

## Modular Curriculum

This training program is a series of three modules about eloquent brain tumor treatment and structured as follows:

- Module 1: TMS-Transcranial Magnetic Stimulation (250€)
- Module 2: White Matter Tractography (250€)
- Module 3: Brain Tumor Surgery (750€)

## Trainers

### Prof. Dr. Thomas Picht\*

Professor of Digital Neurosurgery  
Head of the Image Guidance Lab,  
Charité - Universitätsmedizin Berlin

### Dr. Melina Engelhardt

Head of the research group Neuromodulation,  
Charité - Universitätsmedizin Berlin

### Dr. med. Tizian Rosenstock

Head of the research group Language Mapping,  
Charité - Universitätsmedizin Berlin

## Partners



## Location

Seminar rooms,  
Campus Charité Mitte, 10117 Berlin  
**Luisenstraße 64 | Room 15003 (15<sup>th</sup> floor)**

## Arrival

with public transportation  
S+U Berlin-Hauptbahnhof (S5/S7/S75/S9)  
U Naturkundemuseum (U6)  
U Oranienburger Tor (U6)  
S+U Friedrichstr. (S1/S2/S5/S7/S75/S9/U6)

Please note that Berlin-Mitte doesn't provide a great number of parking spaces. Therefore, using the city's public transportation system would definitely be a good alternative. If you decide to travel via public transportation, we recommend using [www.bvg.de](http://www.bvg.de) for planning your route.

## Host

Charité Universitätsmedizin Berlin  
Berliner Simulations- und Trainingszentrum  
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## Registration

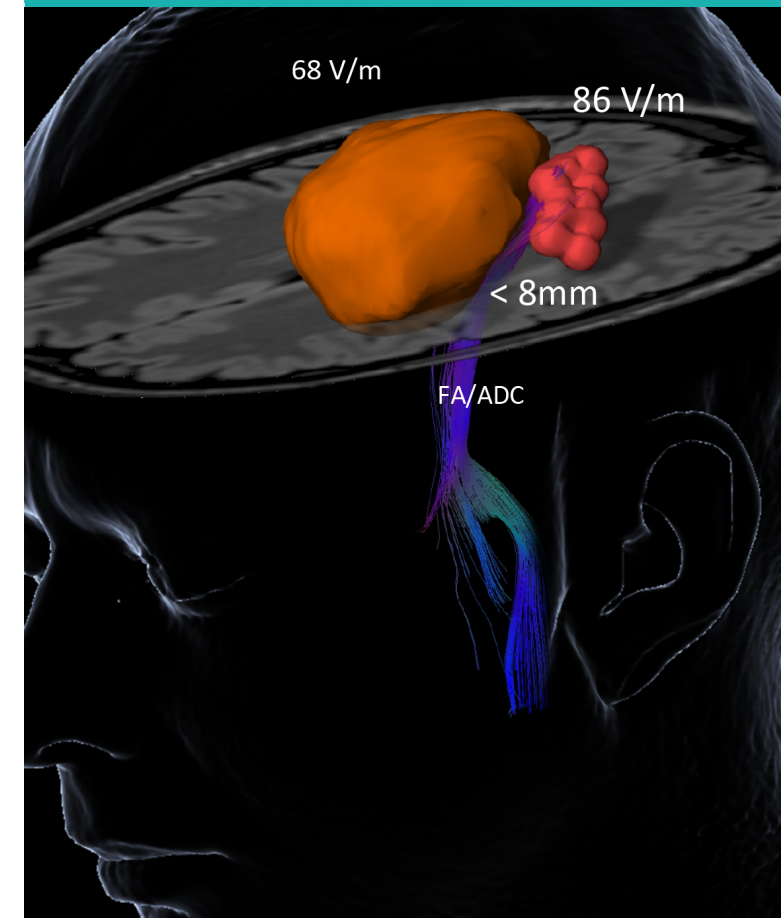
via e-mail: [berliner-simulationstraining@charite.de](mailto:berliner-simulationstraining@charite.de)  
Website: [best.charite.de](http://best.charite.de)

**Maximum no. of participants: 12**



## Berliner Simulations- & Trainingszentrum

### Brain Tumor Treatment Module 1: TMS - Transcranial Magnetic Stimulation



\*scientific director



Dates 2023

30<sup>th</sup> June

Registration fee

250 € per participant

## Clinical relevance

Due to the progress made in terms of individualization of modern therapy methods in neurosurgery, non-invasive functional diagnostics are expected to become even more relevant than they already are. Being able to create a visual representation of individual functional networks benefits the planning process of therapy strategies as well as the actual procedures. Furthermore, it enables personalized risk stratification for surgery.

One technique of non-invasively mapping brain areas of the motor system and regions associated with language is navigated transcranial magnetic stimulation (nTMS). When correctly applied and interpreted, it is possible to reliably identify essential cortical areas of the brain at high spatial resolution with the aid of nTMS. Apart from its important role in the treatment of the supratentorial brain tumors in presumed eloquent areas, nTMS also proves advantageous when dealing with other pathologies. For example, successful risk stratification in neurosurgical interventions for brainstem and spinal lesions relies on the analysis of individual excitability profiles in motor brain areas based on nTMS derived neurophysiological data.

## nTMS - a tool for analysis:

nTMS results help to depict functionally essential brain regions. Combined with tractography to visualize the subcortical networks, this information is of great clinical value. Not only does nTMS allow to standardize tractography, but it also builds the base for evaluation of the functional relevance and the vulnerability of fiber tracts by adding functional information to the topographical network analysis (see module 2). In addition, the potential of nTMS as a neuromodulatory tool will be addressed.

## Competencies taught

- Basic skills in brain anatomy
- Basic skills in functional anatomy
- Basic understanding of nTMS
- nTMS motor and language mapping
- Pitfall-management in difficult cases

## Training schedule

7.30	Registration and small breakfast
8.00	TMS introduction <ul style="list-style-type: none"><li>• TMS basics</li><li>• functional neuroanatomy</li><li>• clinical tests</li><li>• TMS and neuromodulation</li></ul>
08.45	„hot seat“ TMS motor mapping <ul style="list-style-type: none"><li>• RMT determination</li><li>• motor area determination</li></ul>
10.15	„hot seat“ TMS language mapping <ul style="list-style-type: none"><li>• aphasia testing and choice of task</li><li>• language mapping</li></ul>
13.00	LUNCH BREAK

If you would like to [extend your knowledge](#) in tractography, you can book the second module of this series of training courses as well. It will begin subsequent to the first module at [2:00 p.m.](#) Please take a look at the second module's flyer for further information about this training unit!