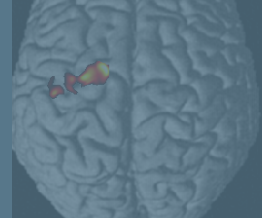


# Functional NearInfraredSpectroscopy Brain Imaging Laboratory (fNIRS-Lab)



*A guideline for Brain Imaging studies at the Department of Neurology, Psychosomatic Medicine and Psychiatry, Institute of Health Promotion and Clinical Movement Science, German Sport University Cologne (GSU)*

The functional NearInfraredSpectroscopy Brain Imaging Laboratory (fNIRS-Lab) of the Department of Neurology, Psychosomatic Medicine and Psychiatry, Institute of Health Promotion and Clinical Movement Science at the German Sport University Cologne (GSU) is a multidisciplinary research unit that provides technical support for a wide spectrum of neuroscientific research. The main focus of the fNIRS-Lab is a non-invasive neuroimaging-based research in humans with functional NearInfraredSpectroscopy (fNIRS).

As fNIRS-based projects compose the major part of neuroimaging research at the fNIRS-Lab, we provide extensive technical and methodological support in this area. The main purpose of fNIRS is to provide new insights into the functioning of the brain. Hereby we use fNIRS to examine brain activity when the subject performs a task; subsequent statistical analyses permit to infer the role of certain brain areas in different mental processes. Due to the wide variety of neuroscience topics the fNIRS-Lab has meanwhile acquired an extensive expertise in evaluating cognitive, motor, emotional and perception processes. Moreover, a major focus of our group lies on clinical questions in neurology, psychosomatics, and psychiatry and the combination of fNIRS with several patient groups (e.g., concussed patients) and their behavioural scores.

## Equipment:

DYNOT 32\*32 channel system  
Working place with a stimulation PC  
Auditory/visual stimulation equipment  
Software to prepare experiments: E-Prime  
Working place for data analysis  
Software to analyze fNIRS data: Matlab, Matlab-based toolboxes: NIRS-SPM, Homer2, NIRStar, etc.

## Expertise and support by the fNIRS-Lab team:

Preparation of the experiment (includes consulting, paradigm programming, developing/improving scanning protocols)  
Data collection  
Data analysis  
Scientific report

In order to get started working with us, just send a request to the laboratory leader of fNIRS-Lab and describe the desired service. You will be informed about possible further requirements.



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