PROJECT TITLE

Effects of brief active breaks on attentional and executive functions in undergraduate university students

LABORATORY / DEPARTMENT

Exercise Science and Sport Laboratory, Degree Programme in Sport Sciences and Techniques, Department of Translational Biomedicine and Neuroscience (DiBraiN), University of Bari – Aldo Moro

STUDY DESIGN

Randomized crossover

EXPECTED START AND END DATE

April 2025 – May 2025

FUNDING: NO

DOCUMENT DATE: 28-05-2026

Directorate for Research, Third Mission and Internationalisation

Ethics Committee for Research

INFORMED CONSENT FORM

FOR PARTICIPATION IN THE STUDY / RESEARCH PROJECT

Dear Participant,

you are invited to participate in the study/research project *"Effects of brief active breaks on attentional and executive functions in undergraduate university students"*. In order to ensure informed participation, we provide you with information regarding the nature of the study, the project objectives, and the activities in which you may be involved to fulfil the research aims.

Please read this information carefully before making a decision about your possible participation in the project. You may ask any clarifying questions and raise any issue that has not received a clear and complete answer.

If, after reading and understanding all the information provided, you decide to participate in the study, you will be asked to sign and date the Informed Consent Form attached to this document.

Your personal data will be processed as described in the specific data protection information notice, in compliance with EU Regulation 2016/679 and Legislative Decree 30 June 2003, no. 196; such notice and the related request for consent to data processing will be submitted to you separately.

Research Title: Effects of brief active breaks on attentional and executive functions in undergraduate university students

Project CUP: N/A

Promoter: N/A

Implementing Bodies: N/A

INFORMATION ON PARTICIPATION IN THE RESEARCH

Objectives: The aim of this research is to investigate the effects of brief active and inactive breaks on the cognitive parameters of university students. In particular, it will assess how different types of breaks (no physical activity, outdoor physical activity, and exergame) influence participants' cognitive abilities. To achieve this objective, the researchers involved in the project intend to collect and analyse data on the estimation of these parameters through cognitive tests to be administered before each of the three experimental conditions.

STUDY/PROJECT STRUCTURE (phases and timeline)

RECRUITMENT AND INFORMED CONSENT PHASE (1–2 months)

Presentation to participants: The informed consent form will be distributed during recruitment procedures. Consent collection will take place prior to the assessments.

RANDOMISATION PHASE (1–2 weeks)

Following recruitment, participants will be randomly assigned to one of the three planned conditions (NPAB, OPAB, PABEx). Anthropometric measurements will be recorded and medical fitness certificates for non-competitive sport activity will be collected.

INTERVENTION, ASSESSMENT AND DATA COLLECTION PHASE (3 weeks)

During this phase, participants previously randomly assigned to one of the three conditions (NPAB, OPAB, PABEx) will carry out the activities under the supervision of qualified experts. Participants will be asked to refrain from engaging in any strenuous activity for at least 30 minutes before the experiment. After 2 hours of frontal lectures, each participant will perform the three assigned weekly conditions for ten minutes in a randomised and counterbalanced order, specifically:

- **NPAB group:** the 10-minute passive break in a university setting will serve as the no physical activity break. The task will involve interrupting academic activities while remaining seated at the study station, without the use of smartphones or other technological devices.

  OPAB group: each outdoor session will last 10 minutes, divided into 3 phases: *Warm-up* (2 min): aimed at increasing heart rate, improving muscle blood flow, and preparing major joints for the subsequent working phase. *Main activity (outdoor walk)* (6 min): a low-to-moderate intensity walk in the outdoor environment at a predetermined speed of 4.5 km/h. *Cool-down* (2 min): relaxation and static stretching exercises.

  PABEx group: each exergame session will last 10 minutes, divided into 3 phases: *Warm-up* (2 min): aimed at increasing heart rate, improving muscle blood flow, and preparing major joints for the subsequent working phase. *Main activity (Exergame)* (6 min): through the immersive virtual reality of the system (Homing®, Tecnobody, Bergamo, Italy), participants will replicate movements in virtual environments and receive visual and auditory feedback to correct performance. This 6-minute phase will use one of the available interactive activities simulating a low-to-moderate intensity walk at a predetermined speed of 4.5 km/h. *Cool-down* (2 min): relaxation and static stretching exercises.

Alongside each intervention condition, assessments consisting of psychological tests (aimed at evaluating cognitive functioning) will be administered.

Discussion and signing of consent: The research team will clarify any doubts raised by participants. Subjects will sign the consent form after having understood the details and potential risks. At least 10–30 minutes per participant must be guaranteed.

Estimated time: 10–30 minutes per participant.

BENEFITS: The intervention is designed to promote the psychophysical well-being of university students, improving concentration and stress management. Through targeted exercises carried out in both indoor and outdoor environments, the programme can reduce sedentary behaviour and enhance self-efficacy in studying. Furthermore, it contributes to countering the feeling of mental and physical fatigue, with a positive impact on mood and an effective reduction in anxiety and stress related to academic workload.

RISKS: Participation does not entail any type of risk or discomfort, except for very rare traumatic events that may occur during the course of the study.

The undersigned _____ born in _____ on _____, residing in _____ at _____ no. ___

DECLARES

to have read and understood the information notice and to wish to participate in the proposed study.

□ Confirm □ Do not confirm

SIGNATURE _____

A signed copy of an identity document is attached.

CONSENT TO PARTICIPATE IN THE RESEARCH

I declare that I:

- have voluntarily decided to participate in the research;
- have received all information related to the request to participate in the research, in particular regarding the purpose, procedures, and what is required of me;
- have received, read, and understood the document containing the "Information on Participation in the Research", which has been provided to me, and have received all the information necessary for my responsible participation in the research;
- have had the opportunity to ask questions and have received clear, complete, and satisfactory answers;
- have been informed of possible risks;
- am aware that my participation is voluntary;
- have been assured that I may withdraw from the research at any time and that this will have no negative consequences on the treatment and care I receive;

For any doubts or questions, please contact Dr./Prof. _____ _____ Tel. _____

Participant's name and surname _____.

_____

Participant's signature Date

Name and surname of the person who obtained consent _____

_____

Signature of the research coordinator Date

Name and surname of witnesses present _____
_____

_____
_____
Signature of witnesses present Date

WITHDRAWAL OF CONSENT

If you wish to withdraw your consent to participation in this research, please indicate with an "X" the desired option from the following:

I withdraw consent to continue participating in one or more of the following activities (specify the individual activities for which you wish to exercise the right of withdrawal):

- _____
  _
- _____
  _
- _____
  _
- _____
  _

Participant's name and surname _____.
_____
Participant's signature Date

Name and surname of the person who obtained consent _____
_____
Signature of the research coordinator Date

Name and surname of witnesses present _____
_____

_____
_____
Signature of witnesses present Date

For incapacitated subjects and minors:

DECLARATION OF CONSENT TO THE PROCESSING OF PERSONAL DATA OF THE DATA SUBJECT BY THE PARENT / GUARDIAN / CURATOR / ADMINISTRATOR OF SUPPORT

PURSUANT TO AND FOR THE PURPOSES OF THE EUROPEAN DATA PROTECTION REGULATION

I, the undersigned _____ _____, born on _____ in _____,

acting as

□ guardian □ curator □ administrator of support of

(name) _____ (surname) _____, born on _____ in _____

pursuant to the provisions of Regulation (EU) 2016/679 and Legislative Decree 196/2003 and subsequent amendments, and having read the "Information on the Processing of Personal Data",

□ consent □ do not consent

to the processing — necessary for the purpose of participating in the present research — of the personal data of the data subject, including health-related data, for purposes of scientific and statistical research in the manner and for the reasons described in the section entitled "Purposes and methods of processing".

□ consent □ do not consent

to the storage and further use — not necessary for the purposes of participation in the present study — of the personal data of the data subject for subsequent research activities and to be possibly re-contacted for further studies.

Furthermore,

□ consent □ do not consent

to the processing of images of the data subject (video, audio and photographic recordings or other audiovisual materials) — necessary for the purposes of participation in the study — for the research purposes described in point (4.A) and in compliance with the provisions of copyright legislation.

Date Signature

Technical Secretariat of the Ethics Committee for Research
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