Clinical Trial Protocol
Iranian Registry of Clinical Trials

21 Oct 2026

The Effect of eight Weeks of Dynamic Neuromuscular Stabilization (DNS) exercises on a Trampoline on Functional Performance and Respiratory Function in Individuals with Intellectual Disabilities

Protocol summary

Study aim
the effect of eight weeks of dynamic neuromuscular stability training on a trampoline on motor and respiratory function in individuals with intellectual disability

Design
The present study will be conducted as a pre-test-post-test and semi-experimental design with the participation of two groups of dynamic neuromuscular stability exercises on a trampoline and on the ground.

Settings and conduct
At the comprehensive career support center and production workshop for the disabled, Pegah Omid, Isfahan (Nemat branch)

Participants/Inclusion and exclusion criteria
Inclusion criteria: 1) Girls with mild to moderate mental retardation with an IQ of 50 to 70 (educable). 2) Written consent from parents or legal guardians to participate during the training and study period. 3) Age range 20 to 30 years. 4) No specific disease or any restriction that prevents participation in the research process. 5) No history of regular participation in exercises similar to the training protocol during the past 6 months. Exclusion criteria: 1) Non-cooperation and absence during the study for more than 3 consecutive sessions during the entire training period. 2) Occurrence of injury or new medical condition that prevents the individual from continuing the training according to the advice of the physician. 3) Unwillingness of the participant or parent to continue participating in the study at any time. 4) Suffering from heart or respiratory diseases or behavioral problems and any acute or chronic disease.

Intervention groups
One group will perform dynamic neuromuscular stability exercises on a trampoline and one group will perform dynamic neuromuscular stability exercises on the ground. These exercises will be performed for 8 weeks, 3 sessions per week, each session lasting approximately 45 minutes.

Main outcome variables
Functional Performance and Respiratory Function

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20250721066577N1**
Registration date: **2025-07-21, 1404/04/30**
Registration timing: **prospective**

Last update: **2025-09-16, 1404/06/25**
Update count: **1**

Registration date
2025-07-21, 1404/04/30

Registrant information

Name
maryam valikhani

Name of organization / entity
The University of Isfahan

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Iran (Islamic Republic of)

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2025-08-22, 1404/05/31

Expected recruitment end date
2025-11-05, 1404/08/14

Actual recruitment start date
empty
Actual recruitment end date
empty
Trial completion date
empty

Scientific title
The Effect of eight Weeks of Dynamic Neuromuscular Stabilization (DNS) exercises on a Trampoline on Functional Performance and Respiratory Function in Individuals with Intellectual Disabilities

Public title
The Effect of eight Weeks of Dynamic Neuromuscular Stabilization (DNS) exercises on a Trampoline on Functional Performance and Respiratory Function in Individuals with Intellectual Disabilities
Purpose
Other
Inclusion/Exclusion criteria
Inclusion criteria:
Girls with mild to moderate mental retardation with an IQ of 50 to 70 (educable) Written consent from a parent or legal guardian to participate during the training and study period Age range 20 to 30 years Absence of any specific disease or any restriction that would prevent participation in the research process No history of regular participation in exercises similar to the exercise protocol within the past 6 months
Exclusion criteria:
Lack of cooperation and absence during the study for more than 3 consecutive sessions throughout the entire training period The occurrence of a new injury or medical condition that prevents the individual from continuing to exercise as recommended by their doctor Unwillingness of the participant or parent to continue participating in the study at any time Having heart or respiratory diseases or behavioral problems and any acute or chronic illness
Age
From **20 years** old to **30 years** old
Gender
Female

Phase
N/A
Groups that have been masked
No information
Sample size
Target sample size: **30**
Randomization (investigator's opinion)
Randomized
Randomization description
The samples will be selected purposively and conveniently based on inclusion and exclusion criteria from among mentally retarded girls aged 20 to 30 years at the Pegah Omid Comprehensive Career Support Center and Production Workshop for the Disabled in Isfahan (Nemat Branch). These individuals will be randomly paired and divided into two groups of 15 people.
Blinding (investigator's opinion)
Not blinded
Blinding description
Placebo
Not used
Assignment
Other
Other design features
After approving the proposal and selecting the subjects on a purposeful and voluntary basis, the participants will be placed into two groups by completing the consent form and based on the inclusion and exclusion criteria. One group will perform dynamic neuromuscular stability exercises on a trampoline and the other group will perform dynamic neuromuscular stability exercises on the ground. These exercises will be performed for 8 weeks, 3 sessions per week, each session lasting approximately 45 minutes. The participants' motor function and respiratory function will be measured before and after the intervention.

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics committee of Isfahan University of Medical Sciences
Street address
Hezar Jerib Street, Isfahan University of Medical Sciences and Health Services
City
Isfahan
Province
Isfehan
Postal code
۸۱۷۴۵-۳۱۹
Approval date
2025-07-10, 1404/04/19
Ethics committee reference number
1404.090

Health conditions studied

1

Description of health condition studied
Intellectual Disabilities
ICD-10 code
ICD-10 code description

Primary outcomes

1

Description
Functional Performance and Respiratory Function
Timepoint

Eight Weeks

Method of measurement

Motor Performance: 1) The Time up and go(TUG) test will be used to assess dynamic balance.2)The 4x10 meter back and forth test will be used to assess the lower body agility of these individuals. During this test, the participant moves back and forth along a 10 meter path 4 times as quickly as possible upon hearing the start command, and after reaching the line each time, crosses it and changes direction. 3)The Sargent Jump Test will be used to measure explosive power of the lower body muscles. The maximum distance the participant can jump upwards will be recorded as an indicator of explosive power of the lower body muscles. 4)To assess visual-motor coordination, a toss and catch test will be used. During this test, the participant throws and catches a ball against a wall. The number of successful catches will be recorded in a specified time. 5)The Ruler Drop Test will be used to assess reaction speed. The ruler is dropped from a specified height and the participant must catch it as quickly as possible. The distance traveled before catching the ruler will be recorded as an indicator of reaction time. Respiratory function: A spirometer will be used to assess respiratory function. This device is capable of measuring parameters such as forced expiratory volume in one second (FEV1), forced vital capacity (FVC), and FEV1/FVC ratio. The spirometry test will be performed by a trained operator following standard guidelines.

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: The present study will be conducted as a pre-test-post-test and semi-experimental study with the participation of two groups of dynamic neuromuscular stability exercises on a trampoline and on the ground.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Comprehensive Career Support Center and Supported Production Workshop for the Disabled, Pegah Omid,

Full name of responsible person

Ziba Rabani Khorasgani

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No. 9, Alley 7 (Hadizadeh), Najarbashi Alley, Jihad St.

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

The University of Isfahan

Full name of responsible person

Vice President of Research and Technology

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Isfahan - Azadi Square - Isfahan University

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Grant name

Grant code / Reference number

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

Yes

Title of funding source

The University of Isfahan

Proportion provided by this source

50

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 Isfahan

Full name of responsible person

Maryam Valikhani

Position

student

Latest degree

Bachelor

Other areas of specialty/work

Rehabilitation management

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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
Yes - There is a plan to make this available
Clinical Study Report
Yes - There is 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
Title and more details about the data/document
All data is potentially shareable after de-identifying individuals.
When the data will become available and for how long
Access period starts 6 months after results are published.
To whom data/document is available
My data will only be available to researchers working in academic and scientific institutions.
Under which criteria data/document could be used
There is no further information
From where data/document is obtainable
To receive data/documents, please contact Ms. Maryam Valikhani at 09338178219 and address: Isfahan, Hezar Jerib, University of Isfahan.
What processes are involved for a request to access data/document
There is no further information
Comments