



BlueCross BlueShield  
of Alabama

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**Name of Policy:**

**Sensory Stimulation for Coma Patients**

Policy #: 139

Category: Therapy

Latest Review Date: September 2009

Policy Grade: **Active policy but no  
longer scheduled for  
regular literature  
reviews and update.**

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**Background/Definitions:**

*As a general rule, benefits are payable under Blue Cross and Blue Shield of Alabama health plans only in cases of medical necessity and only if services or supplies are not investigational, provided the customer group contracts have such coverage.*

*The following Association Technology Evaluation Criteria must be met for a service/supply to be considered for coverage:*

- 1. The technology must have final approval from the appropriate government regulatory bodies;*
- 2. The scientific evidence must permit conclusions concerning the effect of the technology on health outcomes;*
- 3. The technology must improve the net health outcome;*
- 4. The technology must be as beneficial as any established alternatives;*
- 5. The improvement must be attainable outside the investigational setting.*

*Medical Necessity means that health care services (e.g., procedures, treatments, supplies, devices, equipment, facilities or drugs) that a physician, exercising prudent clinical judgment, would provide to a patient for the purpose of preventing, evaluating, diagnosing or treating an illness, injury or disease or its symptoms, and that are:*

- 1. In accordance with generally accepted standards of medical practice; and*
- 2. Clinically appropriate in terms of type, frequency, extent, site and duration and considered effective for the patient's illness, injury or disease; and*
- 3. Not primarily for the convenience of the patient, physician or other health care provider; and*
- 4. Not more costly than an alternative service or sequence of services at least as likely to produce equivalent therapeutic or diagnostic results as to the diagnosis or treatment of that patient's illness, injury or disease.*

### **Description of Procedure or Service:**

Sensory stimulation programs are intended to promote positive changes in consciousness levels as noted in awakening and enhancing the rehabilitative potential of coma patients. Most programs include stimulation involving auditory, visual, olfactory, gustatory, tactile and physical stimulation. Various stimuli may be used for each sense. Protocols may differ with respect to who performs the stimulation and where. Professionals include nurses, occupational therapists, physical therapists, and speech-language therapists. In some cases, family members may be trained in the techniques and are given primary responsibility for providing the therapy. Treatment may be performed in the hospital, the patient's home or a nursing home.

### **Policy:**

**Sensory stimulation** for coma patients **does not meet** Blue Cross and Blue Shield of Alabama's medical criteria for coverage and is considered **investigational**.

*Blue Cross and Blue Shield of Alabama does not approve or deny procedures, services, testing, or equipment for our members. Our decisions concern coverage only. The decision of whether or not to have a certain test, treatment or procedure is one made between the physician and his/her patient. Blue Cross and Blue Shield of Alabama administer benefits based on the members' contract and corporate medical policies. Physicians should always exercise their best medical judgment in providing the care they feel is most appropriate for their patients. Needed care should not be delayed or refused because of a coverage determination.*

### **Key Points:**

The Blue Cross Blue Shield Association policy referenced a 1989 TEC assessment stating that in order to validate the effectiveness of coma stimulation, controlled clinical trials of comparable patients were required. In 1989, no literature was determined to meet these criteria. Further research from 1989 to June 1998 did not identify any controlled studies of coma stimulation. An update in May 2002 again did not identify any additional published data regarding sensory stimulation.

Lombardi, et al. published results of a Cochrane systematic review of sensory stimulation of patients in coma or vegetative state. Three studies were reviewed and revealed the overall methodology was poor and the studies differed in design and conduct. None of the studies reviewed provided useful and valid results on the outcomes of clinical relevance for these patients. Lombardi, et al. concluded that there was no reliable evidence to support the effectiveness of multisensory stimulation programs in patients in coma or vegetative states.

**September 2007** update has identified no additional studies. The evidence remains insufficient to alter the policy statement.

### **September 2009 Update**

Karma and Rawat in 2006 published the results of a prospective and randomized controlled study of 60 pediatric patients in a coma due to non-traumatic causes. Patients from a coma induced by trauma were excluded. Stimulation began as early as possible after the children were

hemodynamically stable and other parameters as well. The stimulation therapy was given from a coma kit. The six senses were stimulated five times a day with a resting period of 2-3 hours in between. The Glasgow Coma Scale and AVPU (A= the child is awake and alert, or V= responds to voice, or P= responds to pain or U= unconscious) Thirty patients were randomized to a control or study group. Patients in the Study group showed significant improvement after 2 weeks of stimulation while the Control groups score remained almost unchanged. For level of consciousness, the Study group had significant improvement while the Control had no significant improvement after 2 weeks of stimulation. The Study group that received stimulation therapy early (< 5 days of onset) and intermediate (6 to 15 days) showed better improvement in comparison that those who began stimulation after 15 days of onset of coma. The authors concluded that stimulation therapy can reduce the duration of non-traumatic coma in children. This study was a small sample size and of short duration of therapy. It is recommended that a larger sample size and longer duration of stimulation therapy and follow-up shall be more informative. No further studies have been identified that would alter the coverage statement of this policy.

**Key Words:**

Sensory stimulation, coma stimulation, vegetative state

**Approved by Governing Bodies:**

Not applicable

**Benefit Application:**

Coverage is subject to member's specific benefits. Group specific policy will supersede this policy when applicable.

ITS: Home Policy provisions apply

FEP contracts: FEP does not consider investigational if FDA approved. Will be reviewed for medical necessity.

Pre-certification/Pre-determination requirements: Not applicable

**CURRENT Coding:**

CPT codes:           **97139** Unlisted therapeutic procedure (specify)  
                              **97799** Unlisted physical medicine/rehabilitation serviced or procedure

HCPCS                **S9056** Coma stimulation; per diem

**References:**

1. Blue Cross and Blue Shield Association. Medical Policy Reference Manual. *Sensory stimulation for coma patients*, June 2009.
2. Bos S. *Coma stimulation*. Online J Knowl Synth Nurs, February 1997; 4:1.

3. Davis AE and Gimenez A. *Cognitive-behavioral recovery in comatose patients following auditory sensory stimulation*. J Neurosci Nurs, August 2003; 35(4): 202-9, 214.
4. Karma D and Rawat AK. *Effect of stimulation in coma*. Indian Pediatrics, October 2006, Vol. 43, pp. 856-860.
5. Lippert-Gruner M, Wedekind C and Klug N. *Outcome of prolonged coma following severe traumatic brain injury*. Brain Inj, January 2003; 17(1): 49-54.
6. Lombardi F, Taricco M, De Tanti A, et al. *Sensory stimulation of brain-injured individuals in coma or vegetative state: Results of a Cochrane systematic review*. Clin Rehabil, August 2002; 16(5): 464-72.
7. National Institute of Neurological Disorders and Stroke. *Traumatic brain injury: Hope through research*, [http://www.ninds.nih.gov/health\\_and\\_medical/pubs/tbi.htm](http://www.ninds.nih.gov/health_and_medical/pubs/tbi.htm).
8. Oh H and Seo W. *Sensory stimulation programme to improve recovery in comatose patients*. J Clin Nurs, May 2003; 12(3): 394-404.
9. Pierce JP, Lyle DM, Quine S, et al. *The effectiveness of coma arousal intervention*. Brain Inj, Apr-Jun 1990; 4(2): 191-7.

### **Policy History:**

Medical Policy Group, September 2003 (1)

Medical Policy Administration Committee, September 2003

Available for comment November 3-December 17, 2003

Medical Policy Group, September 2005 (1)

Medical Policy Group, September 2007 (1)

Medical Policy Group, September 2009 (1)

**Medical Policy Group, March 2012: Effective March 12, 2012 Policy no longer scheduled for regular literature reviews and updates**

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*This medical policy is not an authorization, certification, explanation of benefits, or a contract. Eligibility and benefits are determined on a case-by-case basis according to the terms of the member's plan in effect as of the date services are rendered. All medical policies are based on (i) research of current medical literature and (ii) review of common medical practices in the treatment and diagnosis of disease as of the date hereof. Physicians and other providers are solely responsible for all aspects of medical care and treatment, including the type, quality, and levels of care and treatment.*

*This policy is intended to be used for adjudication of claims (including pre-admission certification, pre-determinations, and pre-procedure review) in Blue Cross and Blue Shield's administration of plan contracts.*