CIVI: Centre for In Vivo Imaging

MR

PET

Clinical

3T MRI x 2

Preclinical

7T MRI
MR Centre Staff – and what they do

- In vitro, in silico, and hardware development
- Preclinical imaging & spectroscopy
- First in man development studies
- Patient cohorts and clinical trials
MR Centre Staff – and what they do

In vitro, in silico, and hardware development
Preclinical imaging & spectroscopy
First in man development studies
Patient cohorts and clinical trials

Imaging technologies team
To develop innovative imaging technologies and apply to important questions of human health and disease
Remit

To develop innovative imaging technologies

and

apply to important questions of human health and disease

Scanner hardware
Scan methodology
Data analysis
Examples
Examples

Inhalable MR-visible gases for lung function imaging
Examples

Inhalable MR-visible gases for lung function imaging

Accelerating MRI for challenging patient cohorts

Funding:

EPSRC
Engineering and Physical Sciences Research Council

MRC
Medical Research Council
Examples

Inhalable MR-visible gases for lung function imaging

Accelerating MRI for challenging patient cohorts

Imaging agents sensitive to tissue physiology

Funding:

EPSRC [Engineering and Physical Sciences Research Council]

MRC [Medical Research Council]
Clinical research

- Bipolar disorder
- Renal fibrosis
- Autonomic dysfunction
- Muscle physiology
- Muscular dystrophy
- Rheumatoid arthritis
- Neuropsychology
- Brain functional imaging
- Traumatic brain injury
- Tissue oxidative stress
- Cardiac dysfunction
- Mitochondrial dysfunction
- Metabolic disorders
- Oncology
- Hepatic steatosis
- Primary Biliary Cirrhosis
- Brain ageing
- Dementia
- Type 2 diabetes
- Type 2 diabetes
Control subjects:
Beta cell function by SISTA

Lim et al, Diabetologia 2011
Baseline

Beta cell function: Diabetes subjects

Lim et al, Diabetologia 2011
Beta cell function: Diabetes subjects

Week 1

 ISR (nmol/min/m²)

-20  0  20  40  60  80

0.3
0.6
0.9
1.2
1.5
1.8

Time (min)

Lim et al, Diabetologia 2011
Beta cell function: Diabetes subjects

Week 4

ISR (nmol/min/m^2)

Time (min)

Lim et al, Diabetologia 2011
Beta cell function: Diabetes subjects

Week 8

 ISR (nmol/min/m²)

Time (min)
Change in beta-cell function and pancreas fat content

- First phase insulin response (nmol/min/m²)
- Pancreas fat content (%)