

Clinical Trial Protocol

Iranian Registry of Clinical Trials

27 Jul 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

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Name of organization / entity

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Recruitment status

Recruitment complete

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		Secondary Ids	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	Ethics committees	<u>1</u>
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	Ethics committee	Name of ethics committee Research Ethics Committee, Shahid Beheshti University
Purpose	Supportive	Street address	Office of the Vice-Chancellor for Research, Shahid Beheshti University, Ovin Square, Tehran, Iran
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.	City	Tehran
Age	From 55 years old to 75 years old	Province	Tehran
Gender	Both	Postal code	1658953571
Phase	N/A	Approval date	2025-09-06, 1404/06/15
Groups that have been masked	No information	Ethics committee reference number	IR.SBU.REC.1404.149
Sample size	Target sample size: 30	Health conditions studied	<u>1</u>
Randomization (investigator's opinion)	Randomized	Description of health condition studied	Parkinson
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.	ICD-10 code	G20
Blinding (investigator's opinion)	Not blinded	ICD-10 code description	Parkinson's disease
Blinding description		Primary outcomes	<u>1</u>
Placebo	Not used	Description	Balance
Assignment	Parallel	Timepoint	Balance will be assessed at baseline (prior to the intervention) and again following the completion of a six-week training program
Other design features		Method of measurement	Mini-Balance Evaluation Systems Test
		<u>2</u>	
		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 بیماراران - 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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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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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