# OXFORD

Neuroimaging reseach in Oxford is focussed araund the

Oxford Centre for Functional MRI of the Brain (FMRIB) and the Oxford Centre for Human Brain Activity (OHBA). The twin centres, with a strong expertise in MR physics and image analysis (FSL), are fully integrated with the Oxford University Departments of Clinical Neurosciences, Psychiatry and Psychology.

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## 7T equipment

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|---|---|
| Hardware | Whole body actively-shielded MR (Siemens) - research only (32ch head coil, parallel transmission, dynamic shim) |
| Operational since | 2011 |

Other equipment (human imaging): 2 x 3T MR (Siemens Prisma)* MEG* and EEG*
* = research only

## 7T Methods (as relevant for EUFIND)

Acquisition

- High resolution EPI
- Resting state fMRI
- Task fMRI
- Multiband/SMS
- Spinal imaging
- Proton spectroscopy
- RF coil evaluation
- QA for fMRI
- MR-safety (implants, coils)

Analysis

- FSL – structural, resting state, diffusion, fMRI
- Analysis pipelines for HCP, lifespan HCP (including 7T) and UK Biobank
- Automated multimodal brain segmentation of subcortical structures only distinguishable at 7 Tesla

## Research in neurodegeneration

Clinical and basic research topics

- Multi-center studies in preclinical and manifest HD, PD, ALS/FTD, epilepsy and strake
- Intervention studies on structural and functional plasticity – tDCS, real-time feedback
- Functional and structural connectivity of cognitive, motor and limbic circuits
- MCI/AD

Cohorts

- Healthy young and older controls
- Preclinical and manifest HD
- PD
- ALS/FTD