Name of Policy:  
Constraint Induced Movement or Language Therapy

Policy #:  188  
Category: Therapy  
Latest Review Date:  April 2014  
Policy Grade: B

Background:
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:
Constraint-induced movement therapy (CIMT), also known as constraint induced therapy (CIT) or forced use movement therapy, is a therapeutic approach to rehabilitation of movement after stroke or other neurologic events. CIMT has been used to improve motor function in patients following CVA. The intensity and schedule of delivery of CIMT is different from that of traditional physical therapy. CIMT involves a technique of restraining the unimpaired limb and forcing the use of the impaired limb during normal daily activities and rehabilitation exercises. The non-paretic upper extremity is secured in a sling for 90% of waking hours, while the paretic arm receives intensive training in a variety of tasks six hours per day for two to three weeks. Pediatric CIT may also be referred to as ACQUIREc Therapy.

CIMT has been used in patients with chronic and subacute CVA, chronic traumatic brain injury, incomplete spinal cord injury, cerebral palsy, fractured hip, phantom limb pain, as well as musicians with focal hand dystonia. The exact mechanism by which CIMT produces its therapeutic effect is not known, but imaging studies suggest that use-dependent cortical reorganization may occur after CI therapy.

Recently, Constraint Induced Language Therapy (CILT) or Constraint Induced Aphasia Therapy (CIAT) has been used to treat patients with aphasia. CILT differs from usual aphasia treatment approaches in that no compensatory nonverbal communications (e.g., gesture, drawing, and writing) are allowed during the language activities. Improved verbal responses are the goal of treatment. Proponents of this therapy hypothesize that by limiting the patient’s use of compensatory communications or even giving up on the message altogether during the therapy session, the brain is forced to adapt and find an alternate way to express the idea, i.e., verbalization and spoken words. Treatment is intense and frequent lasting six hours per day for five days per week.

Policy:
Constraint-Induced Movement Therapy for the treatment of motor disorders such as those caused by stroke, traumatic brain injury, or cerebral palsy does not meet Blue Cross and Blue Shield of Alabama’s medical criteria for coverage and is considered investigational.

Constraint Induced Language Therapy for the treatment of aphasia 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 administers 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:**
There are many reports in the literature on the use of CIMT in patients after stroke, brain injury, or cerebral palsy. However, there are no multi-center trials, only a few randomized trials, and only a few studies that use a separate control group.

Some of the tests used to measure outcomes include the Action Research Arm (ARA) test for dexterity, the Fugl-Meyer Assessment scales (physical performance), the Motor Activity Log (MAL), Rehabilitation Activities Profile, and the Graded Wolf Motor Function Test (GWMFT). Some of the studies are summarized below. The outcomes are varied and inconsistent.

Taub, et al (1993), reported on nine stroke patients randomly assigned to either a CI therapy group (n = 4) for 14 days or to an attention-comparison group (n = 5). The results showed the restraint group had improvement of motor performance times, quality of movement, and functional ability and these improvements were maintained for two years.

van der Lee, et al (1999), reported on a randomized trial in which 66 chronic stroke patients were allocated to either forced use therapy or a reference therapy of equally intensive bimanual training for two weeks. The results showed the forced use group had significantly improved ARA scores and MAL scores. There was no significant improvement in Fugl test or Rehabilitation Activities Profile. At one year, the improved effects were observed only for the ARA test. The effect of the forced use therapy was clinically relevant only in patients with sensory disorders and hemineglect.

Dromerick, et al (2000), reported on a pilot randomized, controlled trial that compared CIM with traditional upper-extremity therapy shortly after stroke. 20 patients completed 14 days of treatment. The CIM group had significantly higher scores on the total ARA and pinch subscale scores. There were no significant differences between the groups in the mean ARA grip, grasp, gross movement subscale scores, or UE activities of daily living performance. The authors concluded that long-term studies are needed to see if CIM is superior therapy.

Miltner, et al (1999), in Germany, reported on 15 stroke patients given CI therapy for 12 days. The results showed the patients had a significant and very large degree of improvement after treatment on a laboratory motor test and on activities of daily living test. There was no decrease in performance at the 6-month follow up.

Kunkel, et al (1999), reported on five chronic stroke patients with moderate motor deficit who were treated with CIM for 14 days. The results showed a substantial improvement in all motor tests and in the quality of movement. Both of these had very small study groups.

Bonifer and Anderson (2003) reported on the use of CIMT in a 53-year-old patient with severe, chronic upper extremity hemiparesis. After three weeks of CIMT, the patient showed improvement on the MAL, the GWMFT, and the Fugl. However, the improved scores were not maintained long-term and the patient reported and demonstrated no improvement in functional ability. The authors concluded that further investigation of CIMT, as well as CIMT in combination with other motor recovery interventions, is warranted.
Page, et al (2002), reported on 14 patients treated with modified CIT (mCIT) that emphasized affected arm use in activities three times a week for ten weeks with restraining of the less affected arm five days per week. Also, five patients received regular therapy (TR) and five patients received no therapy (CON). The results showed that mCIT patients had improved scores on the Fugl test, ARA test, and MAL. This author used ten weeks of therapy, which was longer than that in previous studies.

Winstein, et al (2003), reported that there is an ongoing multisite RCT evaluating CIT in stroke to determine if CIT may be helpful three to nine months after stroke, to see if gains may persist two years, to see if treatment effects differ depending on when treatment is done, and to look at the initial level of motor ability and response to therapy.

Some researchers have looked at the use of CIMT in pediatric patients with cerebral palsy (CP).

Boyd, et al (2001), performed a systematic review of the literature of the management of upper limb dysfunction in children with CP. They reported there are many management options, but very few randomized controlled trials to evaluate the effectiveness of these treatment options, including CIMT.

Taub (2004) reported on a randomized trial of 18 children with CP who received either pediatric CI therapy (cast the less impaired arm and shaping tasks for the more impaired arm) or conventional treatment for 21 days. The results showed that on the Emerging Behaviors Scale, the CI therapy group exhibited a mean of 9.3 new motor patterns and classes of functional activity, as compared to 2.2 new motor activities in the control group. The PMAL scores also showed improvement for CI therapy patients. The TAUT motor activity test showed 54% increased use of the more impaired arm as compared to 18% in the control group. The authors noted that this was the first report of a conventional pediatric PT training procedure conducted at this level of activity. They suggested that future research should examine both the question of non-specific effects from pediatric CI therapy and the dose-response effect of the intensity of treatment. Also, they stated that it would be of value to look at the extent to which pediatric CI therapy contributes to changes in other developmental domains and to see if any of these results can be replicated in other laboratories.

Well-designed studies with large sample sizes, long-term follow up, and appropriate control groups (e.g., other motor rehabilitation regimens in similar treatment time and intensity) are needed to determine the effectiveness of CIMT in the treatment of motor disorders caused by neurological injury.

Finally, there is no documented standarized protocol for performing CIMT. Future studies are needed to determine the best protocol for sustained results.

The results of the Extremity Constraint Induced Therapy Evaluation (EXCITE) trial was published in 2006 by Wolf and colleagues. This was a prospective, single-blind, randomized, multisite clinical trial conducted at seven academic institutions for a period of two years. Participants should have a first stroke within the previous three to nine months. Two hundred twenty-two participants were assigned to receive either CIMT or usual and customary care. The
authors report that the trial demonstrated that the CIMT group had statistically significant and clinically relevant improvements in the paretic arm motor ability and use compared to those who received usual and customary care. Improvements were noted following the two-week CIMT and persisted for up to one year. Changes, although substantially smaller than CIMT, were also demonstrated in the control group and significant improvement in most outcomes from baseline to the one year follow-up. It was noted by the authors that some improvement due to spontaneous recovery could be expected.

The authors also cited several limitations to this study. These include the interpretation of outcomes being limited due to the smaller-than-planned number of lower-functioning individuals enrolled. Only 48.9% of control group participants received other treatments throughout the year. Monitoring additional therapies for intensity was difficult and these therapies were most likely not comparable between the groups. Whether the extent of the intensity of CIMT schedule of delivery can be altered and if CIMT is ultimately cost-effective needs further explanation. The last limitation cited was incomplete detailed information about the anatomical location of each stroke and lack of information regarding the extent and use of medications limit the ability to assess the influence of relevant variables on primary outcomes.

Wolf and colleagues published a two year follow-up to the EXCITE trial in early 2008. The original participants who received CIMT therapy were assessed every 4 months following the one year follow-up. The findings demonstrated that the effects of CIMT at 24 months after treatment did not decline from those at 12 months. These results, according to the authors, highlight the possibility of further improvement in the arm of mild to moderately impaired stroke survivors beyond one year following the two-week CIMT intervention. They further conclude that the importance of long-term follow-up in rehabilitation clinical trials to show the full extent of effects from therapeutic interventions.

**December 2011 Update**

There continues to be little evidence to evaluate the efficacy of CIMT for motor disorders. Among three small controlled trials published to date, there were trends supporting a treatment effect. Because the methods and outcomes used varied considerably among these trials, it is unclear which techniques, if any, are clinically useful.

A literature search identified one randomized controlled trials for using CILT to treat aphasia. The authors of this trial could not rule out that the possibility that conventional therapy performed in a massed-practice fashion also could result in pronounced behavioral improvement within a few days. In addition, small case series reporting on a limited number of participants with short follow-up were noted. There is little evidence to evaluate the efficacy of CILT for aphasia.

**April 2014 Update**

No studies were identified that would change the policy statement. Constraint-induced therapy remains investigational.
**Key Words:**
Constraint-induced movement therapy (CIMT), forced use movement therapy, constraint induced therapy, CIT, Constraint Induced Language Therapy, CILT, Constraint Induced Aphasia Therapy, CIAT, ACQUIREc Therapy

**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:
These services should be billed as a global fee at the end of therapy under the unlisted code.

- **92700** Unlisted otorhinolaryngological service or procedure
- **97799** Unlisted physical medicine/rehabilitation service or procedure

These procedures have also been identified as being billed on the following:

- **97001** Physical therapy evaluation
- **97002** Physical therapy re-evaluation
- **97003** Occupational therapy evaluation
- **97004** Occupational therapy re-evaluation
- **97110** Therapeutic procedure, one or more areas, each 15 minutes; therapeutic exercises to develop strength and endurance; range of motion and flexibility
- **97112** Therapeutic procedure, one or more areas, each 15 minutes; neuromuscular reeducation of movement, balance, coordination, kinesthetic sense, posture, and/or proprioception for sitting and/or standing activities
- **97530** Therapeutic activities, direct (one on one) patient contact (use of dynamic activities to improve functional performance), each 15 minutes
References:

Proprietary Information of Blue Cross and Blue Shield of Alabama
Medical Policy #188

Policy History:
Medical Policy Group, July 2003
Medical Policy Group, July 2004 (2)
Medical Policy Administration Committee, August 2004
Available for comment August 11-September 24, 2004
Medical Policy Group, July 2006 (1)
Medical Policy Group, July 2008 (1)
Medical Policy Group, July 2010 (1): Reviewed, no updates
Medical Policy Group, December 2011 (2), Description, Policy, Key Words, Key Points, Coding, and References updated
Medical Policy Administration Committee, January 2012
Available for comment January 11 - February 27, 2012
Medical Policy Group, December 2012 (3): 2013 Coding Updates: Verbiage change to Code 97530 (removed “by the provider”)
Medical Policy Group, April 2014 (2): No change in policy statement. Two references added.

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.