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Stress hormone, personality and cognition in people who experienced early life stress

Submission date	Recruitment status	[X] Prospectively registered
27/07/2022	Recruiting	[ ] Protocol
Registration date	**Overall study status**	[ ] Statistical analysis plan
15/08/2022	Ongoing	[ ] Results
Last Edited	**Condition category**	[ ] Individual participant data
20/05/2025	Mental and Behavioural Disorders	[X] Record updated in last year

Plain English summary of protocol

Background and study aims
The purpose of the project is to test the effects of a stress hormone (hydrocortisone) on the stress system (hypothalamic-pituitary-adrenal (HPA axis)) activity by measuring the levels of salivary cortisol secretion of participants with and without adverse experiences in childhood known as early life stress.
We will investigate whether cognitive functions such as attention and memory are affected by hydrocortisone. The research aims to establish the validity and feasibility of an integrative screening test that includes each of these cognitive findings, with adrenal axis findings and hydrocortisone, for a sample of participants with and without early life stress.

Who can participate?
Healthy people aged between 18 and 45 years old and over who do not have current psychiatric disorders

What does the study involve?
All participants should be physically healthy based on a comprehensive medical history and examination. After analysing the data from the first session, the participants will be assigned to either early-life stress or without-early-life stress (control) groups. Participants who meet the inclusion criteria will be eligible to receive either hydrocortisone or a placebo. Each participant will have an equal chance of being assigned to either intervention.

The following assessments will be made before and after the hydrocortisone or placebo tablets as follows:
1. Cognitive assessments
2. Patient Health Questionnaire: screening for depression
3. Screening for posttraumatic stress disorder
4. Maudsley Visual Analogue Scales
5. The Quick Inventory of Depressive Symptomatology
6. A biomarker. An assessment of HPA axis activity will be made by measuring salivary cortisol secretion

What are the possible benefits and risks of participating?
The benefits of taking part are that each participant will receive a copy of the study's final report and, for those who complete the whole study, £100 out-of-pocket expenses. The possible risks of taking part are that some participants may experience side effects with high doses of hydrocortisone such as anxiety, fatigue, fluid retention, headache, hirsutism, and altered mood. For the project under consideration, the hydrocortisone dose is 20 mg twice a day for 3 days only. If a participant becomes confused or raises a concern about their well-being, the participant will be immediately referred to the study supervisors. The supervisor in turn will direct them to the appropriate resources and may decide that such participants should withdraw from the project.

Where is the study run from?
The study will take place in the Centre for Affective Disorders Department of Psychological Medicine, Institute of Psychiatry, Psychology & Neuroscience (IoPPN), King’s College London (United Kingdom)

When is the study starting and how long is it expected to run for?
September 2021 to March 2026

Who is funding the study?
The Centre for Affective Disorders, Institute of Psychiatry, Psychology & Neuroscience (IoPPN), King's College London (United Kingdom)

Who is the main contact?
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Contact information

Type(s)
Scientific

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Additional identifiers

EudraCT/CTIS number
Nil known

IRAS number
316745

ClinicalTrials.gov number
Nil known

Secondary identifying numbers
IRAS 316745

Study information

Scientific Title
Hypothalamic-pituitary-adrenal (HPA) axis function, personality, and cognition in subjects with early life stress

Study objectives
The study's central hypothesis is that there will be pre-screening, pre-treatment, and post-treatment differences in cognition between participant groups who have either experienced early life stress or did not experience and when administering hydrocortisone to those groups.

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 04/07/2023, London - Camden & Kings Cross Research Ethics Committee (2 Redman Place, Stratford, London, E20 1JQ, United Kingdom; +44 (0)2071048083; CamdenandKingsCross.REC@hra.nhs.uk), ref: 23/PR/0513

Study design
Randomized double-blind placebo-controlled crossover design

Primary study design
Interventional

Secondary study design
Randomised cross over trial

Study setting(s)
Other

Study type(s)
Treatment

Participant information sheet
Not available in web format

Health condition(s) or problem(s) studied
Early life stress

Interventions
To minimize potential selection bias, we will use a computer random number generator as a randomization technique. The researchers will verify participants' eligibility and randomly assign them during the first experimental session to either the early life stress or no-early life stress (control) groups to receive either an empty opaque placebo gelatine capsule or hydrocortisone (20mg). Both twice a day for 3 consecutive days. After a two-week washout period in the second experimental session, we will repeat the protocol with the opposite intervention to ensure that all patients received either the placebo or hydrocortisone.

Intervention Type
Drug

Phase
Not Applicable

Drug/device/biological/vaccine name(s)
Hydrocortisone

Primary outcome measure
Screen participants for eligibility:
1. Current mental disorders are measured using a Mini-International Neuropsychiatric Interview (M.I.N.I.) for DSM-5 at baseline
2. Cognitive impairment is measured using the Cognitive Impairment in Psychiatry (SCIP) test at baseline
3. Posttraumatic stress disorder (PTSD) is measured using the PTSD Checklist for DSM-5 at baseline
4. Early life stress is measured using Childhood Trauma Questionnaire at baseline

After screening participants' eligibility to enter the trial, they will be assigned to the ‘Early life stress’ and ‘without Early life stress’ groups and undergo further assessments before and after

placebo or hydrocortisone administration (at baseline and on day 4):
1. Levels of anxiety measured using Maudsley Visual Analogue Scales
2. Levels of depression measured using the Patient Health Questionnaire and the Quick Inventory of Depressive Symptomatology
3. Spatial Working Memory measured using the Cambridge Neuropsychological Test Automated Battery (CANTAB)
4. The neuropsychological assessments are measured using Cognitive Remediation in Bipolar (CRiB) Battery
5. Salivary levels of HPA axis activity biomarker cortisol measured using ELISA immediately upon awakening, half an hour later, and one hour afterwards

Secondary outcome measures
There are no secondary outcome measures

Overall study start date
01/09/2021

Completion date
30/03/2026

Eligibility

Key inclusion criteria
Current participant inclusion criteria as of 25/07/2023:
1. Aged 18 to 45 years old
2. Physically healthy

Previous participant inclusion criteria:
1. Aged 18 years old and over
2. Physically healthy

Participant type(s)
Healthy volunteer

Age group
Adult

Lower age limit
18 Years

Upper age limit
45 Years

Sex
Both

Target number of participants
Two clusters. 30 participants with early life stress and 30 participants ‘Control’ without early life stress. All participants (n=60)

Key exclusion criteria
1. Current DSM-5 psychiatric disorders measured using the Mini-International Neuropsychiatric Interview (M.I.N.I.) at the first experimental session
5. New psychotropic medication or in receipt of any other type of pharmacological or psychological treatment
6. Pregnancy or/and breastfeeding
7. Hormonal medications
8. Any type of allergy

Date of first enrolment
10/10/2024

Date of final enrolment
30/01/2026

Locations

Countries of recruitment
England

United Kingdom

Study participating centre
Institute of Psychiatry, Psychology & Neuroscience (IoPPN)
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Sponsor information

Organisation
King's College London

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Sponsor type
University/education

Website
https://www.kcl.ac.uk/index.aspx

ROR
https://ror.org/0220mzb33

Funder(s)

Funder type
University/education

Funder Name
The Centre for Affective Disorders, Institute of Psychiatry, Psychology & Neuroscience (IoPPN), King's College London

Results and Publications

Publication and dissemination plan
1. Planned publication in a high-impact peer-reviewed scientific journal
2. Conference presentations
3. Part of a PhD thesis

Intention to publish date
30/05/2026

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study are not expected to be made available due to privacy and confidentiality. Participants will NOT be identifiable by name in any publication.

IPD sharing plan summary
Not expected to be made available