

# Effects of caffeine and music on anaerobic exercise performance

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<b>Registration date</b> 18/03/2024	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 18/03/2024	<b>Condition category</b> Other	<input type="checkbox"/> Individual participant data <input type="checkbox"/> 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?  
Bopeng Qiu, qiubopeng@bsu.edu.cn

## Contact information

### Type(s)

Public, Scientific, Principal investigator

### Contact name

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## Additional identifiers

### Clinical Trials Information System (CTIS)

Nil known

### ClinicalTrials.gov (NCT)

Nil known

### Protocol serial number

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 Xinxu 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

### **Study type(s)**

Other, Efficacy

### **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(s)**

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

### **Key secondary outcome(s)**

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

### **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

### Healthy volunteers allowed

No

### Age group

Adult

### Lower age limit

18 years

### Sex

Male

### 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

Haidian District  
Beijing  
China  
100084

## Sponsor information

### Organisation

Beijing Sport University

### ROR

<https://ror.org/03w0k0x36>

## Funder(s)

### Funder type

Other

### Funder Name

Investigator initiated and funded

## Results and Publications

### 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

### Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Participant information sheet</a>	Participant information sheet	11/11/2025	11/11/2025	No	Yes