### Kurzzusammenfassung:
Neurological disorders are the leading cause of disability in the world. Among them Parkinson's disease (PD) is the fastest growing. There are currently roughly 7 million PD patients and this number is expected to double by the year 2040. Clinical PD diagnosis occurs only when the motor symptoms are apparent and 50% or more of the SN dopamine neurons have already died and this is reflected in the neuromelanin (NM) loss. SN iron deposition appears to be associated in part with NM loss and over time may play a key role in PD pathophysiology. NM and iron together may provide a new means for the early diagnosis of PD. In practice, it’s very challenging clinically to diagnose PD especially at the early stage, because there are many disease duration components in the diagnose criteria. In this talk, I will focus on iron deposition and neuromelanin loss in the substantia nigra (SN) as measured by QSM and MTC in PD and also AI applications in PD.

### Lernziele:
1. The ability to visualize iron deposition using QSM and its role in PD
2. The ability to visualize NM using NM-MRI and its role in PD
3. AI applications in PD