

Athletic Pubalgia Surgery (for New Jersey Only)

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[Instructions for Use](#)

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Related Policy
<ul style="list-style-type: none"> Surgery of the Hip (for New Jersey Only)

Application

This Medical Policy only applies to the state of New Jersey.

Coverage Rationale

Surgical repair is unproven and not medically necessary for treating athletic pubalgia due to insufficient evidence of efficacy.

Applicable Codes

The following list(s) of procedure and/or diagnosis codes is provided for reference purposes only and may not be all inclusive. Listing of a code in this policy does not imply that the service described by the code is a covered or non-covered health service. Benefit coverage for health services is determined by federal, state, or contractual requirements and applicable laws that may require coverage for a specific service. The inclusion of a code does not imply any right to reimbursement or guarantee claim payment. Other Policies and Guidelines may apply.

CPT Code	Description
49659	Unlisted laparoscopy procedure, hernioplasty, herniorrhaphy, herniotomy
49999	Unlisted procedure, abdomen, peritoneum and omentum

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Description of Services

Athletic groin pain is referred to by many different terms, including but not limited to, sportsman’s groin, incipient hernia, sports hernia, Gilmore’s groin, athletic pubalgia, inguinal disruption, and inguinal-related pain. Athletic groin pain is more common in male athletes than female athletes. Athletic groin pain is an exercise-related chronic condition with a variety of potential root causes. These various causes may include weakness of the abdominal/inguinal wall and injuries to tendons, muscles, and

ligaments within the pelvis. Athletic groin pain is defined as persistent groin pain during exercise in the absence of a clinically detectable hernia (Hayes, 2020).

Treatment is often targeted to the specific diagnosis. The first line of treatment consists of conservative treatments such as rest, physical therapy and rehabilitation, anti-inflammatory medications, and corticosteroid injections. Persistent symptoms may warrant surgical or laparoscopic intervention. A variety of surgical and laparoscopic techniques have been described in the literature. The aims of these procedures include releasing tension and adding support to weak musculature (Hayes, 2020).

Clinical Evidence

There is no uniform agreement in the literature for the diagnosis and treatment of athletic pubalgia. Several studies have shown that groin pain and function are improved after surgical repair. However, most of these studies were uncontrolled, used small sample sizes and did not provide comparisons of the surgical methods used to treat athletic pubalgia. Large prospective randomized studies of individuals with athletic pubalgia with more detailed patient outcome measurements are needed to determine optimal treatment.

Bisciotti et al. (2021) performed a systematic review to look at conservative treatment for longstanding (chronic) adductor-related groin pain syndrome. Twelve studies were included consisting of RCTs (n=84) and case series (n=400). Therapies included compression clothing therapy, manual therapy together with strengthening exercise, prolotherapy, corticoid injections, platelet rich plasma therapy, intra-tissue percutaneous electrolysis and pulse-dose radiofrequency. The authors summarized that the interventions showing the greater level of strength of evidence (moderate) and the greater grade of recommendation (C) are compression clothing therapy, manual therapy and strengthening exercises, and prolotherapy. The other types of therapeutic intervention have shown a conflicting level of strength of evidence and a grade of recommendation D. The authors concluded that compression clothing therapy, manual therapy and strengthening exercises, and prolotherapy seems to show a marked efficacy for longstanding adductor-related GPS allowing an immediate return to sports activity, with no adverse effects reported. They further concluded that the first choice in therapeutic treatment is conservative therapy, and surgical treatment should be considered only if conservative treatment fails.

A 2016 Hayes Health Technology report found that based on a low-quality body of evidence totally extraperitoneal (TEP) and transabdominal preperitoneal (TAPP) repair for mesh placement as well as open surgical procedures to treat athletic groin pain appear to grant benefits to patients who do not fully recover with the use of conservative treatments alone. However, there is insufficient evidence to determine whether a particular laparoscopic or open surgical technique is superior to another. More rigorous studies are needed to establish the relative benefits and harms of different laparoscopic and open surgical procedures for this patient population. An updated 2020 annual review found three additional studies that met the inclusion criteria but did not change previous findings (Hayes, 2016, updated 2020).

Gerhardt et al. (2020) performed a retrospective case series study of athletes to determine the outcomes of a limited surgical interventions of neurolysis, inguinal wall repair and/or adductor debridement of adhesions based on intraoperative findings. A total of 51 athletes were included in the study with an average follow-up of 4.42 years. Outcome measures were the ability to return-to-sport at the same level and time to return-to-play. Nerve entrapment was demonstrated in 96.2% of cases with involvement of the ilio-inguinal in 92.5%, the ilio-hypogastric in 30.8% and the genito-femoral in 13.2%. Post-operatively, 96.1% of the participants were pain-free and returned to sport at their previous level at an average of 5.9 weeks. The authors concluded that the study showed high rates of return to sports after surgery. As a retrospective review, this study was inherently subject to selection bias. This is an uncontrolled study with a small sample size.

Sheen et al. (2019) reported on a randomized multicentre trial for the treatment of sportsman's hernia, comparing complete relief of pain by open minimal suture repair versus total extraperitoneal repair (TEP). A total of 65 athletes were enrolled, with 31 undergoing open repair, and 34 undergoing TEP. At 4 weeks post-surgery, median visual analogue scale (VAS) scores used to measure pain (VAS score 20 or less) dropped similarly in both groups compared to preoperative scores ($P < 0.001$). During sports activity at 4 weeks, VAS score of 20 or less was achieved in 14 of 31 patients after open repair and 24 of 34 patients after TEP. Return to full sporting activity after one month was achieved by 16 open repair patients and 18 TEP patients. At 3 months, return to full sporting activity was achieved by 25 and 31 patients respectively. The authors concluded that although TEP was less painful in the first month post-surgery, the effectiveness of both procedures was similar in treating the chronic pain of sportsman's hernia. The study is limited by the small sample size. Further studies are needed. (Cited in Hayes 2020).

An observational, prospective cohort study was conducted by Roos et al. (2018) in 32 athletes with inguinal disruption who underwent subsequent endoscopic totally extraperitoneal (TEP) repair with placement of polypropylene mesh. Patients were assessed preoperatively, 3 months postoperatively and after a median follow-up of 19 months. Follow-up was completed in 30 patients (94%). At long-term follow-up, the median pain score was 0. Three months postoperatively, improvement was shown on all physical functioning subscales. The authors concluded that athletes with inguinal disruption, selected through a multidisciplinary, systematic work-up, benefit from TEP repair. This is an uncontrolled study with a small sample size.

A retrospective single center study on 27 patients who underwent surgery for athletic pubalgia was conducted by Kajetanek et al. (2018). Athletic pubalgia was diagnosed on physical examination by a sports physician and a surgeon and confirmed by at least one imaging technique showing injury to the abdominal wall attachment site and/or adductors. The criterion for performing surgery was failure of appropriate conservative therapy followed for at least 3 months. Eight patients had abdominal wall involvement only, seven adductor tendon involvement only, and 12 both. The patients were contacted by a physician by telephone or e-mail at least 1 year after surgery. Mean follow-up duration was 33 ± 20 months. Of the 27 patients, 25 (92.6%) returned to play (RTP), after a mean of 112 days (range, 53–223 days) and experienced no recurrence during the follow-up of at least 1 year. The remaining two patients had residual pain precluding the resumption of their sports activities. The RTP time was shorter in patients with injuries confined to the abdominal wall. The authors concluded that the results of the study confirm the high RTP rate after surgery for athletic pubalgia, with a mean RTP time of 111.8 days. The study is limited by its retrospective observations and small sample size.

Zoland et al. (2018) reviewed a case series of eighteen women with athletic pubalgia by analyzing their presentations, concomitant pathologies, and surgical outcomes. All patients received "pubalgia protocol" magnetic resonance imaging and surgical intervention. Outcomes were assessed with a patient questionnaire >1 year after surgery. Of the 17 women, 9 had rectus aponeurotic plate injury only, or pure athletic pubalgia; the remaining 8 had athletic pubalgia in combination with ≥1 inguinal, obturator, and femoral hernias. Eighty-eight percent reported that the surgery was a success at follow-up. The authors concluded that surgical repair of athletic pubalgia in women is successful in significantly reducing pain levels. They identified several limitations to this study. First, the number of studied patients was small. This was a direct result of the available population and the lower number of female patients who present with this injury. Second, the studied population consisted of mixed diagnoses, with only 9 patients having pure athletic pubalgia. Finally, this study did not evaluate the female patients diagnosed with athletic pubalgia who were not referred for surgery. Further research to include non-surgically treated patients may be of value.

A prospective clinical cohort study was conducted by Pokorny et al. (2017) to evaluate the role of transabdominal preperitoneal (TAPP) mesh repair in athletes with sportsman's groin resistant to conservative therapy. Thirty-nine professional athletes with chronic groin pain were referred to surgery at a single clinic. A full assessment was carried out on each, including medical history, physical examination, dynamic ultrasound, and pelvic magnetic resonance imaging. TAPP repair was performed on 30 athletes. The outcome measures were early postoperative recovery of 6 weeks and full resumption of athletic activities. Conservative treatment had improved symptoms temporarily or to some extent in 7 athletes and 2 ceased competing altogether. Laparoscopy confirmed posterior wall deficiency in 24 and true inguinal hernia in 6 athletes. Twenty-one (70%) returned to sports activities after 6 weeks. Persistent mild pain was experienced by 5 athletes postoperatively for up to 1 year. Twenty-five participants (85%) reported full satisfaction with the procedure 1 year after treatment; all returned to the same or even higher level of athletic performance. The authors concluded that the study confirmed that the endoscopic placement of retropubic mesh is an efficient, safe, and minimally invasive treatment that enables fast early recovery. This is a small, unblinded, uncontrolled study.

Harr and Brody (2017) reported on a case series of 22 individuals with magnetic-resonance-imaging (MRI) confirmation of athletic pubalgia with rectus and adductor tendonitis, who underwent a suture herniorrhaphy with adductor tenotomy. All 22 patients returned to their respective sports and within 6-8 weeks regained their ability to perform at a high level, including professional status. No further surgery was required. The authors concluded that in athletes with MRI confirmation of rectus and adductor longus injuries, tenotomies along with a herniorrhaphy may improve outcomes. Well designed, comparative studies with larger patient populations are needed to further describe safety and clinical outcomes.

A systematic review was conducted by de Sa et al. (2016) to identify the most common causes of groin pain in athletes requiring surgery. A total of 73 articles and 4655 patients were included in the study. The intra-articular and extra-articular causes of groin pain in athletes requiring surgery were equal. The top five causes for pain were: femoroacetabular impingement (FAI) (32%), athletic pubalgia (24%), adductor-related pathology (12%), inguinal pathology (10%) and labral pathology (5%), with

35% of this labral pathology specifically attributed to FAI. The authors concluded that given the complex anatomy, equal intra-articular and extra-articular contribution, and potential for overlap of clinical entities causing groin pain leading to surgery in athletes, further studies are required to determine how to best treat this patient population (Cited in Hayes, 2020).

A clinical trial prospective cohort study is underway whose purpose is to describe clinical presentation (physical examination and magnetic resonance imaging findings) for a group of athletes presenting with athletic pubalgia, to describe the different biomechanical diagnoses that exist in patients and to examine the effects of a biomechanics led exercise intervention to rehabilitate chronic groin pain. Three hundred and eighty-two consecutive athletic groin pain patients, all male, are enrolled. All patients underwent MRI and patient-reported outcome (PRO) score to assess recovery. Median time in pain at presentation was (IQR) 36 (16–75) weeks. The most common diagnosis was that of pubic aponeurosis injury. Clinical trial registration number NCT02437942 (Falvey, 2016).

Serner et al. (2015) performed a systematic review of the literature on the efficacy of conservative and surgical treatment options for groin pain in athletes. Nine medical databases were searched in May 2014. Inclusion criteria were treatment studies in athletes with groin pain; randomized controlled trials (RCTs), controlled clinical trials or case series; outcome measures describing number of recovered athletes, patient satisfaction, pain scores or functional outcome scores. A total of 72 studies were included for quality analysis with a mean follow-up time of 27.7 months. The conservative treatment studies included passive physical therapy modalities and/or exercise therapy, or injection therapy (corticosteroids or dextrose). The surgical studies examined open hernia repair, laparoscopic hernia repair and adductor tenotomy. The control group intervention consisted of passive physical therapy modality or exercise therapy, local corticosteroid injection, and surgical adductor repair. The treatment success was defined in terms of the percentage of recovered athletes, percentage of excellent or good patient satisfaction, improvement in pain scores, improvement in functional outcome scores or percentage of athletes returning to play. A mean of 90.6% of the patients returned to play in the intervention groups and the mean reported time to return to play was 11.3 weeks. The mean treatment success in the control groups was 48.7%. A mean of 45.8% of the patients returned to play and the mean time to return to play was 25.6 weeks. The authors state there is moderate evidence that, for adductor-related groin pain, active exercises compared with passive treatments improve success, multimodal treatment with a manual therapy technique shortens the time to return to sports compared with active exercises and adductor tenotomy improves treatment success over time. There is moderate evidence that for athletes with sportsman's hernia, surgery results in better treatment success than conservative treatment. Only four studies were identified as high quality and there were a high number of disagreements between the authors in the quality assessment.

A systematic review was performed by King et al. (2015) of peer review studies which looked at athletic groin pain (AGP) surgery and rehabilitation and their influence on return to play (RTP) rates and/or return to play times. The purpose of this review was to compare the RTP rates and return to play times between surgical and rehabilitation interventions in the treatment of AGP. There were 3332 patients included in 57 studies. The patients were subdivided into three diagnostic groups; the pubic group with diagnosis and interventions related to the pubic symphysis and adjacent bone, the adductor tendons group, and the abdominal group. Surgery interventions included repair via laparoscopy or open incision, tenotomy of adductor longus, debridement of the pubic symphysis, or arthrodesis. Rehabilitation included massage and mobilization, electrotherapy, flexibility, resistance and strength training. Meta-analysis revealed the pubic surgery group had a RTP rate of 86% and returned to play in 23.1 weeks, abdominal group RTP rate of 96% and returned to play in 7.2 weeks, and the adductor group RTP was 84% and returned to play in 18.3 weeks. The pubic rehabilitation group had a RTP rate of 91% and returned to play in 10.5 weeks, the abdominal group had a RTP rate of 83% and returned to play in 7.9 weeks and the adductor group RTP was 81% and returned to play in 16.9 weeks. The authors concluded that this review challenges the belief that surgery offers a superior RTP rate and time across all categories. The review suggested better outcomes with rehabilitation for pubic-related groin pain with no difference between the adductor and abdominal groups. Overall the quality of the evidence available in the surgical and rehabilitation interventions in AGP is low and subject numbers are small. Appropriately designed randomized controlled trials should be conducted comparing rehabilitation and surgical intervention.

Rossidis et al. 2015 conducted a retrospective review of competitive athlete patients with athletic pubalgia from 2007 to 2013. Athletic pubalgia is a syndrome of chronic lower abdomen and groin pain that occurs in athletes. It is the direct result of stress and microtears of the rectus abdominis inserting on the pubis from the antagonizing adductor longus muscles, and weakness of the posterior transversalis fascia and bulging of the inguinal floor. A cohort of 54 patients was examined. Mean age was 22.4 years. Most patients were football players (n=23), triathlon (n=11), track and field (n=6), soccer players (n=5), baseball players (n=4), swimmers (n=3), golfer (n=1), and tennis player (n=1). Fifty one were males and three were females. All patients failed medical therapy with physiotherapy prior to surgery. 76% of patients had an MRI performed with 26% having a right rectus

abdominis stripping injury with concomitant strain at the adductor longus musculotendinous junction. 7% of patients had mild nonspecific edema in the distal bilateral rectus abdominis muscles without evidence of a tear. Twenty patients had no findings on their preoperative MRI, and only one patient was noted to have an inguinal hernia on MRI. All patients underwent laparoscopic totally extraperitoneal inguinal hernia repair with synthetic mesh and ipsilateral adductor longus tenotomy. All patients were able to return to full sports-related activity in 24 days (range 21-28 days). One patient experienced urinary retention and another sustained an adductor brevis hematoma 3 months after completion of rehabilitation and surgical intervention. The author concluded that athletic pubalgia is a disease with a multifactorial etiology that can be treated surgically by a laparoscopic totally extraperitoneal hernia repair with synthetic mesh accompanied with an ipsilateral adductor longus tenotomy allowing patients to return to sports-related activity early with minimal complications. The significance of this study is limited by small sample size and short follow-up period.

Caudill et al. (2008) found that surgery seemed to be more effective than conservative treatment, and laparoscopic techniques generally enabled a quicker recovery time than open repair. However, in addition to better descriptions of surgical anatomy and procedures and conservative and post-surgical rehabilitation, well-designed research studies are needed, which include more detailed serial patient outcome measurements in addition to basing success solely on return to sports activity timing. This information is necessary to better understand sports hernia pathogenesis, verify superior surgical approaches, develop evidence-based screening and prevention strategies, and more effectively direct both conservative and post-surgical rehabilitation.

Clinical Practice Guidelines

American College of Radiology (ACR)

ACR recommends MRI or ultrasound imaging for assessing patients with chronic hip pain, no relevant radiographic findings, and suspected athletic pubalgia (Mintz, 2016).

U.S. Food and Drug Administration (FDA)

This section is to be used for informational purposes only. FDA approval alone is not a basis for coverage.

Laparoscopic surgery is a procedure and therefore not subject to FDA regulation. There are a number of surgical meshes approved for use in pelvic surgery, although none used in the reviewed studies were approved specifically for athletic pubalgia. Refer to the following website for additional information (use product code FTM). Available at: <http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfPMN/pmnm.cfm>. (Accessed April 21, 2021)

References

- Abouelnaga WA and Aboelnour NH. Effectiveness of active rehabilitation program on sports hernia: randomized control trial. *Ann Rehabil Med*. 2019 Jun;43(3):305-313.
- Bisciotti GN, Chamari K, Cena E, et al. The conservative treatment of longstanding adductor-related groin pain syndrome: a critical and systematic review. *Biol Sport*. 2021 Mar;38(1):45-63.
- Caudill P, Nyland J, Smith C, et al. Sports hernias: a systematic literature review. *Br J Sports Med*. 2008 Dec;42(12):954-64.
- de Sa D, Hölmich P, Phillips M, et al. Athletic groin pain: a systematic review of surgical diagnoses, investigations and treatment. *Br J Sports Med*. 2016 Oct;50(19):1181-6.
- Diehl L. American Orthopaedic Society for Sports Medicine. *Sports Medicine*. Athletic pubalgia: Groin pain in athletes. Fall 2016.
- Falvey E, King E, Kinsella S, et al. Athletic groin pain (part 1): a prospective anatomical diagnosis of 382 patients—clinical findings, MRI findings and patient-reported outcome measures at baseline. *Br J Sports Med* 2016;50:423–430.
- Gerhardt M, Christiansen J, Sherman B, et al. Outcomes following surgical management of inguinal-related groin pain in athletes: a case series. *J Hip Preserv Surg*. 2020;7(1):103-108.
- Harr, JN, Brody, F. Sports hernia repair with adductor tenotomy. *Hernia*. 2017;21(1):139-147.

Hayes, Inc. Hayes Medical Technology Directory Report. Laparoscopic and open surgical repairs for treatment of athletic groin pain. Lansdale, PA: Hayes, Inc.; April, 2016. Updated May 14, 2020.

Kajetanek C, Benoît O, Granger B, et al. Athletic pubalgia: Return to play after targeted surgery. *Orthop Traumatol Surg Res*. 2018 Mar 13. pii: S1877-0568(18)30069-0.

King, E, Ward J, Small, L et al. Athletic groin pain: A systematic review and meta-analysis of surgical versus physical therapy rehabilitation outcomes. *Br J Sports Med*. 2015;49(22):1447-1451.

Mintz DN, Roberts CC, Bencardino JT, et al. Expert panel on musculoskeletal imaging. American College of Radiology Appropriateness Criteria chronic hip pain. 2016.

Pokorny H, Resinger C, Fischer I, et al. Fast early recovery after transabdominal preperitoneal repair in athletes with sportsman's groin: A prospective clinical cohort study. *J Laparoendosc Adv Surg Tech A*. 2017;27(3):272-276.

Roos MM, Bakker WJ, Goedhart EA, et al. Athletes with inguinal disruption benefit from endoscopic totally extraperitoneal (TEP) repair. *Hernia*. 2018 Jun;22(3):517-524.

Rossidis G, Perry A, Abbas H. Laparoscopic hernia repair with adductor tenotomy for athletic pubalgia: an established procedure for an obscure entity. *Surg Endosc*. 2015 Feb;29(2):381-6.

Serner, Andreas, van Eijck, Casper, Beumer, Berend, et al. Study quality on groin injury management remains low: a systematic review on treatment of groin pain in athletes. *Br J Sports Med*. 2015 Jun;49(12):813.

Sheen AJ, Montgomery A, Simon T, et al. Randomized Clinical Trial of Open Suture Repair Versus Totally Extraperitoneal Repair for Treatment of Sportsman's Hernia. *Br J Surg*. 2019 Jun;106(7):837-844.

Zoland M, Iraci J, Bharam S, et al. Sports hernia/athletic pubalgia among women. *Orthop J Sports Med*. 2018 Sep 14;6(9):2325967118796494.

Policy History/Revision Information

Date	Summary of Changes
07/01/2022	Supporting Information <ul style="list-style-type: none">Updated <i>Description of Services</i>, <i>Clinical Evidence</i>, and <i>References</i> sections to reflect the most current informationArchived previous policy version CS005NJ.J

Instructions for Use

This Medical Policy provides assistance in interpreting UnitedHealthcare standard benefit plans. When deciding coverage, the federal, state or contractual requirements for benefit plan coverage must be referenced as the terms of the federal, state or contractual requirements for benefit plan coverage may differ from the standard benefit plan. In the event of a conflict, the federal, state or contractual requirements for benefit plan coverage govern. Before using this policy, please check the federal, state or contractual requirements for benefit plan coverage. UnitedHealthcare reserves the right to modify its Policies and Guidelines as necessary. This Medical Policy is provided for informational purposes. It does not constitute medical advice.

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