

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

11 Sep 2026

### Effects Of Chest Expansion Exercises On Pulmonary Function, Chest Expansion, Trunk Control Ability And Quality Of Life Among Stroke Patients

#### Protocol summary

##### Study aim

To find the effects of Chest Expansion exercises on pulmonary function, chest expansion, trunk control ability and quality of life among stroke patients.

##### Design

Two parallel groups, double blinded, randomized controlled trial with pre and post assessment

##### Settings and conduct

Physiotherapy department of Jinnah Memorial Trust Hospital Gujranwala

##### Participants/Inclusion and exclusion criteria

Inclusion Criteria: • Patients between age group of 40-55 years • Both genders • Chronic stroke from at least last 6 months-2 years of both forms (ischemic and hemorrhage). • Hemiplegic patients caused by stroke • Patients are able to sit independently • Patients who are able to walk independently with or without walking aid  
Exclusion Criteria: • Patients with any pulmonary disease before onset of stroke • Patients with thoracic deformity or rib fracture • Patients who received respiratory rehabilitation for stroke • Patients with any neurological disorder other than stroke

##### Intervention groups

Conventional neurorehabilitation program along with Chest expansion exercises

##### Main outcome variables

Pulmonary function test by using Diagnostic Spirometry, Assessment of quality of life using SS-QOL (Stroke Specific Quality Of Life) questionnaire, Trunk Impairment Scale used to assess trunk control (TIS), Measurement of Chest Expansion using measuring tape.

#### General information

##### Reason for update

##### Acronym

Effects Of Chest Expansion Exercises Among Stroke

Patients

##### IRCT registration information

IRCT registration number: **IRCT20191117045462N16**

Registration date: **2024-07-20, 1403/04/30**

Registration timing: **prospective**

Last update: **2024-07-20, 1403/04/30**

Update count: **0**

##### Registration date

2024-07-20, 1403/04/30

##### Registrant information

###### Name

Wajeeha Zia

###### Name of organization / entity

Riphah International University

###### Country

Pakistan

###### Phone

+92 42 35126110

###### Email address

wajeeha\_z@yahoo.com

##### Recruitment status

**Recruitment complete**

##### Funding source

##### Expected recruitment start date

2024-08-15, 1403/05/25

##### Expected recruitment end date

2024-12-15, 1403/09/25

##### Actual recruitment start date

2024-08-15, 1403/05/25

##### Actual recruitment end date

2024-12-15, 1403/09/25

##### Trial completion date

2025-02-15, 1403/11/27

##### Scientific title

|                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                |                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|---------------------------------------------------------------------------------|
| Effects Of Chest Expansion Exercises On Pulmonary Function, Chest Expansion, Trunk Control Ability And Quality Of Life Among Stroke Patients |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Secondary Ids                                  | empty                                                                           |
| <b>Public title</b>                                                                                                                          | Effects Of Chest Expansion Exercises On Pulmonary Function, Chest Expansion, Trunk Control Ability And Quality Of Life Among Stroke Patients                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>Ethics committees</b>                       |                                                                                 |
| <b>Purpose</b>                                                                                                                               | Treatment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <u>1</u>                                       |                                                                                 |
| <b>Inclusion/Exclusion criteria</b>                                                                                                          | <b>Inclusion criteria:</b><br>Patients between age group of 40-55 years Both genders Chronic stroke from at least last 6 months-2 years of both forms (ischemic and hemorrhage) Hemiplegic patients caused by stroke. Patients are able to sit independently Patients who are able to walk independently with or without walking aid<br><b>Exclusion criteria:</b><br>Patients with any pulmonary disease before onset of stroke. Patients with thoracic deformity or rib fracture. Patients who received respiratory rehabilitation for stroke. Patients with any neurological disorder other than stroke | <b>Ethics committee</b>                        |                                                                                 |
| <b>Age</b>                                                                                                                                   | From <b>40 years</b> old to <b>55 years</b> old                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Name of ethics committee</b>                | Riphah college of rehabilitation & Allied Health Sciences                       |
| <b>Gender</b>                                                                                                                                | Both                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Street address</b>                          | 25 Raza Saeed Rd, Bhabra Block M Gulberg III, Lahore, Punjab 25-M Block, Lahore |
| <b>Phase</b>                                                                                                                                 | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>City</b>                                    | Lahore                                                                          |
| <b>Groups that have been masked</b>                                                                                                          | <ul style="list-style-type: none"> <li>Participant</li> <li>Investigator</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Postal code</b>                             | 54660                                                                           |
| <b>Sample size</b>                                                                                                                           | Target sample size: <b>42</b><br>Actual sample size reached: <b>42</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Approval date</b>                           | 2024-07-04, 1403/04/14                                                          |
| <b>Randomization (investigator's opinion)</b>                                                                                                | Randomized                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Ethics committee reference number</b>       | RCS&AHS/REC/MS-CPPT                                                             |
| <b>Randomization description</b>                                                                                                             | Taking into account the above mentioned inclusion and exclusion criteria, patients will be recruited in the study through convenient sampling technique and then will be randomly assigned to each group through Random Sampling sealed opaque enveloped. Labeled as 1 Group A and 2 for Group B                                                                                                                                                                                                                                                                                                           | <b>Health conditions studied</b>               |                                                                                 |
| <b>Blinding (investigator's opinion)</b>                                                                                                     | Double blinded                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <u>1</u>                                       |                                                                                 |
| <b>Blinding description</b>                                                                                                                  | Both patient and assessor physiotherapist will be blinded. Although the consent form will be taken from the patient. But the patient will not be aware of the study. Accessor physiotherapist will be involved in the study. He or She must have 2- or 3-year experience in relevant domain. He will access the patient by study defined outcome measure tools before the start and at the end of study.                                                                                                                                                                                                   | <b>Description of health condition studied</b> | Stroke patients                                                                 |
| <b>Placebo</b>                                                                                                                               | Used                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>ICD-10 code</b>                             | G46.4                                                                           |
| <b>Assignment</b>                                                                                                                            | Parallel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>ICD-10 code description</b>                 | Cerebellar stroke syndrome                                                      |
| <b>Other design features</b>                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Primary outcomes</b>                        |                                                                                 |
|                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <u>1</u>                                       |                                                                                 |
|                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Description</b>                             | Pulmonary Function                                                              |
|                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Timepoint</b>                               | Pre and Post Treatment                                                          |
|                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Method of measurement</b>                   | Diagnostic spirometer                                                           |
|                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <u>2</u>                                       |                                                                                 |
|                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Description</b>                             | Chest Expansion                                                                 |
|                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Timepoint</b>                               | Pre and post Treatment                                                          |
|                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Method of measurement</b>                   | Measuring Tape                                                                  |
|                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <u>3</u>                                       |                                                                                 |
|                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Description</b>                             | Trunk control ability                                                           |
|                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Timepoint</b>                               | Pre and post Treatment                                                          |
|                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Method of measurement</b>                   |                                                                                 |

Trunk Impairment Scale (TIS)

#### 4

##### **Description**

Quality Of Life

##### **Timepoint**

Pre and post Treatment

##### **Method of measurement**

Stroke Specific Quality Of Life (SS-QOL)

### **Secondary outcomes**

empty

### **Intervention groups**

#### 1

##### **Description**

Control group: Conventional neurorehabilitation program

##### **Category**

Rehabilitation

#### 2

##### **Description**

Intervention group: Conventional neurorehabilitation program along with Chest expansion exercises

##### **Category**

Rehabilitation

### **Recruitment centers**

#### 1

##### **Recruitment center**

###### **Name of recruitment center**

Jinnah Memorial Trust Hospital

###### **Full name of responsible person**

Noor ul Zuha

###### **Street address**

287/A, Block A Model Town, Gujranwala, Punjab

###### **City**

Gujranwala

###### **Postal code**

52200

###### **Phone**

+92 55 3253467

###### **Email**

noorulzuha123@gmail.com

###### **Web page address**

### **Sponsors / Funding sources**

#### 1

##### **Sponsor**

###### **Name of organization / entity**

Riphah International University

###### **Full name of responsible person**

Wajeeha Zia

##### **Street address**

25 Raza Saeed Rd, Bhabra Block M Gulberg III,  
Lahore, Punjab 25-M Block, Lahore

##### **City**

Lahore

##### **Postal code**

54660

##### **Phone**

+92 42 111 747 424

##### **Email**

Wajeeha.zia@riphah.edu.pk

##### **Grant name**

Nil

##### **Grant code / Reference number**

##### **Is the source of funding the same sponsor organization/entity?**

No

##### **Title of funding source**

Riphah International University

##### **Proportion provided by this source**

15

##### **Public or private sector**

Private

##### **Domestic or foreign origin**

Domestic

##### **Category of foreign source of funding**

empty

##### **Country of origin**

##### **Type of organization providing the funding**

Academic

### **Person responsible for general inquiries**

##### **Contact**

###### **Name of organization / entity**

Expert Consultant Clinic

###### **Full name of responsible person**

Muhammad Umer Arshad

###### **Position**

HOD

###### **Latest degree**

Master

###### **Other areas of specialty/work**

Physiotherapy

###### **Street address**

627, Khayaban e Jinnah, Iqbal Avenue Cooperative  
Housing Society-Phase 1, Airline Society

###### **City**

Lahore

###### **Province**

Punjab

###### **Postal code**

54000

###### **Phone**

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###### **Email**

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### **Person responsible for scientific inquiries**

##### **Contact**

**Name of organization / entity**

Riphah International University

**Full name of responsible person**

Wajeeha Zia

**Position**

Assistant Professor

**Latest degree**

Ph.D.

**Other areas of specialty/work**

Physiotherapy

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**Email**

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**Sharing plan****Deidentified Individual Participant Data Set (IPD)**

No - There is not a plan to make this available

**Justification/reason for indecision/not sharing IPD**

There is no further information

**Study Protocol**

Undecided - It is not yet known if there will be a plan to make this available

**Statistical Analysis Plan**

Undecided - It is not yet known if there will be a plan to make this available

**Informed Consent Form**

Undecided - It is not yet known if there will be a plan to make this available

**Clinical Study Report**

Undecided - It is not yet known if there will be a plan to make this available

**Analytic Code**

Undecided - It is not yet known if there will be a plan to make this available

**Data Dictionary**

Undecided - It is not yet known if there will be a plan to make this available

**Person responsible for updating data****Contact****Name of organization / entity**

Riphah International University

**Full name of responsible person**

Noor ul Zuha

**Position**

Student

**Latest degree**

Master

**Other areas of specialty/work**

Physiotherapy