

## Trial Description

### Title

**The function of the endocrinological oxytocin system under psychosocial stress conditions in adolescents with anxiety disorder**

### Trial Acronym

[---]\*

### URL of the trial

[---]\*

### Brief Summary in Lay Language

**The hormonal system of the body plays an important role in the development of many mental illnesses. Hormones are chemical messengers that transmit information in the body and regulate physiological functions. In physical or psychological stress situations stress hormones are released. Two of these hormones are cortisol and, according to the latest studies, oxytocin, previously known as the "bonding hormone". It is hypothesized that stress levels and the severity of anxiety symptoms will be reduced by increasing oxytocin levels in the body. The present study will investigate whether oxytocin and cortisol levels of children and adolescents (11-18 years) with anxiety disorder are different from the levels of children and adolescents without these problems. Furthermore, it should be observed how hormone levels change over time due to a stressful situation. Children and adolescents with and without anxiety disorder are invited to participate in the study. In the first appointment (2.5 hours) the participants will be informed in detail about the study contents. After informed consent, the children and adolescents should answer questionnaires about their psychological well-being. In a second appointment (2.5 hours) the hormone determination will take place. After a relaxation phase, saliva sample will be taken. Subsequently, tasks are to be solved in which the participant must speak in front of a foreign audience. More saliva samples will be taken at regular intervals.**

### Brief Summary in Scientific Language

**The planned observational trial in a quasi-experimental design investigates the regulation of the endocrine oxytocin system in children and adolescents (11-18 years) under psychosocial stress conditions. Since the neuropeptide oxytocin (OXT) is ascribed to have an anxiolytic and stress-reducing effect, the study addresses the question whether adolescents with anxiety disorders have a dysregulation of the OXT system under psychosocial stress conditions compared to a healthy control group. After detailed clinical diagnosis of the underlying anxiety disorder, the basal saliva OXT level is determined. In the following the subjects are subjected to a psychosocial stress test (Trier Social Stress Test) in which they have to give a short lecture and solve mathematical tasks. Subsequently, saliva samples are taken at regular intervals to quantify the hormone concentrations and are compared over time. In addition to OXT, the stress hormone cortisol is measured.**

**Do you plan to share individual participant data with other researchers?****Yes****Description IPD sharing plan**

**The study protocol should be published as an open access article before the study is completed. The statistical code can be requested from the responsible author after completion and publication of the study. The collected data will be published in anonymized form on the platform Center for Open Science after completion of the study.**

**Organizational Data**

- DRKS-ID: **DRKS00017793**
- Date of Registration in DRKS: **2019/09/11**
- Date of Registration in Partner Registry or other Primary Registry: [---]\*
- Investigator Sponsored/Initiated Trial (IST/IIT): **yes**
- Ethics Approval/Approval of the Ethics Committee: **Approved**
- (leading) Ethics Committee Nr.: **19-1458-101 , Ethikkommission an der Universität Regensburg**

**Secondary IDs****Health condition or Problem studied**

- ICD10: **F40.0 - Agoraphobia**
- ICD10: **F40.00 - [generalization F40.0: Agoraphobia]**
- ICD10: **F40.01 - [generalization F40.0: Agoraphobia]**
- ICD10: **F40.1 - Social phobias**
- ICD10: **F41.0 - Panic disorder [episodic paroxysmal anxiety]**
- ICD10: **F41.1 - Generalized anxiety disorder**
- ICD10: **F93.0 - Separation anxiety disorder of childhood**
- ICD10: **F93.2 - Social anxiety disorder of childhood**
- ICD10: **F93.8 - Other childhood emotional disorders**

**Interventions/Observational Groups**

- Arm 1: **Cortisol and oxytocin release under stress conditions in children and adolescents with anxiety disorder**
- Arm 2: **Cortisol and oxytocin release under stress conditions in healthy children and adolescents without anxiety disorder**

## Characteristics

- Study Type: **Non-interventional**
- Study Type Non-Interventional: **Other**
- Allocation: **Non-randomized controlled trial**
- Blinding: [---]\*
- Who is blinded: [---]\*
- Control: **Other**
- Purpose: **Basic research/physiological study**
- Assignment: **Parallel**
- Phase: **N/A**
- Off-label use (Zulassungsüberschreitende Anwendung eines Arzneimittels): **N/A**

## Primary Outcome

1. **Basal saliva-oxytocin and cortisol levels of the test group (children and adolescents (11-18 years) with a diagnosed anxiety disorder) compared to a healthy control group (children and adolescents without clinical psychiatric diagnosis)**
2. **Change in oxytocin and cortisol levels under stress conditions (TSST) over time (time points: + 1, 5, 10, 20, 40 and 60 min after completion the TSST)**
3. **Change in cortisol levels under stress conditions in relation to oxytocin levels**

**Methods: Taking saliva samples to determine the hormone concentrations at 8 different points of time.**

**Induced stressful situation by the Trier Social Stress Test (Kirschbaum et al., 1993)**

**The endpoint is recorded when 60 study participants are enrolled.**

## Secondary Outcome

**Physiological stress parameters:  
Recording the heart rate with pulse sensor**

**Psychological stress parameters:  
Anxiety, insecurity and subjective stress with the Visual Analogue Scales (VAS, Hellhammer & Schubert, 2012)**

**Dimensional psychiatric diagnosis regarding general psychopathology and anxiety disorder; Survey of the severity of mental illnesses:**

- **SCARED-D: Screen for Child Anxiety Related Emotional Disorders (SCARED) - German Version (Birmaher et al., 1997)**
- **SPAIK: Social phobia and fear inventory for children (Melfsen et al., 2001)**

- **BAI: Beck Anxiety Inventory (Margraf et al., 2007)**
- **BDI-II: Beck's Depression Inventory -II (Hautzinger et al., 2006)**
- **ECR-RC: Short version of the Experiences in Close Relationships Scale-Revised Child version (Brenning et al., 2014)**
- **STAI: State-Trait Anxiety Inventory for Adults (Spielberger 1970, 1973)**
- **M.I.N.I.-KID: Mini-International Neuropsychiatric Interviews for Children and Adolescents (M.I.N.I.-KID) (Sheehan et al., 1998)**
- **PDS: Pubertal Development Scale (Petersen et al., 1988)**
- **WISC-V: Wechsler Intelligence Scale for Children-V or WAIS-IV: Wechsler Adult Intelligence Scale-Fourth Edition; 4 subtests (Similarities, Vocabulary, Matrix Reasoning, Block Design) (Wechsler, 2017; by Aster et al., 2006)**

The endpoint is recorded when 60 study participants are enrolled.

## Countries of recruitment

- **DE Germany**

## Locations of Recruitment

- **University Medical Center **KJPP, Regensburg****

## Recruitment

- Planned/Actual: **Actual**
- (Anticipated or Actual) Date of First Enrollment: **2020/02/07**
- Target Sample Size: **64**
- Monocenter/Multicenter trial: **Monocenter trial**
- National/International: **National**

## Inclusion Criteria

- Gender: **Both, male and female**
- Minimum Age: **11 Years**
- Maximum Age: **18 Years**

## Additional Inclusion Criteria

### General inclusion criteria of the index and control group

- **Sufficient understanding of the German language**
- **Informed consent of study participants and their legal guardians**
- **Age at baseline: 11-18 years**
- **School education: middle school, junior high school, high school**
- **Good connection to in- and outpatient diagnostic/medical consultation/treatment at the Clinic for Child and Adolescent Psychiatry Regensburg.**

### Inclusion criteria index group

- **Anxiety disorder according to the diagnostic criteria of the DSM-5 classification and ICD-10 Agoraphobia (ICD-10 F40.0) with/without a panic disorder (F40.00, F40.01), social phobias (F40.1), panic disorder (F41.0), generalized anxiety disorder (F41.1), separation anxiety disorder of childhood (F93.0), social (F93.2) and generalized (F93.80) anxiety disorder of childhood.**
- **No further psychiatric comorbidities (except for mild depressive disorder, moderate depressive disorder (ICD-10 F32.0, F32.1))**

### Inclusion criteria control group

- **No history of psychiatric and neurological diseases**
- **No current and history of in- and outpatient psychiatric and psychotherapeutic treatment and any psychiatric disorder**

## Exclusion criteria

### General exclusion criteria of the index group and control group

- **History of traumatic brain injury, history of endocrinological disorder, any other chronic neurological or other disorder, which influences the brain development and physiology**
- **Current glucocorticoid-containing medication**
- **Pregnancy**
- **Early pubertal development (Pubertas praecox vera) due to an abnormal hormone status (Brämwig & Dübbers, 2009)**
- **Intellectual impairment (IQ <85)**
- **School education: special school**
- **Acute psychotic disorder or acute psychiatric condition, which may affect the**

**capacity to consent**

- **Acute suicidality**
- **Lack of consent**

**Exclusion criteria control group**

- **Anxiety score after answering the test questionnaires above the reference values defined by the respective test criteria and guidelines for evaluation**
- **Diagnosed anxiety disorder according to DSM-5 and ICD-10 criteria**
- **Any current or history of psychiatric and neurological disorder, which requires medical treatment**
- **Current and history of in- and outpatient psychiatric and psychotherapeutic treatment**

## Addresses

### ■ Primary Sponsor

**Klinik und Poliklinik für Kinder- und Jugendpsychiatrie, Psychosomatik und Psychotherapie der Universität Regensburg am Bezirksklinikum Regensburg  
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### ■ Contact for Scientific Queries

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## Sources of Monetary or Material Support

### ■ Institutional budget, no external funding (budget of sponsor/PI)

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## Status

### ■ Recruitment Status: **Recruiting ongoing**

### ■ Reason, if "Recruitment stopped after recruiting started" or "Recruiting withdrawn before recruiting started": [---]\*

### ■ Reason, if Reason for Recruiting Stop "Other": [---]\*

### ■ Study Closing (LPLV): [---]\*

### ■ Number of Participants in Germany after Recruiting complete: [---]\*

### ■ Total Number of Participants (all Sites worldwide) after Recruiting complete: [---]\*

## Trial Publications, Results and other documents

\* This entry means the parameter is not applicable or has not been set.

\*\*\* This entry means that data is not displayed due to insufficient data privacy clearing.