

# **Brain function measurements for evidence based occupational therapy practice**

## **Lecturer:**

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**Time:** 10:00-11:30

**Room:** 105

**Minimum number of participants:** Unspecified

**Estimated capacity:** 60 (Unspecified)

**Participation fee per person:** Free of charge

## **Learning Objectives**

The learning objectives of this workshop are: 1) to understand why brain activity and cerebral blood flow measurements are useful for occupational therapy practice; 2) to review studies that used brain activity and cerebral blood flow for assessments, determination of intervention policies and measures, and evaluation of effectiveness; 3) to understand the concepts of EEG and NIRS from measurement to analysis and to learn specific methods; and 4) to share the utility of EEG and NIRS.

## **Outline**

Recent technical advancements in brain function measurement methods have made it possible to measure brain activity and cerebral blood flow in real time when humans are performing work activities, activities of daily living, or instrumental activities of daily living, such as handicrafts and driving a car. It has also become possible to induce alterations in brain activity noninvasively using transcranial magnetic stimulation (TMS) and other techniques. Electroencephalography (EEG) to measure brain activity and near-infrared spectroscopy (NIRS) to measure cerebral blood flow can be used by occupational therapists themselves without the need for a clinician or radiological technician. Participants will be provided with the following content: 1) a lecture on the physiology of brain activity and cerebral blood flow;

2) a literature review; 3) hands-on measurements and analysis using EEG and NIRS; and 4) an exchange of opinions. 3) will include a hands-on session using portable devices.