CHeBA Cognition Group

CHeBA

- Dr Nicky Kochan
- Dr Teresa Lee
- Dr John Crawford
- Dr Melissa Slavin
- Dr Simone Reppermund
- Dr Charlene Levitan

Collaborators

- Prof John R Crawford, Uni Aberdeen
- A/Prof Julie Henry, Uni Qld
- Prof David Bunce, Uni Leeds
- Dr Greg Savage & Dr Liz Ellis, AIBL study
- Dr Blossam Stephan, Newcastle University
- The CoSMIC consortium
Overview of Role of Cognition in CHeBA Research

Cognition
Neuropsychological performance
Cognitive subgroups

Neuroimaging
Structural
Connectivity
Functional

Function
IADLs

Falls & Balance
Service Utilisation
Burden of Care

Genetics/ Genomics

Proteomics

Metabolics

Neuro-inflammation

Neuropsychiatric/ Psychological Personality Lifestyle

Neuro-inflammation
Cognitive Data

1. **Cognitive Performance**
   Cognitive Domain Scores
   - Attention/Processing Speed, Memory, Language, Executive, & Visuo-spatial.
     - Individual neuropsychological measures.
   - Presented as z-scores based on a healthy or normal reference group.

   **Global Cognitive Score**

2. **Cognitive Status**

   **MCI**
   - Subtypes
     - Amnestic
     - Nonamnestic
       - Single domain
       - Multiple domain

   **Dementia**
   - Subtypes
     - AD
     - VD
     & others

   N.B. relies on cognition as well as subjective complaints and functional ability.

Main measures can be used for cross-sectional or longitudinal studies.

N.B. from W2 onward.
Longitudinal Analysis of Cognitive Change/Decline

1. Change in cognitive performance over waves
   - Cognitive domain score, global cognitive score.

2. Change in cognitive status
   - Can form change categories.
   
   **Examples:**
   - Stable normal: CN → CN
   - Persisting MCI: MCI → MCI
   - Converters/Decliners/Incident: CN → MCI, MCI → dementia
   - Reverters: MCI → CN
   - Fluctuating decline: CN → MCI → CN, MCI → CN → MCI
Current & Future Cognition Projects

- Normative data

- Computerised cognitive measures (‘SENSUS’)
  - Reaction time: simple & complex; Stroop; Visuo-spatial memory

- Cognitive trajectories using advanced statistical modelling

- Cognition in centenarians and near centenarians (SCS)
  - Dr Charlene Levitan, Dr Melissa Slavin

- Effect of bilingualism on cognition
  - Dr Amanda Miller-Amberber

- Cosmic (Cohort Studies of Memory in an International Consortium)