Invitation to participate in a scientific study on "Investigating motor neuron population during variable force escalation of finger movements"

The Neurological Observations Assistant in Healthcare 2.0 (NOAH 2.0) project[1] aims to establish a link between movements, physiological data and natural activities. As one of our starting points, we are looking for links between the activity of the nervous system and the forces produced by the hand. The mapping between neurons to force has potential to improve future interfaces for controlling assistive devices. We are looking for participants for our scientific study which is aiming to improve neural interfaces.

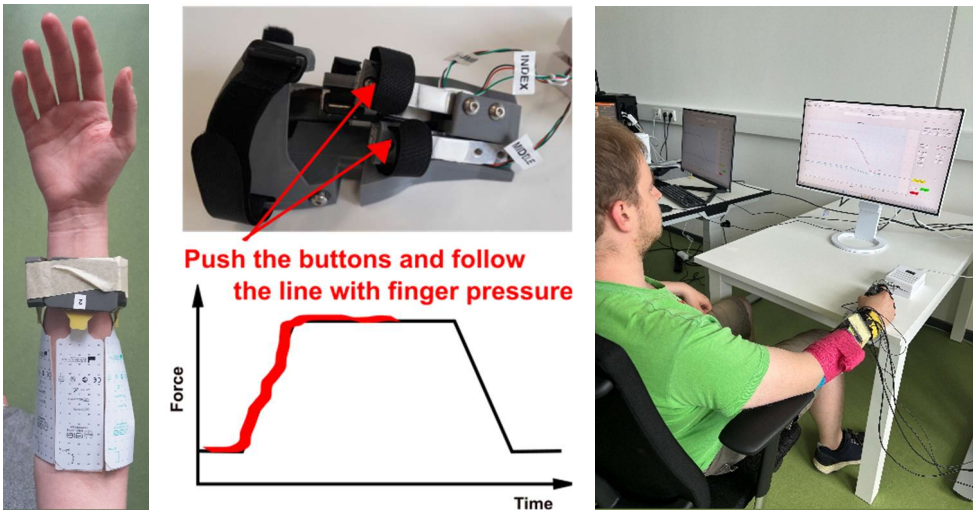

Fig. 1: Left: Patch-like sensors (electrodes) over the forearm. Middle: Side view of the mouse-like sensor and line to follow with finger pressure. Right: Participant operates the mouse to follow a guiding line on the screen.

In this study, the force of finger movements is measured using a specially developed computer mouse. The task is to push the mouse buttons while measuring the activity of neurons in the forearm by placing patch-like sensors on the skin of the forearm. The data is used to understand how finger movements are controlled by the nervous system.

The study will take place from 14 July 2025 to 26 September 2025 at the Kulmbach Campus in the building of the "Alte Spinnerei" (ASP, Hans-Hacker-Straße) on the first floor, room 124.1, at the Chair of Digital Health. The duration of the experiment is up to two hours.

Participation is voluntary, but it is required that you are between 18 and 65 years old, have no known neurological or infectious skin diseases, and are willing to shave/let us shave your forearm over the area where we place the patch sensors.

If you are interested in helping us, please contact us by email (jan.bodenschlaegel@uni-bayreuth.de & renato.mio-zaldivar@uni-bayreuth.de) or in person (Campus Kulmbach, ASP, first floor, Chair of Digital Health) and we will answer any questions you may have and arrange an appointment at your convenience.

We would be delighted to have you participate in our study,

Principal Investigator: Prof. Dr. Aldo Faisal - aldo.faisal@uni-bayreuth.de

Research Team: Jan Bodenschlägel - jan.bodenschlaegel@uni-bayreuth.de
Renato Mio - renato.mio-zaldivar@uni-bayreuth.de

[1] This project was approved by the Review Board of the University of Bayreuth, Bayreuth, Germany (ethics committee of the University of Bayreuth) on 17.07.2024 with request reference number 24-030

Chair of Digital Health, Faculty VII, University of Bayreuth, Kulmbach Campus,
Fritz-Hornschuch-Str. 13, 95326 Kulmbach
E-mail: Faisal_Lab@uni-bayreuth.de