Clinical Trial Protocol
Iranian Registry of Clinical Trials

15 Jun 2026

Comparison of the Effect of High Intensity and Low Intensity Resistance Traning on Bone Indexes in Wowen with steopenia

Protocol summary

Study aim
Comparison of the Effect of High and Low Intensity Resistance Training on Bone Mineral Density and Bone Mineral Content and Bone Youth Index and Adaptation of Bone age and Bone area in Women with Osteopenia

Design
The Clinical Trial had a Control Group with Parallel Groups on one Side of the Blind Randomly Assigned to 45 Patients with Osteopenia A lottery was Used for Randomization

Settings and conduct
The Subjects were Selected From the Endocrine and Metabolism Research Center of the Red Crescent Sub-Specialized and Physical Rehabilitation Center. The Bone was Handed over to the Researcher and According to the Random Allocation of the Experimental Groups in the Red Crescent Rehabilitation Center they Started Training.

Participants/Inclusion and exclusion criteria
Age Range 50 to 60 Years Women With Osteopenia Menopausal Women Body Mass Index Between 18 and 25 No History of Hormone Therapy Do not Take any Hormonal Drugs During Treatment No Joint Disease No History of any Fractures or Surgery

Intervention groups
In Experimental Group 1 High-Intensity Resistance Training Due to Individual Differences in Training Intensity of 70 to 85% 1RM the Number of Repetitions from the First to the Fourth Month Changed from 6 Repetitions to 10 Repetitions Experimental Group 2 Low-Intensity Resistance Training Increased from 50% 1RM to 65% 1RM and the Number of Repetitions Varied from 10 to 16 Repetitions Each ExerciseTook a 20-Second Break The Researcher Monitored the Exercise Throughout the Allotted Time Group 3 as a Control Group that did not Experience any Intervention During these 4 Months and Continued their Daily Life

Main outcome variables
This Research can go to the Doctor Educators and Patients Information on Identifying the Most Effective Resistance Training Program to Prevent Osteoporosis and Restore It to Optimal Bone Density Levels in Postmenopausal Women with Osteopenia

General information

Reason for update

Acronym
BMD

IRCT registration information
IRCT registration number: **IRCT20200829048554N1**
Registration date: **2020-10-04, 1399/07/13**
Registration timing: **prospective**

Last update: **2020-10-04, 1399/07/13**
Update count: **0**

Registration date
2020-10-04, 1399/07/13

Registrant information

Name
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Name of organization / entity
The University of Shahid Beheshti

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2020-10-22, 1399/08/01

Expected recruitment end date
2021-01-20, 1399/11/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Comparison of the Effect of High Intensity and Low Intensity Resistance Traning on Bone Indexes in Wowen with steopenia

Public title

The Effect of Resistance Training to Improve Bone Mineral Density

Purpose

Treatment

Inclusion/Exclusion criteria

Inclusion criteria:

Age Range 50 to 60 Years Women with Postmenopausal Osteopenia to be Approved by a Specialist Weight in the Normal Range and With a Body Mass Index Between 18 and 25 According to the Criteria of the World Health Organization

Exclusion criteria:

History of Any Fractures or Surgery on the Lower Limbs and Spine Taking any Hormonal Medication During Treatment that Affects Bone Tissue Metabolism History of Hormone Therapy and Regular Exercise During the Last 6 Months and During the Study Period People With Joint Diseases Such as Osteoarthritis and Osteoarthritis of the Lower Extremities

Age

From **50 years** old to **60 years** old

Gender

Female

Phase

N/A

Groups that have been masked

- Participant

Sample size

Target sample size: **45**

Randomization (investigator's opinion)

Randomized

Randomization description

The Sample Size of this Study is 45 People Available who Should be Divided into three Groups of 15 People In this Study Before Starting and Before Seeing the Subjects the Researcher Determines by Drawing LotsWhich Group Each Person Should be in In Fact The Researcher Makes a Random Allocation

Blinding (investigator's opinion)

Single blinded

Blinding description

Given that The Subjects are Divided into Three Groups but all Subjects Think that There is One Group

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics Committee of Shahid Beheshti University of Tehran

Street address

Shahid Beheshti University, Daneshejo blvd, Shahid Shahriari Sq, Yaman Ave, Shahid Chamran Hwy

City

Tehran

Province

Tehran

Postal code

1983969411

Approval date

2020-06-20, 1399/03/31

Ethics committee reference number

IR.SBU.REC.1399.037

Health conditions studied

1

Description of health condition studied

Decreased Bone Density in Postmenopausal Women

ICD-10 code

M81.0

ICD-10 code description

Post menopausal osteoporosis without fracture

Primary outcomes

1

Description

In this Study, the Effect of Exercise on People with Osteopenia that Improves their Bone Density

Timepoint

After the Bone Density Test they are Trained for 4 Months and do the Test Again

Method of measurement

Dual Energy X-ray Absorptiometry

Secondary outcomes

empty

Intervention groups

1

Description

Intervention Group 1: Due to Individual Differences and a Maximum Repetition, ie the Maximum Weight that a Person can Move for one Time, Resistance Training with

High Intensity Dumbbells 70 to 85% A Maximum Repetition and 6 to 10 Repetitions are Performed on the Extensor Muscles of the Trunk and the Muscles of the front and Back of the Leg for 4 Months. It Should be Noted that the Exercises Lasted for 20 Minutes in the First Month and 60 Minutes

Category

Treatment - Other

2

Description

Intervention Group2: Due to Individual Differences, Resistance Exercises with Low Intensity of 50 to 65 in bad one Maximal Repetition and 10 to 16 Repetitions on Extensor Trunk and Front and Back Muscles bad Exercises are Performed for 4 Months

Category

Treatment - Other

3

Description

Control Group: In all Three Groups Medication Including Calcium and Vitamin D is Started Participants in all three Groups Follow their Previous Diet, and in the Control Group Only Medication Without Exercise Will be Applied

Category

Treatment - Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Rehabilitation Center Helaal Ahmar

Full name of responsible person

Fatemeh Eslamipour

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Rehabilitation Center Helaal Ahmar, Yasmei Ste, Mirdamad Ave, Vallasr Ave

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

The University of Shahid Beheshti

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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 Shahid Beheshti

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 Shahid Beheshti

Full name of responsible person

Fatemeh Eslamipour

Position

Graduate Student

Latest degree

Bachelor

Other areas of specialty/work

Sport Medicine

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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
Undecided - It is not yet known if there will be a plan to make this available
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
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