

## CONSTRAINT-INDUCED MOVEMENT THERAPY-UPPER EXTREMITY

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### What is constraint-induced movement therapy (CIMT)?

After a stroke, regaining strength and function in your weaker arm (the side weakened by the stroke) can be challenging. Constraint-Induced Movement Therapy (CIMT) involves intensive training of the weaker arm while restricting the use of the stronger arm. Specifically, the use of the stronger arm is restricted by the use of a mitten or a sling for much of each day. The idea is to encourage you to use your weaker hand to do daily activities. This therapy has been studied by high quality research studies and has been found beneficial for arm function in some patients- especially those who already have some use of their arm and hand.



The use of an arm sling during walking training. The sling makes it impossible to use stronger arm. The man must use his weaker arm to hold



Use of a mitten while writing. The mitten makes it impossible to use the good arm. The woman is forced to use her weaker hand to write

### Are there different kinds of constraint-induced therapies?

The term “CIMT” is used to describe a newer technique based on older existing techniques that force the patients to use their weaker arm. These older techniques are called “forced-use” therapy. The goal is to intensively train the weaker arm by using it to perform daily tasks such as preparing meals, engage in fun activities such as throwing a ball or fine motor activities such as writing.

More recently, research has looked at the benefit of modified CIMT (mCIMT), which is based on the same principles as CIMT but with less time wearing the restraint and fewer hours of exercise each day.

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### **What is it used for in people with stroke?**

The goal of CIMT is to help regain strength and function on the weaker side of the body, typically the side affected by the stroke. CIMT is used for a variety of purposes. Here we describe its use for arm and hand therapy.

### **Does it work for stroke?**

As already mentioned, this therapy has been examined using high quality research studies and has been found beneficial for arm function in some patients after a stroke – especially those who already have some use of their arm and hand.

Although researchers are not exactly sure of how it works, some experts suggest that CIMT affects the brain by enlarging the brain area controlling the weaker arm. Research studies have reported that patients who receive CIMT have better control of their weaker arm and better ability to perform daily activities such as cooking and dressing when compared to people with stroke who received other forms of arm and hand therapy.

### **What can I expect?**

Your therapist will decide with you what regime is most suitable for you. However, CIMT typically requires you to wear either a large mitten or an arm sling on your stronger arm, many hours a day, seven days a week, for about two weeks or more. The mitten or the sling is worn to encourage you to use your weaker arm and hand to do everyday tasks. In addition, the occupational therapist or physical therapist providing the treatment will do exercises with you and may also give you exercises to do on your own or with a family member or friend. While results can vary from person to person, there is scientific evidence that many people who receive this therapy can have improved use of their weaker arm.

### **Are there any side effects or risks?**

CIMT is usually done by a physical therapist or an occupational therapist at a rehabilitation centre or out-patient clinic. However, many of the exercises must be done outside of treatment time. Family members and friends can be very important in helping you do these exercises. Ask your therapist to give you and your friends/family specific information on exercises.

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### **How long is the treatment period?**

Intense, repetitive training of the weaker arm is usually given for 90 percent of waking hours (about 13 hours/day) for a 2-week period. This can be done in the clinic, at home, and wherever else it is safe to do so.

An alternative form of CIMT – modified CIMT – is done for fewer hours and possibly, for more weeks. Consult with your therapist or physician who will help you decide which is right for you – CIMT or mCIMT.

This treatment program requires a good deal of self-discipline and commitment. Individuals with stroke tell us it is hard work! Improvement has been shown to be best for those who spend lots of time using the mitten or the sling.

### **Who provides the treatment?**

CIMT is usually provided by a physical therapist or an occupational therapist at a rehabilitation centre or out-patient clinic. However, many of the exercises must be done outside of treatment time. Family members and friends can be very important in helping you do these exercises. Ask your therapist to give you and your friends/family specific information on exercises.

### **Is constraint-induced movement therapy for me?**

CIMT can be of benefit to those who have lost some of the use of their upper limb following stroke. Studies have looked at the benefit for individuals who have had a stroke very recently, over the past couple of months, and those who have experienced a stroke six or more months ago. There is some positive research that suggests that CIMT may be beneficial for certain patients at all of these times.

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