



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)

Supplemental Case Ascertainment Protocol, a proxy-based interview reduced biases in estimated incidence rates and risk factor relationships (Gaussoin et al Int J Geri Psychiatry, 2012;27:205-214; Gaussoin et al. IJGP, 2019)

*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

