Dear Colleagues,

with this course, we offer an introduction into the interesting field of MR proton spectroscopy for clinical applications for physicians and technologists who are experienced in MR tomography applications, but not in spectroscopy.

Single voxel proton spectroscopy and spectroscopic imaging provide valuable additional information for clinical diagnostics in many oncological, pediatric and metabolic brain disorders. At most clinical MR scanners, proton spectroscopy can be performed without any additional hardware.

Our seminar starts with basic theory and hints for the practical performance of spectroscopic measurements and it includes practical demonstrations at one of our MR scanners. All speakers have several years of experience with this technique.

In a further part of the seminar, an overview about clinical applications in neuroradiological and neuropediatric diagnostics will be given.

We are pleased to invite you to our MR spectroscopy course in the University Hospital of Tübingen.

Prof. U. Klose Prof. U. Ernemann

Program

9.00 U. Ernemann: Welcome address

Basics and Practical Performance

9.05 U. Klose: Physics of MR proton spectroscopy (Signal creation, differences compared to MR imaging)

9.30 G. Chadzynski: Measurement sequences for spectroscopy (Single voxel measurements, spectroscopic imaging, double spin echo, STEAM)

10.00 A. Gröger: Shimming: what is it and how to perform it? (Principles of automatic shim, demonstration of steps for manual shimming)

10.30 Coffee break

10.45 Practical demonstrations at the MR scanner

11.30 B. Bender: Practical aspects of volume of interest positioning for spectroscopy measurements (possible distortions by lipid-signals, by air-tissue borders and other regions with field inhomogeneities)
**Program**

**Evaluation of MR Spectroscopic Data**

12.00 U. Klose:
Postprocessing of MR spectra
(Description of usual postprocessing steps, how to perform phase correction, calculation of metabolic maps)

12.30 R. Kolb:
Quantification of metabolite concentrations
(Fitting of spectra at the MR scanner and with special evaluation programs, e.g. LCModel)

13.00 Lunch break

**Clinical Applications of MR Spectroscopy**

13.45 T. Nägele:
Spectroscopic findings in neurodegenerative diseases and in inflammation

14.15 S. Bisdas:
Spectroscopic imaging of brain tumours

14.45 Coffee break

15.00 M. Wilke:
Use of MR-spectroscopy in neuropediatrics

15.30 B. Bender:
Demonstration of selected clinical cases

16.00 Seminar closing

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**Speakers**

- **Prof. Uwe Klose PhD**
  Department of Diagnostic and Interventional Neuroradiology

- **Grzegorz Chadzynski PhD**
  Department of Biomedical Magnetic Resonance

- **Adriane Gröger PhD**
  Department of Neurology, University of Mainz

- **Benjamin Bender MD**
  Department of Diagnostic and Interventional Neuroradiology

- **Till Hauser MD**
  Department of Diagnostic and Interventional Neuroradiology

- **Rupert Kolb MS**
  Department of Diagnostic and Interventional Neuroradiology

- **Prof. Thomas Nägele MD**
  Department of Diagnostic and Interventional Neuroradiology

- **Ass. Prof. Sotirios Bisdas MD**
  Department of Diagnostic and Interventional Neuroradiology

- **Ass. Prof. Marko Wilke MD**
  Department of Pediatric Neurology and Developmental Medicine

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**Registration**

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Conference fee: 150 €
Reduced fee for members of ESNR or ESMRMB: 120 €

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**Venue**

University Hospital Tübingen
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