

Scan to find out more about DBS at CU Anschutz!

# The Effects of Deep Brain Stimulation on Obsessive-Compulsive Disorder



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## Introduction

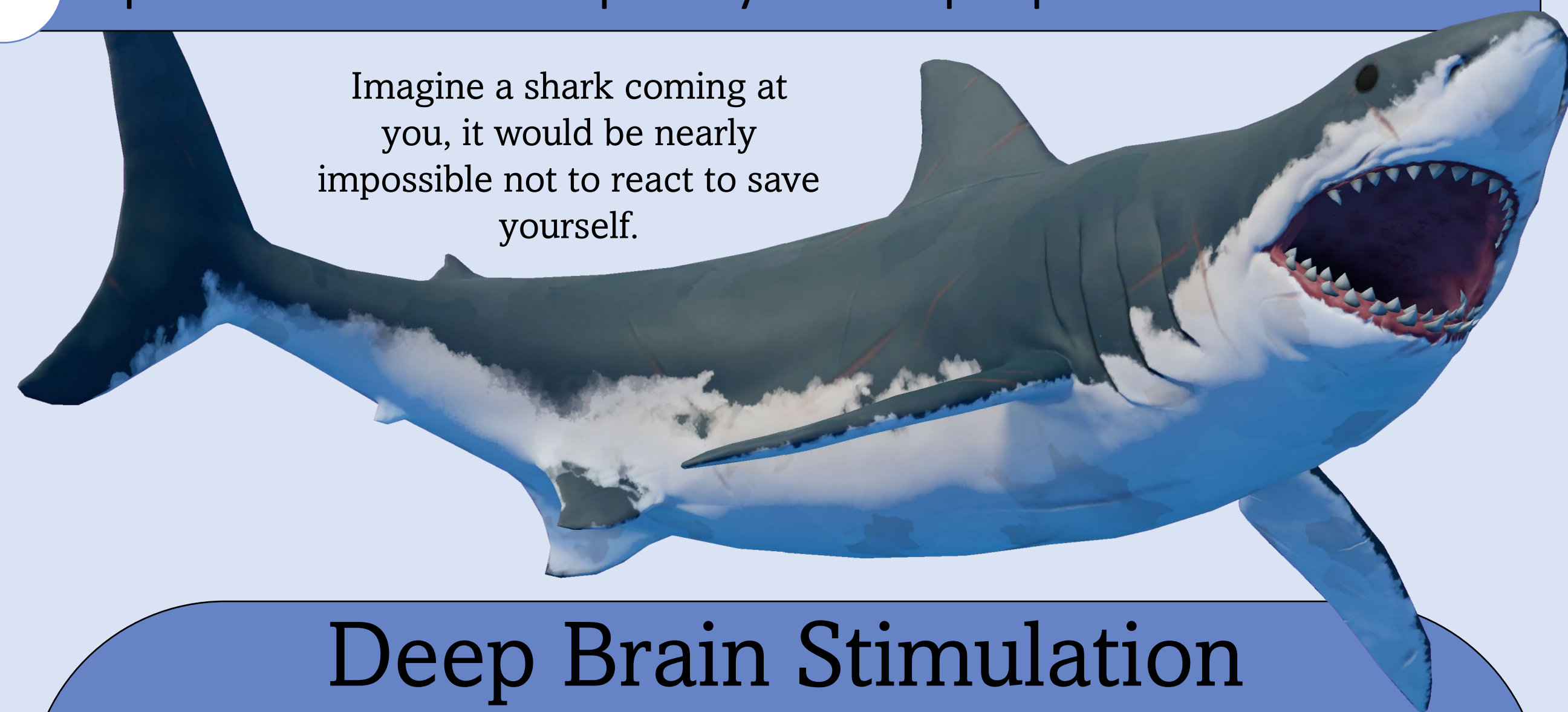
OCD affects 2-3% of the United States, 1-2% of the world

Comorbidities include depression, tics, eating disorders

Treatment includes CBT, ERP, medications

Optimal treatment helps only 35% of people reach "remission"

Imagine a shark coming at you, it would be nearly impossible not to react to save yourself.



## Deep Brain Stimulation

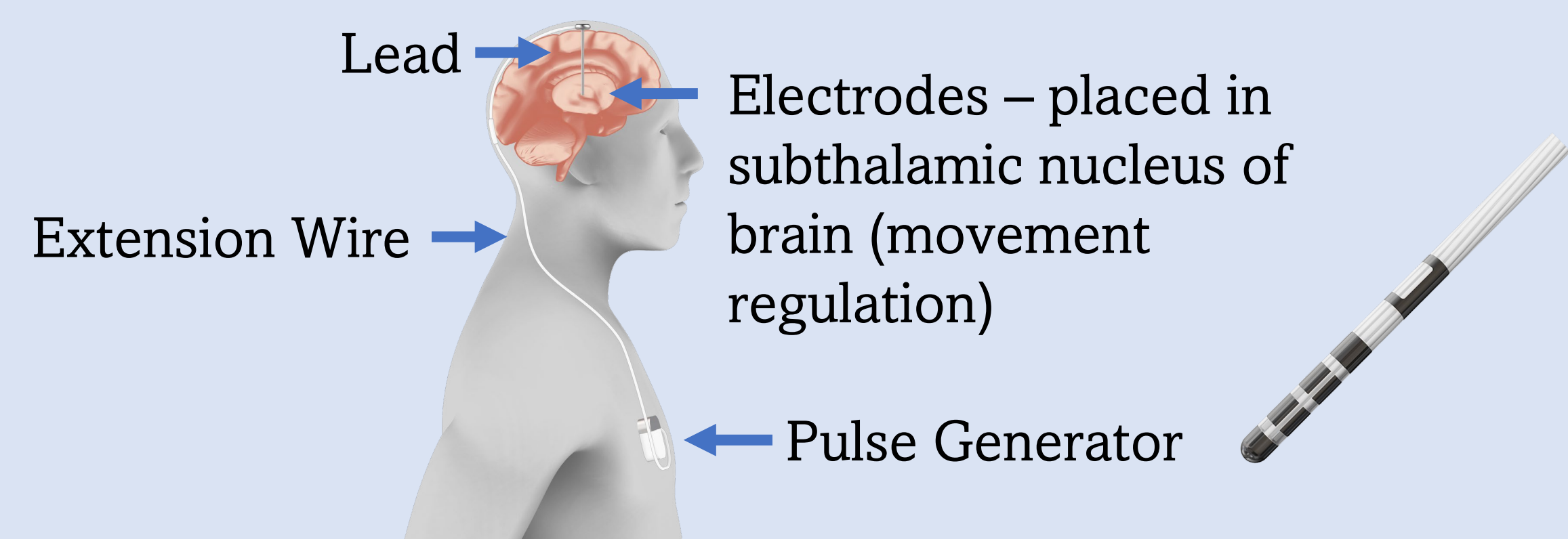
- Surgical procedure used for Parkinson's disease, essential tremor since the 1980s
- Granted H.D.E status for OCD in 2009
- Progress made through trial-and-error programming across multiple years
- Very stringent qualifications:

### Inclusion

YBOCS  $\geq 28$   
 20 sessions of ERP  
 At least 3 SSRI trials  
 1 month with benzo  
 1 month on antipsychotic

### Exclusion

Psychotic disorders  
 Bipolar disorder  
 Active substance abuse  
 Active eating disorder  
 Active suicidality



Example of a line with **four** potential electrode sites

This study was conducted under the prediction that deep brain stimulation will lead to **better** scores on several validated scales, including the YBOCS (OCD), MADRS (Depression), YMRS (mania, Q-LES-Q-SF (quality of life)

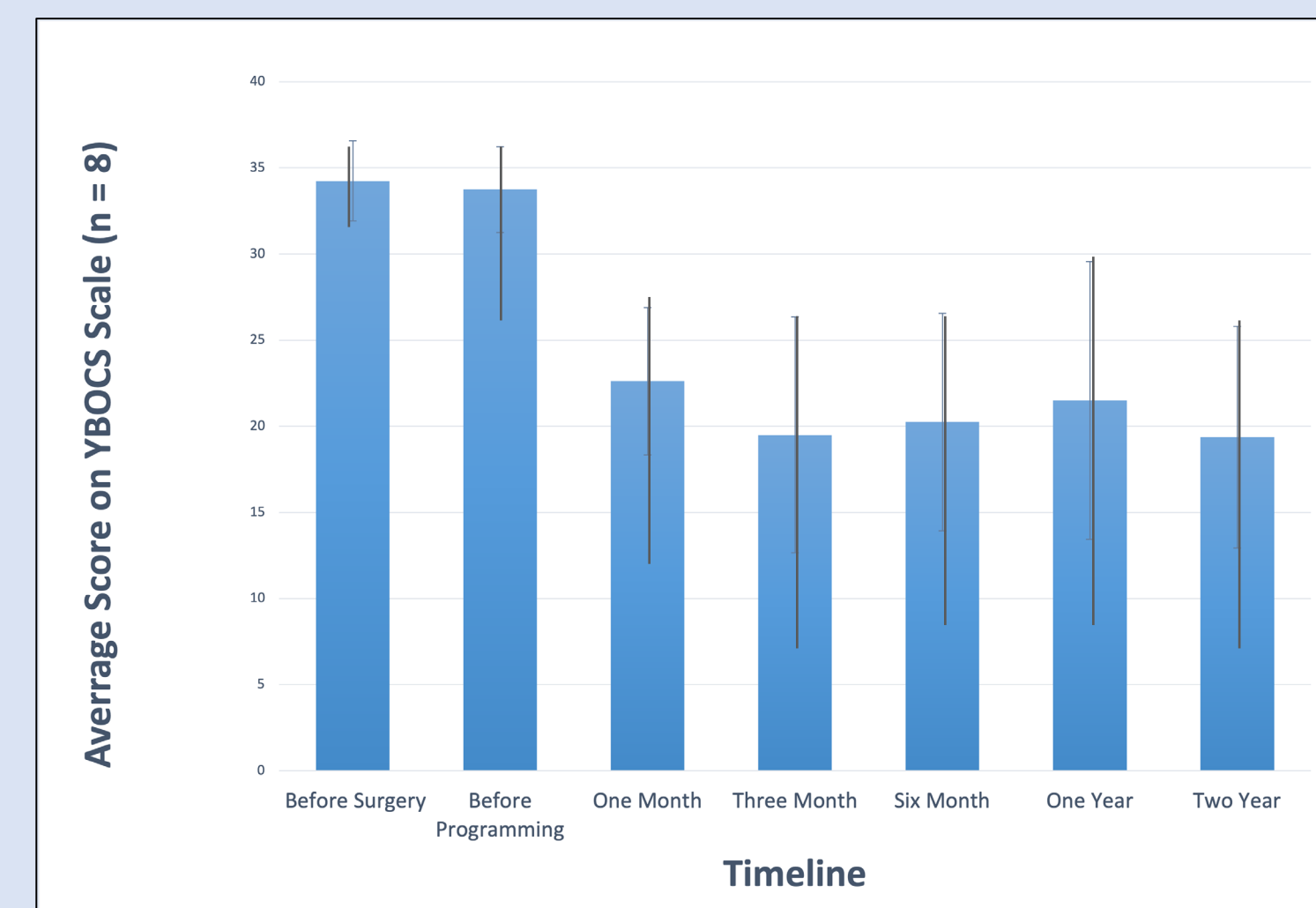
## Methods and Results

Data was taken from **eight** patients with the OCD clinic at CU Anschutz, participation ranges from 2-7 years. All adult patients.

Along with consistent programming, patients also went through therapy (ERP, CBT).

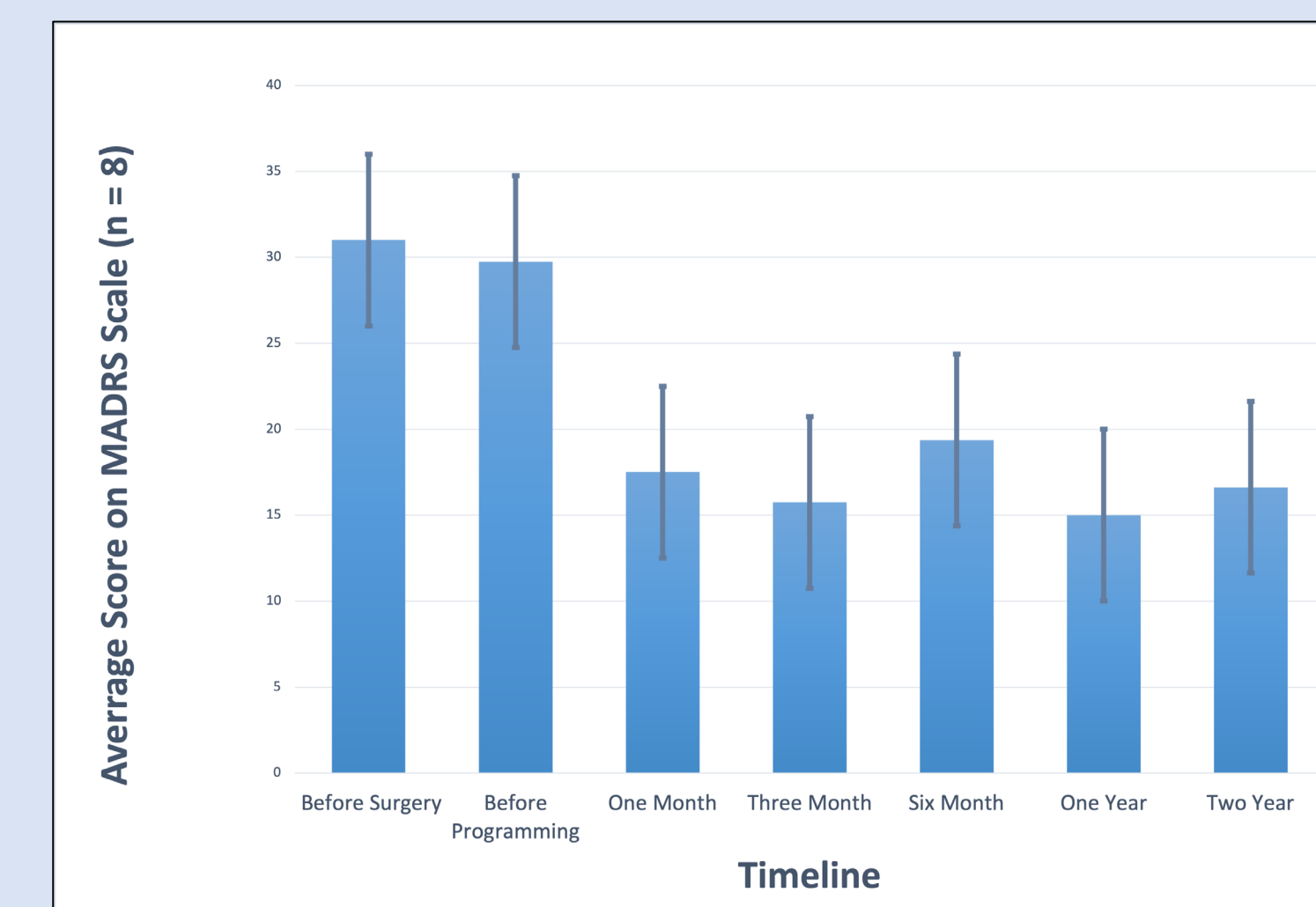
Data was analyzed using a **one-way ANOVA** for each scale, followed by a **pairwise t-test** bearing significant results.

Data taken from intervals of one month, three months, six months, one year, and two years. No patients were recruited for the purposes of this study with everyone already being patients with the clinic. Each programming session was proceeded with assessments, followed by therapy sessions throughout the week



**YBOCS**

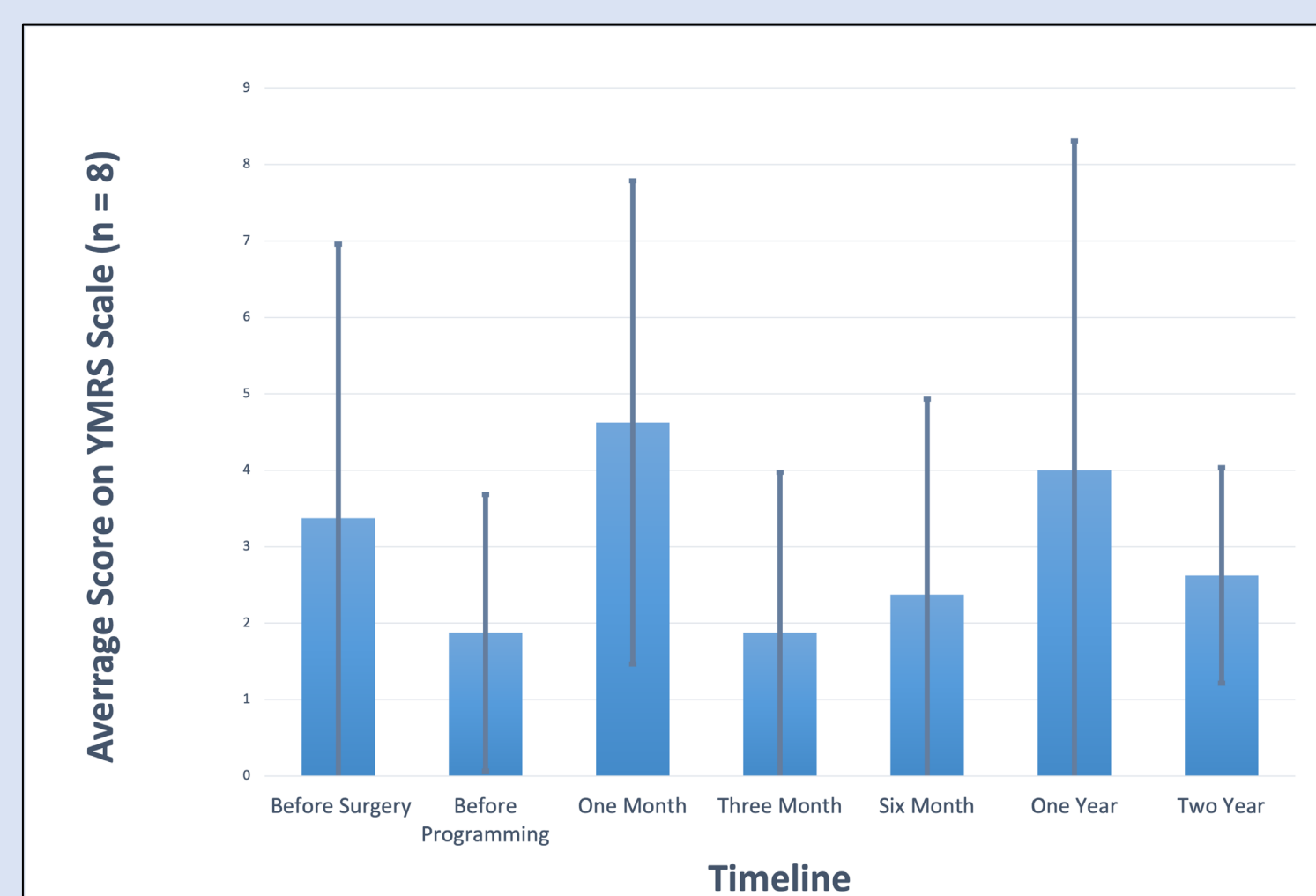
**p < 0.05**



**MADRS**

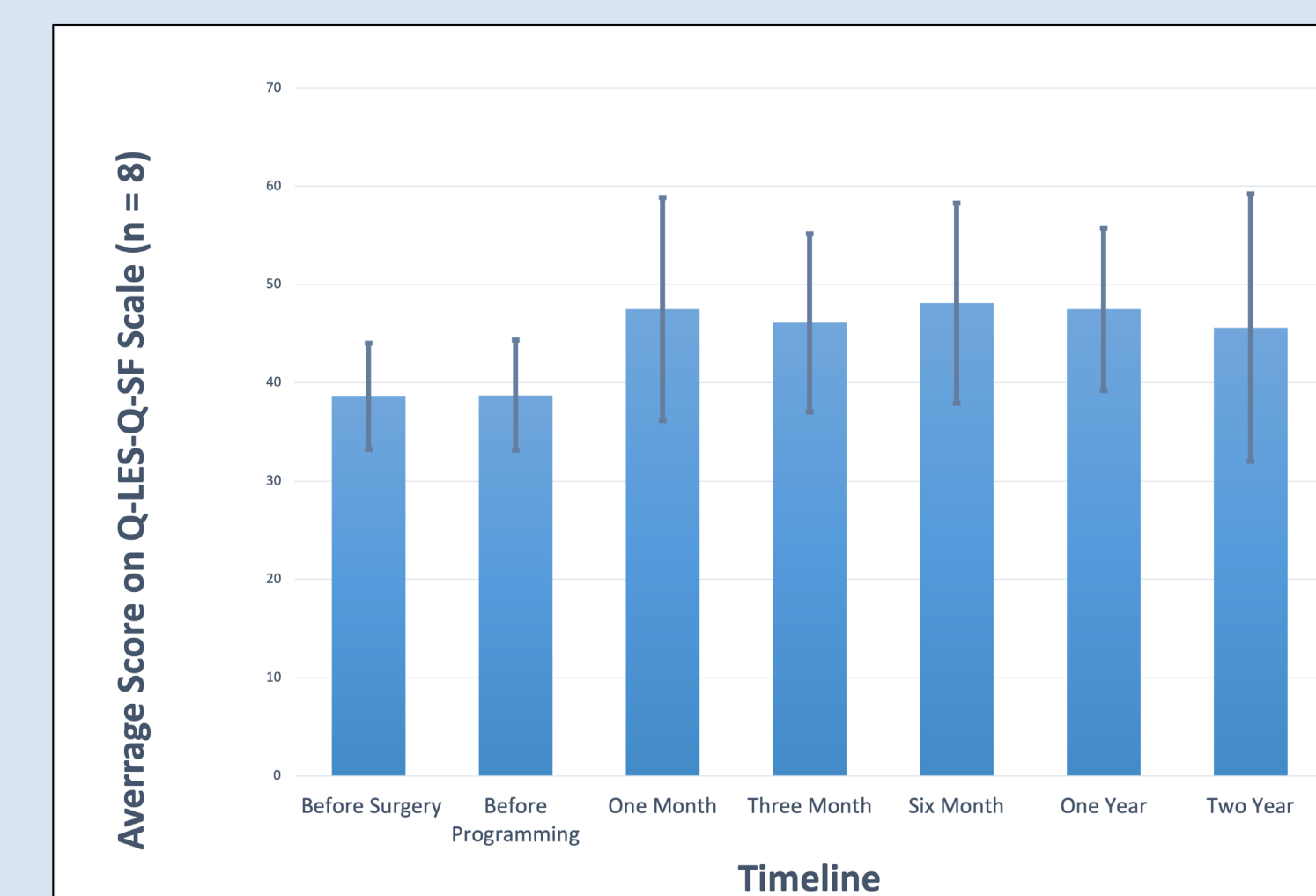
**p < 0.05**

P-value **less than 0.05** denotes significance in a study, anything above this lessens the impact of the findings.



**YMRS**

**p = 0.372**



**Q-LES-Q-SF**

**p = 0.19**

## Discussion

As predicted, both YBOCS and MADRS scores showed significant positive results. While progress isn't linear, the before and after comparison is evident.

YBOCS are the most telling scale for OCD, showing DBS to be a consistent treatment for OCD directly. Depression, being a big comorbidity, also should decrease

Quality of life showed improvement, albeit insignificant through analysis. YMRS scores showed no consistent improvement over two years

YMRS scores reflect exactly why bipolar disorder is an exclusion factor. Quality of life could be hampered by noted lack of social life improvement.

### Strengths

- Strong uniformity in treatment
- Long length of study
- Clinically focused, taking care of patients

### Weaknesses

- Limited Sample Size
- Inconsistent time intervals between patients' visits

## Implications

This study can serve as a guideline to further testing for DBS, which has minimal sample size nationally due to unfair problems between insurance companies and its H.D.E status. Notable improvements in OCD and depression symptoms should warrant significantly more testing with an emphasis on quality of life.

### Future Directions...

- Altruism within OCD patients
  - People with OCD regularly exhibit sensitive and empathetic tendencies towards other people as a result of being hyper-aware most of the time.
- Further exploration into possible quality of life trends related to DBS
  - Qualitative interviews and data tracking
  - More in-depth investigation

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