Clinical Trial Protocol
Iranian Registry of Clinical Trials

08 Nov 2026

Effects of adding total motion release technique to caffeine ingestion on neuromuscular, cognitive and anaerobic performance in male sprinters

Protocol summary

Study aim
Effects of adding total motion release technique to caffeine ingestion on neuromuscular, cognitive and anaerobic performance in male sprinters: A randomized controlled trial

Design
A controlled, parallel-group, single-blind, randomized, phase 3 clinical trial on 56 patients in 4 groups. Statistical software was used for randomization.

Settings and conduct
First, people were present at the Sports Medicine Federation and informed about the research process. Then they are randomly placed in a group. The first group (control), the second group (caffeine), the third group (TMR), the fourth group (caffeine tablets and TMR). Interventions are done for each person according to the group and then the evaluations are done again after 1 hour from the end of the first stage of evaluation. Participants were unaware of the study groups.

Participants/Inclusion and exclusion criteria
Semi-professional speed athletes, 18 to 40 years old, without specific sports complications and not sensitive to caffeine consumption.

Intervention groups
"First" (control), "second" (TMR), "third" (caffeine) and "fourth" (caffeine and TMR) are specified.

Main outcome variables
FMS test, Wingate anaerobic test, Stroop and Flanker cognitive tests

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20230708058720N1**
Registration date: **2024-03-13, 1402/12/23**
Registration timing: **retrospective**
Last update: **2024-03-13, 1402/12/23**
Update count: **0**

Registration date
2024-03-13, 1402/12/23

Registrant information

Name
Parsa Safapour

Name of organization / entity

Country
Iran (Islamic Republic of)

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+98 21 6693 7407

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p_safapour@razi.tums.ac.ir

Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2023-06-22, 1402/04/01

Expected recruitment end date
2023-10-22, 1402/07/30

Actual recruitment start date
2023-07-04, 1402/04/13

Actual recruitment end date
2023-09-21, 1402/06/30

Trial completion date
2023-09-21, 1402/06/30

Scientific title
Effects of adding total motion release technique to caffeine ingestion on neuromuscular, cognitive and anaerobic performance in male sprinters

Public title
Investigating the effect of caffeine and warming up in sprinters

Purpose
Supportive

Inclusion/Exclusion criteria

Inclusion criteria:
Semi-professional sprinter men aged 18-40 No history of musculoskeletal injury in the past 3 months Not consuming caffeine, cigarettes and alcohol at least 48 hours before the research No history of neurological disease or balance disorder Absence of cardiovascular and metabolic problems
Exclusion criteria:
Allergy to caffeine People's unwillingness to continue the research process Nervous, kidney or stomach reflux problems Incomplete range of motion in bilateral comparison

Age
From **18 years** old to **40 years** old

Gender
Male

Phase
3

Groups that have been masked

- Participant
- Care provider

Sample size
Target sample size: **56**
Actual sample size reached: **56**

Randomization (investigator's opinion)
Randomized

Randomization description
The participants use the simple randomization technique with the Spin the wheel Picker decides software on mobile, which is available from Google Play with the link https://play.google.com/store/apps/details?id=com.randompicker.wheeldecides.randomnamepicker .spinthewheel was received, randomly placed into 4 groups. Allocation was determined through a random sequence. 4 indicators of 4 groups were entered in the software and the button was started when the person was present. Since the number of people in each group was considered to be 14 people, the chance of choosing people in the groups was the same. For each person, one of the numbers 1-4 was shown on the screen, which indicated the group and thus their type of intervention.

Blinding (investigator's opinion)
Single blinded

Blinding description
People were evaluated without a detailed explanation about the type of pill they were taking, and without contacting each other, and they did not know about other people's interventions. Rest time of 40 or 60 minutes was applied according to grouping and individual people were evaluated.

Placebo
Used

Assignment
Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Research Ethics Committees of School of Nursing and Midwifery & Rehabilitation - Tehran University o

Street address
No. 24, Mostali Ave., N. Kargar, Enghelab Sq.

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Postal code
1418614914

Approval date
2023-07-04, 1402/04/13

Ethics committee reference number
IR.TUMS.FNM.REC.1402.071

Health conditions studied

1

Description of health condition studied
Cognition, Functional Movement Screen, Total Motion Release, TMR, Wingate anaerobic

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description
Functional Movement Screen

Timepoint
Measuring functional movement screening score in the initial study and after taking the pill and performing the complete movement warm-up technique

Method of measurement
FMS toolkit

2

Description
Cognition Tests

Timepoint
Evaluation of cognitive functions by Eriksen Flanker and Stroop tests at the beginning of the study and after taking the pill and performing the complete movement warm-up technique

Method of measurement
Eriksen Flanker Task and Stroop test with laptop

3

Description
Wingate Anaerobic Test

Timepoint
Anaerobic test evaluation by Wingate test at the

beginning of the study and after taking the pill and performing full movement warm-up technique

Method of measurement

Technogym Bike anaerobic test

Secondary outcomes

empty

Intervention groups

1

Description

Control group: this group of participants at the beginning of the triple evaluation work (including two cognitive tests Stroop and Eriksen Flanker with a laptop in the offline version, a neuromuscular 7 movement test called FMS with the help of the Anham kit for this test, a Wingate's anaerobic test is performed with the help of Technogym's hand bike. Then according to the group in which they have been placed according to randomization (control), a tablet containing cellulose as a placebo and ineffective, manufactured by Karen Company, is consumed with a glass of water. Then, in the next step, they rest for 1 hour. In the next stage, all the evaluations of the first stage will be taken from the participants again.The duration of the meeting is generally 1.5 hours, including two 15-minute evaluations and 1 hour of rest, and the venue is at the Sports Medicine Federation.

Category

Rehabilitation

2

Description

Intervention group: This group of participants performs triple evaluations at the beginning of the work (including two cognitive tests with a laptop, a neuromuscular 7 movement test called FMS, and a Wingate anaerobic test with the help of a hand bike). Then according to the randomization group (caffeine), they consume a tablet containing 200 mg of caffeine, made by Karen company, with a glass of water. Then, in the next step, they rest for an hour so that the caffeine has its maximum effectiveness. After this break, all the evaluations of the first stage will be taken from the people again.The duration of the session is generally 1.5 hours, including two 15-minute evaluations and 1 hour of pill effect time, and the venue is at the Sports Medicine Federation.

Category

Rehabilitation

3

Description

Intervention group: This group of participants performs triple evaluations at the beginning of the work (including two cognitive tests with a laptop, a neuromuscular 7 movement test called FMS, and a Wingate anaerobic test with the help of a hand bike). Then according to the group they are placed in according to randomization (TMR), they consume a tablet containing cellulose, made by Karen company, which acts as an ineffective placebo, with a glass of water. Then, in the next step, they rest for 40 minutes. This time is due to the fact that the TMR warm-up process takes about 20 minutes and generally, similar to other groups, there is an interval of 1 hour between the two assessment stages. After this rest, subjects are asked to perform 6 TMR movements for each side for 2 sets of 15, with 30 seconds of rest between each set and 1 minute of rest between each movement. In the next stage, all the evaluations of the first stage will be taken from the participants again. The duration of the session is generally 1.5 hours, including two 15-minute evaluations and 1 hour of rest and exercise in between, and the venue is at the Sports Medicine Federation.

Category

Rehabilitation

4

Description

Intervention group: This group of participants performs triple evaluations at the beginning of the work (including two cognitive tests with a laptop, a neuromuscular 7 movement test called FMS, and a Wingate anaerobic test with the help of a hand bike). Then according to the randomization group (caffeine + TMR), a tablet containing 200 mg of caffeine, manufactured by Karen, is consumed with a glass of water. Then, in the next step, they rest for 40 minutes. This time is due to the fact that the TMR warm-up process takes about 20 minutes and generally, similar to other groups, there is an interval of 1 hour between the two assessment stages. After this rest, subjects are asked to perform 6 TMR movements for each side for 2 sets of 15, with 30 seconds of rest between each set and 1 minute of rest between each movement. In the next stage, all the evaluations of the first stage will be taken from the participants again.The duration of the meeting is generally 1.5 hours, including two 15-minute evaluations and 1 hour of rest for the effectiveness of the pill and exercise, and the venue is at the Sports Medicine Federation.

Category

Rehabilitation

Recruitment centers

1

Recruitment center

Name of recruitment center

Sports Medicine Federation of IR of Iran

Full name of responsible person

Physical Therapist Dr. Morteza Ahmadi

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Tehran Province, Tehran, District 7, Varzandeh St, PC5H+R6P

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity
Tehran University of Medical Sciences

Full name of responsible person
Ali Akbar Sari

Street address
No. 24, Mostali Ave., N. Kargar St., Enghelab Sq., Tehran

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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
Tehran 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
Tehran University of Medical Sciences

Full name of responsible person
Parsa Safapour

Position
Master's Student

Latest degree
Master

Other areas of specialty/work
Physiotherapy

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Person responsible for scientific inquiries

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Person responsible for updating data

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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Yes - There is a plan to make this available
Study Protocol
Yes - There is a plan to make this available
Statistical Analysis Plan
Not applicable
Informed Consent Form
Yes - There is a plan to make this available
Clinical Study Report
Not applicable
Analytic Code
Not applicable
Data Dictionary
Not applicable
Title and more details about the data/document
The data of this study will be placed in the form of 56 separate participants, each of which has 28 variables. 14 cases of interventions are related to the first stage of evaluation and 14 cases are related to the second stage of evaluation.
When the data will become available and for how long
The access period starts after the results are printed
To whom data/document is available
Those interested in the field of physiotherapy and sports and sports nutrition, other enthusiastic researchers
Under which criteria data/document could be used
The use of data is unimpeded by mentioning the source
From where data/document is obtainable
Email below p_safapour@razi.tums.ac.ir
What processes are involved for a request to access data/document
Email below p_safapour@razi.tums.ac.ir
Comments