

The effect of regular caffeine consumption and caffeine withdrawal on the desire for caffeinated drinks

Submission date 15/09/2026	Recruitment status No longer recruiting	☐ Prospectively registered ☐ Protocol
Registration date 16/09/2026	Overall study status Completed	☐ Statistical analysis plan ☐ Results
Last Edited 16/09/2026	Condition category Other	☐ Individual participant data ☒ Record updated in last year

Plain English summary of protocol

Background and study aims

Many people drink coffee regularly and become dependent on it, but it is unclear what motivates this behaviour. This study explored two theories that may explain coffee consumption: negative reinforcement (motivated by relief from unpleasant symptoms such as tiredness) and Incentive Sensitisation Theory (motivated by an increased urge or “wanting”).

Who can participate?

Healthy volunteers aged 18 - 50 years

What does the study involve?

Participants were screened and recruited into two groups: high (more than two cups of coffee a day) and low (less than one cup of coffee a day) coffee consumers. The study involved two laboratory-based test sessions that were conducted on separate days at least a week apart, where the participant was given either caffeine (100 mg) or placebo dissolved in and consumed as a lemon and ginger tea.

What are the possible benefits and risks of participating?

Participants were rewarded with cash or University course credits for taking part and the risks for participating were negligible.

Where is the study run from?

University of Sussex (UK)

When is the study starting and how long is it expected to run for?

February 2024 to July 2026

Who is funding the study?

Biotechnology and Biological Sciences Research Council (BBSRC) (UK)

Who is the main contact?

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Contact information

Type(s)

Principal investigator

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Additional identifiers

Study information

Scientific Title

Effects of habitual caffeine consumption and caffeine deprivation on 'wanting' and 'liking' for caffeinated drinks

Study objectives

The primary objective of this study was to investigate explicit and implicit 'wanting' and 'liking' for coffee controlling for acute caffeine deprivation.

Ethics approval required

Ethics approval required

Ethics approval(s)

Approved 01/02/2024, University of Sussex Sciences and Technology Research Ethics Committee (Falmer, Brighton, BN1 9RH, United Kingdom; +44 (0)1273606755; frecsemset@sussex.ac.uk), ref: ER/TS580/9

Primary study design

Interventional

Allocation

Randomized controlled trial

Masking

Blinded (masking used)

Control

Placebo

Assignment

Crossover

Purpose

Basic science

Study type(s)**Health condition(s) or problem(s) studied**

Habitual coffee consumption

Interventions

The study implemented a randomised double-blind placebo controlled crossover design. Participants were screened and recruited into two groups: high (>2 cups of coffee a day) and low (<1 cup of coffee a day) coffee consumers. The study involved two laboratory-based test sessions that were conducted on separate days at least a week apart, where the participant was given either caffeine (100 mg) or placebo dissolved in and consumed as a lemon and ginger tea.

A double-blind procedure was implemented so that neither the participants nor the researcher knew whether caffeine or placebo was administered to the participant during the testing session. The order of the caffeine and placebo conditions was randomised using a computer-generated randomisation schedule by a faculty member external to this study, who also ensured that caffeine or placebo was stored in distinct sealed containers for each study session.

Intervention Type

Drug

Phase

Not Applicable

Drug/device/biological/vaccine name(s)

Caffeine

Primary outcome(s)

1. Explicit 'wanting' and 'liking' for coffee measured using explicit taste test measure at two timepoints: before and after caffeine or placebo

2. Implicit 'wanting' and 'liking' for coffee measured using the Implicit Association Task (IAT) at one timepoint: after receiving caffeine or placebo

Key secondary outcome(s)

1. Mood measured using the Bond-Lader Mood Battery at three timepoints: before and after receiving caffeine or placebo and following the IAT before the completion of the test session

Completion date

14/07/2026

Eligibility

Key inclusion criteria

Healthy volunteers

Healthy volunteers allowed

Yes

Age group

Adult

Lower age limit

18 Years

Upper age limit

50 Years

Sex

All

Total final enrolment

64

Key exclusion criteria

1. Those who smoke more than 5 cigarettes per week or vaped
2. Those taking prescription medication other than the oral contraceptive pill
3. Those who are diabetic
4. Did not drink coffee

Date of first enrolment

27/02/2024

Date of final enrolment

16/10/2025

Locations

Countries of recruitment

United Kingdom

England

Study participating centre

University of Sussex

Sussex House

Falmer

Southern Ring Road

Brighton

England

BN1 9RH

Sponsor information**Organisation**

University of Sussex

ROR

<https://ror.org/00ayhx656>

Funder(s)**Funder type****Funder Name**

Biotechnology and Biological Sciences Research Council

Alternative Name(s)

UKRI - Biotechnology And Biological Sciences Research Council, Agricultural and Food Research Council, Biotechnology & Biological Sciences Research Council, BBSRC, BBSRC UK, AFRC

Funding Body Type

Government organisation

Funding Body Subtype

National government

Location

United Kingdom

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary

Not expected to be made available