



Cigna Medical Coverage Policy

Effective Date 1/15/2014
Next Review Date 1/15/2015
Coverage Policy Number 0037

Subject **Hyperhidrosis Treatments**

Table of Contents

Coverage Policy	1
General Background	2
Coding/Billing Information	9
References	10

Hyperlink to Related Coverage Policies

- [Acupuncture](#)
- [Biofeedback](#)
- [Botulinum Therapy](#)
- [Complementary and Alternative Medicine](#)
- [Physical Therapy](#)

INSTRUCTIONS FOR USE

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Coverage Policy

Cigna covers iontophoresis for the treatment of primary palmar, axillary and plantar hyperhidrosis as medically necessary when there is failure, contraindication or intolerance to standard medical management (i.e., topical prescription aluminum chloride or other extra-strength antiperspirants and oral pharmacotherapy [e.g., anticholinergics, beta-blockers, benzodiazepines]).

Cigna covers endoscopic thoracic sympathectomy (ETS) or video-assisted ETS for the treatment of primary palmar and axillary hyperhidrosis as medically necessary when EITHER:

- the individual has medical complications secondary to hyperhidrosis (e.g., skin maceration with secondary infection) **OR**
- the individual is experiencing a significant impact on age-appropriate activities of daily living as a result of hyperhidrosis

and **ALL** of the following criteria are met:

- Topical prescription aluminum chloride or other extra-strength antiperspirants are contraindicated, poorly tolerated, or ineffective.
- For axillary hyperhidrosis, there is failure, contraindication or intolerance to treatment with onabotulinumtoxinA (Botox® A)
- There is failure, contraindication or intolerance to the use of available oral pharmacotherapy for hyperhidrosis (e.g., anticholinergics, beta-blockers, benzodiazepines).

Cigna covers the surgical removal of axillary sweat glands for the treatment of hyperhidrosis as medically necessary when ALL of the above medical necessity criteria have been met.

Cigna does not cover surgical treatment of secondary hyperhidrosis since appropriate therapy involves treatment of the underlying condition (e.g., hyperthyroidism, diabetes mellitus and hyperpituitarism).

Cigna does not cover any of the following treatments for hyperhidrosis, because each is considered experimental, investigational or unproven (this list may not be all-inclusive):

- alternative therapy methods, including homeopathy, massage, acupuncture and phytotherapeutic (herbal) drugs
- axillary liposuction, including ultrasound-assisted lipoplasty, retrodermal curettage and tumescent suction curettage
- biofeedback
- hypnosis
- laser therapy
- microwave energy
- percutaneous thoracic phenol sympathectomy
- psychotherapy
- radiofrequency ablation
- radiotherapy
- repeat/reversal of ETS
- sympathectomy for craniofacial hyperhidrosis
- sympathectomy for plantar hyperhidrosis

Note: Nonprescription drugs are excluded under many medical benefit plans. Please refer to the applicable pharmacy benefit to determine benefit availability and the terms and conditions of coverage related to the treatment of hyperhidrosis.

General Background

Hyperhidrosis, or excessive sweating, is a medical condition that is defined as sweating beyond what is necessary to maintain thermal regulation. Hyperhidrosis can be classified as primary focal or secondary, depending on its cause or origin. Primary focal hyperhidrosis, also known as essential or idiopathic hyperhidrosis, is caused by an overactive sympathetic nervous system. Primary focal hyperhidrosis can lead to intractable and profuse sweating in several locations typically affecting the feet (plantar), armpits (axillae), and hands (palmar). Hyperhidrosis can be accompanied by facial blushing. Secondary hyperhidrosis usually affects the whole body and is due to some underlying cause such as malignancy, infection, spinal cord injury, neurologic and endocrine disorders. Craniofacial hyperhidrosis is uncommon and can be provoked by heat, emotion, or spicy foods (i.e., gustatory hyperhidrosis or Frey's syndrome) (Eisenach, et al., 2005; Haider and Solish, 2005).

Hyperhidrosis symptoms typically begin in adolescence or in the early twenties and may affect one or more anatomic regions. There is some evidence to suggest that there may be genetic and familial elements to hyperhidrosis. Hyperhidrosis may result in multiple complications, including bacterial/fungal overgrowth and eczematous dermatitis. Sweating that interferes with an individual's activities of daily living is generally viewed as abnormal. Individuals may endure functional limitations such as difficulty handling necessary papers or tools, impeding their ability to perform jobs and activities of daily living. The Hyperhidrosis Disease Severity Scale (HDSS) is a diagnostic tool that provides a qualitative measure of the severity of the patient's condition based on how it affects daily activities (Ram, et al., 2007a; Cohen, et al., 2007; Glaser, et al., 2007, Solish, et al., 2007; ECRI, 2006).

Diagnosis of hyperhidrosis is typically made by obtaining a patient history and testing such as the starch iodine test and gravimetric measurement of sweat rates. Treatment for hyperhidrosis is based on the severity of sweating, with consideration given to the risks and benefits associated with the treatment modality. Conservative topical methods (e.g., topical antiperspirant agents) are generally tried initially, followed by oral

pharmacotherapy (e.g., anticholinergics or antidepressant agents), iontophoresis and then moderately invasive procedures (e.g., onabotulinumtoxinA (Botox[®] A). Invasive or surgical treatments are generally reserved for those individuals for whom conservative treatment has failed to resolve the condition (e.g., endoscopic thoracic sympathectomy [ETS], local tissue resection, curettage of adipose tissue in the axillae, percutaneous thoracic phenol sympathectomy [PTPS], liposuction of the axillary glands) (Schallock and Sober, 2009; Ram, et al., 2007a; Ram, et al., 2007b; Eisenach, et al., 2005; Haider and Solish, 2005).

Conservative and Noninvasive Treatments

Topical and Systemic Treatments: In the case of secondary hyperhidrosis, treatment focuses on the underlying medical condition. Treating the underlying medical condition may resolve the hyperhidrosis, and no further intervention may be needed. Over-the-counter antiperspirants containing aluminum salts are used to conservatively treat hyperhidrosis. The most effective topical treatment for palmo-plantar hyperhidrosis is 20% aluminum chloride hexahydrate in absolute anhydrous ethyl alcohol (e.g., Drysol). Aluminum chloride obstructs sweat pores and induces atrophy of secretory cells within the sweat glands. Aluminum salts can cause skin irritation and itching, leading to skin infections. Other topical agents have resulted in less satisfactory results (e.g., boric acid, anticholinergic drugs, resorcinol, tannic acid, potassium permanganate, formaldehyde, methenamine, and glutaraldehyde) (Schallock and Sober, 2009; Haider and Solish, 2005; Thomas, et al., 2004).

Noninvasive hyperhidrosis treatments include systemic anticholinergics, beta blockers and benzodiazepines. These treatments can have numerous side effects, such as nausea, dizziness, blurred vision, dry mouth, lethargy and drowsiness (Haider and Solish, 2005; Thomas, et al., 2004).

Iontophoresis: Topical iontophoresis has been used for many decades as a treatment for primary hyperhidrosis. Iontophoresis is considered if topical agents or pharmacotherapy do not control sweating sufficiently or if their side effects are severe. If these treatments fail to relieve symptoms, surgical procedures (i.e., endoscopic thoracic sympathectomy) may be considered. Iontophoresis is primarily used for focal palmo-plantar hyperhidrosis, since the hands and feet are the easiest body parts to submerge in water. A specialized electrode can be used to apply iontophoresis to the axillae. Iontophoresis for hyperhidrosis is most often conducted through plain tap water; however, iontophoresis to deliver medications (e.g., onabotulinumtoxinA, anticholinergic agents) is being investigated. In an iontophoresis treatment, the patient places his/her hands or feet into a water bath that contains two electrodes. A small electric current is passed through the electrodes. The mechanism of action is not precisely known but is thought to be related to plugging of the sweat gland pores. The limitation of this treatment is that it causes skin irritation, peeling, and drying. This treatment is time-consuming, in that it may require 10–20 minute treatments daily for at least four days a week. Treatments are generally repeated every day or every other day, until the desired effects are seen and treatment frequency can be reduced. Iontophoresis can be performed at home or in the physician's office (ECRI, 2013; Choi, et al., 2013; Chia, et al., 2012).

It has been reported in textbook literature that topical iontophoresis response rates are greater than 80% and have been reported with an average remission of about one month (Schallock and Sober, 2009).

The U.S. Food and Drug Administration (FDA) regulates iontophoresis devices via the 510(k) process. Numerous iontophoresis devices are listed on the FDA 510(k) website but do not indicate for the treatment of hyperhidrosis. Examples of iontophoresis devices that are commercially available for home use with a doctor's prescription are The Drionic[®] device (General Medical Co., Pasadena, CA) and the MD-1A Galvanic Unit (R.A. Fischer Co., Glendale, CA) (ECRI, 2013; Haider and Solish, 2005).

Literature Review: Despite a lack of robust evidence, iontophoresis has become an accepted standard of treatment for patients with primary plantar, palmar and/or axillary hyperhidrosis (Choi, et al., 2013; Chia, et al., 2012; Na, et al., 2007; Aydemir, et al., 2006; Karakoc, et al., 2004; Dolianitis, et al., 2004; Karakoc, et al., 2002).

Microwave Energy: Microwave energy has been proposed for the treatment of primary axillary hyperhidrosis. The miraDry[®] system (Miramar Labs, Menlo Park, CA) noninvasively delivers microwave energy to the sweat glands. Energy generates heat which results in thermolysis of the sweat glands. The manufacturer website states that formal publication of clinical studies is in progress. In 2011 the miraDry system received 510(k) FDA approval for use in the treatment of primary axillary hyperhidrosis. The miraDry System is not indicated for treating hyperhidrosis related to other body areas or generalized hyperhidrosis (FDA, 2011; Miramar Labs, 2011).

Literature Review: There is a paucity of evidence in the in the published, peer-reviewed scientific literature to support the efficacy of microwave energy for the treatment of primary axillary hyperhidrosis. Well-designed studies are lacking with data on long-term health outcomes (Lee, et al., 2013; Johnson, et al., 2012; Glaser, et al., 2012; Hong et al., 2012).

Radiofrequency Ablation (RFA): RFA is being investigated as a treatment for palmar hyperhidrosis. Presently one comparative study is available comparing RFA (n=48) to transthoracic sympathectomy (n=46). The authors reported RFA to be inferior to transthoracic sympathectomy (Purtuloglu, et al., 2013). Presently there is a paucity of evidence in the in the published, peer-reviewed scientific literature to support the efficacy of RFA for the treatment of palmar hyperhidrosis. Well-designed studies are lacking with data on long-term health outcomes.

Moderately Invasive Procedure

OnabotulinumtoxinA (Botox® A): For information on the coverage of Botox A for the treatment of hyperhidrosis, please refer to the Cigna Pharmacy Coverage Policy, Botulinum Therapy.

Invasive Procedures

Endoscopic Thoracic Sympathectomy (ETS): Surgical options for hyperhidrosis are associated with high efficacy rates, but they are typically reserved for patients for whom other treatment options have been ineffective. Although noninvasive treatments are often effective in milder cases, patients with severe hyperhidrosis often remain symptomatic and may require surgical intervention. Referral may be made to a neurosurgeon or vascular surgeon for evaluation. Surgical treatments include ETS, which destroys the sympathetic ganglia by excision, clamping, transection or ablation with cautery or laser. Most of the patients who present for surgery have palmar-plantar hyperhidrosis. The procedure, which is performed on an inpatient or outpatient basis, cannot be standardized because of anatomic variation among individuals (Schalock and Sober, 2009; Eisenach, et al., 2005; Haider and Solish, 2005; Thomas, et al., 2004).

The most common complication of sympathectomy is compensatory sweating in other areas of the body. Other possible complications include Horner's syndrome, pneumothorax, hemothorax, wound infection and rare cardiac arrest or arrhythmias. Contraindications for ETS include untreated thyroid diseases; pleural adhesions, which can make accurate identification and dissection of the sympathetic ganglia difficult; and any underlying condition that, would pose a danger to the patient in the presence of pneumothorax (Ram, et al., 2007b; Cohen, et al., 2007).

ETS is not designed to treat plantar hyperhidrosis and should not be used primarily if this is the only complaint. The risk of permanent sexual dysfunction limits the usefulness of lumbar sympathectomy for the treatment of plantar hyperhidrosis. Of the patients who present for surgery with severe hyperhidrosis, less than 5% have craniofacial hyperhidrosis with no sole therapy of choice for treatment (Smidfelt, et al., 2011; Schalock and Sober, 2009; Eisenach, et al., 2005; Haider and Solish, 2005; Thomas, et al., 2004).

Literature Review ETS Axillary and Palmar Hyperhidrosis: Several retrospective, uncontrolled and large case series studies have demonstrated that ETS is effective in eliminating axillary and palmar hyperhidrosis in 68%–100% of cases. Definite patient selection criteria for ETS as a treatment for primary hyperhidrosis have not been established. Most studies involved patients who had failed previous nonsurgical therapies (e.g., aluminum chloride, astringents, talcum powders, or oral antihistamines, Botox injections) and have severe hyperhidrosis that is causing social, psychological, or work-related disability. Most of the studies also used various methods of ablation, resection or clipping under direct endoscopic or video guidance (Wolosker, et al., 2012; Ishy, et al., 2011; Baumgartner, et al., 2011; Boscardim, et al., 2011; Atkinson, et al., 2011; Wait, et al., 2010; Dewey, et al., 2006; Loscertales, et al., 2004; Doolabh, et al., 2004; Reisfeld, et al., 2002; Chuang and Liu, 2002; Zacherl, et al., 1999; Lin and Fang, 1999).

Literature Review ETS Plantar and Craniofacial Hyperhidrosis: There is a paucity of evidence in the peer-reviewed literature to support the efficacy of ETS for treating plantar or craniofacial hyperhidrosis. There are concerns for side effects in sexual functioning with ETS for plantar hyperhidrosis (Smidfelt, et al, 2011; Neumayer, et al., 2003; Lin, et al., 2000).

Endoscopic Lumbar Sympathectomy for Plantar Hyperhidrosis: Lumbar sympathectomy is proposed as a surgical treatment of plantar hyperhidrosis. There is a paucity of studies in the peer-reviewed literature. The studies are mainly case series and are limited by lack of randomization or comparator, heterogeneous patient characteristics, lack of long-term follow-up, and varied surgical techniques (Reisfeld, et al., 2013; Coelho, et al., 2010; Reisfeld, et al., 2010; Reiger, et al., 2009; Jani, 2009; Loureiro, et al., 2008).

Technology Assessment: An ECRI emerging evidence report on ETS for the treatment of hyperhidrosis reported that “Endoscopic thoracic sympathectomy leads to short-term and long-term reduction in palmar and axillary hyperhidrosis, with elimination of symptoms in a clinically significant proportion of patients. Insufficient evidence precluded any conclusion for patients with craniofacial hyperhidrosis. Need for retreatment for short-term and long-term recurrence of hyperhidrosis is low. Also, the procedure leads to short-term and long-term patient satisfaction, with a clinically significant proportion of patients reporting complete satisfaction after long-term follow-up. The strength of evidence is moderate for most of the short-term conclusions (except for those concerning reduction/elimination of axillary hyperhidrosis, which are supported by weak evidence) and weak for most of the long-term conclusions. No conclusion could be reached concerning quality of life following sympathectomy” (ECRI, 2006).

Endoscopic Sympathetic Blockade (ESB): ESB is also referred to as endoscopic transthoracic sympathectomy with metallic clips (ETS-C). The ESB method of surgery was developed to interrupt sympathetic nerve conduction by clamping the sympathetic nerves with a titanium clip, instead of utilizing the cautery or cutting methods. Compensatory sweating, which is characterized by a moderate increase in sweating in other parts of the body, occurs in some patients who undergo ETS for axillary, palmar, plantar and/or craniofacial hyperhidrosis. The ESB method is thought to potentially reduce postoperative compensatory sweating. Also, the surgery can be reversed by removing the clips, if the patient still develops and is unable to tolerate postoperative reflex sweating. Although there is limited evidence in the peer-reviewed literature that ESB surgery with titanium clips significantly reduces postoperative compensatory sweating or that removal of the clips will improve side effects, ESB is an accepted surgical method in the treatment of primary hyperhidrosis (Chou, et al., 2006; Reisfeld, et al., 2002).

Percutaneous Thoracic Phenol Sympathiclysis (PTPS): PTPS involves the introduction of small volumes of phenol into multiple sites on each side of the T2–T4 sympathetic trunks and ganglia. This procedure is performed under local or general anesthesia guided by C-arm fluoroscopy. PTPS is not widely used in clinical practice nor frequently referenced in the literature. PTPS as an invasive treatment for hyperhidrosis is not supported at this time due to the lack of clinical data (Ram, et al., 2007b; Wang, et al., 2001).

Reversal/Repeat ETS Surgery: There is a paucity of evidence in the peer-reviewed scientific literature to support that reversal or repeated sympathectomy is safe and effective in reversing compensatory sweating and other complications of ETS.

Surgical Removal of Axillary Sweat Glands: Surgical removal of the axillary sweat glands has been performed in patients with severe isolated axillary hyperhidrosis. Removal may involve excision of the subcutaneous sweat glands without removal of any skin, limited excision of skin and removal of surrounding subcutaneous sweat glands, or a more radical excision of skin and subcutaneous tissue en bloc. Surgical removal of the axillary sweat glands is an accepted treatment for severe axillary hyperhidrosis (Haider and Solish, 2005; Lawrence and Eccles, 2006).

Minimally Invasive Surgery of Axillary Sweat Glands: Minimally invasive techniques (e.g., subcutaneous curettage, liposuction and ultrasound) have been investigated as alternatives to surgical excision of the axillary sweat glands (Commons, et al., 2009). Tumescence suction curettage has emerged as one of the surgical treatment modalities. This is a variant of liposuction. This technique is performed under local anesthesia, and the tumescent fluid containing saline, bicarbonate, epinephrine and lidocaine is used as the only source of pain control. The waterlogged cells are suctioned out via a cannula. The surface of the cannula that is used is rough, which results in curettage when pressure is applied. Tumescence of the fat protects the blood vessels by compressing them and provides pain control. Injuries are limited, as liposuction beyond the infiltrated areas cannot be performed. There is a reduced infection rate due to open drainage, and there is less hematoma, not only because of pure compression, but also because of the prolonged action of epinephrine (Boni, 2006; Lee and Ryman, 2005). Retrodermal curettage is similar to tumescent suction curettage and a variant of axillary

liposuction. Only scattered reports and case studies regarding these procedures are identified in the literature. The efficacy of minimally invasive techniques for the treatment of axillary hyperhidrosis is not well-supported.

Literature Review: A small case series study was conducted by Commons et al. (2009). Thirteen patients with significant axillary hyperhidrosis and/or bromidrosis were treated with a minimally invasive ultrasound-assisted lipoplasty device using the VASER System (Sound Surgical Technologies, Louisville, CO). Follow-up was for six months. Postoperative assessment of changes relative to lifestyle and degree of sweat/odor reduction and patient and surgeon satisfaction were completed. Eleven of 13 patients had significant reduction in sweat/odor and had no recurrence of significant symptoms at six months. Two patients had a reduction in sweat/odor but not to the degree desired by the patients. No significant complications were noted. The author reported that at six months the treatment appears to be long lasting, but further follow-up is required for verification of permanence.

In a comparative study, Wollina et al. (2008) compared the efficacy and risk–benefit ratio of two local surgical procedures (i.e., the minimal skin excision with subcutaneous curettage (Method A) and tumescent liposuction curettage (Method B). A total of 163 patients with primary axillary hyperhidrosis as assessed by positive iodine starch test were included. The age range of patients was 16–61 years. A total of 125 underwent Method A, and 37 were treated by Method B. Both procedures were performed in tumescent anesthesia. The mean follow-up was 21 months (Method A) and 48 months (Method B). The outcome was evaluated by patient’s global assessment and by Minor’s starch test. Patient satisfaction was scored as “satisfied,” “partially satisfied,” or “dissatisfied.” Adverse effects, complications, hospitalization time, and time to return to work were recorded and compared for both methods. In patients who underwent Method A, scar formation was assessed only for the first axilla (n=99). In Method A, the rate of residual sweating was 12.0%. The relapse rate was 1.0% of patients or 2% of axillae. In Method B, the relapse rate was 16.2% of patients or 14.5% of axillae within 12 months. If both the relapses and the residual sweating are considered, this modified relapse rate per axilla was 12.8% for Method A and 14.5% for Method B. Patients who underwent Method B had significantly less pain, no atrophic or hypertrophic scars, and no complications such as wound infections, bleeding (with the need of a second operation), or delayed healing. Using Method A, the stay in hospital was on average 5.8 days per patient or 3.2 days per axilla. Mean time to return to work was 8.87 ± 3.5 days. For Method B, the procedure was performed in an outpatient setting. The mean time to return to professional work was 1.370 ± 8 days. The total satisfaction rate was 97% for Method A and 89.2% for Method B, respectively. The authors reported that their data may represent a bias for patients choosing between more invasive and less invasive procedures. They acknowledged that willingness to pay for the less invasive procedure might have been associated with an expectation of a higher health benefit, both aesthetic and functional. There were no long-term outcomes reported in this study.

In a prospective study, the clinical efficacy and postoperative complications of tumescent superficial liposuction with curettage was studied by Seo et al. (2008). A total of 43 patients were enrolled. The duration of axillary bromhidrosis was on average eight years. Twenty patients had family history and 40 patients had personal history of axillary hyperhidrosis. Among the 43 patients, three patients were recurrent cases in spite of conventional surgery 6.3 years ago, on average. The mean follow-up period was 15.8 months, ranging from 3–54 months. A total of 30.2% patients were graded as excellent, 41.9% were good, 18.6% were fair, and 9.3% were poor. Among 43 patients, 31 patients (72.1%) showed excellent to good results. Three of eight fair-resulted patients had reoperations for more improvement. All of them had excellent results afterwards. One of the four poor-resulted patients did not show any improvement even after the re-operation. The most common postoperative complication was transient ecchymosis which spontaneously regressed in 1–2 weeks. Focal skin necrosis, induration, and hematoma were each noted in four, three, and one patients, respectively, but resolved after proper dressing.

Tumescent suction curettage was studied by Boni (2006). Sixty-three patients with axillary hyperhidrosis were included in this case series study. All the patients had repeated injections of Botox A prior to tumescent suction curettage but wanted a permanent solution for their excessive sweating. None of the patients had early postoperative complications such as infection or seroma. Postoperatively, mild bruising and numbness of the axillary cavity were temporarily present in all of the patients. However, after six months, 15 out of 63 patients asked for repeat surgery. In these 15 patients, a reduction of sweat production was confirmed by the iodine-starch test. The authors stated it is difficult to exactly assess sweat production, as sweating is not always present but is usually triggered by emotional events. Two years after the procedure, 49 patients were satisfied, 11 patients were partially satisfied and three patients were dissatisfied with their results. The authors reported

that tumescent suction curettage is a safe and effective treatment for axillary hyperhidrosis but should not be used as the first-line treatment in axillary hyperhidrosis, since other less invasive treatments (e.g., Botox A) are available.

A small case series study was conducted by Lee and Ryman (2006). Ten patients were treated with axillary liposuction under tumescent anesthesia. Of the 10 patients treated, four relapsed with axillary hyperhidrosis and required additional liposuction to the same area. The longest time to relapse was 15 months, with four months being the shortest time. Six patients did not require additional liposuction. The longest remission was seven years. The reported complications were bruising in the axillae of two patients and relapse of hyperhidrosis in four patients.

Lee et al. (2006) studied the efficacy of tumescent liposuction with curettage using a new device, the Fatemi cannula, in the treatment of axillary osmidrosis and hyperhidrosis. Of 50 axillae, in 25 patients, 76% were graded as excellent results, 22% were good, and 2% were fair. Temporary bruising and local infection in minor cases were noted, with no serious complications.

Laser Therapy: Laser therapy of subcutaneous sweat glands has been proposed as a minimally invasive treatment of axillary/underarm hyperhidrosis. Laser energy is applied thru a laser fiber inserted into a small incision in the axillae. The laser liquefies the tissue containing the sweat glands. Laser therapy may be used with liposuction to remove the damaged cells. This procedure can be performed under local anesthesia in a doctor's office. Manufacturer websites refer to the procedure and/or laser devices as AxiLase, PrecisionTX™, SmartLipo™, SlimLipo, or VASER Lipo.

The SmartLipo™ Nd:YAG laser system (Cynosure, Inc., Westford, MA) received FDA 510(k) approval in 2006 for the surgical incision, excision, vaporization, ablation, and coagulation of soft tissue. All soft tissue is included, such as skin, cutaneous tissue, subcutaneous tissue, striated and smooth tissue, muscle, cartilage meniscus, mucous membrane, lymph vessels and nodes, organs and glands. The SmartLipo is further indicated for laser assisted lipolysis (FDA, 2006).

Literature Review: There is limited evidence in the in the published, peer-reviewed scientific literature to support the efficacy of subdermal laser therapy for the treatment of axillary hyperhidrosis. The studies have small sample sizes (n=1–21) and lack data on long-term health outcomes (Bechara, et al., 2012; Goldman, et al., 2008; Ichikawa, et al., 2006).

Alternative Treatments

According to the literature, psychotherapy and hypnosis have been used to treat hyperhidrosis, but with poor results. Psychological problems are generally the consequence of hyperhidrosis, not the cause. Therefore, neither psychiatric nor psychopharmacologic therapy can cure the disorder. There is insufficient evidence to support the use of psychotherapy and hypnosis in the treatment of hyperhidrosis.

There is insufficient evidence in the published peer-reviewed scientific literature to support the safety and effectiveness of alternative medical interventions, including homeopathy, massage, acupuncture and phytotherapy (i.e., herbal) drug, radiotherapy (i.e., high-dose radiation), and biofeedback for the treatment of hyperhidrosis are also not well-supported in the literature.

Professional Societies/Organizations

The 2011 Society of Thoracic Surgeons expert consensus for the surgical treatment of hyperhidrosis concludes that endoscopic thoracic sympathectomy with interruption of the sympathetic chain is the treatment of choice for patients with primary hyperhidrosis. The authors report that "For palmar hyperhidrosis, the optimal operation is a rib level (R)3 interruption (cauterizing or clipping the sympathetic chain on top of the third rib) because it yields the driest hands; however, an R4 interruption is also reasonable. The patient should be aware of the differences and the slightly higher risk of compensatory hyperhidrosis (CH) with an R3 but the risk of moister hands with an R4. An R4 and R5 sympathetic chain interruption should be used for palmar-axillary, palmar-axillary-plantar, or axillary hyperhidrosis alone. An R5 interruption alone is also a viable option for patients who have axillary hyperhidrosis only. Finally, an R3 interruption is suggested for patients with craniofacial hyperhidrosis without blushing. An R2 and R3 procedure may be performed for these patients, but it may lead to a higher incidence of CH, and it increases the risk of Horner's syndrome, especially on the left side" (Cerfoio, et al., 2011).

A multidisciplinary task force reviewed the clinical evidence and developed a consensus statement on the recognition, diagnosis, and treatment of primary focal hyperhidrosis (Hornberger, et al., 2004). The working group recommendations for diagnosing primary focal hyperhidrosis include focal, visible, excessive sweating of at least six months' durations without apparent cause with at least two of the following characteristics:

- bilateral and relatively symmetric
- impairs daily activities
- frequency of at least one episode per week
- age of onset less than 25 years
- positive family history
- cessation of focal sweating during sleep

The recommended treatment algorithm for axillary hyperhidrosis includes:

- education regarding the proper use of over-the-counter antiperspirants versus deodorants
- 10–35% aluminum chloride hexahydrate using proper technique to avoid irritation (i.e., apply to dry axilla at bedtime; wash off in 6–8 hours. Use 3–7 times/week until euhidrotic. Maintenance treatment every 1–3 weeks.)
- intradermal injection of Botox-A
- surgery including local sweat gland resection (i.e., curettage, liposuction, or limited excision) or ETS (patient should be seen by both a surgeon and a dermatologist, and be informed of local success and complication rates)

The recommended treatment algorithm for palmar hyperhidrosis includes:

- 10–35% aluminum chloride hexahydrate or tap water iontophoresis following education regarding proper technique (direct current at 10–20 mA for 20–30 min. Switch current direction midway through treatment. Use every other day until euhidrotic. Maintenance treatment every 1–4 weeks.)
- intradermal injections of Botox A
- ETS

Recommendations for the treatment of plantar hyperhidrosis include:

- education regarding local hygiene
- initiate therapy with topical aluminum chloride hexahydrate
- tap water iontophoresis
- intradermal Botox injections for patients who fail to achieve satisfactory response with aluminum chloride hexahydrate or iontophoresis
- lumbar sympathectomy is not recommended because of associated sexual dysfunction

Recommendations for the treatment of primary craniofacial hyperhidrosis:

- educate the patient to recognize and avoid food triggers and other stimulating factors
- although evidence is lacking, topical aluminum chloride hexahydrate may be tried, taking particular care to avoid the eyes
- intradermal injection of Botulinum toxin is a reasonable option

The American Academy of Neurological Surgeons (AANS) position statement on sympathectomy for hyperhidrosis states that “Endoscopic sympathectomy is safe and highly effective for providing a permanent cure for palmar and axillary hyperhidrosis. These disorders impair the function and activities of daily living of affected individuals. Insurance reimbursement for this procedure is appropriate and justified” (AANS, 2009).

Use Outside of the US

The German Society of Dermatology Practice Guideline on the recommendations for tap water iontophoresis states that the specific indications for the performance of tap water iontophoresis are idiopathic palmar, plantar and axillary hyperhidrosis. A medium or higher degree of severity of hyperhidrosis should exist (Holzle, et al., 2010).

The International Hyperhidrosis Society discusses the following treatment options for hyperhidrosis: antiperspirants, Botox, miraDry, iontophoresis, local and ETS surgery as well as alternative therapies such as herbal substances, acupuncture, biofeedback, hypnosis, and relaxation techniques.

Summary

Clinical studies in the published, peer-reviewed literature support the safety and efficacy of specific hyperhidrosis treatments for selected patients with severe, persistent primary hyperhidrosis (i.e., aluminum chloride, onabotulinumtoxinA (Botox® A), iontophoresis, endoscopic transthoracic sympathectomy, and surgical excision of sweat glands). There is insufficient evidence in the published, peer-reviewed literature to determine the effectiveness of alternative therapy methods (e.g., axillary liposuction, biofeedback, hypnosis, microwave energy, laser therapy, radiofrequency ablation, radiotherapy and psychotherapy) for the treatment of severe, persistent primary, secondary or generalized hyperhidrosis.

Coding/Billing Information

Note: 1) This list of codes may not be all-inclusive.

2) Deleted codes and codes which are not effective at the time the service is rendered may not be eligible for reimbursement.

Covered when medically necessary for primary palmar, axillary and plantar hyperhidrosis:

CPT ^{®*} Codes	Description
97003	Application of a modality to 1 or more areas; iontophoresis, each 15 minutes

HCPCS Codes	Description
E1399 [†]	Durable medical equipment, miscellaneous

[†]**Note:** Covered when medically necessary when used to report durable medical equipment related to iontophoresis for treatment of primary palmar, axillary and plantar hyperhidrosis.

Covered when medically necessary for axillary hyperhidrosis:

CPT* Codes	Description
11450	Excision of skin and subcutaneous tissue for hidradenitis, axillary; with simple or intermediate repair
11451	Excision of skin and subcutaneous tissue for hidradenitis, axillary: with complex repair

Experimental/Investigational/Unproven/Not Covered for craniofacial and plantar hyperhidrosis:

CPT ^{®*} Codes	Description
32664	Thoracoscopy, surgical; with thoracic sympathectomy
64818	Sympathectomy, lumbar

Experimental/Investigational/Unproven/Not Covered when used to report treatment for Hyperhidrosis:

CPT* Codes	Description
15877	Suction assisted lipectomy; trunk
15878	Suction assisted lipectomy; upper extremity
17110	Destruction (eg, laser surgery, electrosurgery, cryosurgery, chemosurgery,

	surgical curettement), of benign lesions other than skin tags or cutaneous vascular proliferative lesions; up to 14 lesions
17111	Destruction (eg, laser surgery, electrosurgery, cryosurgery, chemosurgery, surgical curettement), of benign lesions other than skin tags or cutaneous vascular proliferative lesions; 15 or more lesions
17999†	Unlisted procedure, skin, mucous membrane and subcutaneous tissue
90832	Psychotherapy, 30 minutes with patient and/or family member
90833	Psychotherapy, 30 minutes with patient and/or family member when performed with an evaluation and management service (List separately in addition to the code for primary procedure)
90834	Psychotherapy, 45 minutes with patient and/or family member
90836	Psychotherapy, 45 minutes with patient and/or family member when performed with an evaluation and management service (List separately in addition to the code for primary procedure)
90837	Psychotherapy, 60 minutes with patient and/or family member
90838	Psychotherapy, 60 minutes with patient and/or family member when performed with an evaluation and management service (List separately in addition to the code for primary procedure)
90880	Hypnotherapy
90901	Biofeedback training by any modality
97024	Application of a modality to one or more areas; diathermy (eg, microwave)
97124	Therapeutic procedure, one or more areas, each 15 minutes; massage, including effleurage, petrissage and/or tapotement (stroking, compression, percussion)
97810	Acupuncture, 1 or more needles; without electrical stimulation, initial 15 minutes of personal one-on-one contact with the patient
97811	Acupuncture, 1 or more needles; without electrical stimulation, each additional 15 minutes of personal one-on-one contact with the patient, with re-insertion of needle(s) (List separately in addition to code for primary procedure)
97813	Acupuncture, 1 or more needles; with electrical stimulation, initial 15 minutes of personal one-on-one contact with the patient
97814	Acupuncture, 1 or more needles; with electrical stimulation, each additional 15 minutes of personal one-on-one contact with the patient, with re-insertion of needle(s) (List separately in addition to code for primary procedure)

†**Note: Experimental/Investigational/Unproven/Not Covered when used to report laser destruction of subcutaneous sweat glands for the treatment of hyperhidrosis.**

***Current Procedural Terminology (CPT®) © 2013 American Medical Association: Chicago, IL.**

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