# MEDICAL POLICY

| MEDICAL POLICY DETAILS | |
|---|---|
| **Medical Policy Title** | **Surgical Management of Sleep Disorders** |
| **Policy Number** | **7.01.41** |
| **Category** | **Technology Assessment** |
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## POLICY STATEMENT

I. Nasal Surgery

A. Based upon our criteria and assessment of the peer-reviewed literature, nasal surgery is considered **medically appropriate** to correct a nasal obstruction that prohibits the use of continuous positive airway pressure (CPAP) device and bilevel positive airway pressure (BiPAP).

B. Based upon our criteria and assessment of the peer-reviewed literature, septoplasty, turbinate reduction, and polypectomy do not improve patient outcomes and, therefore, are considered **not medically necessary** for obstructive sleep apnea (OSA).

II. Upper Airway Surgery

A. Palatopharyngoplasty (e.g., uvulopalatopharyngoplasty (UPPP), uvulopharyngoplasty):
Based upon our criteria and assessment of the peer-reviewed literature, UPPP, with or without inferior sagittal osteotomy (ISO) with hyoid suspension, for the treatment of OSA has been medically proven to be effective and, therefore, is considered **medically appropriate** for patients who meet **BOTH** criteria **1 and 3** below, or **BOTH** criteria **2 and 3**, below:

1. Documented OSA with an apnea-hypopnea index (AHI) or respiratory disturbance index (RDI) of 15 or greater events per hour, regardless of symptoms;
2. Documented OSA with an AHI or RDI of five to 14 events per hour, accompanied by symptoms of excessive daytime sleepiness, impaired cognition, mood disorders, insomnia, or documented cardiovascular diseases, including hypertension and ischemic heart disease;
3. Failure of all forms of medical management of OSA, including documented intolerance to positive airway pressure (e.g., CPAP, BiPAP).

B. Tonsillectomy and Adenoidectomy:
Based upon our criteria and assessment of the peer-reviewed literature, tonsillectomy and adenoidectomy have been medically proven to be effective and, therefore, are considered **medically appropriate** for the treatment of OSA, as well as to correct an upper airway obstruction that prohibits the use of CPAP/BiPAP.

C. Radiofrequency Ablation or Somnoplasty of Palatal Tissues:
Based upon our criteria and assessment of the peer-reviewed literature, somnoplasty does not improve patient outcomes and, therefore, is considered **not medically necessary** for the treatment of OSA.

D. Laser-assisted Uvulopalatoplasty (LAUP):
Based upon our criteria and assessment of the peer-reviewed literature, LAUP does not improve patient outcomes and, therefore, is considered **not medically necessary** for the treatment of OSA.

E. Expansion Sphincter Pharyngoplasty/Expansion Sphincteroplasty (ESP):
Based upon our criteria and the lack of peer-reviewed literature, ESP has not been medically proven to be effective and, therefore, is considered **investigational**.

F. Injection Snoreplasty:
1. Based upon our criteria and assessment of the peer-reviewed literature, injection snoreplasty does not improve patient outcomes and, therefore, is considered **not medically necessary** for the treatment of snoring alone.
2. Based upon our criteria and assessment of the peer-reviewed literature, injection snoreplasty has not been medically proven to be effective and, therefore, is considered **investigational** for the treatment of OSA.

G. Cautery-assisted Palatal Stiffening Operation (CAPSO)*:*
1. Based upon our criteria and assessment of the peer-reviewed literature, cautery-assisted palatal stiffening operation (CAPSO*)* does not improve patient outcomes and, therefore, is considered **not medically necessary** for snoring alone.
2. Based upon our criteria and assessment of the peer-reviewed literature, CAPSO has not been medically proven to be effective and, therefore, is considered **investigational** for the treatment of OSA.

H. Palatal Implant System (e.g., Pillar Palatal Implant)*:*
1. Based upon our criteria and assessment of the peer-reviewed literature, palatal implant does not improve patient outcomes and, therefore, is considered **not medically necessary** for the snoring alone.
2. Based upon our criteria and assessment of the peer-reviewed literature, palatal implant system has not been medically proven to be effective and, therefore, is considered **investigational** for the treatment of OSA.

III. Lower Airway Surgery

A. Jaw Realignment Surgery (e.g., inferior sagittal mandibular osteotomy, genioglossal advancement, hyoid myotomy and suspension, maxillomandibular osteotomy and advancement):
Based upon our criteria and assessment of the peer-reviewed literature, jaw realignment surgery has been medically proven to be effective and, therefore, is considered **medically appropriate** for the treatment of OSA in patients who meet the criteria for UPPP, as stated in Policy Statement II.A.

B. Radiofrequency Ablation or Somnoplasty of the Base of the Tongue:
Based upon our criteria and assessment of the peer-reviewed literature, somnoplasty does not improve patient outcomes and, therefore, is **considered not medically necessary** for the treatment of OSA.

C. Tongue Suspension Suture System (e.g., AIRvance [formerly known as the Repose System], Encore System):
Based upon our criteria and assessment of the peer-reviewed literature, tongue suspension suture systems have not been medically proven to be effective and, therefore, are considered **investigational** for the treatment of OSA.

IV. Surgical Bypass of the Airway
Tracheostomy*:* Based upon our criteria and assessment of the peer-reviewed literature, tracheostomy has been medically proven to be effective and, therefore, is considered **medically appropriate** for the treatment of severe, life-threatening OSA.

V. Hypoglossal Nerve/Upper Airway Stimulation
   A. Based upon our criteria and assessment of the peer-reviewed literature, hypoglossal nerve upper airway stimulation (e.g., Inspire II Upper Airway Stimulation system) has been medically proven to be effective and, therefore, is considered **medically appropriate** for the treatment of moderate-to-severe OSA, when **ALL** of the following criteria are met for each listed age group.
      1. Adult Patient (aged 18 years or older):
         a. AHI described as greater than 15 and less than or equal to 100;
         b. Unable to use or cannot tolerate CPAP;
         c. All previous treatment measures exhausted/failed; **and**
         d. BMI less than or equal to 40.
      2. Pediatric Patients (aged 10 to 21 years) with Down Syndrome:
         a. AHI greater than 10 and less than 50 with less than 25% central apneas after prior adenotonsillectomy;
         b. Absence of a complete concentric collapse at the soft palate level on drug induced sleep endoscopy;
         c. Body mass index $\leq 95^{th}$ percentile for age;
         d. Have either tracheotomy or have been confirmed to fail, or cannot tolerate, PAP therapy despite attempts to improve compliance; **and**
         e. Have followed standard of care in considering all other alternative/adjunct therapies.
   B. Upper airway stimulation therapy is **contraindicated** when the patient:
      1. Has central and mixed apneas greater than 25% of the total AHI;
      2. Has any anatomical finding that would affect the performance of upper airway stimulation, such as the presence of complete concentric collapse of the soft palate;
      3. Has any condition or procedure that would affect neurological control of the upper airway;
      4. Is unable or does not have the necessary assistance to operate the sleep remote;
      5. Is pregnant or plans to become pregnant;
      6. Will require magnetic resonance imaging (MRI); or
      7. Has an implantable device that may have unintended interactions with the Inspire system.

VI. Cardiac Pacing/Atrial Overdrive Pacing:
Based upon our criteria and assessment of the peer-reviewed literature, atrial overdrive pacing is considered **investigational** for the treatment of OSA.

VII. Based upon our criteria and assessment of the peer-reviewed literature, treatment for snoring without polysomnographic evidence of OSA does not improve patient outcomes and, therefore, is considered **not medically necessary**.

*Refer to Corporate Medical Policy #1.01.06 Positive Airway Pressure Devices CPAP, BIPAP, APAP, and Noninvasive Positive Pressure Ventilators (NIV)*

*Refer to Corporate Medical Policy #1.01.07 Oral Appliances for the Treatment of Obstructive Sleep Apnea*

*Refer to Corporate Medical Policy #11.01.03 Experimental or Investigational Services*

*Refer to Corporate Medical Policy #7.01.05 Vagus Nerve Stimulation and Vagus Nerve Blocking Therapy*

## POLICY GUIDELINES

I. Surgery is not the first treatment of choice for OSA. It is reserved for patients who have failed all forms of medical management of OSA, or are intolerant of CPAP, BiPAP, and/or oral appliances.

II. In severe OSA disease, surgery may not be curative, and follow-up studies may be warranted post-operatively.

III. For those patients who have been found to have multiple levels or anatomical sites (e.g., hypopharyngeal, retropalatal, and/or retro lingual) of OSA on clinical evaluation, a simultaneous combination of surgical procedures may be appropriate for the best surgical outcome and to minimize operative risk. Nasal surgery is not considered part

of a multi-level surgery to correct OSA. If a nasal obstruction precludes the use of CPAP, then nasal surgery to allow the use of CPAP should be performed first.

## DESCRIPTION

Obstructive sleep apnea (OSA) is the cessation of airflow through the nose and mouth for at least 10 seconds with a respiratory effort noted and is usually associated with a reduction in blood oxygen saturation. Features of OSA include daytime somnolence, disordered sleep, and a variety of clinical symptoms. It is also common to find decreased motor and perceptual skills while awake, which correlate with the severity of hypoxia during sleep. The syndrome is most common in middle-aged, obese, male smokers.

In patients with OSA, the normal pharyngeal narrowing is accentuated by anatomic factors, such as a short neck, elongated palate and uvula, or large tonsillar pillars with redundant lateral pharyngeal wall mucosa. OSA may also be associated with a wide variety of craniofacial abnormalities, including micrognathia, retrognathia or maxillary hypoplasia.

When patients with OSA are not able achieve benefit with non-invasive positive pressure therapy (PAP) or fail the gold standard of treatment in the form of continuous positive airway pressure (CPAP), a second-line treatment may be a surgical option. The American Academy of Sleep Medicine (AASM) proposes the use of specific guidelines, such as CPAP adherence for at least four hours of sleep for at least 70% of the days, or an improvement in clinical symptoms. The United States Food and Drug Administration (FDA) defines failed compliance as using the CPAP for fewer than four hours per night for fewer than five nights per week. Not all patients may be candidates for surgical options; appropriate polysomnographic, age, BMI, and objective upper airway evaluation measures may be required, for proper patient selection.

The goal of surgery is to enlarge the airway and prevent airway collapse and oxygen desaturation, to prevent the clinical symptoms of OSA: excessive daytime sleepiness, impaired cognition, and mood disorders. Surgery is site-specific, performed to enlarge a certain portion of the airway.

I. Nasal Surgery
   A. Septoplasty corrects a deviated septum, which may obstruct the nasal airway.
   B. Turbinate reduction reduces the size of one of the three turbinate in each nostril, which can improve the size of the nasal airway. The surgery may be performed with lasers, cautery or radiofrequency ablation.
   C. Polypectomy removes nasal polyps that obstruct the nasal airways.

II. Upper Airway Surgery
   A. Uvulopalatopharyngoplasty (UPPP) involves the removal of the uvula and trimming of the lower edge of the soft palate. The surgery may include several technical variations. All techniques include the basic UPPP procedure, but often additional surgery is performed, such as tonsillectomy. UPPP with inferior sagittal osteotomy with hyoid suspension is one variation proposed to improve the surgical outcome.
   B. Radio-frequency ablation of soft palate tissue, or somnoplasty system, uses a device consisting of an electrosurgical (RF) generator and tissue-coagulating electrodes that ablate soft tissues in the palate or uvula.
   C. Laser-assisted uvulopalatoplasty (LAUP) involves the progressive removal of the back edge of the palate and reduction in the size of the uvula. It is most frequently performed with a carbon dioxide laser and is typically performed over several surgical sessions in an outpatient setting.
   D. Expansion sphincter pharyngoplasty/expansion sphincteroplasty (ESP) is a modification of a UPPP in which the lateral pharyngeal wall is stiffened in order to prevent collapse. ESP consists of a tonsillectomy, expansion pharyngoplasty, rotation of the palatopharyngeal muscle, partial uvulectomy, and closure of the anterior and posterior tonsillar pillars.
   E. Tonsillectomy and adenoidectomy are, respectively, procedures to remove enlarged tonsils, which may narrow the width of the upper airway, and the adenoids, which are at the back of the nose and may obstruct the nasal airway. Removal of tonsils and adenoids is performed most often in children with sleep apnea. Adenoids usually shrink with age and only rarely require removal in adults.

F. Injection snoreplasty involves the injection of a sclerosing agent (tetradecyl sulfate/Sotradecol) into the soft palate, which causes scarring and subsequent stiffening of the soft palate. This is thought to reduce the flutter of the soft palate, which is the cause of primary snoring.
G. Cautery-assisted palatal stiffening operation (CAPSO) is a procedure in which electrocautery is utilized to remove a portion of the soft palate and uvula. It is carried out under local anesthesia, on an outpatient basis.
H. Palatal implant system involves insertion of three narrow bands of braided polyester under the skin of the soft palate using a delivery tool. The implant has been proposed for the treatment of snoring and for the treatment of palate-related mild to moderate sleep apnea. Once in place, the implant stiffens the palate by mechanical means and induces a fibrotic response that incapsulates and secures the implants, further stiffening the palatal tissue. Palatal implants, though designed to be permanent, are removable. Implantation is carried out under local anesthesia.

III. Lower Airway Surgery

A. Jaw realignment surgery (e.g., inferior sagittal mandibular osteotomy, genioglossal advancement, hyoid myotomy and suspension, maxillomandibular osteotomy and advancement) is a more aggressive surgical procedure than UPPP. It has been used to relieve obstruction in OSA patients who meet the criteria for UPPP.
B. A tongue suspension suture system (e.g., Airvance, Medtronic, Inc) involves preventing the tongue from falling back during sleep. The Airvance System uses a titanium screw in the chin, which is attached to a permanent stitch through the tongue to pull it forward. The Encore System is similar to the Airvance System but creates a suture loop within the tongue without having to create penetrations through the mucosal surface of the tongue.
C. Radiofrequency ablation, or Somnoplasty System, uses a device consisting of an electrosurgical (RF) generator and tissue-coagulating electrodes that ablate soft tissues, creating volumetric tissue reduction of the tongue.

IV. Surgical Bypass of the Airway

A tracheostomy bypasses the narrow segments of the airway that cause obstruction and creates an opening in the neck that allows the patient to breathe unobstructed at night. This is done in severe, life-threatening cases of sleep apnea.

V. Hypoglossal Nerve/Upper Airway Stimulation

Electrical stimulation of the hypoglossal nerve has been proposed as a method of maintaining upper airway patency by augmenting tone to the upper airway. The implant device, which consists of a pulse generator, a stimulation lead, and a sensing lead, is designed to detect the patient's respiratory effort and maintain airway patency with mild stimulation of the hypoglossal nerve. Therapy settings are stored in the pulse generator and configured by the physician using an external programmer. The patient uses a remote to start therapy before going to sleep and to stop therapy when awakened. The sleep remote also provides the ability to pause therapy and to adjust stimulation amplitude within physician-defined limits.

On April 30, 2014, the FDA granted pre-market approval for the Inspire Upper Airway Stimulation (UAS) system (Inspire Medical Systems) for use in treating a subset of patients, aged 22 years and older, with moderate-to-severe obstructive sleep apnea (apnea-hypopnea index [AHI] of 20 to 65) who have failed or cannot tolerate CPAP treatments; who do not have complete concentric collapse, as seen during drug-induced sleep endoscopy (DISE), at the level of the soft palate; and whose Body Mass Index (BMI) is less than 32. A drug-induced sleep endoscopy (DISE) replicates sleep with an infusion of propofol. DISE will suggest either a flat, anterior-posterior collapse or complete circumferential oropharyngeal collapse. Concentric collapse decreases the success of hypoglossal nerve stimulation and is an exclusion criterion from the U.S. Food and Drug Administration.

Other devices under investigation include, but may not be limited to, the Aura6000 System (Imthera Medical) and the HGNS System (Apnex Medical**),** although neither of these devices is FDA-approved. In 2020 the FDA granted approval of the Inspire® UAS device for use in patients between the ages of 18 and 21 years for whom specific criteria is met.

In June 2023, Inspire Medical Systems Inc received approval from the FDA on an expanded indication for Inspire UAS system. The update includes an increase on the upper limit of the apnea-hypopnea index (AHI) to 100 events per hour from 65 and raises the BMI warning in the labeling to 40 from 32. The Inspire UAS system is also indicated

for use in people between the ages of 18 and 21 with moderate to severe obstructive sleep apnea (15≤AHI≤100) and people between the ages 13 to 18 with down syndrome and severe obstructive sleep apnea (10≤AHI≤50) who meet the criteria above.

VI. Atrial Overdrive Pacing
It has been found that bradycardia frequently occurs during episodes of apnea. Therefore, atrial overdrive pacing after implantation of a pacemaker has been proposed as a treatment to reduce the incidence of obstructive sleep apnea events.

## RATIONALE

Obstructive sleep apnea has been associated with significant co-morbidities. The gold standard of treatment has been non-invasive ventilation in the form of continuous positive airway pressure (CPAP). When anatomical obstructions exist, surgical intervention is used. Obstruction can occur at any of several different locations along the airway, and, in specific circumstances, combined surgical procedures can offer a higher overall success rate than one single procedure alone. Due to the complexity of airway narrowing or collapse during sleep, any one surgical procedure may not eradicate the patient's sleep apnea. Though procedures such as septoplasty, nasal turbinectomies or nasal polypectomies may be indicated for correction of nasal airway obstruction, their role in treating multi-level OSA is very limited.

LAUP studies have shown that a large proportion of patients post-operatively developed significant worsening of objective sleep parameters. There are no data regarding the long-term efficacy and safety of injection snoreplasty as a treatment for OSA. The scientific evidence is insufficient to permit conclusions concerning the effect of CAPSO on health outcomes. Somnoplast*y* has been approved by the FDA only as a treatment for snoring. Current literature regarding radiofrequency/somnoplasty does not support the efficacy or applicability of this procedure for OSA. Studies also fail to report long-term outcomes or recurrence rates.

The Pillar Palatal Implant received FDA approval for the treatment of snoring in 2003 and as a treatment for OSA in September 2004. There is insufficient peer-reviewed evidence to support the use of the Pillar implant as a treatment for OSA. The literature consists of small case series investigating its use for snoring. Studies with OSA patients had very small sample sizes and limited follow-up, and were vendor sponsored (Nordgard et al. (2006); Friedman et al. (2006).

Many patients with OSA also suffer from nocturnal bradycardia or tachyarrhythmias. It has been observed that, in some patients, the use of a pacemaker to increase the heart rate and cardiac function during sleep could also reduce the incidence of apneic episodes. Although a clinical study by Garrigue et al. (2002) found that atrial overdrive pacing significantly reduced the number of episodes of central and obstructive sleep apnea, these positive findings have not been validated in any of the newer, well-designed studies. Atrial overdrive pacing has not been found to reduce the number of apnea and/or hypopnea events in patients with OSA (Krahn et al. (2006); Unterberg et al. (2005); Luthje et al. (2005); Simantirakis et al. (2005); Pepin et al. (2005).

Upper airway stimulation (UAS) leads to significant reductions in the AHI, the ODI, and the ESS in older patients, despite higher age with multiple co-morbidities. Advanced age was not a limiting factor for surgical procedure or treatment outcomes. The main result of this study is a significant reduction of the AHI in younger and older subjects: 84% decrease in younger subjects and 80.8% decrease in older subjects where the AHI declined below a level of 15 events per hour (the generally accepted values that define mild sleep apnea). Furthermore, the level of daytime sleepiness also declined in 69.6% of younger and in 72% of older subjects where the value of ESS was below 10 points. (Zhu et al. 2018).

The largest cohort study done to date, which focused exclusively on UAS therapy outcomes, consisted of a study of 47 patients, 30 of whom had undergone a previous surgery and 16 of whom had not suffered from moderate-to-severe OSA, but were surgical candidates for HNS therapy. The study examined AHI and nadir oxyhemoglobin saturation (NOS) as measured by polysomnography; secondary measures included ESS. The study revealed an overall reduction in AHI by 90%, which translated to a success rate of 96% and cure rate of 81%. (Mahmoud et al. 2018).

Patients with moderate-to-severe OSA and an inability to adhere to positive pressure therapy, who underwent HGNS, were compared to a historical cohort of patients who were intolerant of CPAP who underwent UPPP. Data included BMI, as well as pre- and post-implant AHI. UAS resulted in an approximately 90% reduction in AHI, while traditional airway

surgery resulted in an approximately 30% reduction in AHI. In addition, 65% of the patients in the UAS cohort demonstrated a reduction in AHI from the moderate-to-severe range into the normal range (AHI <5), compared to only 20% of the patients in the UPPP group. (Shah et al. 2018).

Liu et al. (2022) published a systematic review investigating HNS in adolescents with Down Syndrome and OSA. A total of nine studies were included with a follow up period ranging from two to 58 months; six studies had sample sizes fewer than ten patients. The largest of the included studies was a prospective cohort study published by Yu et al (2022), which is summarized below. In an analysis that included 104 patients, AHI scores were significantly reduced in patients after HNS (mean AHI reduction, 17.43 events/h; 95% CI, 13.98 to 20.88events/h; p<.001). Similarly, in an analysis that included 88 patients, OSA-18 survey scores were significantly reduced after HNS (mean OSA-18 reduction, 1.67; 95% CI, 1.27 to 2.08; p<.001).

Yu et al. (2022) reported on the safety and effectiveness of HNS in 42 adolescents with Down Syndrome and severe OSA (AHI of 10 events/h or greater). This was a single-group, multicenter, cohort study with a 1-year follow-up that included non-obese (BMI <95%) children and adolescents aged 10 to 21 years who were refractory to adenotonsillectomy and unable to tolerate CPAP. Patients who were included had an AHI between10 and 50 on baseline PSG; the mean baseline AHI was 23.5 (SD, 9.7). All patients included tolerated HNS without any intraoperative complications. The most common complication was tongue or oral discomfort or pain, which occurred in 5 (11.9%) patients and was temporary, lasting weeks or rarely, months. Four patients(9.5%) had device extrusion resulting in readmissions to replace the extruded device. At 12 months, there was a mean decrease in AHI of 12.9 (SD, 13.2) events per hour (95% CI, -17.0 to -8.7 events/h). At the 12-month PSG, 30 of 41 patients (73.2%) had an AHI of less than 10 events/h, 14/41 patients (34.1%) had an AHI of less than 5 events/h, and 3/41 patients (7.3%) had an AHI of less than 2 events/h. There was also a significant improvement in quality of life outcomes. The mean improvement in the OSA-18 total score was 34.8 (SD, 20.3;95% CI, -42.1 to -27.5) and the ESS improved by 5.1 (SD, 6.9; 95% CI, -7.4 to -2.8).

## CODES

- *Eligibility for reimbursement is based upon the benefits set forth in the member's subscriber contract.*
- *CODES MAY NOT BE COVERED UNDER ALL CIRCUMSTANCES. PLEASE READ THE POLICY AND GUIDELINES STATEMENTS CAREFULLY.*
- *Codes may not be all inclusive as the AMA and CMS code updates may occur more frequently than policy updates.*
- *Code Key: Experimental/Investigational = (E/I), Not medically necessary/ appropriate = (NMN).*

**CPT Codes**

| Code | Description |
|---|---|
| 21141-21155, 21193-21206, 21244 | Jaw realignment surgery (code ranges) |
| 31600 | Tracheostomy, planned (separate procedure) |
| 41512 **(E/I)** | Tongue base suspension, permanent suture technique |
| 41530 **(NMN)** | Submucosal ablation of the tongue base, radiofrequency, one or more sites, per session |
| 42145 | Palatopharyngoplasty (e.g., uvulopalatopharyngoplasty, uvulopharyngoplasty) |
| 42820 | Tonsillectomy and adenoidectomy; younger than age 12 |
| 42821 | Tonsillectomy and adenoidectomy; age 12 or over |
| 64568 | Open implantation cranial nerve (e.g., vagus nerve) neurostimulator electrode array and pulse generator |

| Code | Description |
|---|---|
| 64582 | Open implantation of hypoglossal nerve neurostimulator array, pulse generator, and distal respiratory sensor electrode or electrode array |
| 64583 | Revision or replacement of hypoglossal nerve neurostimulator array and distal respiratory sensor electrode or electrode array, including connection to existing pulse generator |
| 64584 | Removal of hypoglossal nerve neurostimulator array, pulse generator, and distal respiratory sensor electrode or electrode array |
| 95970 | Electronic analysis of implanted neurostimulator pulse generator/transmitter (e.g., contact group[s], interleaving, amplitude, pulse width, frequency [Hz], on/off cycling, burst, magnet mode, dose lockout, patient selectable parameters, responsive neurostimulation, detection algorithms, closed loop parameters, and passive parameters) by physician or other qualified health care professional; with brain, cranial nerve, spinal cord, peripheral nerve, or sacral nerve, neurostimulator pulse generator/transmitter, without programming |
| 95976 | Electronic analysis of implanted neurostimulator pulse generator/transmitter (e.g., contact group[s], interleaving, amplitude, pulse width, frequency [Hz], on/off cycling, burst, magnet mode, dose lockout, patient selectable parameters, responsive neurostimulation, detection algorithms, closed loop parameters, and passive parameters) by physician or other qualified health care professional; with simple cranial nerve neurostimulator pulse generator/transmitter programming by physician or other qualified health care professional |
| 95977 | Electronic analysis of implanted neurostimulator pulse generator/transmitter (e.g., contact group[s], interleaving, amplitude, pulse width, frequency [Hz], on/off cycling, burst, magnet mode, dose lockout, patient selectable parameters, responsive neurostimulation, detection algorithms, closed loop parameters, and passive parameters) by physician or other qualified health care professional; with complex cranial nerve neurostimulator pulse generator/transmitter programming by physician or other qualified health care professional |



**HCPCS Codes**

| Code | Description |
|---|---|
| C1823 | Generator, neurostimulator (implantable), non-rechargeable, with transvenous sensing and stimulation leads |
| C9727 **(E/I)** | Insertion of implants into the soft palate; minimum of three implants |
| S2080 **(NMN)** | Laser-assisted uvulopalatoplasty (LAUP) |

**ICD10 Codes**

| Code | Description |
|---|---|
| F51.8 | Other sleep disorders not due to a substance or known physiological condition |
| G47.00 | Insomnia, unspecified |
| G47.10 | Hypersomnia, unspecified |
| G47.20 | Circadian rhythm sleep disorder, unspecified type |
| G47.30-G47.39 | Sleep apnea (code range) |
| G47.69 | Other sleep related movement disorders |

| Code | Description |
|---|---|
| G47.8-G47.9 | Other and unspecified sleep disorders (code range) |

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*Key Article

## KEY WORDS

Airvance, Atrial overdrive pacing, Aura6000 System, CAPSO, Encore, HGNS, Hypoglossal Nerve Stimulation, Inspire II Upper Airway Stimulation System, LAUP, Pillar, Repose, Snoreplasty, Somnoplasty, UPPP

## CMS COVERAGE FOR MEDICARE PRODUCT MEMBERS

Based on our review, surgical management of obstructive sleep apnea is not addressed in National or Regional Medicare coverage determinations or policies.