



CIGNA MEDICAL COVERAGE POLICY

The following Coverage Policy applies to all health benefit plans administered by CIGNA Companies including plans formerly administered by Great-West Healthcare, which is now a part of CIGNA.

Subject Surgery for Male Sexual Dysfunction

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Hyperlink to Related Coverage Policies

Alprostadil (Caverject[®], Edex[®], Muse[®])
Oral Phosphodiesterase-5 Inhibitors for
Erectile Dysfunction (Viagra[®], Levitra[®],
Cialis[®])
Penile Prosthesis for Erectile Dysfunction

INSTRUCTIONS FOR USE

Coverage Policies are intended to provide guidance in interpreting certain **standard** CIGNA HealthCare benefit plans. Please note, the terms of a customer's particular benefit plan document [Group Service Agreement (GSA), Evidence of Coverage, Certificate of Coverage, Summary Plan Description (SPD) or similar plan document] may differ significantly from the standard benefit plans upon which these Coverage Policies are based. For example, a customer's benefit plan document may contain a specific exclusion related to a topic addressed in a Coverage Policy. In the event of a conflict, a customer's benefit plan document **always supercedes** the information in the Coverage Policies. In the absence of a controlling federal or state coverage mandate, benefits are ultimately determined by the terms of the applicable benefit plan document. Coverage determinations in each specific instance require consideration of 1) the terms of the applicable benefit plan document in effect on the date of service; 2) any applicable laws/regulations; 3) any relevant collateral source materials including Coverage Policies and; 4) the specific facts of the particular situation. Coverage Policies relate exclusively to the administration of health benefit plans. Coverage Policies are not recommendations for treatment and should never be used as treatment guidelines. In certain markets, delegated vendor guidelines may be used to support medical necessity and other coverage determinations. Proprietary information of CIGNA. Copyright ©2011 CIGNA

Coverage Policy

The treatment of male sexual dysfunction, including erectile dysfunction, is specifically excluded under many benefit plans; therefore, surgery for male sexual dysfunction is generally not covered. Please refer to the applicable benefit plan document to determine benefit availability and the terms, conditions and limitations of coverage.

If coverage is available for the treatment of male sexual dysfunction, the following conditions of coverage apply.

CIGNA covers penile arterial reconstructive surgery as medically necessary for the treatment of erectile dysfunction when ALL of the following criteria are met:

- erectile dysfunction is secondary to focal arterial occlusive disease or trauma.
- there is an absence of generalized vascular disease.
- there is failure, contraindication to or intolerance of nonsurgical treatments.

CIGNA covers the surgical correction of penile deformity caused by Peyronie's disease as medically necessary when BOTH of the following criteria are met:

- Stabilization of the fibrotic process has occurred.

- Symptoms (i.e., severe curvature causing pain with attempted intercourse) have persisted beyond 12 months.

CIGNA does not cover EITHER of the following for the treatment of erectile dysfunction because they are considered experimental, investigational or unproven (this list may not be all-inclusive):

- venous occlusive surgery (e.g., venous ligation)
- sural nerve grafting during radical retroperitoneal prostatectomy

CIGNA does not cover extracorporeal shock wave therapy (ESWT) for the treatment of Peyronie's disease because it is considered experimental, investigational or unproven.

General Background

Erectile dysfunction (ED) is defined as the inability to achieve or maintain an erection sufficient for satisfactory sexual performance. ED usually has a physical cause in older men and is treatable at all ages. There are many causes of ED. Medical conditions, such as diabetes, kidney disease, chronic alcoholism, multiple sclerosis, atherosclerosis, vascular disease and neurological disease, can negatively impact erectile ability. Injury to the penis, spinal cord, prostate, bladder and pelvis can lead to ED by harming the nerves, smooth muscles, arteries or fibrous tissue of the corpora cavernosa. Surgery, especially radical prostate or bladder surgery for cancer, can injure the nerves and arteries near the penis and cause ED. In addition, many common medications, such as antihypertensive drugs, antihistamines, antidepressants, and tranquilizers can cause ED as a side effect. Peyronie's disease, which causes scarring of the fibrous tissue of the penis, and priapism are associated with ED. Other possible causes are smoking, which affects blood flow, and hormonal abnormalities.

The most important component of diagnosing ED is obtaining a complete medical and psychosexual history. It is important to distinguish ED from other sexual dysfunctions. A psychogenic disorder may occasionally be the primary cause of ED; therefore, early recognition and appropriate referral for counseling may be recommended. The physical exam should focus on the vascular, neurological and endocrine systems. Laboratory investigations should follow clinical suspicion of specific disorders.

A wide variety of medical (nonsurgical) treatment options is available for patients with ED. They include oral medications (e.g., phosphodiesterase-5 [PDE-5] inhibitors sildenafil, tadalafil and vardenafil), hormone replacement therapy, intracavernosal injectable agents (e.g., alprostadil, phentolamine mesylate and papavarine hydrochloride), intraurethral deposition of pellets (i.e., medicated urethral system for erection, or MUSE), vacuum constriction devices and penile implants (NIDDK, 2003). In addition to the surgically implanted prostheses, other procedures may be recommended for ED that is refractory to medical therapy. Vascular surgical procedures include penile arterial bypass or revascularization and venous ligation for the treatment of vasculogenic ED. For those with ED unresponsive to nonsurgical treatments, vascular surgery may be the preferred treatment option that offers the possibility of spontaneous, unaided erections. Sural nerve grafting has been proposed as a surgical intervention for ED that occurs in association with radical prostatectomy. The Nesbit and Lue procedures are used for the correction of penile deformities caused by Peyronie's disease.

Vascular Surgery

Patients who are considered for vascular surgical therapy typically have appropriate preoperative evaluation, which may include the combined injection and stimulation (CIS) test, dynamic infusion pharmacocavernosometry and cavernosography (DICC), duplex ultrasonography, and possibly arteriography. The indications for and interpretations of these diagnostic procedures are not completely standardized; therefore, difficulties persist with using these techniques to predict and assess the outcomes of surgical therapy.

Penile Arterial Reconstructive Surgery: Penile arterial reconstructive surgery, also referred to as penile arterial bypass or revascularization, is one intervention that has the potential to cure patients with ED. During penile revascularization procedures, an arterial blockage is bypassed usually by anastomosing the inferior epigastric artery to the dorsal artery of the penis. Young men without other vascular risk factors (e.g., diabetes, high blood pressure, lipid disorders, cigarette smoking), who have ED due to pure artery blockage, are ideal

candidates for this procedure. For posttraumatic arteriogenic ED in young patients, surgical penile revascularization has a 60–70% long-term success rate (Hatzimouratidis, et al., 2010).

Several revascularization techniques have been described. Michal and colleagues were among the first to report on such a procedure utilizing an end-to-side anastomosis of the inferior epigastric artery and the dorsal penile artery. The Hauri method currently in use is a three-vessel technique involving side-to-side anastomosis between the dorsal artery and vein covered by a spatulated epigastric artery. In the Virag technique, an end-to-side anastomosis between the epigastric artery and the deep dorsal vein is performed. Deep dorsal vein arterialization (DDVA) utilizes a penile vein for the bypass.

The most frequently reported complication of revascularization surgery is hyperemia of the glans, occurring in 7–13% of patients. It has been suggested that distal vein ligation at the time of surgery may prevent this complication. Other commonly reported complications include infection, hematomas and thromboses of the vascular anastomosis (Rao and Donatucci, 2001). The efficacy of penile revascularization surgery remains controversial, largely because the selection criteria, outcome measures, and techniques have not been standardized (American Urological Association [AUA], 2003).

Literature Review: The safety and effectiveness of penile revascularization has been evaluated primarily in case series with patient populations ranging from 61–125. Success rates of 47%–77% for the varying procedures have been reported (Kayigil, et al., 2011; Vardi, et al., 2004; Manning, et al., 1998; Sarramon, et al., 1997). A trend toward higher success rates for younger patients (< 50 years), as well as those without vascular risk factors such as diabetes and smoking has also been noted (Kayigil, et al., 2011; Vardi, et al., 2004; Manning, et al., 1998).

Babaei et al. (2009) conducted a systematic review and meta-analysis of nonrandomized comparative studies (n=46) to examine the benefits of penile revascularization surgery in the treatment of arteriogenic ED. A total of 25 studies compared different operative techniques. The overall success rate of revascularization techniques (e.g., Virag, Hauri) was about 50% after a mean follow-up period of 50 months. The surgical complication rate was reported to be approximately 30%. Results of the review suggested that the main risk factors for failure of penile revascularization included smoking, diabetes mellitus, hypertension, coronary heart disease, alcoholism, obesity, cavernosal fibrosis, and distal arteriogenic disease. It was noted that effectiveness data were limited, however the effectiveness of penile revascularization is largely determined by the patient selection criteria rather than the surgical technique (Babaei, et al., 2009).

Penile Vein Ligation: Venous ligation is a surgical procedure used to treat veno-occlusive ED, or erectile failure caused by venous insufficiency. The procedure involves the removal or ligation of the veins leaving the corpora cavernosa. Penile vein ligation techniques range from dorsal and accessory vein ligation to complete ligation and excision of the dorsal, cavernous, and crural veins. Surgery of the penile venous system has been reported to have some efficacy in patients with venous leakage. However, the tests necessary to establish this diagnosis have been incompletely validated. Therefore, it is difficult to select patients who will have a predictably good outcome. In general, the long-term benefits of venous ligation surgery have been limited. Success rates within the first year range from 23–80% but consistently decrease on longer follow-up (Rao and Craig, 2001).

Literature Review: Studies in the published peer-reviewed medical literature evaluating penile vein ligation for venogenic ED include case series primarily with small sample sizes. A larger series by Hsu et al. (2010) compared patients with veno-occlusive dysfunction who were treated with a venous stripping surgical method (n=178) patients who were treated without this surgery (n=163). At an average follow-up of 7.7 years, there were no statistically significant differences in outcomes between surgery and control groups as measured by IIEF-5 scores.

Cayan (2008) reported a series of 26 patients who underwent penile venous surgery with crural ligation for primary venous leakage. Postoperatively complete improvement in erectile function occurred in 11 men (42.3%), partial improvement occurred in eight (30.8%), and erectile function remained unchanged in seven (26.9%). Earlier case series have reported success rates of 31%–60% (Berardinucci, et al., 1996; Kim and McVary, 1995).

Surgery for Peyronie's Disease

Peyronie's disease (PD) is a localized connective tissue disorder of unknown cause, and is characterized by the formation of inelastic fibrous plaques within the tunica albuginea or erectile tissue of the penis. The hardened plaque reduces flexibility, causing pain and forcing the penis to bend or arc during erection. Pain on erection and palpable nodule on the shaft of the penis are typical clinical features of the acute phase, which can last for 12-18 months. During the chronic phase, the deformity stabilizes and pain diminishes. For many patients, PD results in sexual problems due to the difficulty in attaining and/or maintaining erections. In a significant number of patients, the disorder improves or resolves spontaneously. Medical therapies, including antioxidants (such as vitamin E and potassium aminobenzoate) and corticosteroids injected directly into the plaque, lack adequate scientific support.

Surgery for PD is contemplated only after stabilization of the fibrotic process and is generally reserved for men with severe penile deformities that impede satisfactory sexual intercourse (Kendirici and Hellstrom, 2004). The two most common surgical procedures are removal or expansion of the plaque followed by placement of a patch of skin or artificial material, and plication or the removal or pinching of tissue from the side of the penis opposite the plaque, which cancels out the bending effect. The first method, referred to as the Lue procedure, can involve partial loss of erectile function, particularly decreased rigidity. The second method, known as the Nesbit procedure, causes a shortening of the erect penis. In some cases, an implant alone will straighten the penis adequately. In other cases, implantation is combined with a technique of incisions and grafting or plication if the implant alone does not straighten the penis (National Institute of Diabetes and Digestive and Kidney Diseases [NIDDK], 2003).

Literature Review: A number of case series reporting the outcomes of the Lue and Nesbit procedures can be found in the published peer-reviewed medical literature (Taylor and Levine, 2008; Ho, et al., 2006; Kalsi, et al., 2005; Savoca, et al., 2004; Syed, et al., 2003; Montorsi, et al., 2000; Adeniyi, et al., 2001; Gholomai and Lue, 2001). Although the studies have limitations that include retrospective design and in some cases small sample sizes, the safety and effectiveness of these surgical methods for the treatment of PD is supported in the literature.

Extracorporeal Shock Wave Therapy (ESWT) for PD

ESWT has also been investigated as a treatment option for PD. Various hypotheses about its mechanism of action exist, including direct damage to the plaque resulting in an inflammatory reaction with increased macrophage reaction leading to plaque lysis, improved vascularity resulting in plaque resorption, and the creation of contralateral scarring of the penis resulting in "false" straightening (Taylor and Levine, 2007). There is a lack of standardization regarding issues such as shockwave dosage, energy levels and number of sessions required for a therapeutic effect in patients with PD (National Institute for Clinical Excellence [NICE], 2003). Currently, the treatment of PD is not a U.S. Food and Drug Administration (FDA)-approved indication for ESWT.

Literature Review: The use of ESWT for the treatment of PD has been examined in RCTs. Chitale et al. (2010) randomized men with Peyronie's disease to receive ESWT (n=16) or sham (n=20). At six months of follow-up there was no significant difference in the mean change between the control and intervention groups on any outcome measure.

Palmieri et al. (2009) compared the use ESWT as a treatment for PD with a duration of less than 12 months (n=50) to placebo (n=50). At 24 weeks, the mean visual analog scale (VAS) score was reported to be significantly lower in both groups compared to baseline. Mean plaque size and mean curvature degree were significantly higher in the placebo group compared to baseline and ESWT values. Study limitations include small sample size, restricted inclusion criteria, and short-term follow-up.

In general, the evidence evaluating the safety and efficacy of ESWT for PD consists of case series with relatively small sample sizes (n=44–114) and short-term follow-up (Poulakis, et al., 2006; Srirangam, et al., 2006; Strebel, et al., 2004; Hauck, et al., 2004). These studies have yielded inconsistent results. In 2003, a NICE review of the literature found that "uncertainties exist regarding the efficacy of this procedure for the treatment of Peyronie's disease." According to NICE, this opinion was based on the lack of controlled data, the natural history of the disease, interpatient variability, outcome measurement and placebo response (NICE, 2003).

Sural Nerve Graft with Radical Prostatectomy

Despite advances in radical prostatectomy procedures, ED remains a significant postoperative complication. When both neurovascular bundles are spared during radical retropubic prostatectomy (RRP), potency rates of up to 70% have been reported, but rates of 30–60% have been observed. For intentional resection of both neurovascular bundles, the return of erectile function is the exception (Kim, et al., 2001). Sural nerve grafting has been proposed as an intervention at the time of RRP to prevent ED associated with the procedure. In sural nerve grafting, a portion of the sural nerve is harvested from one leg and then anastomosed to the divided ends of the cavernous nerves which are resected during a radical prostatectomy.

Literature Review: There is limited data in the scientific peer-reviewed literature regarding the long-term outcomes of sural nerve grafting. An RCT by Davis et al. (2009) compared outcomes of patients who underwent unilateral nerve-sparing radical prostatectomy with a sural nerve graft (n=66) to those who had unilateral nerve-sparing radical prostatectomy alone (n=41). At 24-month follow-up, there was no significant difference in the return of erectile function for the SNG group versus the control group (p=0.962).

Nonrandomized controlled comparison studies and case series have also evaluated the safety and effectiveness of sural nerve grafting with radical prostatectomy (Satkunasivam, et al., 2009; Hanson, et al., 2008; Zorn, et al., 2008; Sim, et al., 2006; Porpliglia, et al., 2005; Chang, et al., 2002; Kim, et al., 2001). Study populations have ranged from 28–40 with a follow-up range of 12–24 months. Small sample sizes have limited the generalizability of results. In addition, the results of these studies have not consistently shown a statistically significant difference in erectile function after sural nerve grafting.

Professional Societies/Organizations

According to the American Urology Association (AUA) guidelines on the management of ED, the efficacy of surgical intervention for the management of vasculogenic ED remains unproven and controversial. Based on a review of the literature on penile arterial surgery, the guideline panel found that a satisfactory outcome occurred in 36–91% of patients. It was concluded that a larger study of hundreds of patients would be needed to demonstrate that penile arterial reconstructive surgery is efficacious. However, the AUA recommends that arterial reconstructive surgery be used as a treatment option only in otherwise healthy individuals, age 55 or younger, with recently acquired focal arterial occlusion in the absence of any evidence of generalized vascular disease.

Penile venous reconstructive surgery is not recommended by the AUA. The guidelines state that it is difficult to determine: 1) what percentage of veno-occlusive ED exists independent of general arterial hypofunction; 2) how to accurately diagnose this condition; and 3) whether there is a subset of patients with this disorder who would benefit from surgical intervention. Currently, there is no evidence from randomized controlled trials documenting a standardized approach to diagnosis or supporting the efficacy of treatment for veno-occlusive ED. There is no substantial evidence to support a routine surgical approach in the management of veno-occlusive ED (AUA, 2006).

The American Association of Clinical Endocrinologists (AACE) updated their guidelines for evaluating and treating male sexual dysfunction in 2003. The document states that special cases such as those involving younger patients with the destruction of an artery after trauma to the pelvis or radiation therapy deserve consideration for rearterialization of the penis. Bypass surgical procedures for generalized atherosclerotic disease are discouraged because of the low success rate (AACE, 2003).

Summary

Controversy persists regarding the clinical utility and long-term efficacy of penile revascularization. However, the overall body of evidence based primarily on the results of case series studies, suggests that the procedure is indicated in a small subset of patients with erectile dysfunction (ED).

There is insufficient evidence in the published peer-reviewed medical literature to support the use of venous ligation as treatment for venogenic ED. Available studies have demonstrated low short- and long-term success rates. Further investigation is needed to define the role and support the efficacy of this surgical intervention.

The evidence in the published peer-reviewed medical literature suggests that both plication (Nesbit procedure) and plaque incision with vein grafting (Lue procedure) are indicated for men who have continuing symptoms for at least 1–2 years and for those in whom curvature is so severe that it prevents sexual intercourse. Thorough

preoperative counseling that includes information as to all available treatment options and potential postoperative complications is essential.

There is insufficient evidence in the published peer-reviewed medical literature to support the use of extracorporeal shock wave therapy (ESWT) for the treatment of PD. Randomized controlled studies are needed to validate the efficacy of this therapy and identify the subset of PD patients most likely to benefit from its use.

There is insufficient evidence in the published peer-reviewed medical literature to support the efficacy of sural nerve grafting during radical prostatectomy. Further investigation is needed in the form of randomized controlled trials that compare sural nerve grafting to no surgical intervention for ED or to medical therapy to further define the role of this therapy in the treatment of ED associated with radical prostatectomy.

Coding/Billing Information

Note: This list of codes may not be all-inclusive.

Covered when medically necessary when coverage for the service is available under the plan. Benefit exclusions and limitations may apply:

CPT®* Codes	Description
37788	Penile revascularization, artery, with or without vein graft
54110	Excision of penile plaque (Peyronie disease)
54111	Excision of penile plaque (Peyronie disease); with graft to 5 cm in length
54112	Excision of penile plaque (Peyronie disease); with graft greater than 5 cm in length
54200	Injection procedure for Peyronie disease
54205	Injection procedure for Peyronie disease; with surgical exposure of plaque

ICD-9-CM Diagnosis Codes	Description
607.84	Impotence of organic origin
607.85	Peyronie's disease

Experimental/Investigational/Unproven/Not Covered:

CPT* Codes	Description
37790	Penile venous occlusive procedure
55899†	Unlisted procedure, male genital system

†**Note:** Experimental/Investigational/Unproven and Not Covered when used to report extracorporeal shock wave therapy for the treatment of Peyronie's disease.

ICD-9-CM Diagnosis Codes	Description
459.81	Venous (peripheral) insufficiency, unspecified
607.89	Other specified disorders of penis, Other

***Current Procedural Terminology (CPT®) © 2010 American Medical Association: Chicago, IL.**

References

1. Adeniyi AA, Goorney SR, Pryor JP, Ralph DJ. The Lue procedure: an analysis of the outcome in Peyronie's disease. *BJU Int*. 2002 Mar;89(4):404-8.
2. American Association of Clinical Endocrinologists (AACE) Male Sexual Dysfunction Task Force. American Association of Clinical Endocrinologists medical guidelines for clinical practice for the evaluation and treatment of male sexual dysfunction: a couple's problem—2003 update. *Endocr Pract*. 2003 Jan-Feb;9(1):77-95.
3. American Urological Association (AUA). Guideline on the Management of Erectile Dysfunction: Diagnosis and Treatment Recommendations. Reviewed 2003 Jul. Accessed June 12, 2005. Available at URL address: <http://www.auanet.org/guidelines/edmgmt.cfm>
<http://www.urologyhealth.org/adult/index.cfm?cat=11&topic=111>
4. American Urological Association (AUA). The management of erectile dysfunction: an update. 2006 addendum. Accessed July 12, 2007. Available at URL address: http://www.guideline.gov/summary/summary.aspx?doc_id=10018&nbr=005332&string=erectile+AND+dysfunction
5. Babaei AR, Safarinejad MR, Kolahi AA. Penile revascularization for erectile dysfunction: a systematic review and meta-analysis of effectiveness and complications. *Urol J*. 2009 Winter;6(1):1-7.
6. Berardinucci D, Morales A, Heaton JP, Fenemore J, Bloom S. Surgical treatment of penile veno-occlusive dysfunction: is it justified? *Urology*. 1996 Jan;47(1):88-92.
7. Cayan S. Primary penile venous leakage surgery with crural ligation in men with erectile dysfunction. *J Urol*. 2008 Sep;180(3):1056-9. Epub 2008 Jul 17.
8. Chang DW, Wood CG, Kroll SS, Youssef AA, Babaian RJ. Cavernous nerve reconstruction to preserve erectile function following non-nerve sparing radical retropubic prostatectomy: a prospective study. *Plast Reconstr Surg*. 2003 Mar;111(3):1174-81.
9. Chitale S, Morsey M, Swift L, Sethia K. Limited shock wave therapy vs sham treatment in men with Peyronie's disease: results of a prospective randomized controlled double-blind trial. *BJU Int*. 2010 Nov;106(9):1352-6. doi: 10.1111/j.1464-410X.2010.09331.x.
10. Davis JW, Chang DW, Chevray P, Wang R, Shen Y, Wen S, et al. Randomized phase II trial evaluation of erectile function after attempted unilateral cavernous nerve-sparing retropubic radical prostatectomy with versus without unilateral sural nerve grafting for clinically localized prostate cancer. *Eur Urol*. 2009 May;55(5):1135-43. Epub 2008 Sep 2.
11. Gholami SS, Lue TF. Correction of penile curvature using the 16-dot plication technique: a review of 132 patients. *J Urol*. 2002 May;167(5):2066-9.
12. Hanson GR, Borden LS Jr, Backous DD, Bayles SW, Corman JM. Erectile function following unilateral cavernosal nerve replacement. *Can J Urol*. 2008 Apr;15(2):3990-3.
13. Hatzimouratidis K, Amar E, Eardley I, Giuliano F, Hatzichristou D, Montorsi F, et al. Guidelines on Male Sexual Dysfunction: Erectile Dysfunction and Premature Ejaculation. *Eur Urol*. 2010 Feb 20. [Epub ahead of print]
14. Hauck EW, Hauptmann A, Bschleipfer T, Schmelz HU, Altinkilic BM, Weidner W. Questionable efficacy of extracorporeal shock wave therapy for Peyronie's disease: results of a prospective approach. *J Urol*. 2004 Jan;171(1):296-9.

15. Hauck EW, Diemer T, Schmelz HU, Weidner W. A critical analysis of nonsurgical treatment of Peyronie's disease. *Eur Urol.* 2006 Jun;49(6):987-97. Epub 2006 Mar 20.
16. Ho KL, Yip AW, Leung LS, Law IC. Surgical treatment of penile curvature. *Hong Kong Med J.* 2006 Dec;12(6):410-4.
17. Hsu GL, Chen HS, Hsieh CH, Lee WY, Chen KL, Chang CH. Clinical experience of a refined penile venous stripping surgery procedure for patients with erectile dysfunction: is it a viable option? *J Androl.* 2010 May-Jun;31(3):271-80. Epub 2009 Nov 19.
18. Jackson G, Rosen RC, Kloner RA, Kostis JB. The second Princeton consensus on sexual dysfunction and cardiac risk: new guidelines for sexual medicine. *J Sex Med.* 2006 Jan;3(1):28-36; discussion 36.
19. Kalsi J, Minhas S, Christopher N, Ralph D. The results of plaque incision and venous grafting (Lue procedure) to correct the penile deformity of Peyronie's disease. *BJU Int.* 2005 May;95(7):1029-33.
20. Kalsi JS, Christopher N, Ralph DJ, Minhas S. Plaque incision and fascia lata grafting in the surgical management of Peyronie's disease. *BJU Int.* 2006 Jul;98(1):110-4; discussion 114-5.
21. Kayigil O, Okulu E, Aldemir M, Onen E. Penile revascularization in vasculogenic erectile dysfunction (ED): long-term follow-up. *BJU Int.* 2011 Jun 28. doi: 10.1111/j.1464-410X.2011.10293.x. [Epub ahead of print]
22. Kendirci M, Hellstrom WJ. Critical analysis of surgery for Peyronie's disease. *Curr Opin Urol.* 2004 Nov;14(6):381-8..
23. Kim ED, McVary KT. Long-term results with penile vein ligation for venogenic impotence. *J Urol.* 1995 Mar;153(3 Pt 1):655-8.
24. Kim ED, Nath R, Slawin KM, Kadmon D, Miles BJ, Scardino PT. Bilateral nerve grafting during radical retropubic prostatectomy: extended follow-up. *Urology.* 2001 Dec;58(6):983-7.
25. Kim ED, Scardino PT, Kadmon D, Slawin K, Nath RK. Interposition sural nerve grafting during radical retropubic prostatectomy. *Urology.* 2001 Feb;57(2):211-6.
26. Manning M, Junemann KP, Scheepe JR, Braun P, Krautschick A, Alken P. Long-term followup and selection criteria for penile revascularization in erectile failure. *J Urol.* 1998 Nov;160(5):1680-4.
27. Montorsi F, Salonia A, Maga T, Bua L, Guazzoni G, Barbieri L, et al. Evidence based assessment of long-term results of plaque incision and vein grafting for Peyronie's disease. *J Urol.* 2000 Jun;163(6):1704-8.
28. National Institute for Clinical Excellence (NICE). Interventional procedure overview of extracorporeal shockwave therapy for Peyronie's disease. March 2003. Accessed June 11, 2005. Available at URL address: <http://www.nice.org.uk/pdf/ip/182overview.pdf>
29. National Institutes of Health (NIH). Impotence [NIH consensus statement]. 1992 Dec 7-9;10(4):1-31.
30. National Kidney and Urologic Diseases Information Clearinghouse (NKUDIC) (a service of the National Institute of Diabetes and Digestive and Kidney Diseases [NIDDK], National Institutes of Health [NIH]). Erectile Dysfunction. 2009 Jun. Accessed July 1, 2010. Available at URL address: <http://kidney.niddk.nih.gov/kudiseases/pubs/impotence/>
31. National Kidney and Urologic Diseases Information Clearinghouse (NKUDIC) (a service of the National Institute of Diabetes and Digestive and Kidney Diseases [NIDDK], National Institutes of Health [NIH]). Peyronie's Disease. 2009 Apr. Accessed July 1, 2010. Available at URL address: <http://kidney.niddk.nih.gov/kudiseases/pubs/peyronie/>

32. Palmieri A, Imbimbo C, Longo N, Fusco F, Verze P, Mangiapia F, et al. A first prospective, randomized, double-blind, placebo-controlled clinical trial evaluating extracorporeal shock wave therapy for the treatment of Peyronie's disease. *Eur Urol*. 2009 Aug;56(2):363-9. Epub 2009 May 18.
33. Porpiglia F, Ragni F, Terrone C, Renard J, Musso F, Grande S, et al. Is laparoscopic unilateral sural nerve grafting during radical prostatectomy effective in retaining sexual potency? *BJU Int*. 2005 Jun;95(9):1267-71.
34. Poulakis V, Skriapas K, de Vries R, Dillenburg W, Ferakis N, Witzsch U, et al. Extracorporeal shockwave therapy for Peyronie's disease: an alternative treatment? *Asian J Androl*. 2006 May;8(3):361-6.
35. Rao DS, Donatucci CF. Vasculogenic impotence. Arterial and venous surgery. *Urol Clin North Am*. 2001 May;28(2):309-19.
36. Sarramon JP, Bertrand N, Malavaud B, Rischmann P. Microvascularisation of the penis in vascular impotence. *Int J Impot Res*. 1997 Sep;9(3):127-33.
37. Satkunasivam R, Appu S, Al-Azab R, Hersey K, Lockwood G, Lipa J, et al. Recovery of erectile function after unilateral and bilateral cavernous nerve interposition grafting during radical pelvic surgery. *J Urol*. 2009 Mar;181(3):1258-63. Epub 2009 Jan 18.
38. Savoca G, Scieri F, Pietropaolo F, Garaffa G, Belgrano E. Straightening corporoplasty for Peyronie's disease: a review of 218 patients with median follow-up of 89 months. *Eur Urol*. 2004 Nov;46(5):610-4; discussion 613-4.
39. Sim HG, Kliot M, Lange PH, Ellis WJ, Takayama TK, Yang CC. Two-year outcome of unilateral sural nerve interposition graft after radical prostatectomy. *Urology*. 2006 Dec;68(6):1290-4. Epub 2006 Dec 4.
40. Srirangam SJ, Manikandan R, Hussain J, Collins GN, O'Reilly PH. Long-term results of extracorporeal shockwave therapy for Peyronie's disease. *J Endourol*. 2006 Nov;20(11):880-4.
41. Strebel RT, Suter S, Sautter T, Hauri D. Extracorporeal shockwave therapy for Peyronie's disease does not correct penile deformity. *Int J Impot Res*. 2004 Oct;16(5):448-51.
42. Syed AH, Abbasi Z, Hargreave TB. Nesbit procedure for disabling Peyronie's curvature: a median follow-up of 84 months. *Urology*. 2003 May;61(5):999-1003.
43. Vardi Y, Gruenwald I, Gedalia U, Nassar S, Engel A, Har-Shai Y. Evaluation of penile revascularization for erectile dysfunction: a 10-year follow-up. *Int J Impot Res*. 2004 Apr;16(2):181-6.
44. Zorn KC, Bernstein AJ, Gofrit ON, Shikanov SA, Mikhail AA, Song DH, et al. Long-term functional and oncological outcomes of patients undergoing sural nerve interposition grafting during robot-assisted laparoscopic radical prostatectomy. *J Endourol*. 2008 May;22(5):1005-12.

Policy History

<u>Pre-Merger Organizations</u>	<u>Last Review Date</u>	<u>Policy Number</u>	<u>Title</u>
CIGNA HealthCare	8/15/2008	0403	Surgery for Male Sexual Dysfunction

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