

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

Comparison of the Immediate Effect of Flat Treadmill Walking with Soleus Pushups versus Inclined Treadmill Walking on Glucose Levels in Type 2 Diabetes Patients: A Randomized Controlled Trial.

Protocol summary

Study aim

This study compares the immediate effects of flat treadmill walking with soleus pushups versus inclined treadmill walking on blood glucose levels in type 2 diabetes patients.

Design

Randomized, parallel group trial with 48 participants (24 in each group) at a single center.

Settings and conduct

Northwest General Hospital & Research Centre Peshawar, Pakistan. No blinding in the trial.

Participants/Inclusion and exclusion criteria

Inclusion Criteria • Able to complete Physical activity readiness questionnaire • Persons diagnosed with type 2 diabetes for at least a year • Age 18 years and older • Ambulatory (with or without assistive device) Exclusion Criteria • recently started a new treatment including medication or changed treatment • history of surgery of spine or lower extremity • comorbid conditions that may influence understanding, or answering of the questionnaires (e.g., cognitive impairments).

Intervention groups

Two groups: flat treadmill walking with soleus pushups and inclined treadmill walking.

Main outcome variables

Primary outcome is the change in blood glucose levels immediately after exercise.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20250222064811N1**

Registration date: **2025-03-09, 1403/12/19**

Registration timing: **prospective**

Last update: **2025-03-09, 1403/12/19**

Update count: **0**

Registration date

2025-03-09, 1403/12/19

Registrant information

Name

Rabia Qubais

Name of organization / entity

Khyber Medical University

Country

Pakistan

Phone

+92 332 9993006

Email address

rqubais4@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2025-04-01, 1404/01/12

Expected recruitment end date

2025-04-30, 1404/02/10

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of the Immediate Effect of Flat Treadmill Walking with Soleus Pushups versus Inclined Treadmill Walking on Glucose Levels in Type 2 Diabetes Patients: A Randomized Controlled Trial.

Public title

Comparing Walking Exercises to Improve Blood Sugar

Control in Type 2 Diabetes Patients.

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Able to complete Physical activity readiness questionnaire Age 18 years and above Persons diagnosed with type 2 diabetes for at least a year Ambulatory (with or without assistive device)

Exclusion criteria:

recently started a new treatment including medication or changed treatment history of surgery of spine or lower extremity comorbid conditions that may influence understanding, or answering of the questionnaires (e.g., cognitive impairments).

Age

From **18 years** old

Gender

Both

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **48**

Randomization (investigator's opinion)

Randomized

Randomization description

Method of Randomization: Simple randomization using a lottery method. Unit of Randomization: Individual participants. Randomization Strata: No stratification is used in this study. Tools Used in Randomization: A lottery draw is used to generate the random sequence. How the Random Sequence Was Built: The random sequence is generated through a lottery draw, where participants randomly select their group assignment. Allocation Concealment: Allocation concealment is not explicitly implemented, as participants are aware of their group assignment immediately after the lottery draw. However, the lottery method ensures that the sequence is unpredictable until the participant makes their selection.

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

Ethics committee of Khyber Medical university

Street address

phase 5, Hayatabad Peshawar

City

Peshawar

Postal code

25100

Approval date

2025-03-05, 1403/12/15

Ethics committee reference number

KMU/IPM&R/MSPT/42

Health conditions studied

1

Description of health condition studied

Type 2 diabetes

ICD-10 code

Type 2 dia

ICD-10 code description

E11

Primary outcomes

1

Description

blood glucose level

Timepoint

immediately after intervention

Method of measurement

glucometer

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Flat treadmill walking with soleus pushups.

Category

Treatment - Other

2

Description

Intervention group: inclined treadmill walk

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Northwest General Hospital & Research Centre

Full name of responsible person

Rabia Qubais

Street address

House no. 57, Street 5, Sector K-6, Phase 3,
Hayatabad Peshawar, Pakistan.

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Sponsors / Funding sources**1****Sponsor****Name of organization / entity**

Khyber Medical University

Full name of responsible person

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Grant name

Not applicable

Grant code / Reference number

Not applicable

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

Yes

Title of funding source

Khyber Medical 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****Name of organization / entity**

Khyber Medical University

Full name of responsible person

Rabia Qubais

Position

Student

Latest degree

Master

Other areas of specialty/work

Physical Medicine

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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

Yes - There is a plan to make this available

Analytic Code

Yes - There is a plan to make this available

Data Dictionary

Yes - There is a plan to make this available

Title and more details about the data/document

COMPARISON OF THE IMMEDIATE EFFECT OF FLAT TREADMILL WALKING WITH SOLEUS PUSHUPS VERSUS INCLINED TREADMILL WALKING ON GLUCOSE LEVELS IN TYPE 2 DIABETES PATIENTS: A RANDOMIZED CONTROLLED TRIAL. Additional Details: This dataset includes deidentified participant data collected during the study, specifically focusing on blood glucose levels before and after exercise interventions. The shared data will include demographic information, exercise type (flat treadmill walking with soleus pushups or inclined treadmill walking), and corresponding glucose measurements.

When the data will become available and for how long

After data collection and analysis it will be provided which will probably take 6 months.

To whom data/document is available

Deidentified individual participant data (IPD) and supporting documents will be available to researchers from academic institutions, research organizations, and other entities upon request. Access will be granted for the purpose of scientific research and analysis, subject to approval by the study's principal investigator and adherence to ethical guidelines. The data will be shared through a secure platform, ensuring confidentiality and compliance with data protection regulations.

Under which criteria data/document could be used

Deidentified IPD will be shared for scientific research related to the study's objectives. Requests must be made in writing, specifying intended use. The principal investigator will review requests based on scientific merit, relevance, and adherence to ethical guidelines.

From where data/document is obtainable

Applicants can obtain the data/documents by contacting the principal investigator, Rabia Qubais, via email at rqbais4@gmail.com. Requests should include a brief description of the intended use of the data.

What processes are involved for a request to access data/document

Initial Contact: Applicants should contact the principal investigator, Rabia Qubais, via email at rqbais4@gmail.com to express interest in accessing the data/documents. Application Submission: A formal request must be submitted, including a detailed description of the intended use of the data and how it aligns with the study's objectives. Review Process: The request will be reviewed by the principal investigator and relevant stakeholders to ensure alignment with ethical guidelines and study objectives. Approval: Once approved, the applicant will receive instructions on how to access the data/documents securely. Timeline: The review process typically takes 2-4 weeks, depending on the complexity of the request and the availability of the review committee. Communication: Applicants will be notified via email regarding the status of their request. If additional information is required, they will be contacted promptly.

Comments

No additional comments at this time. For any further inquiries or clarification regarding the study or data sharing, please contact the principal investigator via the provided contact information.