

## ETHNICITY-DEPENDENT RESPONSE TO dTMS TREATMENT

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**Background:** There are not many studies on ethnicity-dependent response to dTMS treatment. This study was conducted to identify whether there are differences in outcomes between deep Transcranial Magnetic Stimulation (dTMS) treatments for South Asians compared to Caucasians.

**Methods:** 16 age- and gender-matched patients (8 South Asian, 8 Caucasian) who completed a full treatment course (36 treatments), were compared using their self-reported baseline (1<sup>st</sup> treatment) and end (36<sup>th</sup> treatment) scores on the Patient Health Questionnaire-9 (PHQ-9), the Quick Inventory of Depressive Symptomatology (QIDS-SR-16), Generalized Anxiety Disorder Assessment (GAD-7), and Quality of Life Enjoyment and Satisfaction Questionnaire - Short Form (Q-LES-Q-SF). All patients were treated within the past two years at a private TMS clinic in San Diego, California, USA.

**Results:** For Caucasians, the average difference for PHQ-9, QIDS-SR-16, GAD-7, and Q-LES-Q-SF between baseline and end scores was 11.25, 5.56, 8.88, and 13.88, respectively. In comparison, for South Asians, the average differences between baseline and end scales for PHQ-9, QIDS-SR-16, GAD-7, and Q-LES-Q-SF were 11, 10.20, 9.94, and 12.63, respectively. The average baseline scores for Caucasians were 19.75, 18.375, 16.625, and 40.875 vs. average end scores of 8.5, 12.81, 7.75, and 54.75. For South Asians, the average baseline scores were 17.25, 17.57, 16.25, and 44.38 vs. average end scores of 6.25, 7.38, 6.31, and 57.

**Conclusions:** It is promising to see that interventional methods may be able to overcome differences in ethnicity-dependent variability in metabolism and response to psychopharmacologic treatments. For example, in comparison to Caucasians, South Asians had a larger clinical decrease in QIDS-SR-16 scores despite a greater baseline average. These results may help show that despite destigmatization efforts, interventional methods may provide care in minority groups, adjunctive to or in place of certain pharmacological options that are known to be less effective or provide greater side effects in some minority groups.

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## A SINGLE PSYCHOEDUCATIONAL SESSION INCREASES ACCEPTABILITY TOWARDS TRANSCRANIAL DIRECT CURRENT STIMULATION (tDCS) IN TREATING ANXIETY DISORDERS

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**Objective:** In this study we sought to investigate the acceptability of transcranial direct current stimulation (tDCS) in treating anxiety disorders. We studied the impact of a psychoeducational session on acceptability as defined by a multidimensional framework employing a novel self-report questionnaire we developed, the ACCEPT-tDCS.

**Method:** A cross-sectional study was conducted, aiming at observing the impact of a psychoeducational session on tDCS acceptability in treating anxiety disorders. Our sample was comprised of 536 participants.

**Results:** After a single psychoeducational session - administered via informative video - the acceptability of our sample towards the use of tDCS in treating anxiety disorders increased significantly. Also, the questionnaire we developed showed adequate psychometric properties.

**Conclusions:** This work has shown that a single psychoeducational session increased participants' acceptability towards tDCS, which highlights the importance of providing adequate knowledge about tDCS and other new and emerging interventions to promote a subsequent successful implementation of novel health interventions within health care provisioning systems. It has also shown that the ACCEPT-tDCS is an adequate tool to measure acceptability towards tDCS in anxiety disorders, and an added value both for clinical and research contexts.

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## FLUMAZENIL ADMINISTRATION DURING ELECTROCONVULSIVE THERAPY: A RETROSPECTIVE CHART REVIEW ON EEG DURATION, SIDE EFFECTS AND CLINICAL OUTCOME

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**Introduction:** Benzodiazepines are considered to negatively affect seizure quality and duration during electroconvulsive therapy (ECT). Several researchers have advocated the use of flumazenil, a competitive benzodiazepine receptor antagonist, for patients receiving benzodiazepines during ECT treatment. However, clinical evidence regarding flumazenil use in ECT remains sparse. The aim of this study is to describe the effects of flumazenil on EEG seizure duration, clinical outcome and adverse effects.

**Method:** Twenty-six depressive and/or catatonic patients with concomitant benzodiazepine use receiving flumazenil during ECT were identified through retrospective chart review. Effects of flumazenil on depressive symptoms, catatonia, EEG duration and postictal agitation were assessed by the Inventory of Depressive Symptomatology, the Bush-Francis Catatonia Rating Scale and seizure duration on EEG. Postictal agitation was ascertained by identifying patients who received sedatives immediately after ECT or who needed physical restraint. The study was approved by the ethics committee of Ghent University Hospital.

**Results:** In patients receiving flumazenil, response and remission rates after ECT were 66.7% and 41.7% for depression and 91.7% and 75% for catatonia. Flumazenil administration increased EEG seizure duration with 10.5 seconds on average in patients comparing ECT with or without flumazenil administration and 58.3% of patients had an adequate seizure (> 15s). We found no correlation between benzodiazepine dose and seizure duration in patients receiving flumazenil before ECT. Postictal agitation occurred in 34.6% of the patients. One case of prolonged seizure, successfully managed with diazepam administration, was noted.

**Conclusion:** Patients with depression and/or catatonia and concomitant benzodiazepine use show good clinical outcome and increased EEG seizure duration after flumazenil treatment before ECT. However, postictal agitation seems to be a frequent and important side-effect. Current strategies to mitigate agitation should be considered when administering flumazenil.

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## PSYCHIATRIC SYMPTOMS IN PARKINSON DISEASE PATIENTS BEFORE AND AFTER ONE YEAR OF SUBTHALAMIC NUCLEUS DEEP BRAIN STIMULATION: ROLE OF LEAD POSITIONING AND TOTAL ELECTRICAL ENERGY DELIVERED

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**Introduction:** Most patients with Parkinson's disease (PD) experience psychiatric symptoms. Deep Brain Stimulation (DBS) is the most effective treatment for motor and non-motor symptoms of advanced Pd. However, several studies hypothesized a possible correlation between DBS and the occurrence of mood disorders such as apathy, depression, and suicidal ideation. Additionally, conflicting results have been reported on the correlation between psychiatric symptoms and lead placement and total electrical energy delivered.

**Methods:** The study was performed at the University Federico II of Naples from 2011 to 2020. Fourteen patients (7 females, and 7 males) underwent a comprehensive psychopathological examination at baseline and after one year of STN-DBS. We assessed PD motor symptoms, depression, anxiety, apathy, impulsivity, and suicidality using clinical rating scales and correlated the results to the leads' position using the Medtronic® Suretune™ software and to the total electrical energy delivered (TEED) according to the Koss formula.