

**Keywords:** Executive Function, Adverse Childhood Experiences, Estradiol, Acute Tryptophan Depletion, Lisdexamfetamine

## O12. Intranasal Testosterone Reduces Stress-Evoked Anxiety in Women

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**Background:** Can a single-dose of a testosterone-containing nasal spray reduce anxiety? Although both exogenous and endogenous testosterone have been associated with reductions in implicitly measured fear responses, it remains unknown whether exogenous testosterone can reduce the explicit, subjective experience of anxiety in humans.

**Methods:** In the present study, participants (N = 104, 48.1% female) were randomly assigned to receive either testosterone or placebo via intranasal spray before taking part in an acute psychosocial stressor. Participants used visual analogue scales to rate their subjective anxiety before, during, and after the stressor.

**Results:** Results revealed a statistically significant drug by sex interaction, in which women—as expected—experienced significantly higher levels of subjective anxiety in the placebo condition compared to men; a sex difference that was eliminated in the drug condition. Further, women randomized to the testosterone condition experienced significantly lower levels of anxiety during recovery from the acute stressor relatively to women in the placebo condition.

**Conclusions:** Taken together, these results have important implications for the etiology of anxiety and treatment.

**Keywords:** Anxiety, Testosterone, Neuroendocrinology, Sex-steroid Hormones, Gender Differences

## O13. Delayed Treatment and Co-Occurring Psychiatric Illness Predict Response to Gamma Knife Capsulotomy for Obsessive Compulsive Disorder

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**Background:** Ten percent of patients with OCD exhibit severe symptoms that do not improve with standard behavioral and pharmaceutical therapy. Gamma Ventral Capsulotomy (GVC) has a proven efficacy of 55-80% in

treating patients with medically-refractory OCD, but it is unknown what factors distinguish responders from non-responders.

**Methods:** We conducted retrospective chart-analysis on a dataset of OCD patients treated with GVC (N=66) from 1993 to 2016. We examined the age of OCD symptom onset and age at initial OCD treatment to calculate the time to treatment in years. We also looked at the co-incidence of Axis I psychiatric illnesses. Patient outcome 6 months post-surgery was assessed with the Yale-Brown Obsessive Compulsive Scale (YBOCS).

**Results:** On average, OCD symptoms began at age 11, and standard OCD treatment began at age 20. Greater time to treatment correlated with more severe post-surgical YBOCS ( $p=0.04$ ) and reduced response compared to baseline ( $p=0.03$ ). Co-occurring psychiatric illness was a common finding in this sample (87.9%). We found that the greater the number of co-occurring diagnoses, the higher the post-surgical YBOCS ( $p=0.03$ ) but not pre-surgical YBOCS ( $p=0.92$ ).

**Conclusions:** This study examined predictors of outcome in one of the largest samples of patients who have undergone GVC for severe OCD. Our data suggest that surgical outcome is associated with time to OCD treatment, as well as the number of co-occurring psychiatric illnesses. Earlier treatment may make OCD symptoms more amenable to surgical treatment. Conversely, co-occurring diagnoses may limit post-surgical response by increasing disease burden and potentially affecting underlying functional neurocircuitry.

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**Keywords:** Psychiatric Neurosurgery, Obsessive Compulsive Disorder (OCD), Prediction of Treatment Outcome

## O14. Deep TMS of the Medial Prefrontal and Anterior Cingulate Cortices for OCD: A Double-Blinded Multi-Center Study

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**Background:** Obsessive compulsive disorder (OCD) is a common disabling disease, yet medications only result in a reduction of symptoms for 40-60% of patients. Symptom severity is correlated to the degree of hyperconnectivity in the cortical-striatal-thalamic-cortical circuit and increased glucose metabolism in the anterior cingulate cortex during symptom provocation and at rest.

**Methods:** Ninety-four OCD patients were randomized to receive twenty-nine active or sham treatments over six weeks. Deep transcranial magnetic stimulation (dTMS) was applied over the medial prefrontal (mPFC) and anterior cingulate cortices (ACC) using the H7 dTMS coil. Immediately after individualized symptom provocation dTMS was administered at 100% resting motor threshold of the foot, 20Hz