

# How does oxytocin affect brain functioning in people at high risk of developing psychosis?

<b>Submission date</b> 15/03/2023	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 17/03/2023	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 03/04/2023	<b>Condition category</b> Mental and Behavioural Disorders	<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims

Psychotic disorders are usually preceded by a prodromal phase, called the Ultra High-Risk Mental State (UHR), characterised by attenuated psychotic symptoms, emotional dysregulation and difficulties with interpersonal relationships. Emotional and social cognition problems are common in UHR individuals, are the main source of their distress, and are a key factor in the associated loss of vocational function. Administration of oxytocin (OT) appears to promote social interactions and emotional bonding in healthy volunteers, improve emotional and social dysfunction, and ameliorate psychotic symptoms in patients with schizophrenia. The present study will evaluate the mechanism of action of OT on social cognition and emotional processing in UHR individuals.

### Who can participate?

Adults aged 18-35 who are UHR for psychosis.

### What does the study involve?

During each OT/placebo challenge, the team will use magnetic resonance imaging (MRI) to measure the effects of OT on the neural substrates of emotional processing and social cognition. Subjects will also undergo a clinical assessment with standardized psychometric scales.

### What are the possible benefits and risks of participating?

Participants will not benefit directly but the potential findings from the research may improve understanding of the neurobiological factors underlying psychosis. The experimental treatment will not interfere with the standard care of the participants. OT has been widely used for several years in medicine. A review of 38 studies conducted since 1990 with a total of 1529 participants indicated that 18-40 IU OT is safe. There is a risk that some participants may feel anxious or claustrophobic during MRI scanning.

### Where is the study run from?

Department of Psychosis Studies at the Institute of Psychiatry, Psychology and Neuroscience, King's College, London (UK)

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

January 2014 until October 2017

Who is funding the study?

1. National Institute for Health Research (NIHR) Biomedical Research Centre (BRC) at South London and Maudsley NHS Foundation Trust and King's College London
2. Brain & Behaviour Research Foundation National Alliance for Research on Schizophrenia & Depression (NARSAD) Award

Who is the main contact?

Prof Paolo Fusar-Poli, [paolo.fusar-poli@kcl.ac.uk](mailto:paolo.fusar-poli@kcl.ac.uk) (UK)

## Contact information

### Type(s)

Principal Investigator

### Contact name

Prof Paolo Fusar-Poli

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### Contact details

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None provided

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## Additional identifiers

### EudraCT/CTIS number

Nil known

### IRAS number

150687

### ClinicalTrials.gov number

Nil known

### Secondary identifying numbers

CPMS 18011, IRAS 150687

# Study information

## Scientific Title

Neurophysiological basis of effects of oxytocin on emotional processing and social cognition in people at ultra-high risk for psychosis.

## Study objectives

The primary outcome measure is to investigate the regional brain response under oxytocin challenge (versus placebo) in subjects at ultra-high risk (UHR) for psychosis. Specifically, we hypothesise that a single dose of oxytocin modulates brain functioning during emotional processing and social cognition in UHR subjects.

## Ethics approval required

Old ethics approval format

## Ethics approval(s)

Approved 12/11/2014, London – London Bridge Research Ethics Committee (Research Ethics Committee London Centre, Ground Floor, Skipton House, 80 London Road, London, SE1 6LH, UK; +44 (0)207 1048 387, (0)207 1048 124; londonbridge.rec@hra.nhs.uk), ref: 14/LO/1692

## Study design

Randomized interventional study

## Primary study design

Interventional

## Secondary study design

Randomised controlled trial

## Study setting(s)

Community

## Study type(s)

Treatment

## Participant information sheet

Not available in web format, please use the contact details below to request a patient information sheet

## Health condition(s) or problem(s) studied

Schizophrenia, schizotypal and delusional disorders

## Interventions

This is a randomised, double-blind, 40 IU intranasal oxytocin versus placebo single-dose challenge with a crossover design (1-week washout). Oxytocin administration will follow international guidelines (Guastella AJ et al., Recommendations for the standardisation of oxytocin nasal administration and guidelines for its reporting in human research) and be conducted under researcher supervision. During each challenge, subjects will undergo a 90-minute MRI scan which includes fMRI tasks exploring social cognition, arterial spin labelling, resting-state fMRI, and MR-spectroscopy.

**Intervention Type**

Biological/Vaccine

**Phase**

Not Applicable

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

Oxytocin

**Primary outcome measure**

Regional brain response to oxytocin versus placebo challenge in subjects at ultra-high risk (UHR) for psychosis measured using MRI, which includes fMRI tasks of social cognition and other neuroimaging readouts (arterial spin labelling, resting-state fMRI, and MR-spectroscopy), during the challenge

**Secondary outcome measures**

There are no secondary outcome measures

**Overall study start date**

01/01/2014

**Completion date**

17/10/2017

**Eligibility****Key inclusion criteria**

Among the new referrals to the OASIS service, South London and Maudsley NHS Foundation Trust, we will enroll those meeting inclusion criteria for a UHR state for psychosis (as defined on the CAARMS revised version questionnaire).

**Participant type(s)**

Patient

**Age group**

Adult

**Sex**

Male

**Target number of participants**

Planned Sample Size: 30; UK Sample Size: 30

**Total final enrolment**

30

**Key exclusion criteria**

1. Personal history of psychotic illness (i.e. schizophrenia, schizoaffective disorder or related psychosis)
2. Aged below 18 years old

3. Aged over 35 years old
4. Significant cognitive deficit (IQ<60 as measured by the shortened WAIS)
5. Significant history of drug or alcohol misuse or dependence
6. Severe neurological and medical conditions
7. Evidence of hyponatremia in participant's recent blood test
8. Rejection of informed consent
9. Pregnancy (apply to women of childbearing age)
10. Breastfeeding (applies to women of childbearing age)
11. Non-use of contraceptive methods (apply to women of childbearing age).

**Date of first enrolment**

06/05/2015

**Date of final enrolment**

10/10/2017

## **Locations**

**Countries of recruitment**

England

United Kingdom

**Study participating centre**

**Kings College London**

Strand

London

United Kingdom

WC2R 2LS

**Study participating centre**

**Maudsley Hospital**

Denmark Hill

London

United Kingdom

SE5 8AZ

**Study participating centre**

**Kings College Hospital**

Mapother House

De Crespigny Park

Denmark Hill

London

United Kingdom

SE5 8AB

**Study participating centre**  
**East London NHS Foundation Trust**  
Robert Dolan House  
9 Alie Street  
London  
United Kingdom  
E1 8DE

## **Sponsor information**

**Organisation**  
King's College London

**Sponsor details**  
C/o: Barbara Dahill  
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**Sponsor type**  
University/education

**Website**  
<http://www.kcl.ac.uk/index.aspx>

**ROR**  
<https://ror.org/0220mzb33>

**Organisation**  
South London and Maudsley NHS Foundation Trust

**Sponsor details**  
C/o: Jennifer Leibscher  
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SE5 8AF

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jennifer.leibscher@kcl.ac.uk

**Sponsor type**

Hospital/treatment centre

**Website**

<http://www.slam.nhs.uk/>

**ROR**

<https://ror.org/015803449>

## **Funder(s)**

**Funder type**

Government

**Funder Name**

National Institute for Health and Care Research

**Alternative Name(s)**

National Institute for Health Research, NIHR Research, NIHRresearch, NIHR - National Institute for Health Research, NIHR (The National Institute for Health and Care Research), NIHR

**Funding Body Type**

Government organisation

**Funding Body Subtype**

National government

**Location**

United Kingdom

**Funder Name**

Brain and Behavior Research Foundation

**Alternative Name(s)**

Brain & Behavior Research Foundation, The Brain & Behavior Research Foundation, Brain & Behavior Research FDN, The Brain and Behavior Research Foundation, BBRFoundation, National Alliance for Research on Schizophrenia & Depression, NATIONAL ALLIANCE FOR RESEARCH ON SCHIZOPHRENIA AND DEPRESSION, National Alliance for Research on Schizophrenia and Depression, Inc., BBRF, NARSAD

**Funding Body Type**

Government organisation

## Funding Body Subtype

Trusts, charities, foundations (both public and private)

## Location

United States of America

# Results and Publications

## Publication and dissemination plan

Planned publication in a high-impact peer reviewed journal

## Intention to publish date

09/01/2019

## Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are not expected to be made available. Individual-level data are not currently openly available due to data privacy, ongoing research and regulatory/ethical approvals. However, aggregate (group-level) clinical, demographic and imaging data may be made available, upon request (at the investigator's discretion) via contact with Prof Fusar-Poli, [paolo.fusar-poli@kcl.ac.uk](mailto:paolo.fusar-poli@kcl.ac.uk). Aggregate data have already been shared with, for example, the ENIGMA Clinical High-Risk Working Group for the purposes of large-scale cross-site meta- and mega-analysis.

## IPD sharing plan summary

Available on request

## Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Other publications</a>	Intranasal oxytocin increases heart-rate variability in men at clinical high risk for psychosis: a proof-of-concept study	12/07/2020	15/03/2023	Yes	No
<a href="#">Results article</a>	Oxytocin modulates hippocampal perfusion	09/01/2019	15/03/2023	Yes	No
<a href="#">Results article</a>	Oxytocin on brain activation during inferring others' beliefs and social emotions	22/06/2020	15/03/2023	Yes	No
<a href="#">Results article</a>	Oxytocin on glutamate and other metabolites	28/03/2019	15/03/2023	Yes	No
<a href="#">HRA research summary</a>			28/06/2023	No	No