

Empowering Independence: A hands-on exploration of purposeful activity-based electrical stimulation therapy for severe upper extremity paralysis

Lecturer:

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Time: 10:00-11:30

Room: 104

Minimum number of participants: 5

Estimated capacity: 20

Participation fee per person: Free of charge

Learning Objectives

- a. To identify the unique challenges and characteristics associated with severe upper extremity paralysis induced by chronic stroke.
- b. To understand the principles and methodologies underlying PA-EST as an effective intervention for individuals with severe upper extremity paralysis.
- c. To acquire practical knowledge and skills in implementing PA-EST through hands-on exploration of muscle electrical stimulation equipment (NESSH200W) for meaningful engagement in activities of daily living.

Outline

We want to create programs that use robots and rehabilitation tools to help activities of daily living (ADL) of people. We will give a lecture focusing on the purposeful activity-based electrical stimulation therapy (PA-EST) program for severe upper extremity paralysis caused by chronic cerebral infarction. We will show the actual intervention method and research results.

The practice of PA-EST consists of three steps. Step 1 involves familiarization of the patient with electrical muscle stimulation (EMS) and improvements in upper extremity function. Step 2 aims to improve the patient's ability to predict their own purposeful activity. Step 3 aims to improve the patient's adaptation to the ADL.

We will present the research results of interventions aimed at individuals with severe hemiparetic upper extremity impairments, showcasing outcomes related to motor function, EEG, and fNIRS. Additionally, participants will have the opportunity to experience a part of the PA-EST program using EMS devices.