

# The use of sling exercise therapy for weakness and functional disability on one side of the body after a stroke

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<b>Registration date</b> 27/05/2022	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 26/05/2022	<b>Condition category</b> Circulatory System	<input type="checkbox"/> Individual participant data <input type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and study aims

Stroke patients have problems with trunk control, which is linked with restricted balance, an increased risk of falls, poor walking performance, and dependence on people in daily activities. The goal of physical therapy is to improve the trunk stability of stroke patients. In addition, recent studies have found that trunk exercises performed on an unstable surface are more effective than those performed on a stable surface. Sling exercise therapy (SET), one of the common unstable surfaces, can help patients perform the training program more effectively by supporting their body weight with an elastic cord. The aim of this study is to determine the effects of core stability exercises using sling exercise training on balance, walking, and activities of daily living for patients with subacute hemiparesis (weakness of one side of the body).

### Who can participate?

Patients diagnosed with their first stroke with hemiplegia within the last 6 months who can walk independently

### What does the study involve?

Participants are randomly allocated to the sling exercise training or conventional physical therapy. Participants receive the training for 8 weeks and their trunk function, balance, walking and daily living activities are assessed before and after 8 weeks of training.

### What are the possible benefits and risks of participating?

Balance, walking and daily living activities may be improved after the training, and trunk function may be improved after the sling exercise intervention.

### Where is the study run from?

Yuan's General Hospital (Taiwan)

### When is the study starting and how long is it expected to run for?

October 2017 to March 2018

Who is funding the study?

1. Ministry of Science and Technology (Taiwan)
2. National Sun Yat-sen University (Taiwan)
3. Kaohsiung Medical University (Taiwan)

Who is the main contact?

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## Contact information

### Type(s)

Scientific

### Contact name

Miss Shih Chi Tseng

### Contact details

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## Additional identifiers

## Study information

### Scientific Title

The effect of core stability exercises using sling exercise therapy on trunk function, balance ability, walking performance and daily living activities in subacute hemiparesis patients

### Study objectives

The sling exercise training improved balance ability, walking performance and activities of daily living significantly compared to baseline measurement and the conventional therapy intervention.

### Ethics approval required

Old ethics approval format

### Ethics approval(s)

Approved 25/12/2017, Institutional Review Board of Yuan's General Hospital (No. 162, Chenggong 1st Road, Lingya Dist., Kaohsiung City, Taiwan (R.O.C.); +886 (0)7 3350205; irb@yuanhosp.com.tw), ref: 20171031B

### Study design

Single-center interventional randomized controlled trial

**Primary study design**

Interventional

**Study type(s)**

Treatment

**Health condition(s) or problem(s) studied**

Subacute stroke

**Interventions**

Participants were randomly assigned to study groups by sealed envelopes to receive sling exercise training for the experiment group and conventional physical therapy for the control group. All participants receive a total of 20 intervention sessions, 3 intervention sessions a week and 1 hour per session, over 8 weeks.

**Intervention Type**

Other

**Primary outcome(s)**

1. Balance ability measured by Timed Up & Go, Berg Balance scale and postural assessment scale at baseline and post-intervention (8 weeks)
2. Walking performance measured by 5-meter walking test and 6-minute walking test at baseline and post-intervention (8 weeks)

**Key secondary outcome(s)**

1. Trunk function measured by the Trunk Impairment Scale and the pelvic backward tilt force by using stabilizer pressure biofeedback at baseline and post-intervention (8 weeks)
2. Daily living activities measured by the Barthel index and the activities-specific balance confidence scale at the baseline and post-intervention (8 weeks)

**Completion date**

12/03/2018

**Eligibility**

**Key inclusion criteria**

1. Less than 6 months since diagnosis of first stroke with hemiplegia
2. Modified Rankin Scale scores less than or equal to 4 (MRS  $\leq$  4)
3. Independent walking

**Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Adult

**Sex**

All

**Total final enrolment**

40

**Key exclusion criteria**

1. Trunk Impairment Scale (TIS) score of 17 or more
2. Other musculoskeletal or neurologic problems

**Date of first enrolment**

25/12/2017

**Date of final enrolment**

15/01/2018

**Locations****Countries of recruitment**

Taiwan

**Study participating centre****Yuan's General Hospital**

No. 162, Chenggong 1st Rd., Lingya Dist.

Kaohsiung

Taiwan

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**Sponsor information****Organisation**

Kaohsiung Medical University

**ROR**

<https://ror.org/03gk81f96>

**Funder(s)****Funder type**

Government

**Funder Name**

Ministry of Science and Technology, Taiwan

**Alternative Name(s)**

Ministry of Science and Technology, R.O.C. (Taiwan), Ministry of Science and Technology of Taiwan, MOST

**Funding Body Type**

Government organisation

**Funding Body Subtype**

National government

**Location**

Taiwan

**Funder Name**

National Sun Yat-sen University

**Alternative Name(s)**

NSYSU

**Funding Body Type**

Government organisation

**Funding Body Subtype**

Universities (academic only)

**Location**

Taiwan

**Funder Name**

Kaohsiung Medical University

**Alternative Name(s)**

-, Kaohsiung Medical University | Kaohsiung Medical University, Kaohsiung Medical University in Taiwan, Kaohsiung Medical University (KMU) - Taiwan, Kaohsiung Medical University, Taiwan, Kaohsiung Medical University | , Kaohsiung Medical College, KMU

**Funding Body Type**

Private sector organisation

**Funding Body Subtype**

Universities (academic only)

**Location**

Taiwan

## **Results and Publications**

### **Individual participant data (IPD) sharing plan**

The datasets generated and/or analysed during the current study will be included in the subsequent results publication

### **IPD sharing plan summary**

Published as a supplement to the results publication