Mirror therapy: (how) does it work?

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Ethical review	Approved WMO
Status	Recruiting
Health condition type	Central nervous system vascular disorders
Study type	Interventional

Summary

ID

NL-OMON34265

Source
ToetsingOnline

Brief title
Mirror therapy: (how) does it work?

Condition

- Central nervous system vascular disorders

Synonym
armfunction after stroke, hemiplegic upper extremity function

Research involving
Human

Sponsors and support

Primary sponsor: Erasmus MC, Universitair Medisch Centrum Rotterdam
Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: Mirror therapy, Rehabilitation, Stroke, Upper-limb

Outcome measures

Primary outcome

The primary outcome of this study is movement time, defined as the time between initiation and termination of the reaching task.

Secondary outcome

Secondary outcomes are movement segmentation (temporal characteristics of endpoint acceleration profiles), movement smoothness, reaction time and precision of goal attainment.

Study description

Background summary

Some 50-70% of stroke patients suffer from a paretic arm. Optimizing upper extremity functioning is therefore a central issue in post-stroke rehabilitation. A recently developed intervention is mirror therapy, in which a patient exercises with the affected limb behind a mirror while the non-affected limb is mirrored. Using the mirror reflection, visual feedback is provided as if the paretic hand is functioning normally. Several studies have shown the effectiveness of mirror therapy, for acute, sub-acute and chronic stroke patients. However, there are a number of ways in which mirror therapy can be administered. The manner in which one chooses to administer mirror therapy is partly dependent on ideas on the underlying working mechanism. It is conceivable that the effectiveness of mirror therapy will be largely dependent on the manner in which it is administered. However, research that has been performed so far does not allow for inferences on the most effective administration of mirror therapy. As a result, some patients receive mirror therapy in a suboptimal format.

Study objective

The aim of the present study is to increase the understanding of the optimal administration of mirror therapy and thereby improve the quality and effectiveness on this therapy. In order to realise this several different applications of mirror therapy will be compared. In order to realise this, we will use a movement task which is known to have short-term learning effects in

stroke patients. By having patients practice the movement task under different conditions, similar to the different ways in which mirror therapy can be performed, we can learn the most effective administration of mirror therapy.

Study design

Ninety stroke patients will be assigned randomly to six training groups. Every group will train the movement task in a different way, similar to the ways in which mirror therapy can be administered.

Intervention

The intervention consists of performing a motor task 70 times. Dependent on the group to which participants will be allocated they perform the task with the affected arm, with the unaffected arm or with both arms together. Two groups will just watch a video from someone else performing the motor task. Before and after the intervention all participants will perform the motor task 5 times with the affected arm. These measurements will serve as baseline and effect measurement respectively.

Study burden and risks

The burden for the participants consists of a single visit to the Erasmus MC. During this visit, patients will undergo three intake measurements, and will have to perform a reaching task 80 times with either their affected or unaffected arm. Intake measurements will take around half an hour, whereas performing the motor task will take around one and a half hour. As far as we know no risks are associated with either the intake tests or with performing the motor task.

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)
Elderly (65 years and older)

Inclusion criteria

- Stroke more than 6 months ago
- First ever and only stroke
- Minimal age 18 and maximum age 70 years
- Mastery of Dutch language
- BFM score of 3 or more (voluntary muscle control without domination of pathological synergies)

Exclusion criteria

- Co-morbidity: neurologic disorders, rheumamatic or orthopaedic disorders to both arms including shoulder girdle and spinal cord
- Subarachnoidal bleeds
- Hemineglect
- Absence of vital or gnostic sensibility

Study design

Design

Study phase:	2
Study type:	Interventional
Intervention model:	Parallel

Allocation:	Randomized controlled trial
Masking:	Open (masking not used)
Control:	Active
Primary purpose:	Treatment

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	01-09-2010
Enrollment:	90
Type:	Actual

Ethics review

Approved WMO

Application type:	First submission
Review commission:	METC Erasmus MC, Universitair Medisch Centrum Rotterdam (Rotterdam)

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
CCMO	NL32469.078.10