Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

To study the effectiveness of inspiratory muscle training on the functional capacity of male taekwondo athletes

Protocol summary

Study aim
To evaluate the effectiveness of inspiratory muscle training on the functional capacity of male taekwondo athletes

Design
A clinical trial with a control group, with parallel groups, randomised with random numbers table and sample size of 33 people.

Settings and conduct
Research is in the sports medicine field and at the Rasoul Akram Hospital is being carried out on the Taekwondo Premier League. In this study, we intend to measure the functional capacity of 33 taekwondo athletes by performing CPET testing and VO2max measurement. Simultaneous measurement of maximal power of the inspiratory muscle (Pi max) is performed with the Power Breathe machine. Training on how to inhale and exhale and measure diaphragm breathing power is performed by a Power Breath. Then, at the end of the measurement, two factors of respiratory muscle strength measurement are PI max and S index. At first, the individual is assessed by the Inspiratory Muscle Training. The inspiratory muscles training machine is then adjusted to a degree equal to 50% of PI max and given to taekwondo men and the correct method of training with the machine is taught to them. muscle training with incentive spirometry is continued for up to 6 weeks, followed by individual performance tests.

Participants/Inclusion and exclusion criteria
Attending Taekwondo Premier League matches in 2019
Age over 15 years

Intervention groups
Athletes in the intervention group will undergo inspiratory breathing exercises using a power breathe device.

Main outcome variables
The effect of inspiratory breathing exercises on the performance of taekwondo men is evaluated.

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20200103045992N1**
Registration date: **2020-01-20, 1398/10/30**
Registration timing: **registered_while_recruiting**

Last update: **2020-01-20, 1398/10/30**
Update count: **0**

Registration date
2020-01-20, 1398/10/30

Registrant information

Name
Meisam Rezaei

Name of organization / entity

Country
Iran (Islamic Republic of)

Phone
+98 21 6609 9062

Email address
maysamrezaei@yahoo.com

Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2019-12-29, 1398/10/08

Expected recruitment end date
2020-02-09, 1398/11/20

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title

To study the effectiveness of inspiratory muscle training on the functional capacity of male taekwondo athletes

Public title
To study the effectiveness of inspiratory muscle training on the functional capacity of male taekwondo athletes
Purpose
Supportive
Inclusion/Exclusion criteria
Inclusion criteria:
Male taekwondo athletes of professional league age over 15 years
Exclusion criteria:
Lack of physical fitness for tests
Age
From **15 years** old
Gender
Male

Phase
3
Groups that have been masked
No information
Sample size
Target sample size: **33**
Randomization (investigator's opinion)
Randomized
Randomization description
Athletes were randomly divided into two groups of intervention with breathing muscle training and control groups. They were randomly assigned to either the intervention or control groups through the random numbers table & blocking
Blinding (investigator's opinion)
Not blinded
Blinding description
Placebo
Not used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics committee of Iran University of Medical Sciences
Street address
Hemat Highway next to Milad Tower, Tehran
City
Tehran
Province
Tehran
Postal code
۱۴۴۹۶۱۴۵۳۵
Approval date
2019-12-25, 1398/10/04
Ethics committee reference number
IR.IUMS.FMD.REC.1398.421

Health conditions studied

1

Description of health condition studied
Functional capacity
ICD-10 code
ICD-10 code description

Primary outcomes

1

Description
The rate of improvement of respiratory capacity
Timepoint
At baseline and 6 weeks after
Method of measurement
Cardiopulmonary Exercise Test and Power breathe device

Secondary outcomes

empty

Intervention groups

1

Description
Respiratory muscles training using power breathe device
Category
Other

Recruitment centers

1

Recruitment center
Name of recruitment center
Rasool Akram hospital
Full name of responsible person
Sara Lotfiyan
Street address
Rasool Akram hospital, Niayesh ave, Sattarkhaan st.
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Iran University of Medical Sciences
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Seyed Abas Motevalian
Street address
Basement, Central Library, Iran University of Medical Sciences, Hemmat Highway.
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1449614535
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irct@hbi.ir
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Iran University of Medical Sciences
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
Iran University of Medical Sciences
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Position
Resident
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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

Not applicable

Data Dictionary

Not applicable