Clinical Trial Protocol
Iranian Registry of Clinical Trials

27 Sep 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.
City
Tehran
Province
Tehran
Postal code
1489684511
Phone
+98 21 4839 0000
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.
City
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Province
Tehran
Postal code
1489684511
Phone
+98 21 4839 0000
Email
behzad.hajizadeh-maleki@sport.uni-giessen.de
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
Street address
Vice Chancellor for Research, Central Building, Village Square, Olympic Village, Allameh Tabataba’i University, Tehran, Iran.
City
Tehran
Province
Tehran
Postal code
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Email
behzad.hajizadeh-maleki@sport.uni-giessen.de

Person responsible for scientific inquiries

Contact
Name of organization / entity
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Province
Tehran
Postal code
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Email
behzad.hajizadeh-maleki@sport.uni-giessen.de

Person responsible for updating data

Contact
Name of organization / entity
Allameh Tabataba'i University
Full name of responsible person
Behzad Hajizadeh Maleki
Position
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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