

MEDICAL POLICY

SUBJECT: BIOFEEDBACK	EFFECTIVE DATE: 10/18/01 REVISED DATE: 05/16/02, 04/24/03, 04/15/04, 03/17/05, 03/16/06, 03/15/07, 04/17/08, 09/17/09, 09/16/10, 09/15/11, 09/20/12, 12/19/13, 11/20/14, 11/19/15, 10/20/16, 10/19/17, 10/18/18
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<ul style="list-style-type: none">• <i>If a product excludes coverage for a service, it is not covered, and medical policy criteria do not apply.</i>• <i>If a commercial product (including an Essential Plan product) or a Medicaid product covers a specific service, medical policy criteria apply to the benefit.</i>• <i>If a Medicare product covers a specific service, and there is no national or local Medicare coverage decision for the service, medical policy criteria apply to the benefit.</i>	

POLICY STATEMENT:

- I. Based upon our criteria and review of the peer-reviewed literature, biofeedback is considered **medically appropriate** as part of the overall treatment plan for *migraine* and *tension-type headaches* only after other conventional methods of treatment have been attempted (e.g., medication management, relaxation) and not been successful in treating the patients headaches.
- II. Based upon our criteria and review of the peer-reviewed literature, biofeedback for *dyssynergic-type constipation* in adults is considered **medically appropriate** for patients who exhibit ALL of the following:
 - A. Symptoms of functional constipation for at least three months with onset at least 6 months prior to diagnosis and who meet the following ROME IV criteria for functional constipation:
 1. Patient must exhibit at least two of the following:
 - a. Straining during at least 25% of defecations,
 - b. Lumpy or hard stools in at least 25% of defecations,
 - c. Sensation of incomplete evacuation for at least 25% of defecations,
 - d. Sensation of anorectal obstruction/blockage for at least 25% of defecations,
 - e. Manual maneuvers to facilitate at least 25% of defecations (e.g., digital evacuation, support of the pelvic floor), and/or
 - f. Fewer than three defecations per week; and
 2. Loose stools are rarely present without the use of laxatives; and
 3. Irritable bowel syndrome has been ruled out; and
 - B. There is objective physiologic evidence of pelvic floor dyssynergia demonstrated by inappropriate contraction of the pelvic floor muscles by manometry, imaging or EMG; and
 - C. There has been a failure of a 3-month trial of standard treatments for constipation (e.g., laxatives, dietary changes, adequate fluids, exercise).
- III. Based upon our criteria and review of the peer-reviewed literature, there is no consistent evidence that biofeedback alone, or as an adjunct to other treatments, demonstrates improvement in patient outcomes. Therefore, biofeedback is considered **investigational** for all other indications.

Refer to Corporate Medical Policy # 11.01.03 regarding Experimental and Investigational Services.

POLICY GUIDELINES:

- I. Biofeedback sessions beyond six sessions will require documentation of therapeutic effectiveness, before further sessions will be considered for coverage.
- II. The recommended treatment course for patients with dyssynergic-type constipation, who meet the criteria stated in policy statement II, is up to 6 biofeedback sessions over 3 months.
- III. The Federal Employee Health Benefit Program (FEHBP/FEP) requires that procedures, devices or laboratory tests approved by the U.S. Food and Drug Administration (FDA) may not be considered investigational and thus these procedures, devices or laboratory tests may be assessed only on the basis of their medical necessity.

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DESCRIPTION:

Biofeedback is a technique, using electronic instrumentation, intended to teach patients self-regulation of certain physiologic processes not normally considered to be under voluntary control. The technique involves the feedback of a variety of types of information not normally available to the patient, followed by a concerted effort on the part of the patient to use this feedback to help alter the physiological process in some specific way.

The most common forms of biofeedback involve the measurement of muscle tension (electromyographic or EMG biofeedback), skin temperature (thermal biofeedback), electrical conductance or resistance of the skin (electrodermal biofeedback), brain waves (EEG biofeedback) and respiration. During biofeedback, sensors can be utilized to measure and feedback the activity of the internal and external rectal sphincters, activity of the detrusor muscles of the urinary bladder, esophageal motility and stomach acidity.

Biofeedback has been proposed as a treatment for a variety of diseases and disorders including, but not limited to: addictive behaviors, ADHD/ADD, temporomandibular joint dysfunction (TMJ), bruxism, asthma, cardiac arrhythmias, anxiety and panic disorders, headaches, hypertension, movement/neuromuscular disorders, urinary incontinence, fecal incontinence (encopresis), constipation, Irritable Bowel Syndrome, epilepsy, pain, asthma, Raynaud’s disease and insomnia.

In dyssynergic-type constipation there is a loss of the ability to coordinate contractions of the pelvic floor muscles and to relax the anal sphincter during defecation. Rome IV diagnostic criteria explain dyssynergic defecation as the inappropriate contraction of the pelvic floor with adequate propulsive forces during attempted defecation. Patients often report an inability to defecate despite the urge to do so. The aim of biofeedback for constipation is to teach patients how to tighten and relax their external anal sphincter in order to pass bowel movements. Biofeedback attempts to improve rectal sensory perception, strength, and/or coordination. Sensory training involves inducing intrarectal pressure using a balloon feedback device in which a manometric balloon probe is inserted into the rectum, and the balloon is filled with air to produce a sensation of rectal filling. Strength training uses either anal canal pressure (manometric) or intra-anal electromyography (EMG) feedback of pelvic floor muscles (PFM). The purpose is to strengthen the force of the PFM contraction without including rectal distention. Some training increases endurance (duration of external anal sphincter contraction), as well as peak strength. Coordination training uses pressure feedback of intra-rectal balloon distention using a water-perfused catheter or Schuster-type balloon probe and PFM contractions in a simultaneous feedback display in order to synchronize the contraction of the external anal sphincter with relaxation of the internal anal sphincter. Biofeedback techniques convert the physiologic measures from an intra-anal EMG sensor, anal manometric probe (measuring intra-anal pressure), or perianal surface EMG electrodes to either visual or audio display for feedback. Biofeedback training is performed alone or in combination with other behavioral therapies designed to teach relaxation.

In 2016, ASCRS published guidelines on the evaluation and management of constipation. In 2017, the guidelines state that biofeedback therapy is a first-line treatment for symptomatic pelvic floor dyssynergia (strong recommendation, moderate quality of evidence, 1B).

RATIONALE:

There are methodologic difficulties in assessing biofeedback. Most interventions that include biofeedback are multimodal and include relaxation and behavioral instruction, which may have an independent effect. While some studies may report a beneficial effect of multimodal treatments, without appropriate controls it is impossible to isolate the specific contribution of biofeedback to the overall treatment effect.

Although several studies have recently been published the majority had limited experimental design (e.g., many contain a small sample size of less than 40 patients, randomized studies not blinded, performed at a single site).

Constipation:

For the treatment of constipation, several well-conducted randomized, controlled trials have been published that focus on patients with dyssynergic-type constipation. Although the number of participants in each of the studies is generally small the studies suggest benefits of biofeedback in this specific group of patients.

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A systematic review of randomized, controlled trials found a benefit of biofeedback as a treatment of constipation in adults. The review was limited by the variability in patient populations, comparison groups and outcomes measures. The authors concluded for constipation due to pelvic floor dyssynergia (anismus, spastic pelvic floor syndrome) the collected evidence underlines superiority of biofeedback over other management options and makes biofeedback the treatment of choice for this condition. (Enck, et al)

An American Society of Colon and Rectal Surgeons practice parameter addressing Evaluation and Management of Constipation recommends biofeedback therapy as the treatment of choice for patients with symptomatic pelvic floor dyssynergia (Level of Evidence: Class II; Grade of Recommendation: B).

There is a lack of evidence that addresses whether biofeedback is an effective treatment for constipation in children. A clinical practice guideline of the North American Society for Pediatric Gastroenterology, Hepatology and Nutrition addressing the treatment of constipation states that biofeedback has been found to be efficacious in some open-label studies but recent controlled studies did not demonstrate long-term efficacy. However, biofeedback may be beneficial in the short-term treatment of a small subgroup of patients with intractable constipation.

Fecal incontinence:

Literature addressing biofeedback for treating fecal incontinence in adults and children has not found that biofeedback provides additional benefit when offered in conjunction with conventional therapy compared to conventional therapy alone. Overall, the evidence is insufficient to conclude that biofeedback improves the net health outcome for adults and children with fecal incontinence.

Headache:

According to the US Headache Consortium Guidelines, published in October 2000, biofeedback is somewhat effective in preventing migraine headaches when compared with controls. However, given the evidence reviewed, no conclusions could be made regarding the equivalence or superiority among specific behavioral treatments. The Consortium recommended biofeedback may be considered as a treatment option for prevention of migraine headaches but specific recommendations could not be made regarding which behavioral treatment to use for specific patients. They stated additional studies are needed on behavioral and physical therapies.

Two systematic reviews addressing biofeedback for migraine headaches and tension headaches were published in 2007 and 2008 (Nestoriuc, et al.). The meta-analysis addressing treatment of migraine headaches included 55 studies (randomized, pre-post, and uncontrolled) and 39 controlled trials, reporting a medium effect size of 0.58 (pooled outcome of all available headache variables) for treatment of migraine. Effect sizes were computed using Hedges' g, which refers to the mean difference between the experimental and control groups divided by the pooled standard deviation. For treatment of tension-type headaches, 53 studies met criteria for analysis; these included controlled studies with standardized treatment outcomes, follow-up of at least 3 months, and at least 4 patients per treatment group. Meta-analysis showed a medium-to-large effect size of 0.73 that appeared to be stable over 15 months of follow-up. Biofeedback was reported to be more effective than headache monitoring, placebo, and relaxation therapies. Biofeedback in combination with relaxation was more effective than biofeedback alone, and biofeedback alone was more effective than relaxation alone, suggesting different elements for the two therapies. Although these meta-analyses are limited by the inclusion of studies of poor methodological quality, the authors did not find evidence of an influence of study quality or publication bias in their findings.

Urinary incontinence:

There is insufficient evidence to determine the incremental effects of biofeedback on health outcomes in women with stress and/or urge incontinence and men with post-prostatectomy incontinence. Specifically the value of adding biofeedback to a program of pelvic muscle exercises has not been demonstrated. Studies on combined electrical stimulation and biofeedback have shown mixed results but have not isolated the effect of biofeedback on outcomes.

In a Cochrane review (Stewart, et al 2016) of Incontinence Specialized Register Controlled Trials, journals and conference proceedings a review of electrical stimulation with non-implanted devices aimed to inhibit contractions of the detrusor muscle, potentially reducing urinary frequency and urgency was done. Included in this review of 63 eligible trials (4424

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randomized patients) was a comparison with and without biofeedback. Low- or very low-quality evidence suggested no evidence of a difference in perception of improvement of UII when ES was compared to PFMT with or without biofeedback. The low quality of the evidence base overall for these trials means that there cannot be a full confidence in these conclusions until adequately powered trials is carried out, measuring subjective outcomes and adverse effects.

CODES: Number Description

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.

Note: All codes are experimental/investigational (E/I) except as stated in Policy Statement I for migraine and tension headaches and Policy Statement II for dyssynergic-type constipation.

CPT:	90875	Individual psychophysiological therapy incorporating biofeedback training by any modality (face to face with the patient), with psychotherapy (e.g. insight oriented behavior modifying, or supportive psychotherapy); 30 minutes
	90876	45 minutes
	90901	Biofeedback training by any modality
	90911	Biofeedback training, perineal muscles, anorectal or urethral sphincter, including EMG and/or manometry

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HCPCS: E0746 Electromyography (EMG), biofeedback device

ICD10: Multiple diagnosis codes

REFERENCES:

American Gastroenterological Association. Medical position statement on constipation. Gastroenterol 2013 Jan;144(1):211-7 [http://www.gastrojournal.org/article/S0016-5085(12)01545-4/fulltext#sec5] accessed 9/18/18.

*American Headache Society. US Headache Consortium Guidelines. Evidence-based guidelines for migraine headache: behavioral and physical treatments. 2000 Oct [http://tools.aan.com/professionals/practice/pdfs/g10089.pdf] accessed 9/18/18.

American Urological Association. Diagnosis and Treatment of Overactive Bladder (Non-Neurogenic) in Adults: AUA/SUFU Guideline. [https://www.auanet.org/education/guidelines/overactive-bladder.cfm]. accessed 9/18/18.

Association for Applied Psychophysiology and Biofeedback I. Standards for Performing Biofeedback. 2013; [http://www.aapb.org/i4a/pages/index.cfm?pageid=3678#II] accessed 9/18/18.

Barth B, et al. EMG biofeedback training in adult attention-deficit/hyperactivity disorder: An active (control) training? Behav Brain Res. 2017 Jun 30;329:58-66. doi: 10.1016/j.bbr.2017.04.021.

Bertotto A, et al. Effect of electromyographic biofeedback as an add-on to pelvic floor muscle exercises on neuromuscular outcomes and quality of life in postmenopausal women with stress urinary incontinence: A randomized controlled trial. Neurourol Urodyn. 2017 May 16. doi: 10.1002/nau.23258

BlueCross BlueShield Association. Temporomandibular joint dysfunction. Medical Policy Reference Manual. Policy #2.01.21. 2018 Feb 08.

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- BlueCross BlueShield Association. Biofeedback in the treatment of urinary incontinence in adults. Medical Policy Reference Manual. Policy #2.01.27. 2018 Aug 09.
- BlueCross BlueShield Association. Neurofeedback. Medical Policy Reference Manual. Policy #2.01.28. 2018 Jun 14.
- BlueCross BlueShield Association. Biofeedback as a treatment of headache. Medical Policy Reference Manual. Policy #2.01.29. 2017 Nov 09.
- BlueCross BlueShield Association. Biofeedback as a treatment of chronic pain. Medical Policy Reference Manual. Policy #2.01.30. 2017 Nov 09.
- BlueCross BlueShield Association. Biofeedback for miscellaneous indications. Medical Policy Reference Manual. Policy #2.01.53. 2017 Aug 10.
- BlueCross BlueShield Association. Biofeedback as a treatment of fecal incontinence or constipation. Medical Policy Reference Manual. Policy #2.01.64. 2017 Nov 14.
- Bove A, et al. Consensus statement AIGO/SICCR diagnosis and treatment of chronic constipation and obstructed defecation (part II: treatment). World J Gastroenterol 2012 Sep 28;18(36):4994-5013.
- Campbell SE, et al. Conservative management for postprostatectomy urinary incontinence. Cochrane Database of Systematic Reviews, 2012, Issue 1. Art. No.: CD001843.
- Fazeli MS, et al. Biofeedback for nonneuropathic daytime voiding disorders in children: a systematic review and meta-analysis of randomized controlled trials. J Urol 2015 Jan;193(1):274-9.
- Hart SL, et al. A randomized controlled trial of anorectal biofeedback for constipation. Int J Colorectal Dis 2012 Apr;27(4):459-66.
- *Heymen S, et al. Randomized, controlled trial shows biofeedback to be superior to alternative treatments for patients with pelvic floor dyssynergia-type constipation. Dis Colon Rectum 2007 Apr;50(4):428-11.
- Jones L, et al. Pain management for women in labour: an overview of systematic reviews. Cochrane Database Syst Rev. 2012 Mar 14;3:CD009234.
- Lacy BE, et al. Bowel disorders. Gastroenterology 2016 May;150(6):1393–1407.
- Lepley AS, et al. Effects of electromyographic biofeedback on quadriceps strength: a systematic review. J Strength Cond Res 2012 Mar;26(3):873-82.
- Moroni RM, Magnani PS, Haddad JM, et al. Conservative treatment of stress urinary incontinence: a systematic review with meta-analysis of randomized controlled trials. Rev Bras Ginecol Obstet. Feb 2016;38(2):97-111.
- Nagai Y, et al. Epileptic seizures are reduced by autonomic biofeedback therapy through enhancement of fronto-limbic connectivity: a controlled trial and neuroimaging study. EBioMedicine 2018 Jan;27:112-122.
- National Institute for Health and Clinical Excellence (NICE). Guideline 99: Constipation in children and young people. 2010 updated July 2017 [<http://www.nice.org.uk/guidance/CG99>] accessed 9/18/18.
- Norton C, et al. Biofeedback and/or sphincter exercises for the treatment of faecal incontinence in adults. Cochrane Database of Systematic Reviews 2012, Issue 7. No. CD002111.
- Paquette IM, Varma M, Ternent C, et al. The American Society of Colon and Rectal Surgeons' Clinical Practice Guideline for the Evaluation and Management of Constipation. Dis Colon Rectum. Jun 2016;59(6):479-492.
- Pollock A, et al. Interventions for improving upper limb function after stroke. Cochrane Database Syst Rev. 2014 Nov 12;11:CD010820.
- *Rao SS, et al. Randomized controlled trial of biofeedback, sham feedback and standard therapy for dyssynergic defecation. Clin Gastroenterol Hepatol 2007 Mar;5(3):331-8.

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*Rome Foundation, Inc. Rome III diagnostic criteria for functional gastrointestinal disorders. 2006
http://www.theromefoundation.org/assets/pdf/19_RomeIII_apA_885-898.pdf] accessed 9/18/18.

Schmulson MJ and Drossman DA. What is new in Rome IV. J Neurogastroenterol Motil 2017 Apr;23(2):151-163.

Shamliyan T, et al. Nonsurgical treatments for urinary incontinence in adult women: diagnosis and comparative effectiveness. Comparative Effectiveness Review No. 36. AHRQ Publication No. 11(12)-EHC074-EF. Rockville, MD. Agency for Healthcare Research and Quality. 2012 Apr [www.effectivehealthcare.ahrq.gov/reports/final.cfm] accessed 9/18/18.

Simren M, et al. Update on Rome IV criteria for colorectal disorders: implications for clinical practice. Curr Gastroenterol Rep 2017 Apr;19(4):15

Stewart F, et al. Electrical stimulation with non-implanted electrodes for overactive bladder in adults. Cochrane Database Syst Rev. 2016 Dec 9;12:CD010098.

Tabbers MM, et al. Clinical guideline. Evaluation and treatment of functional constipation in infants and children: evidence-based recommendations from ESPGHAN and NASPGHAN. JPGN 2014 Feb;58(2):258-74
[http://www.naspghan.org/files/documents/pdfs/position-papers/Constipation_Feb_2014.pdf] accessed 9/18/18.

*Ternent CA, et al. Practice parameters for the evaluation and management of constipation. Dis Colon Rectum 2007 Dec; 50(12):2013-22.

Wang MY, Chang NC, Hsieh MH, et al. Effect of feedback signal on blood pressure self-regulation capability in individuals with prehypertension or stage I hypertension: a randomized controlled study. J Cardiovasc Nurs. Mar- Apr 2016;31(2):166-172.

*Woodford H and Price C. EMG biofeedback for the recovery of motor function after stroke. Cochrane Database Syst Rev 2007 Apr 18;(2):CD004585.

*key article

KEY WORDS:

Biofeedback, EMG feedback.

CMS COVERAGE FOR MEDICARE PRODUCT MEMBERS

There are currently two National Coverage Determinations (NCDs) addressing Biofeedback. Please refer to the following websites for Medicare Members:

Biofeedback Therapy:

https://www.cms.gov/medicare-coverage-database/details/ncd-details.aspx?NCDId=41&ncdver=1&CoverageSelection=Both&ArticleType=All&PolicyType=Final&s=New+York++Upstate&Keyword=biofeedback&KeywordLookup=Title&KeywordSearchType=And&ncd_id=30.1&ncd_version=1&basket=ncd%25253A30%25252E1%25253A1%25253ABiofeedback+Therapy&bc=gAAAABAAAA&

Biofeedback Therapy for the Treatment of Urinary Incontinence:

https://www.cms.gov/medicare-coverage-database/details/ncd-details.aspx?NCDId=42&ncdver=1&CoverageSelection=Both&ArticleType=All&PolicyType=Final&s=New+York++Upstate&Keyword=biofeedback&KeywordLookup=Title&KeywordSearchType=And&ncd_id=30.1&ncd_version=1&basket=ncd%25253A30%25252E1%25253A1%25253ABiofeedback+Therapy&bc=gAAAABAAAA&