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MOX STUDY

IN SEARCH FOR AN INNOVATIVE NEURAL MARKER AND INTERVENTION FOR SOCIO-COMMUNICATIVE DIFFICULTIES IN CHILDREN WITH AND WITHOUT ASD

([Nederlandstalige uitleg](#))

RESEARCHERS:

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Term:

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Background:

Individuals with Autism Spectrum Disorders (ASD) have difficulties with social communication and interaction. To date, no objective quantitative (bio)marker exists for ASD, thus formal diagnosis is solely based on clinical expertise. In addition, there are no pharmacological interventions available for ASD. Here, we will validate an innovative EEG-based neural tool to quantify socio-communicative sensitivity. Next, we will combine this new tool with various other behavioural, biological and neuroimaging measurements to study the underlying mechanisms of oxytocin (OT) pharmacotherapy. We will use this multimodal approach to monitor and predict the outcome of a long-term oxytocin pharmacotherapy in children with social difficulties with and without ASD.

Aims:

The aims of this project are:

- › Delineate the most sensitive EEG-paradigms to discriminate children with ASD from TD children with and without socio-communicative difficulties;
- › Explore the neural mechanisms of multiple-dose OT therapy in these children;
- › Investigate how multiple-dose OT treatment outcome is influenced by person-dependent factors.

Method:

We will perform a multiple-dose randomized double-blind OT trial. Neural assessment via multimodal neuroimaging will include FPVS EEG-paradigms to assess neural saliency of social cues, resting-state fMRI to assess functional connectivity, task-based fMRI to relate FPVS responses to fMRI measures, and diffusion MRI to measure structural connectivity. Behavioural testing will include various face-processing tasks and a real-life social interaction paradigm (both combined with eye-tracking), and questionnaires assessing autism-traits, social functioning, anxiety and attachment style. Physiological measures of social anxiety and stress (heartrate, heartrate variability, skin conductance) will be included. Saliva samples will be used to measure peripheral OT, cortisol and testosterone levels and OXTR methylation patterns.



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