

Western University

Scholarship@Western

Inspiring Minds – A Digital Collection of
Western's Graduate Research, Scholarship and
Creative Activity

Inspiring Minds

November 2022

Novel Device for Improving Stroke Detection During Surgery

Farah Kamar

Western University, fkamar@uwo.ca

Follow this and additional works at: <https://ir.lib.uwo.ca/inspiringminds>

Citation of this paper:

Kamar, Farah, "Novel Device for Improving Stroke Detection During Surgery" (2022). *Inspiring Minds – A Digital Collection of Western's Graduate Research, Scholarship and Creative Activity*. 348.

<https://ir.lib.uwo.ca/inspiringminds/348>

Farah Kamar

Stroke is one of the most severe complications that can occur during surgery. Monitoring oxygen levels in the brain is one way to detect stroke early to help surgeons act quickly and prevent permanent brain damage. Cerebral oximetry has become standard for brain monitoring during surgery; however, probes are only placed on the patient's forehead. Consequently, if oxygen decreases in different brain regions, this can go undetected. Cerebral oximetry is a non-invasive imaging modality which relies on near-infrared spectroscopy (NIRS). This imaging modality uses light to detect the oxygen levels in tissue. My work focuses on assessing the sensitivity of a novel full-head coverage NIRS device (called the Kernel Flow) to regional oxygen changes in the brain. We hope to conduct a feasibility study using the device during surgery to evaluate whether this device addresses the clinical need for a full-head coverage oxygen monitoring device during surgery.