



**Keywords:** subthalamic nucleus stimulation, voice, fluency, dysarthria, Parkinson's disease

**Introduction**

Subthalamic nucleus (STN) stimulation is a well-established treatment for Parkinson's disease (PD) motor symptoms. However, its effects on speech and voice are less clear. Some studies suggest that STN stimulation can improve speech fluency and reduce dysarthria in PD patients. This study aims to investigate the effects of STN stimulation on voice and fluency in PD patients with dysarthria. The study involves a group of PD patients who have been treated with STN stimulation. The researchers will measure various aspects of voice and fluency, such as speech rate, articulation, and voice quality, before and after STN stimulation. The results of this study will help to determine whether STN stimulation can be used as a treatment for speech and voice problems in PD patients.

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**L e g e**

... ..

**Mea e**

**I e g b a d d c**

... ..

**Ac ca a**

... ..

**F e c a g**

... ..

**Re**

**S a e e e e a e d e a c e**

**I e g b** : ... ..  
**p** ... ..  
**F** ... ..  
**p** ... ..  
**F** ... ..  
**p** ... ..

... ..  
**t** ... ..  
**p** ... ..  
**t** ... ..  
**p** ... ..  
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**Citation:**

Page 4 of 8



**Citation:**

Page 6 of 8

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Page 7 of 8

**Citation:**