Clinical Trial Protocol
Iranian Registry of Clinical Trials

28 Jun 2026

Effect of 6 Weeks of Low-Repetition and Light-Load Power Training on Serum Levels of b-ALP and CTX in Postmenopausal Women

Protocol summary

Study aim

Present study aims to survey effects of 6 weeks of low-repetition and light-load power training on serum Octeocalcin, Paratormone, Sclerostin, Bone Alkalin Phosphatase and C- terminal telopeptides of type I collagen in postmenopausal women.

Design

Clinical trial with control group, randomized, not blinded on 24 postmenopausal women. The table of random numbers will be used.

Settings and conduct

During menopause, reduced ovarian activity is associated with a drop in the level of hormones and its complications such as cardiovascular disease and osteoporosis. Present study are conducted in Zahedan city. 24 healthy and sedentary postmenopausal women will participate in this semi experimental study. They will be selected on purpose and will be randomly divided into two equal groups; experimental and control. Experimental group will perform 6 weeks low-repetition and light-load power training while control group wouldn't perform any activities.

Participants/Inclusion and exclusion criteria

Inclusion criteria were having no exercise background and no regular sport activity in past one year, at least two years should be passed from their menopause time, having no special problems such as cardiovascular, metabolic, kidney, orthopedic diseases and no smoking. The exclusion criteria include applying any medication, food supplements and diet therapy.

Intervention groups

The Training group which perform Low-Repetition and Light-Load Power Training and Control group don't participate in any physical exercises in intervention period.

Main outcome variables

Measurements of serum levels of Osteocalcin, Paratormone, Sclerostin, Bone Alkalin Phosphatase and C- terminal telopeptides of type I collagen.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20190618043935N1**
Registration date: **2020-05-23, 1399/03/03**
Registration timing: **retrospective**

Last update: **2020-05-23, 1399/03/03**
Update count: **0**

Registration date

2020-05-23, 1399/03/03

Registrant information

Name

Shila Nayebifar

Name of organization / entity

The University of Sistan and Baluchestan

Country

Iran (Islamic Republic of)

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2019-09-23, 1398/07/01

Expected recruitment end date

2019-10-23, 1398/08/01

Actual recruitment start date

2019-09-23, 1398/07/01

Actual recruitment end date

2019-10-23, 1398/08/01

Trial completion date

2020-01-21, 1398/11/01

Scientific title
Effect of 6 Weeks of Low-Repetition and Light-Load Power Training on Serum Levels of b-ALP and CTX in Postmenopausal Women

Public title
Effect of Low-Repetition and Light-Load Power Training on Post menopausal Women

Purpose
Prevention

Inclusion/Exclusion criteria

Inclusion criteria:
Having no exercise background At least two years should be passed from their menopause time. Not having any special problems such as cardiovascular, metabolic, kidney, orthopedic diseases. No smoking.

Exclusion criteria:
The exclusion criteria include applying any medication and food supplements, diet therapy. Being in amenorrhea state

Age
From **55 years** old to **65 years** old

Gender
Female

Phase
N/A

Groups that have been masked
No information

Sample size
Target sample size: **30**
Actual sample size reached: **24**

Randomization (investigator's opinion)
Randomized

Randomization description
Randomization method: Simple Randomization, Randomization unit: individually, Randomization tool: Table of Random Numbers, How to make Randomization sequence: From the top to the end of list, Allocation Concealment: A third person allocate numbers to the participants then using table of Random Numbers another person select the numbers with closed eyes.

Blinding (investigator's opinion)
Not blinded

Blinding description

Placebo
Not used

Assignment
Other

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Ethics committee of Sistan and Baluchestan University

Street address
Daneshgah Blvd

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Zahedan

Province
Sistan-va-Balouchestan

Postal code
9816976153

Approval date
2019-10-22, 1398/07/30

Ethics committee reference number
Code number: IR.USB.REC.1398.002

Health conditions studied

1

Description of health condition studied
Menopause

ICD-10 code

ICD-10 code description

2

Description of health condition studied
Osteoporosis

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description
Serum levels of Osteocalcin.

Timepoint
At the beginning of program (before starting intervention) and at the end of program (48 hours after last training session).

Method of measurement
Measurement of serum Osteocalcin will be assessed using a kit (Zell Bio, Germany) with a sensitivity of 0.026 ng/ml.

2

Description
Serum levels of Paratormone.

Timepoint
At the beginning of program (before starting intervention) and at the end of program (48 hours after last training session).

Method of measurement
Paratormon will be assessed using a kit (Zell Bio, Germany) with a sensitivity of 1.56 ng/ml.

3

Description
Serum levels of Sclerostin.

Timepoint
At the beginning of program (before starting

intervention) and at the end of program (48 hours after last training session).

Method of measurement

Sclerostin will be assessed using Hangzhou Stabiopharm kit (China), with a sensitivity of 0.26 ng/ml and ELISA method.

4

Description

Serum levels of Bone Alkalin Phosphatase.

Timepoint

At the beginning of program (before starting intervention) and at the end of program (48 hours after last training session).

Method of measurement

Bone Alkalin Phosphatase will be assessed using Hangzhou Stabiopharm kit (China), with a sensitivity of 0.52 pmol/l and ELISA method.

5

Description

Serum levels of C- terminal telopeptides of type I collagen.

Timepoint

At the beginning of program (before starting intervention) and at the end of program (48 hours after last training session).

Method of measurement

C- terminal telopeptides of type I collagen will be assessed using Hangzhou Stabiopharm kit (China), with a sensitivity of 0.01ng/ml and ELISA method.

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Power trainings will be performed for 6 weeks, 5 sessions per week, 8 sets, 3 repetitions and 15 seconds rest between sets, including 5 activities (Scot, forward lounge, side lounge, cuff rise and toe rise) and to produce power in mentioned activities, the concentric phase should be done so fast in correct body straight posture. After 10 minutes of warm up the training starts and finished after 10 minutes of cool down.

Category

Prevention

2

Description

Control group: No intervention has received.

Category

Prevention

Recruitment centers

1

Recruitment center

Name of recruitment center

Emam Ali Hospital

Full name of responsible person

Shila Nayebifar

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

The university of Sistan and Baluchestan

Full name of responsible person

Research minister

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Grant name

Grant code / Reference number

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

No

Title of funding source

University of Sistan and Baluchestan

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 Sistan and Baluchestan

Full name of responsible person
Shila Nayebifar

Position
Assisstant professor

Latest degree
Ph.D.

Other areas of specialty/work
Exercise Physiology

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Person responsible for updating data

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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