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Effects of caffeine and music on anaerobic exercise performance

Submission date	Recruitment status	[ ] Prospectively registered
14/03/2024	No longer recruiting	[ ] Protocol
Registration date	**Overall study status**	[ ] Statistical analysis plan
18/03/2024	Completed	[ ] Results
Last Edited	**Condition category**	[ ] Individual participant data
18/03/2024	Other	[ ] Record updated in last year

Plain English summary of protocol

Background and study aims.
Listening to music and consuming caffeine are two widely used ways to enhance athletic performance, but the effects of combining a music intervention with caffeine in healthy active volunteers are currently unclear. The aim of this study is to investigate the effects of acute caffeine intake combined with a music intervention on anaerobic capacity in physically active volunteers.

Who can participate?
Healthy men aged over 18 years

What does the study involve?
All participants will be subjected to three conditions in a random order:
1. Caffeine + Music : Caffeine intake of 3 mg/kg and listening to self-selected music during warm-up.
2. Music: Placebo intake of 200 mg and listening to self-selected music during warm-up.
3. Control: no caffeine and no music.
Anaerobic performance is measured during each experiment.

What are the possible benefits and risks of participating?
Participants will be exposed to a variety of pre-competition warm-up protocols and nutritional supplementation strategies, and only a short intervention will be needed to improve their anaerobic exercise performance to a certain extent.
Strenuous exercise may be physically uncomfortable for subjects, and in addition, caffeine intake may cause adverse effects such as headaches, palpitations, insomnia, anxiety, irritability, and stomach upset. However, for most people, ingestion at appropriate doses usually does not cause serious physical harm.

Where is the study run from?
Beijing Sport University (China)

When is the study starting and how long is it expected to run for?
August 2023 to April 2024

Who is funding the study?
Investigator initiated and funded

Who is the main contact?
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Contact information

Type(s)
Public, Scientific, Principal Investigator

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Additional identifiers

EudraCT/CTIS number
Nil known

IRAS number

ClinicalTrials.gov number
Nil known

Secondary identifying numbers
Nil known

Study information

Scientific Title
Effects of caffeine intake combined with listening to self-selected music during warm-up on Wingate performance: a double-blind, randomized crossover study

Study objectives
It is hypothesised that caffeine combined with music will have a synergistic effect on Wingate performance

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 28/09/2023, Sports Science Experiment Ethics Committee of Beijing Sport University (Beijing Sports University, No. 48 Xinxi Road, Haidian District, Beijing, 100084, China; +86 (0)10 62989306; mt5345916@163.com), ref: 2023225H

Study design
Single-center interventional double-blind randomized controlled trial

Primary study design
Interventional

Secondary study design
Randomised cross over trial

Study setting(s)
Fitness/sport facility

Study type(s)
Other, Efficacy

Participant information sheet
Not available in web format

Health condition(s) or problem(s) studied
Performance improvement

Interventions
All participants will be subjected to three conditions in a randomized crossover design. A computer randomization method will be used (random.org).

Caffeine + Music intervention group: Caffeine intake of 3 mg/kg and listening to self-selected music during warm-up.
Music intervention group: Placebo intake of 200 mg and listening to self-selected music during warm-up.
Control group: no caffeine and no music.

Participants participated in the intervention trial every other week over a period of approximately 3 weeks.

Intervention Type
Supplement

Primary outcome measure
Anaerobic exercise performance will be measured during each experiment using the 30s-Wingate (WAnT) test

Secondary outcome measures

1. Heart rate measured using Polar H9 monitor
2. Rate of perceived exertion (RPE) measured using the Borg scale, 6 to 20
3. Feelings measured using a questionnaire on an 11-point scale, -5 to +5
4. Motivation measured using a questionnaire on a 10-point Likert scale, 0 to +10
The results of these four indicators will be recorded by two specialized researchers at the end of each WAnT test
5. Adverse reactions to supplement intake will be collected by a dedicated researcher who will guide the subjects through a questionnaire at a fixed time in the morning of the day after the experiment

Overall study start date
23/08/2023

Completion date
10/04/2024

Eligibility

Key inclusion criteria
1. No neuromusculoskeletal disorders
2. Age >18 years
3. Possessing a health condition that would allow them to complete the experimental tests
4. Daily caffeine intake less than 50 mg/day

Participant type(s)
Learner/student

Age group
Adult

Lower age limit
18 Years

Sex
Male

Target number of participants
24

Total final enrolment
24

Key exclusion criteria
1. Smoking
2. Alcohol consumption
3. Caffeine allergy
4. The presence of diseases and abnormalities of the ear or hearing

Date of first enrolment
01/12/2023

Date of final enrolment
01/03/2024

Locations

Countries of recruitment
China

Study participating centre
Beijing Sport University
No. 48 Information Road
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Sponsor information

Organisation
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Sponsor type
University/education

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ROR
https://ror.org/03w0k0x36

Funder(s)

Funder type
Other

Funder Name
Investigator initiated and funded

Results and Publications

Publication and dissemination plan
Planned publication in a peer-reviewed journal

Intention to publish date
01/08/2024

Individual participant data (IPD) sharing plan
The data is not publicly available due to privacy concerns related to the inclusion of sensitive personal information.

IPD sharing plan summary
Not expected to be made available