

What is motor imagery?



(Courtesy of Dr. Stephen Page and his team at Drake Center and University of Cincinnati)

Motor imagery is a form of therapy that can be used to strengthen the arms, hands, feet and legs which may be weakened by stroke. In motor imagery, we mentally rehearse the movement of the affected body parts, without ever actually attempting to perform the movement. In other words, you imagine doing the motion in your mind. For example, you may imagine hitting a golf ball or drinking a cup of tea. Researchers have shown that this “mental rehearsal” actually works,

as it stimulates the brain areas responsible for making the weaker arm or leg move.

What is motor imagery used for?

It has been used to improve strength, increase hip movements, and improve postural control in the elderly, as well as treat people who have health problems, including injury to the spinal cord, Parkinson’s disease, or fibromyalgia (general muscle pain). It is especially useful for people with problems with the arms, legs, and hands.

Are there different types of motor imagery?

There are two distinct types of motor imagery:

- **Kinaesthetic motor imagery** – imagining the feeling associated with performing a movement.
- **Visual motor imagery** – imagining the movement itself.

What can I expect from a motor imagery session?

An example of a motor imagery session for a person with a weakened arm might include:

- 5 minutes of listening to a tape recording of relaxation techniques
- 20 minutes of exercises related to motor imagery. In week one the mental imagery training involves using computer images and movies to analyze steps and

sequences required to successfully complete a task ie. reaching for a cup or turning a page in a book. In week two, patients are trained to identify problems they are having with the tasks and correct them using mental imagery. In the third week, they practice the corrected tasks mentally as well as perform the actual tasks.

- The session concludes with time given to the individual to refocus on the room around them.

Does it Work for Stroke?

Experts have done experiments to compare mental imagery with other treatments, to see if mental imagery helps people who have had a stroke.

In individuals with ACUTE stroke (up to 1 month after stroke), 1 high quality study and one fair quality study found that mental imagery:

- Was more helpful than the usual treatment alone for improving self-care skills (e.g. dressing and shopping);
- Was as helpful as other treatments for improving thinking skills (e.g. attention) and motor function of the arms and legs.

In individuals with SUBACUTE stroke (1 month to 6 months after stroke), 2 high quality studies and 1 fair quality study found that mental imagery:

- Was more helpful than the usual treatment alone for improving walking speed;
- Was as helpful as other treatments for improving self-care skills (e.g. dressing) and physical skills of the arms and legs, including mobility, dexterity and grip strength.

In individuals with CHRONIC stroke (more than 6 months after stroke), 10 high quality studies, 6 fair quality studies in 1 poor quality study found that mental imagery:

- Was more helpful than the usual treatment alone for improving balance, walking speed, and motor function of the arms and legs;

- Was as helpful as other treatments for improving self-care skills (e.g. dressing and shopping) and spasticity.

When can motor imagery be used after stroke?

Motor imagery techniques can be started at any time following a stroke. However, it is believed that the treatments would be most useful in the first 6 to 18 months after a stroke when the majority of post-stroke recovery occurs.

Are there any risks to me?

There are no specific risks involved in participating in motor imagery. Motor imagery is actually quite easy to do at home, and many people find it a fun and relaxing way of having additional therapy.

How do I begin?

Your rehabilitation therapist should be able to provide you with a program to meet your individual needs. She/He can guide you as to:

- how many times a week you should do motor imagery exercises,
- what specific activities and movements you should do,
- what activities you should not do,
- how long each motor imagery session should be,
- how to change activities as you improve.

How much does it cost? Do I need special equipment?

Motor imagery is inexpensive and accessible. Insurance will cover the services that you will receive in the hospital or rehabilitation centre. Once you are home you can continue this treatment on your own. No special equipment is required.

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