UK Biobank Imaging Project

- Around seven years to complete
- Operating 3 imaging centres
  - Co-ordinating centre
  - Then one in the South, the other North East
- Around £35 million in funding
- A total of 100,000 participants
Imaging Modalities

- MRI
  - Brain (3T)
  - Cardiac (1.5T)
  - Abdomen (1.5T)

- Dual-Echo X-Ray Absorptiometry (iDXA)

- Carotid Ultrasound
Scientific Value

- Integrated with detailed non-imaging data
- Investigation of associations
- Meaningful risk assessments can be made
  - Phenotypic measures made before disease
UK Biobank Imaging Project – Phase 1

- Up to 7,000 participants from the North West
- Duration of 18 months
- Coordinating Centre, South Manchester
- Initial funding of £9.5 million from the MRC

The first phase of the study alone will be the largest imaging study of its kind in the world
Imaging Progress

5,765 participants to date
The Imaging Centre
Participant Recruitment

- Leeds Assessment Centre
- Sheffield Assessment Centre
- Bury Assessment Centre
- Liverpool Assessment Centre
- Stoke Assessment Centre
- Man’cr Assessment Centre
- Cheadle Imaging Centre
Participant Visit

- 18 participants per day
- Scheduled in groups of three over an operational day running from 8am until 10pm
- Visits will last approximately 4 hours
- Imaging scans plus repeat assessment
Participant 3

Registration, Pre-Screening, Consent, Change into gown. (40 mins)

Cardiac / Abdomen MRI (20 mins + 10 mins)

iDXA / Ultra-sound (20 mins + 10 mins)

Brain MRI (30 mins)

Brain MRI (30 mins)

Cardiac / Abdomen MRI (20 mins + 10 mins)

iDXA / Ultra-sound (20 mins + 10 mins)

Re-Assessment and Exit (~120 mins)

Participant 2

Brain MRI (30 mins)

Cardiac / Abdomen MRI (20 mins + 10 mins)

iDXA / Ultra-sound (20 mins + 10 mins)

Brain MRI (30 mins)

Participant 1

iDXA / Ultra-sound (20 mins + 10 mins)

Brain MRI (30 mins)

Cardiac / Abdomen MRI (20 mins + 10 mins)

iDXA / Ultra-sound (20 mins + 10 mins)

Next group

= “buffer” time.
Incidental Findings

- Only routinely reviewed by radiographer (not clinicians)
- Incidental Findings then escalated to a radiologist
- Scans are NOT diagnostic
- Notify participant and their GP
- On-going research on impact during the pilot
“I felt very comfortable in the scanner; everything was explained so well and very clearly. I think people should make a little bit of effort and time to do something that will benefit others in the future.”

“The brain scan lasted a long time but it was an interesting experience. I found the experience better than I expected.”

"A bit boring at times ... but all in a good cause!"

"Staff very kind and reassuring as I was a bit worried about the scan as thought I'd feel claustrophobic."

"Very helpful and cheerful staff helped to make it a pleasant and non-threatening experience."

90% of participants say they would be prepared to attend a repeat of the visit within the next 12 months!
The Imaging Working Group Members

- Sir Rory Collins, Principal Investigator and CEO UK Biobank
- **Professor Paul Matthews**, Head of Division of Brain Sciences, Imperial College
- **Professor Steve Smith**, Associate Director, FMRIB, Oxford
- **Dr. Steffen Petersen**, Lead of the Advanced Cardiovascular Imaging Centre at Barts and the London.
- **Professor Stefan Neubauer**, Clinical Director, University of Oxford Centre Clinical Magnetic Resonance Research (OCMR)
- **Professor Jimmy Bell**, head of the Molecular Imaging Group at the MRC Clinical Sciences Centre
- **Dr. Tony Goldstone**, Senior Clinician Scientist in the Molecular Imaging Group, MRC Clinical Sciences Centre
- **Dr. Nick Harvey**, Honorary Consultant Rheumatologist, University of Southampton
- **Dr. Paul Leeson**, Clinical Lead, Oxford Cardiovascular Clinical Research Facility
Questions