

## Biographical Sketch

### Personal Information

Name: **NIESS Fabian, PhD**  
Current affiliation: Medical University of Vienna

### Higher Education

2015 - 2020 PhD, Center for Medical Physics and Biomedical Engineering, Medical University of Vienna, Austria, Supervisor: Martin Meyerspeer, PhD  
2011 - 2015 MSc, Institute of Biomedical Imaging, University of Technology Graz, Austria  
2007 - 2011 BSc, Institute of Biomedical Imaging, University of Technology Graz, Austria

### Appointments & Positions

2021 - ongoing Post-doctoral researcher, MR Center of Excellence, Department of Biomedical Imaging and Image-guided Therapy, Medical University Vienna, Austria  
2020 - 2021 Post-doctoral researcher, MR Center of Excellence, Center for Medical Physics and Biomedical Engineering, Medical University Vienna, Austria  
2015 - 2020 PhD Student, MR Center of Excellence, Center for Medical Physics and Biomedical Engineering, Medical University Vienna, Austria

### Selected Grants, Fellowships and Awards

2023 - ongoing Funding, FWF Clinical Research Project, KLI1106 (Imaging dynamics of glioma metabolism via MRI), € 399.998, Role PI

### Career Breaks if applicable

08.2022 – 10.2022 Paternity Leave

### Top 10 Selected Publications

- 1H magnetic resonance spectroscopic imaging of deuterated glucose and of neurotransmitter metabolism at 7T in the human brain. Bednarik P, ..., **Niess F**... Bogner W. *Nature Biomedical Engineering* 2023;7(8):1001-1013; doi: 10.1038/s41551-023-01035-z
- Balanced steady state free precession enables high-resolution dynamic 3D Deuterium Metabolic Imaging of the human brain at 7T. Frese S, ..., **Niess F**. *Investigative Radiology* 2025; doi: 10.1097/RLI.0000000000001196
- Whole-brain deuterium metabolic imaging via concentric ring trajectory readout enables assessment of regional variations in neuronal glucose metabolism. **Niess F**, ..., Bogner W. *Human Brain Mapping* 2024;45(6):e26686; doi: 10.1002/hbm.26686
- Noninvasive 3-Dimensional 1H-Magnetic Resonance Spectroscopic Imaging of Human Brain Glucose and Neurotransmitter Metabolism Using Deuterium Labeling at 3T: Feasibility and Interscanner Reproducibility. **Niess F**, ..., Bogner W. *Investigative Radiology* 2023;58(6):431-437; doi: 10.1097/RLI.0000000000000953
- Reproducibility of 3D MRSI for imaging human brain glucose metabolism using direct (2H) and indirect (1H) detection of deuterium labeled compounds at 7T and clinical 3T. **Niess F**, ..., Bogner W. *Neuroimage* 2023;277:120250; doi: 10.1016/j.neuroimage.2023.120250
- Concentric Ring Trajectory Sampling With k-Space Reordering Enables Assessment of Tissue-Specific T1 and T2 Relaxation for 2H-Labeled Substrates in the Human Brain at 7T. Bader V, ..., **Niess F**. *NMR in Biomedicine* 2025;38:e5311, doi: 10.1002/nbm.5311
- 3D localized lactate detection in muscle tissue using double-quantum filtered <sup>1</sup>H MRS with adiabatic refocusing pulses at 7T. **Niess F**, ..., Meyerspeer M. *Magnetic Resonance in Medicine* 2022;87(3):1093-1637; doi: 10.1002/mrm.29061

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8. Interleaved  $^{31}\text{P}$  MRS /  $^1\text{H}$  ASL for analysis of metabolic and functional heterogeneity along human lower leg muscles at 7T. **Niess F**, ..., Meyerspeer M. *Magnetic Resonance in Medicine* 2020;83(6):1885-2381; doi: 10.1002/mrm.28088
  9. Dynamic multivoxel-localized  $^{31}\text{P}$  MRS during plantar flexion exercise with variable knee angle. **Niess F**, ..., Meyerspeer M. *NMR in Biomedicine* 2018;31:e3905 doi: 10.1002/nbm.3905
  10. Interleaved multivoxel  $^{31}\text{P}$  MR spectroscopy. **Niess F**, ..., Meyerspeer M. *Magnetic Resonance in Medicine* 2017;77:921-927. doi: 10.1002/mrm.26172
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### **Complete Publication List**

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Link: <https://scholar.google.com/citations?user=bLYQPC8AAAAJ&hl=de&oi=ao>

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### **Additional skills and experience**

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Experienced MR researcher with 10 years of expertise, an MSc in Biomedical Imaging, and a PhD in Medical Physics (2020, Medical University of Vienna). Specializes in MR pulse sequence development and fast acquisition techniques for Deuterium Metabolic Imaging at 3T/7T. Currently PI of an FWF-funded research grant (KLI 1106), supervising 2 PhD students.

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