

Participate in Research

Examining the Effects of Systemic Blood Flow in NIRS-BCIs in Children



**Principal Investigator:
Tom Chau**



CONTACT INFORMATION:

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We invite you to take part in an research study to advance the development of a communication device for children.

What is this study about:

Near-infrared spectroscopy (NIRS) measures blood oxygen levels in the brain. We are looking to adapt this technology for brain-computer interfaces in children.

Who can participate?

We are looking to recruit typically developing children with the following profile:

- Between 8 – 12 years old
- Can understand verbal and written instructions in English
- Able to pedal on a stationary recumbent bicycle
- Have no health issues that include: neurological, psychological, cardiopulmonary, respiratory, or drug and alcohol-related conditions, trauma-related or otherwise.

What's involved?

- You will be asked to **attend 3 sessions** at Holland Bloorview
- **Each session will be approximately 1 hour long**
- An NIRS cap will be placed on your head with probes inserted in holes to touch your scalp
- Forehead pads will also measure blood flow in your scalp and a finger pad will measure your heart rate
- You will be asked to ride a bike for 5 mins to increase your heart rate, twice.
- You will be asked to silently list out words following a auditory prompt

What are the risks and benefits of participating?

Participation in this study will help adapt this technology for children who need devices to communicate. You may get tired or frustrated during the study, but you can stop at any time.

You will receive a \$25 gift card and compensation for parking for each session as a token of appreciation for your participation.

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