

# Clinical Trial Protocol

## Iranian Registry of Clinical Trials

10 Jun 2026

### Comparing the effects of task-oriented circuit training (TOCT) and dynamic neuromuscular stabilization training (DNS) on balance, motor function, trunk control, and quality of life in people with Parkinson's disease: A randomized clinical trial

#### Protocol summary

##### Study aim

The aim of the present study was to determine the effectiveness of two training protocols, DNS and TOCT, in Parkinson's disease.

##### Design

A simple randomized, non-blinded, parallel-group, controlled clinical trial conducted on 30 patients.

##### Settings and conduct

The current study is conducted on Parkinson's patients at Hazrat Rasool Akram Hospital for 6 weeks, 3 sessions per week, each session lasting 60 minutes.

##### Participants/Inclusion and exclusion criteria

1. Diagnosis of Parkinson's disease with gait disturbance
2. Age 55 to 75 years
3. Being in stage 3 of the disease according to the Hoenn and Yahr scale
4. Not dependent on assistive devices
5. No history of stroke, peripheral neuropathy
6. Normal range of body mass index (18-25.5)
7. Completion of the informed consent form

##### Intervention groups

The research design will consist of three groups (two training groups and one control group) participating in 3 training sessions per week for 6 weeks. Dynamic neuromuscular stabilization training group: 5 minutes of warm-up, 50 minutes of core training (with varied movement patterns and breathing control), and 5 minutes of cool-down. Rest between sets: 60 to 150 seconds. Task-based circuit training group: 60 minutes of training at workstations related to daily activities (balance, walking, reaching for objects). This design will be implemented with a pre-test and post-test method.

##### Main outcome variables

Balance; motor function; trunk control; quality of life

#### General information

##### Reason for update

##### Acronym

TOCT-DNS-PD

##### IRCT registration information

IRCT registration number: **IRCT20251110067946N1**

Registration date: **2026-06-03, 1405/03/13**

Registration timing: **registered\_while\_recruiting**

Last update: **2026-06-03, 1405/03/13**

Update count: **0**

##### Registration date

2026-06-03, 1405/03/13

##### Registrant information

###### Name

Marziyeh Ardeshiri lordejani

###### Name of organization / entity

Shahid Beheshti University Faculty of Sports and Health Sciences

###### Country

Iran (Islamic Republic of)

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##### Recruitment status

**recruiting**

##### Funding source

##### Expected recruitment start date

2026-05-11, 1405/02/21

##### Expected recruitment end date

2026-06-29, 1405/04/08

##### Actual recruitment start date

empty

##### Actual recruitment end date

empty

##### Trial completion date

empty

### Scientific title

Comparing the effects of task-oriented circuit training (TOCT) and dynamic neuromuscular stabilization training (DNS) on balance, motor function, trunk control, and quality of life in people with Parkinson's disease: A randomized clinical trial

### Public title

Comparison of Two Types of Exercise Training on Balance, Motor Performance, Trunk Control, and Quality of Life in Patients with Parkinson's Disease

### Purpose

Supportive

### Inclusion/Exclusion criteria

#### Inclusion criteria:

Diagnosis of Parkinson's disease based on official clinical diagnostic criteria, accompanied by gait impairment. Age range: 55 to 75 years. Hoehn and Yahr stage III of Parkinson's disease. Independence from assistive devices, with the ability to walk without using a cane or walker. Absence of stroke, peripheral neuropathy, and other serious diseases that could affect the study outcomes. Normal body mass index (BMI) ranging from 18.5 to 25. Completion of the informed consent form and willingness to participate in the study.

#### Exclusion criteria:

Absence from more than three sessions of the scheduled training program. Withdrawal of consent or unwillingness to continue participation in the study. Exacerbation of Parkinson's disease symptoms.

### Age

From **55 years** old to **75 years** old

### Gender

Both

### Phase

N/A

### Groups that have been masked

*No information*

### Sample size

Target sample size: **30**

### Randomization (investigator's opinion)

Randomized

### Randomization description

Participants who met the inclusion criteria were randomly assigned to one of three groups: TOCT, DNS, or control. Randomization was performed using a simple allocation method, with individual participants as the unit of randomization. To maintain allocation concealment, sealed and coded paper envelopes were used. Each envelope contained the group assignment and was opened sequentially according to the order of participant enrollment to prevent prior allocation.

### Blinding (investigator's opinion)

Not blinded

### Blinding description

### Placebo

Not used

### Assignment

Parallel

### Other design features

## Secondary Ids

empty

## Ethics committees

### 1

#### Ethics committee

##### Name of ethics committee

Research Ethics Committee, Shahid Beheshti University

##### Street address

Office of the Vice-Chancellor for Research, Shahid Beheshti University, Ovin Square, Tehran, Iran

##### City

Tehran

##### Province

Tehran

##### Postal code

1658953571

#### Approval date

2025-09-06, 1404/06/15

#### Ethics committee reference number

IR.SBU.REC.1404.149

## Health conditions studied

### 1

#### Description of health condition studied

Parkinson

#### ICD-10 code

G20

#### ICD-10 code description

Parkinson's disease

## Primary outcomes

### 1

#### Description

Balance

#### Timepoint

Balance will be assessed at baseline (prior to the intervention) and again following the completion of a six-week training program

#### Method of measurement

Mini-Balance Evaluation Systems Test

### 2

#### Description

Motor Function

#### Timepoint

Motor Function will be assessed at baseline (prior to the intervention) and again following the completion of a six-week training program

#### Method of measurement

Timed Up and Go (TUG)

### 3

#### **Description**

Trunk Control

#### **Timepoint**

Trunk Control will be assessed at baseline (prior to the intervention) and again following the completion of a six-week training program

#### **Method of measurement**

Trunk Impairment Scale (TIS)

### 4

#### **Description**

Quality of Life

#### **Timepoint**

Quality of Life will be assessed at baseline (prior to the intervention) and again following the completion of a six-week training program

#### **Method of measurement**

Quality of Life questionnaire (PDQ-39)

### **Secondary outcomes**

empty

### **Intervention groups**

#### 1

#### **Description**

the first intervention group : dynamic neuromuscular stabilization exercises 3 times per week for 6 weeks , each training session consisted of three main parts : warm - up for 5 min , dynamic muscle - dynamic stabilization for 50 min and chilling for 5 min . sets of rest intervals between sets are between 60 and 150 seconds . the exercises consist of various motor patterns performed in different situations and exercises with the control of breathing are performed .

#### **Category**

Rehabilitation

#### 2

#### **Description**

the second intervention group : وظیفه محور بیماران - based training program : parkinson " s disease , 3 sessions per week for 6 weeks before starting the training program , 5 min before the start of training program , and in the last 50 minutes , they had their سردکردن in their training program . these include repeating tasks , in order to achieve and maintain the motor learning of these tasks .

#### **Category**

Rehabilitation

#### 3

#### **Description**

Control group: receive no intervention and continue to live in normal life.

#### **Category**

N/A

### **Recruitment centers**

#### 1

#### **Recruitment center**

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

Hazrat rasul akram hospital

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

Marzieh ardeshiri lordejani

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### **Sponsors / Funding sources**

#### 1

#### **Sponsor**

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

Vice President for Research, Shahid Beheshti University

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

Amir Hossein Barati

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Shahid Beheshti University, Shahid Shahryari Square, Evin, Tehran

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

##### **Grant name**

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

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

Yes

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

Vice President for Research, Shahid Beheshti University

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

100

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

Public

##### **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

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The university of shahid beheshti  
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## Person responsible for scientific inquiries

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## Person responsible for updating data

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## Sharing plan

**Deidentified Individual Participant Data Set (IPD)**  
Undecided - It is not yet known if there will be a plan to  
make this available  
**Study Protocol**  
Undecided - It is not yet known if there will be a plan to  
make this available  
**Statistical Analysis Plan**  
Not applicable  
**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**  
Not applicable  
**Data Dictionary**  
Not applicable