Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

The effect of multi-component dual-task chair exercises on biochemical, functional, and cognitive indices in multiple parkinsonian patients.

Protocol summary

Study aim
The Effects of Multi-Component Chair-Based Dual-Task Exercises on Biochemical, Functional, and Cognitive Indices in Patients with Parkinson's Disease

Design
A double-blind method will be used. This study will involve patients with Parkinson's disease and will be conducted at the Isfahan Parkinson's Charity Association.

Settings and conduct
A double-blind method will be used. The study will be conducted on patients with Parkinson's disease at the Isfahan Parkinson's Charity Association.

Participants/Inclusion and exclusion criteria
disease, confirmed by a physician. No history of participation in an exercise program during the previous three years. No other underlying diseases. Before the study begins, the experimental procedures and potential risks will be explained to the participants. Written informed consent will be signed by the patient or a caregiver

Intervention groups
During this period, the exercise group will perform strength, aerobic, flexibility, and cognitive exercises, while the control group will receive no exercise or only minimal, short-duration exercise.

Main outcome variables
Improved sleep quality, mental status, reduced freezing of gait, improved lower-limb flexibility, lower-body strength and dynamic balance, improved cardiorespiratory endurance, and assessment of blood dopamine, melatonin, and BDNF levels

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20260722070312N1**
Registration date: **2026-10-11, 1405/07/19**
Registration timing: **registered_while_recruiting**

Last update: **2026-10-11, 1405/07/19**
Update count: **0**

Registration date
2026-10-11, 1405/07/19

Registrant information

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Marzieh Zamani Faradonbeh

Name of organization / entity
The University of Esfahan

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Recruitment status
recruiting

Funding source

Expected recruitment start date
2026-08-11, 1405/05/20

Expected recruitment end date
2026-12-11, 1405/09/20

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
The effect of multi-component dual-task chair exercises on biochemical, functional, and cognitive indices in multiple parkinsonian patients.

Public title
The effect of dual-task exercise on physical and cognitive

function in patients with parkinson’s disease.

Purpose

Supportive

Inclusion/Exclusion criteria

Inclusion criteria:

Patients with physician-confirmed mild to moderate disease Patients should not have a history of participating in any sports program in the past three years Parkinson's patients should not have other underlying diseases Before the study begins, the experimental procedures and possible risks should be explained to the participants The consent form must be signed by the patient or the patient's companion Patients must be in the age range of 55 to 70

Exclusion criteria:

Patients with a physician-confirmed diagnosis of mild-to-moderate Parkinson’s disease Patients should have no history of participating in an exercise program during the past three years Patients should not have any other underlying medical conditions Prior to the commencement of the study, the experimental procedures and potential risks were fully explained to the participants The informed consent form was signed by either the participant or their legal representative/caregiver

Age

From **55 years** old to **70 years** old

Gender

Both

Phase

3

Groups that have been masked

- Outcome assessor
- Data analyser

Sample size

Target sample size: **20**

Randomization (investigator's opinion)

Randomized

Randomization description

Following the application of inclusion and exclusion criteria, eligible participants were enrolled in the study. Randomization was performed at the individual level using a random number table. Participants were initially listed in alphabetical order and assigned sequential identification numbers. Subsequently, subjects were allocated to one of two groups based on their assigned numbers, where even numbers were assigned to one group and odd numbers to the other.

Blinding (investigator's opinion)

Double blinded

Blinding description

To minimize bias, participants were assigned to two groups based on personal circumstances and determining factors, as well as their level of interest and accessibility. The protocols for both groups were designed to ensure a high degree of similarity regarding the type, duration, and setting of the activities; the only difference was the greater use of cognitive tools in the dual-task training group. The instructor, the person collecting blood samples, the laboratory staff, and the statistician were unaware of the group assignments.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

University of Isfahan

Street address

University of Isfahan, Hezar-Jarib Street

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Esfahan

Province

Isfehan

Postal code

8174673441

Approval date

2026-07-28, 1405/05/06

Ethics committee reference number

IR.UI.REC.1405.057

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

Biochemical markers are laboratory measurements of body chemical compounds, including levels of brain-derived neurotrophic factor and dopamine.

Timepoint

The factors were measured before the start of 8 weeks of training and after the end of eight weeks.

Method of measurement

Blood factors were measured using the ELISA method.

2

Description

Functional indices are measures that assess a person's ability to perform physical, motor, or daily activities, including lower body flexibility, cardiorespiratory

endurance, dynamic balance, and muscle strength.

Timepoint

The factors were measured before the start of 8 weeks of training and after the end of eight weeks.

Method of measurement

The sit-and-stand test with a chair to measure lower body flexibility, the six-minute walk test for cardiorespiratory endurance, the timed get-up-and-go test to assess dynamic balance, and the five-repetition sit-to-stand test to assess lower body functional strength ability.

3

Description

Cognitive indices are measures of mental and brain function, including sleep quality and dementia.

Timepoint

The factors were measured before the start of 8 weeks of training and after the end of eight weeks.

Method of measurement

MOCA questionnaire for assessing dementia, PSQI questionnaire for assessing sleep quality

Secondary outcomes

empty

Intervention groups

1

Description

We have an intervention group, half of the people are in the intervention group. The equipment required for the intervention group was: ball, stick and chair along with music. The duration of the sessions was 3 sessions per week for 8 weeks and the length of each session started from 40 minutes and gradually increased to 60 minutes per session.

Category

Rehabilitation

2

Description

Control group: Control group: We have a control group and half of the patients were placed in this group. For the control group, no intervention was done and the people had the same lifestyle as before during our study work and during these eight weeks they followed the same dose of the previous medicine and the same diet as before.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Isfahan Parkinson’s and Alzheimer’s Charity Association

Full name of responsible person

Marzieh Zamani Faradonbeh

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

The University of Esfahan

Full name of responsible person

Baabak Safari

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Grant name

Vice Chancellor for Research and Technology, University of Isfahan

Grant code / Reference number

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

Yes

Title of funding source

The University of Esfahan

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

Name of organization / entity
The University of Esfahan
Full name of responsible person
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Student
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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Yes - There is a plan to make this available
Study Protocol
Yes - There is a plan to make this available
Statistical Analysis Plan
Yes - There is a plan to make this available
Informed Consent Form
Yes - There is a plan to make this available
Clinical Study Report
Not applicable
Analytic Code
Not applicable
Data Dictionary
Not applicable
Title and more details about the data/document
The factors being assessed will be expressed as standard deviation and mean.
When the data will become available and for how long
The access period begins in the year 1406.
To whom data/document is available
Credible statistical methods will be employed, and the findings will be published in scientific research outputs.
Under which criteria data/document could be used
We use validated forms from previous scientific studies.
From where data/document is obtainable
Call:09308550524
What processes are involved for a request to access data/document
The process involves pre-test and post-test evaluations, and since blood samples are involved, it will take approximately six months.
Comments
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