Women’s Health Initiative Memory Study

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Disclosures & Acknowledgements

DISCLOSURES
None

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WHIMS: 20 years in 20 seconds

• 20+ years of measuring cognitive function, adjudicating cognitive impairment
• 2 Phases: WHIMS (1996-2007) and WHIMS ECHO (2008-2021)
• Active participants
  • WHIMS (1996) 7479
  • WHIMS ECHO (2008 / 2019) 2662 / 1326 (50%)
• Adjudicated cases cognitive impairment (WHIMS + WHIMS-ECHO)
  • All-cause Dementia 506
  • Mild Cognitive Impairment 711
WHIMS/ECHO: Major Ancillary Studies

• MRI-1 and MRI-2: structural
• WHISCA: Additional annual cognitive battery
• WHIMS-Younger: N=1362; 50-54 at WHI enrollment into HT trials; 6 yrs. ECHO battery
• RBC Fatty Acids (Harris)
• Geographical Disparities (Chen)
• ‘APOE-4 Escapees’ (Resnick)
WHIMS-ECHO (2008-2021)

- 11 years completed; 13 years planned
- **Annual assessment** with full battery for each participant
- >25,000 telephone assessments completed
- Cognitive domains assessed: **Attention, Memory, Working Memory, Executive Function, Verbal Fluency**
- Additional assessments: **depressive symptom severity, insomnia**
- **Proxy reports**: Dementia Questionnaire
- **Adjudicated outcomes** Probable Dementia, Mild Cognitive Impairment
Examples of Diverse Paper Topics Utilizing WHIMS/ECHO data (Est. Total N=121)

- **HT** assignment → cognitive outcomes (many)
- **CVD** → risk of cognitive decline (Haring et al 2013)
- Cognitive decline → **CVD, mortality** (Leng et al, 2018)
- **HTN**, cog func, brain volumes (Kuller et al 2010)
- **Obesity**, cog func, brain volumes (Driscoll et al 2011, 2016)
- **Dietary Inflammatory Index** and cog impairment (Hayden et al 2017)
- **Retinopathy**, cog func, brain volumes (Haan et al 2012)
- **Air pollution**, cog func, cog imp, brain vol (Cacciottolo et al 2017; Chen et al 2015)
- **Cognitive reserve** (Petkus et al, 2019)
- **Depression**, cog func, cog imp, brain vol (Goveas et al, 2011, 2014)
- **RBC fatty acids DM and mortality** (Harris et al, 2016; 2017)
- **Calcium + Vit D** and cog imp, cog func (Rossum et al, 2012)
WHIMS Innovations

*Telephone administration of cognitive battery* and questionnaires in older women is reliable and valid ([Rapp et al, J Amer Geri Soc, 2012;60:1616-1623])


Using machine learning approach applied to ADNI imaging and cognitive data, *Alzheimer’s Disease Pattern Similarity Scores* distinguished well between women with and without cognitive impairment in WHIMS cohort ([Casanova et al PLoS One, 2013;8:e77949])
Resources Available to Interested Investigators

• 20+ years of WHI data
• 20+ years of cognitive phenotyping
• ECHO telephone cognitive battery used in:
  • WHIMS ECHO (N=2662 x 11 adm)
  • COSMOS-MIND (N=2200 x 3 adm)
  • WHISPER (N=5000 x 3 adm)
• MRI imaging
• Genotyping
• $ support for biospecimen procurement from WHI Biorepository
• Biostatistical support
Q & A