

# Thalamic Deep Brain Stimulation for Traumatic Brain Injury

This is the first article in a two-part series describing subject and family perspectives from the central thalamic deep brain stimulation for the treatment of traumatic brain injury using the Medtronic PERCEPT™ PC **NEUROSTIMULATOR** first-in-human invasive neurological device trial to achieve cognitive restoration in moderate to severe traumatic brain injury, with subjects who were deemed capable of providing voluntary informed consent. In this article, we report on interviews conducted prior to surgery wherein we asked participants about their experiences recovering from brain injury and their perspectives on study enrollment and participation. We asked how risks and benefits were weighed, what their expectations and fears were, and how decisions were reached about trial participation. We found that informed consent and enrollment decisions are fraught. Subjects and families were often split, with subjects more focused on putative benefits and families concerned about incremental risk. Both subjects and families viewed brain injury as disruptive to personal identity and relationships. As decisions were made about study enrollment, families struggled with recognizing the re-emergent agency of subjects and ceding decision-making authority to subjects who had previously been dependent upon them for protection and guidance. Subjects and family members reported a hope for the relief of cognitive disabilities, improved quality of life, normalization of interpersonal interactions, and a return to work or school as reasons for study participation, along with altruism and a desire to advance science. Despite these aspirations, both subjects and families appreciated the risks of the intervention and did not suffer from a therapeutic misconception. A second essay to be published in the next issue of Cambridge Quarterly of Healthcare Ethics-Clinical Neuroethics will describe interviews conducted after surgery, the effects of cognitive restoration for subjects, families, and challenges presented to the social structures they will call upon to support them through recovery. This subsequent article will be available online prior to its formal publication in October 2023 <sup>1)</sup>.

<sup>1)</sup>

Fins JJ, Wright MS, Henderson JM, Schiff ND. Subject and Family Perspectives from the Central Thalamic Deep Brain Stimulation for Traumatic Brain Injury Study: Part I. Camb Q Healthc Ethics. 2022 Oct;31(4):419-443. doi: 10.1017/S0963180122000226. PMID: 36398511.

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