

Clinical Trial Protocol

Iranian Registry of Clinical Trials

09 Jul 2026

Exercise training and COVID-19: a randomized controlled trial

Protocol summary

Study aim

Examining the effects of different exercise modalities in patients with Covid-19

Design

A randomized controlled trial with a control group, parallel groups, single-blind, phase 3, patients (n=900), randomization will be performed by random number generation, and group assignment will be placed in a sealed envelope, which will be opened by the study coordinator at the time of randomization.

Settings and conduct

Laboratory-confirmed COVID-19 patients, Tehran, single-blind, randomization will be performed by random number generation, and group assignment will be placed in a sealed envelope, which will be opened by the study coordinator at the time of randomization.

Participants/Inclusion and exclusion criteria

Laboratory-confirmed COVID-19 patients. Inclusion criteria: Tendency and ability to participate in exercise protocols. Exclusion criteria: Participants with a history of using cigarettes and alcohol in the last 6 months.

Intervention groups

Non-exercise group. Aerobic exercise training group. Resistance exercise training group. Resistance-aerobic exercise training group.

Main outcome variables

Tissue biomarkers including blood, saliva, semen, and urine.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20160605028270N3**

Registration date: **2021-09-01, 1400/06/10**

Registration timing: **prospective**

Last update: **2021-09-01, 1400/06/10**

Update count: **0**

Registration date

2021-09-01, 1400/06/10

Registrant information

Name

Behzad Hajizadeh Maleki

Name of organization / entity

Department of Sports Medicine, Institute of Sports Sciences, Justus-Liebig-University

Country

Iran (Islamic Republic of)

Phone

+49 641 9925210

Email address

behzad.hajizadeh-maleki@sport.uni-giessen.de

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2021-09-06, 1400/06/15

Expected recruitment end date

2021-10-07, 1400/07/15

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Exercise training and COVID-19: a randomized controlled trial

Public title

Exercise training and COVID-19: a randomized controlled trial

Purpose

Supportive

Inclusion/Exclusion criteria

Inclusion criteria:

laboratory-confirmed COVID-19 patients. Tendency and

ability to participate in exercise protocols.

Exclusion criteria:

Physically active subjects. Participants with a history of using cigarettes and alcohol in the last 6 months.

Age

From **20 years** old to **94 years** old

Gender

Both

Phase

N/A

Groups that have been masked

- Investigator

Sample size

Target sample size: **900**

More than 1 sample in each individual

Number of samples in each individual: **6**

Baseline, week 4, 8, 12, 16, and 1 month of detraining.

Randomization (investigator's opinion)

Randomized

Randomization description

Randomization will be performed by random number generation, and group assignment will be placed in a sealed envelope, which will be opened by the study coordinator at the time of randomization.

Blinding (investigator's opinion)

Single blinded

Blinding description

The researchers will not know which treatment or intervention the participant is receiving until the trial is over.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

The Ethics Committee of Allameh Tabataba'i University

Street address

Vice Chancellor for Research, Central Building, Village Square, Olympic Village, Allameh Tabatabai University,

City

Tehran

Province

Tehran

Postal code

1489684511

Approval date

2020-11-18, 1399/08/28

Ethics committee reference number

IR.ATU.REC.1399.061

Health conditions studied

1

Description of health condition studied

COVID-19

ICD-10 code

U07.1

ICD-10 code description

COVID-19 disease

Primary outcomes

1

Description

Tissue biomarkers including blood, saliva, semen, and urine.

Timepoint

Baseline, weeks 4, 8, 12, 16, and one month of detraining.

Method of measurement

White blood cells, neutrophils, and lymphocytes in blood, saliva, seminal fluid, and urine will be measured according to the standard laboratory techniques.

Secondary outcomes

1

Description

Body composition

Timepoint

Baseline, weeks 4, 8, 12, 16 and 1 month of detraining.

Method of measurement

By using Omron body composition analyzer.

Intervention groups

1

Description

Non-exercise group: will not participate in any exercise training protocol.

Category

Rehabilitation

2

Description

Intervention group: aerobic exercise training. Subjects in this group will participate in moderate-intensity aerobic exercise training protocol three times per week for 16 weeks.

Category

Rehabilitation

3

Description

Intervention group: Resistance exercise training. Subjects in this group will participate in moderate-intensity resistance exercise training protocol three times per week for 16 weeks.

Category

Rehabilitation

4

Description

Intervention group: aerobic-resistance exercise training. Subjects in this group will participate in moderate-intensity aerobic-resistance exercise training protocol three times per week for 16 weeks.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Allameh Tabataba'i University,

Full name of responsible person

Behzad Hajizadeh Maleki

Street address

Vice Chancellor for Research, Central Building, Village Square, Olympic Village, Allameh Tabatabai University, Tehran, Iran.

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Email

behzad.hajizadeh-maleki@sport.uni-giessen.de

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Allameh Tabataba'i University

Full name of responsible person

Behzad Hajizadeh Maleki

Street address

Vice Chancellor for Research, Central Building, Village Square, Olympic Village, Allameh Tabataba'i University, Tehran, Iran.

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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

Allameh Tabataba'i 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

Allameh Tabataba'i University

Full name of responsible person

Behzad Hajizadeh Maleki

Position

Consultant

Latest degree

Master

Other areas of specialty/work

Exercise Physiology and Sports Therapy

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Vice Chancellor for Research, Central Building, Village Square, Olympic Village, Allameh Tabataba'i University, Tehran, Iran.

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Person responsible for scientific inquiries

Contact

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Person responsible for updating data**Contact****Name of organization / entity**

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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