

Liverpool Magnetic Resonance Imaging Centre (LiMRIC)

Supporting research into some of the most challenging health issues from Alzheimer's to obesity

Housed in a bespoke building in the heart of the University of Liverpool's campus, LiMRIC is the only human clinical research facility of its kind in the city available to external organisations.

Featuring a brand new Siemens Prisma 3T scanner, our well-equipped, high quality facility contains the necessary infrastructure and support to carry out structural and functional MRI on human subjects of all ages, both healthy subjects and patients, as well as structural imaging in samples of animal, plant or preserved human origin.

Our dedicated team offers a wide range of support on all aspects of imaging from preparing successful ethics applications and advising on clinical governance to project design and methodology. We have well-defined protocols to handle incidental findings in human studies, and can connect you with colleagues who can assist with specialist analysis and interpretation of your data.

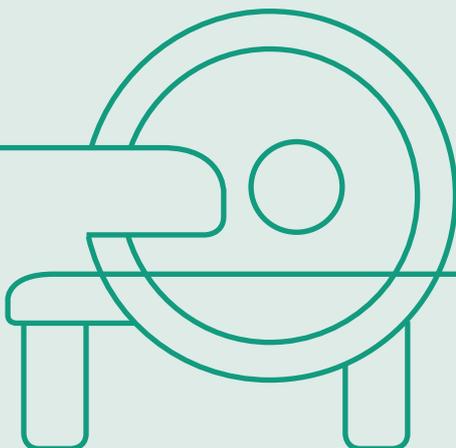
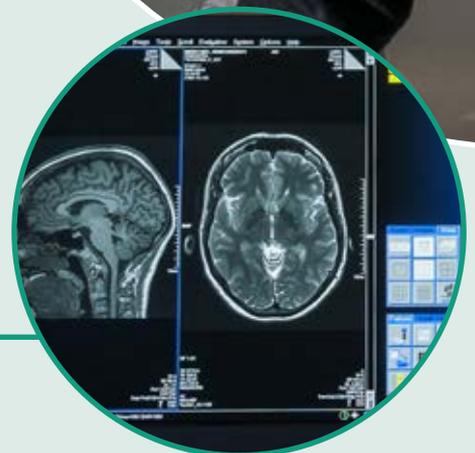
We also offer bespoke training on our equipment to enable researchers to undertake projects more independently, and can provide hospitals with regular access to our facilities to help meet the growing clinical demand for MRI scans.

Our facilities

- Siemens Prisma 3T – state-of-the-art scanner with custom exercise rigs capable of both structural and functional magnetic resonance studies
- High quality patient accommodation areas
- Well-equipped laboratories for undertaking preparatory or supporting work.

Our expertise

Our staff have experience in 3T MR scanning, including functional MRI, magnetic resonance spectroscopy (^1H and ^{31}P MRS), diffusion tensor imaging (DTI) and perfusion imaging, with particularly strong expertise in neuro, metabolic, cardiac and musculoskeletal imaging.



LiMRIC is managed by the University of Liverpool's Technology Directorate, which aims to give the scientific community access to enabling technology and the academic expertise that supports it. www.liverpool.ac.uk/technology-directorate



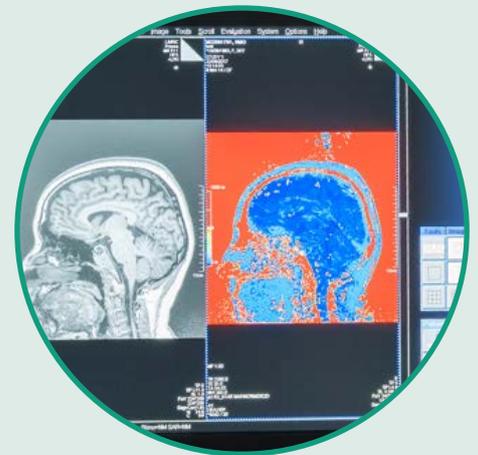
Case study

Eating behaviour and obesity

Challenge: Appetite theory suggests that feeling full after eating is associated with the part of the brain called the hypothalamus. However, endocrinologists recently observed that only some people who had suffered damage to this area of the brain were obese. The researchers approached LiMRIC to help them uncover why this may be.

Solution: Working with colleagues from the Department of Psychological Sciences, staff in LiMRIC designed a trial to monitor brain activity in both obese and weight stable patients with hypothalamus damage, in fed and fasted states, when shown pictures of different types of food. Using BOLD fMRI, which exploits the magnetic properties of oxygenated blood to visualise neural activity, the tests produced a high quality dataset demonstrating the complex network of mechanisms that mediate biological and environmental influence on appetite.

Impact: The data showed that the feeling of being full after eating is more complex than previously thought, involving other parts of the brain in addition to the hypothalamus. This offers insights into obesity and could have a major impact on future treatment of the condition.



Contact Us

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Why work with us?

- **Best facilities:** We offer open access to top of the range equipment, supported by highly skilled and experienced staff.
- **Approachable:** We are happy to discuss any commercial or research project and are willing to engage with external organisations who feel they could benefit from working with us.
- **High standards:** The centre maintains the highest ethical and safety standards where clinical governance is key.
- **Well-connected:** We have strong links with key areas of expertise across the University of Liverpool and the wider healthcare network, which informs our work and helps us deliver the best outcomes.