%). A total of 21% of nonsurgical patients shifted to surgery (Jorgensen, 2019).

Comparison of surgical techniques

To compare the outcomes of rectus abdominis repair and posterior wall mesh reinforcement, McKeeman (2025) synthesized the results of seven prospective cohort studies, five retrospective cohort studies, and one randomized control trial. The mean follow-up time ranged from one month to 12.5 years. The success rate was defined as return to play at baseline level or better with no pain. The success rate ranged from 76% to 96% for rectus abdominis repair and from 72% to 98% for posterior wall reinforcement. Both procedures achieved high success rates, despite being very different procedures and having different mechanisms of injury and underlying pathology. Return to play was approximately three to six months for most of the included studies, with some as early as one month. The authors described the lack of standardization in clinical outcomes and low quality evidence as limiting factors in the research.

Hatem (2021) compared the outcomes of different surgical techniques for treatment of chronic groin pain in athletes in 47 studies (n = 2,737). Most were observational surgical series generally of low quality and lacking in comparison groups. The rate of return to play at preinjury or higher level was 92% in athletes after surgery to the inguinal area, 75% after surgery to the adductor origin, 84% after surgery to the pubic symphysis, and 89% after combined surgery in the inguinal and adductor origin.

A systematic review of 28 studies, only two of which were randomized, found no significant difference between totally extraperitoneal and transabdominal preperitoneal laparoscopic surgical approaches for sports hernia. Median time (28 days) from surgery to activity was similar between groups (Kler, 2021).

In 2022, we added one new systematic review and deleted one older one. The results are consistent with previous findings and warrant no policy changes.

In 2023, we added two systematic reviews to the policy. No policy changes are warranted.

In 2024, we deleted older references, reorganized the findings section, and identified no newly published, relevant literature to add to the policy. No policy changes are warranted.

In 2025, we updated the references. No policy changes are warranted.

References

On September 5, 2025, we searched PubMed and the databases of the Cochrane Library, the U.K. National Health Services Centre for Reviews and Dissemination, the Agency for Healthcare Research and Quality, and the Centers for Medicare & Medicaid Services. Search terms were “athletic pubalgia,” “groin pain,” “core muscle injury,” and “sports hernia.” We included the best available evidence according to established evidence hierarchies (typically systematic reviews, meta-analyses, and full economic analyses, where available) and professional guidelines based on such evidence and clinical expertise.

Bisciotti GN, Volpi P, Zini R, et al. Groin Pain Syndrome Italian Consensus Conference on terminology, clinical evaluation and imaging assessment in groin pain in athlete. *BMJ Open Sport Exerc Med*. 2016;2(1):E000142. Doi: 10.1136/bmjsem-2016-000142.

de Sa D, Holmich P, Phillips M, et al. Athletic groin pain: A systematic review of surgical diagnoses, investigations and treatment. *Br J Sports Med*. 2016;50(19):1181-1186. Doi: 10.1136/bjsports-2015-095137.

Delahunt E, Thorborg K, Khan KM, Robinson P, Holmich P, Weir A. Minimum reporting standards for clinical research on groin pain in athletes. *Br J Sports Med*. 2015;49(12):775-781. Doi: 10.1136/bjsports-2015-094839.

Elattar O, Choi H-R, Dills VD, Busconi B. Groin injuries (athletic pubalgia) and return to play. *Sports Health*. 2016;8(4):313-323. Doi: 10.1177/1941738116653711.

Farrell SG, Hatem M, Bharam S. Acute adductor muscle injury: A systematic review on diagnostic imaging, treatment, and prevention. *Am J Sports Med*. 2023:51(13):3591-3603. Doi: 10.1177/03635465221140923.

Forlizzi JM, Ward MB, Whalen J, Wuerz TH, Gill TJT. Core muscle injury: Evaluation and treatment in the athlete. *Am J Sports Med*. 2023;51(4):1087-1095. Doi: 10.1177/03635465211063890.

Hatem M, Martin RL, Bharam S. Surgical outcomes of inguinal-, pubic-, and adductor-related chronic pain in athletes: A systematic review based on surgical technique. *Orthop J Sports Med*. 2021;9(9):23259671211023116. Doi: 10.1177/23259671211023116.

Jorgensen SG, Oberg S, Rosenberg J. Treatment of longstanding groin pain: A systematic review. *Hernia*. 2019;23(6):1035-1044. Doi: 10.1007/s10029-019-01919-7.

Kler A, Sekhon N, Antoniou GA, Satydas T. Totally extra-peritoneal repair versus trans-abdominal pre-peritoneal repair for the laparoscopic surgical management of sportsman’s hernia: A systematic review and meta-analysis. *Surg Endosc*. 2021;35(10):5399-5413. Doi: 10.1007/s00464-021-08554-3.

Kraeutler MJ, Mei-Dan O, Beld JW, Larson CM, Talishinsky T, Scillia AJ. A systematic review shows high variation in terminology, surgical techniques, preoperative diagnostic measures, and geographic differences in the treatment of athletic pubalgia/sports hernia/core muscle injury/inguinal disruption. *Arthroscopy*. 2021;37(7):2377-2390.e2. Doi: 10.1016/j.arthro.2021.03.049.

McKeeman J, Johnson B, Rivera JC. Rectus abdominis repair compared to posterior wall mesh reinforcement in athletes with sportsman's hernia: A systematic review. *Cureus*. 2025;17(2):e78580. Doi: 10.7759/cureus.78580.

Serafim TT, Oliveira ES, Migliorini F, Maffulli N, Okubo R. Return to sport after conservative versus surgical treatment for pubalgia in athletes: A systematic review. *J Orthop Surg Res*. 2022;17(1):484. Doi: 10.1186/s13018-022-03376-y.

Weir A, Brukner P, Delahunt E, et al. Doha agreement meeting on terminology and definitions in groin pain in athletes. *Br J Sports Med*. 2015;49(12):768-774. Doi: 10.1136/bjsports-2015-094869.

Witstein JR, Wilkerson R. Sports hernia (Athletic pubalgia). American Academy of Orthopaedic Surgeons. https://orthoinfo.aaos.org/en/diseases--conditions/sports-hernia-athletic-pubalgia/. Last updated June 2022.

Zuckerbraun BS, Cyr AR, Mauro CS. Groin pain syndrome known as sports hernia: A review. *JAMA Surg*. 2020;155(4):340-348. Doi: 10.1001/jamasurg.2019.5863.

Policy updates

10/2021: initial review date and clinical policy effective date: 11/2021

10/2022: Policy references updated.

10/2023: Policy references updated.

10/2024: Policy references updated.

10/2025: Policy references updated.