



Bonnielin Swenor, PhD, MPH

Associate Professor

The Wilmer Eye Institute
Johns Hopkins School of Medicine

Department of Epidemiology
Johns Hopkins Bloomberg School of Public Health

Johns Hopkins Center on Aging and Health

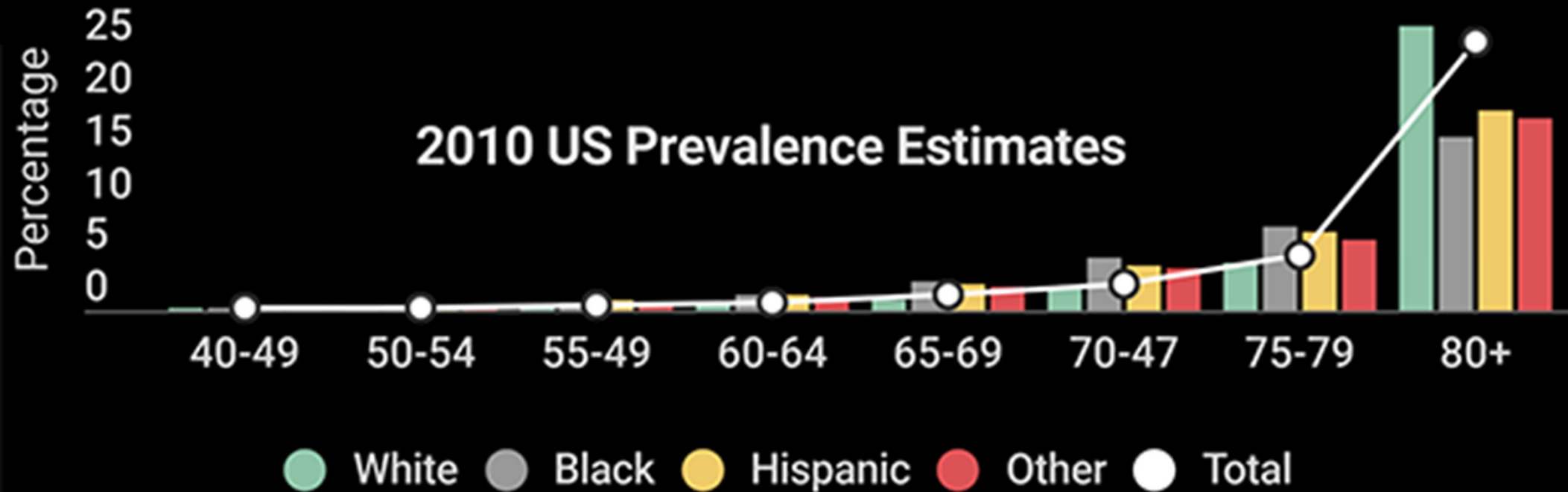


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Visual impairment ↑ with age



Prevent Blindness America. Vision problems in the US. 2010.

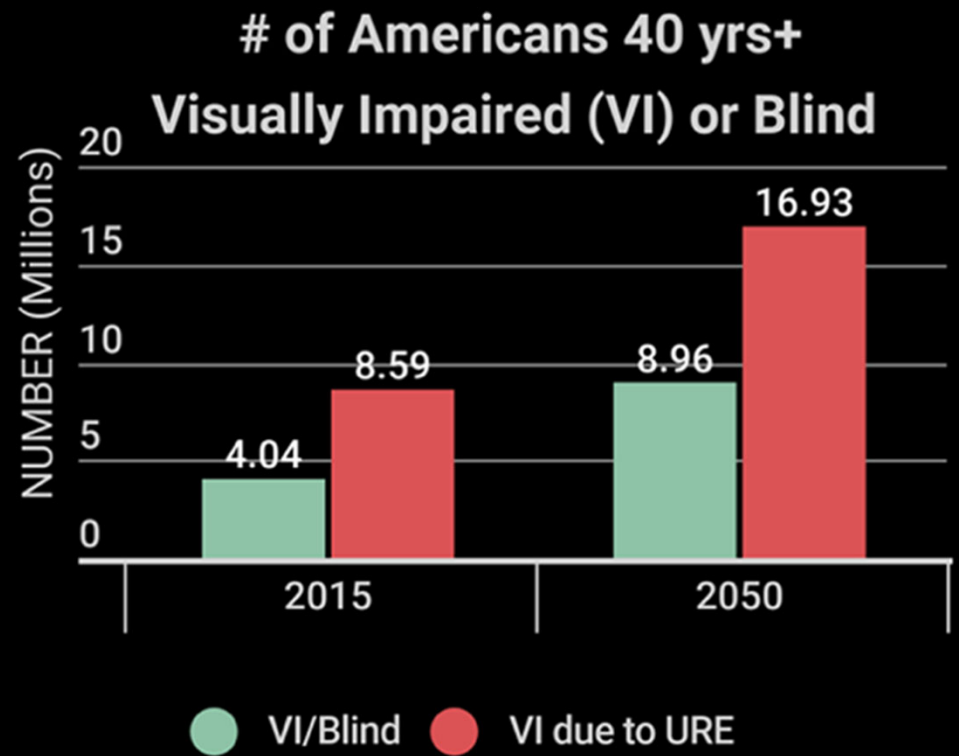


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Visual Impairment is ↑



Varma et al. JAMA Ophthalmol. 2016.



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Aging: Looking at the whole picture



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Did we lose sight of context?



Keith Haring



“Statistical Analysis of Keith Haring”

Ursus Wehli



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Vision-Cognition Relationship

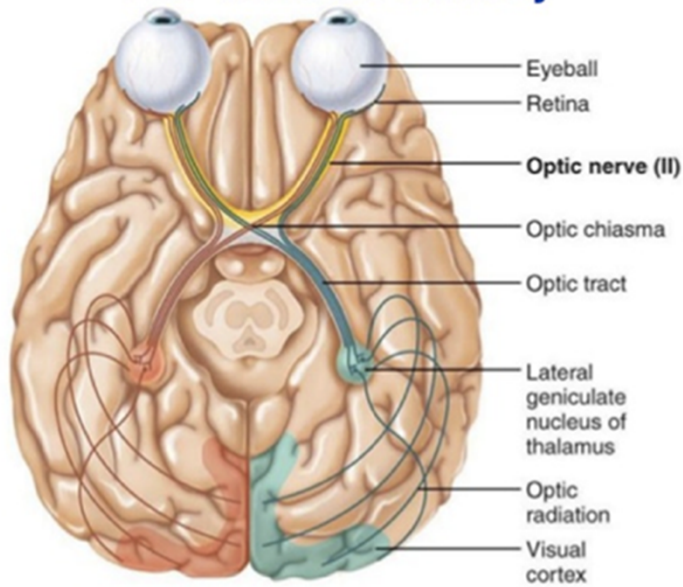


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The Visual Pathway



Eyes collect information, but “seeing” occurs in the brain

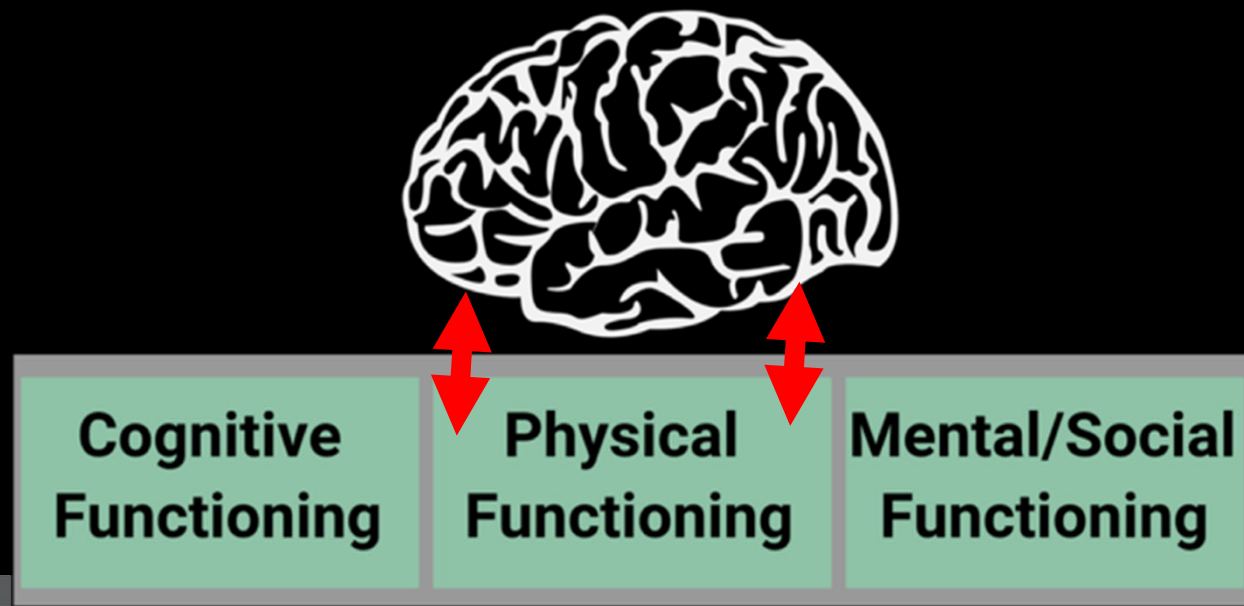


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Adapted from F. Lin

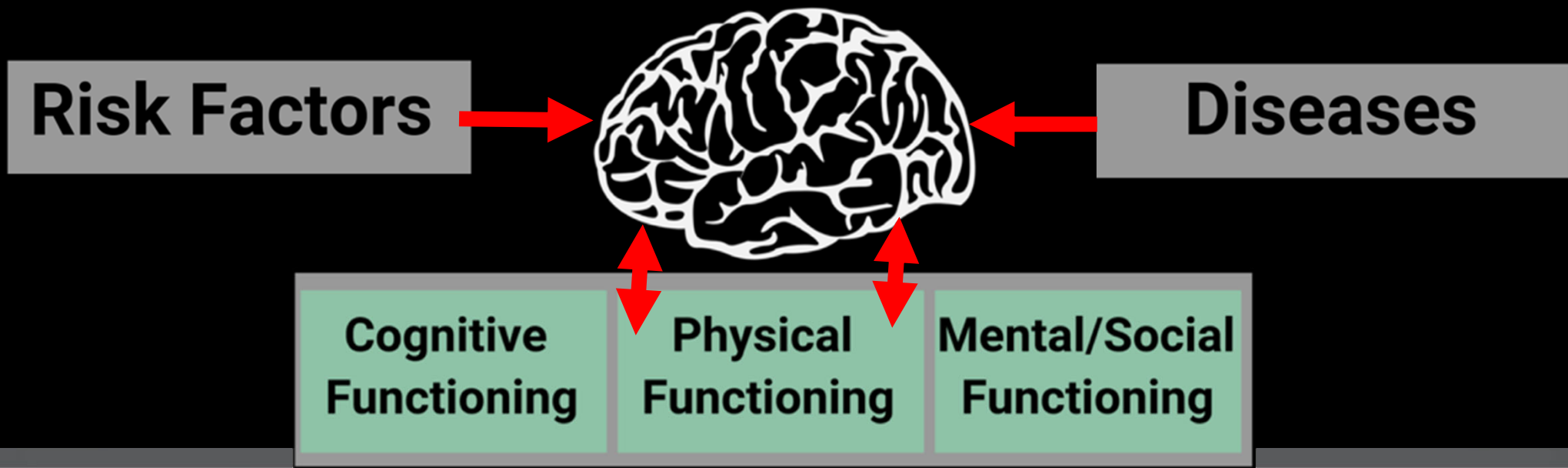


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Risk Factors

Diseases



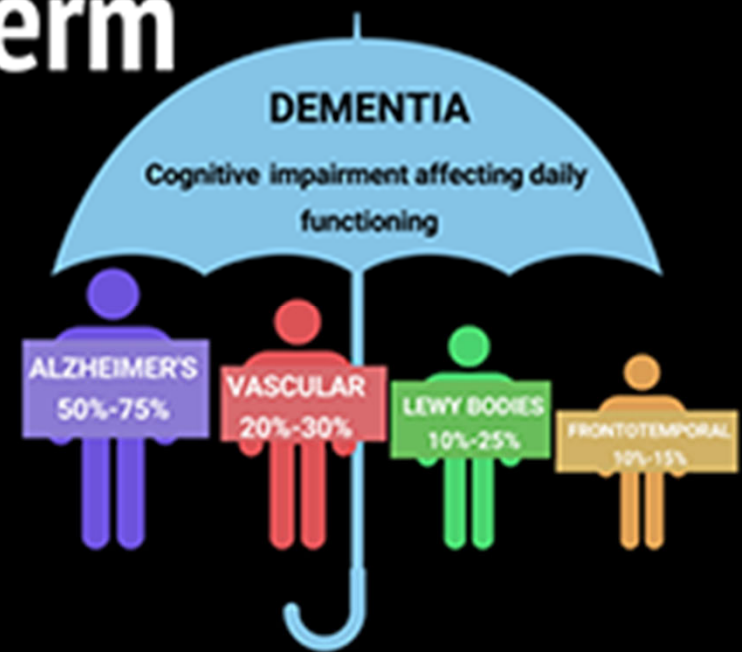
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Dementia is an umbrella term

Dementia is a general term for cognitive decline that interferes with daily activities



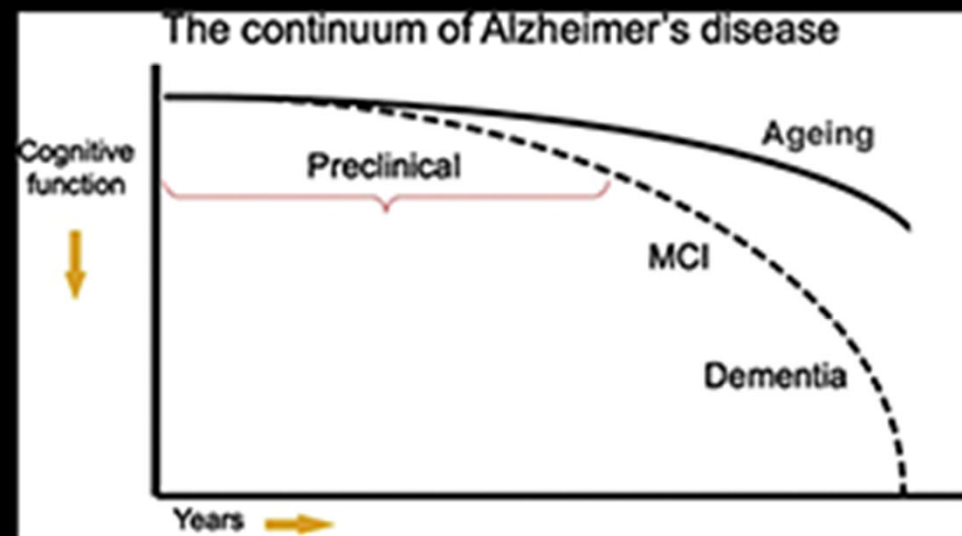
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Cognitive impairment is a spectrum

Cognitive impairment ranges from mild cognitive impairment (MCI) to dementia



Sperling et al. Alzheimer's Dement. 2011.



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ADRD is \$\$ and prevalence is ↑



\$290 billion: U.S. cost of ADRD in 2019

5.8 million Americans have ADRD in 2019, which will increase to 14 million by 2050

2019 Alzheimer's Disease Facts and Figures. Alzheimer's Association.



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Older adults with visual impairments:



↑ risk of
Dementia
&

Cognitive decline

Swenor et al. J Gerontol A Biol Sci Med Sci. 2018.
Zheng et al. JAMA Ophthalmol. 2018.
Lin et al. JAGS. 2004.
Nael et al. Eur J Epidemiol. 2019.



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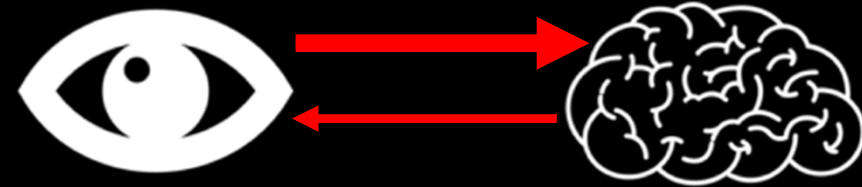
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JAMA Ophthalmology | Original Investigation

Longitudinal Associations Between Visual Impairment and Cognitive Functioning

The Salisbury Eye Evaluation Study

D. Diane Zheng, MS; Bonnielin K. Swenor, PhD; Sharon L. Christ, PhD; Sheila K. West, PhD; Byron L. Lam, MD; David J. Lee, PhD



A bidirectional relationship:

- Worse vision associated with worse cognition
- BUT... Worsening vision has stronger association with cognitive ↓

Zhang, et al. JAMA Ophthalmol 2018.

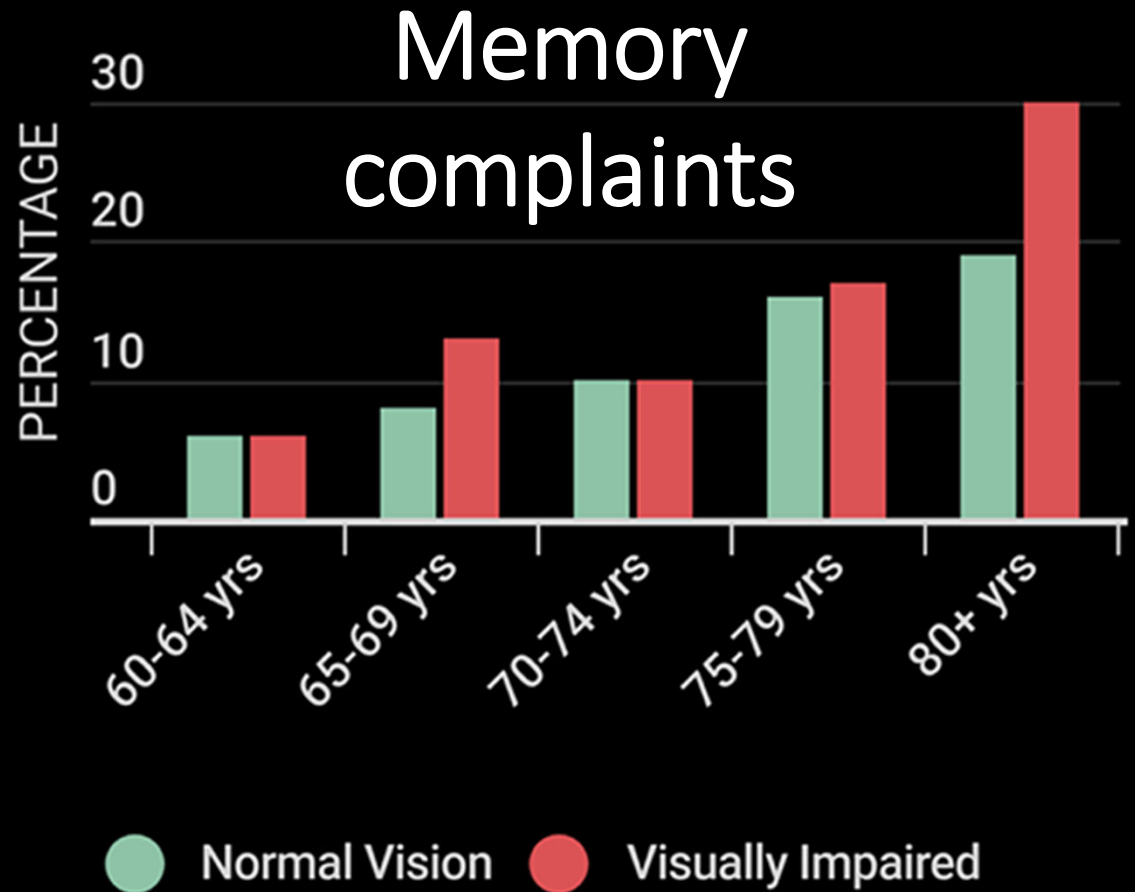


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Older adults with vision loss are more likely to report memory complaints



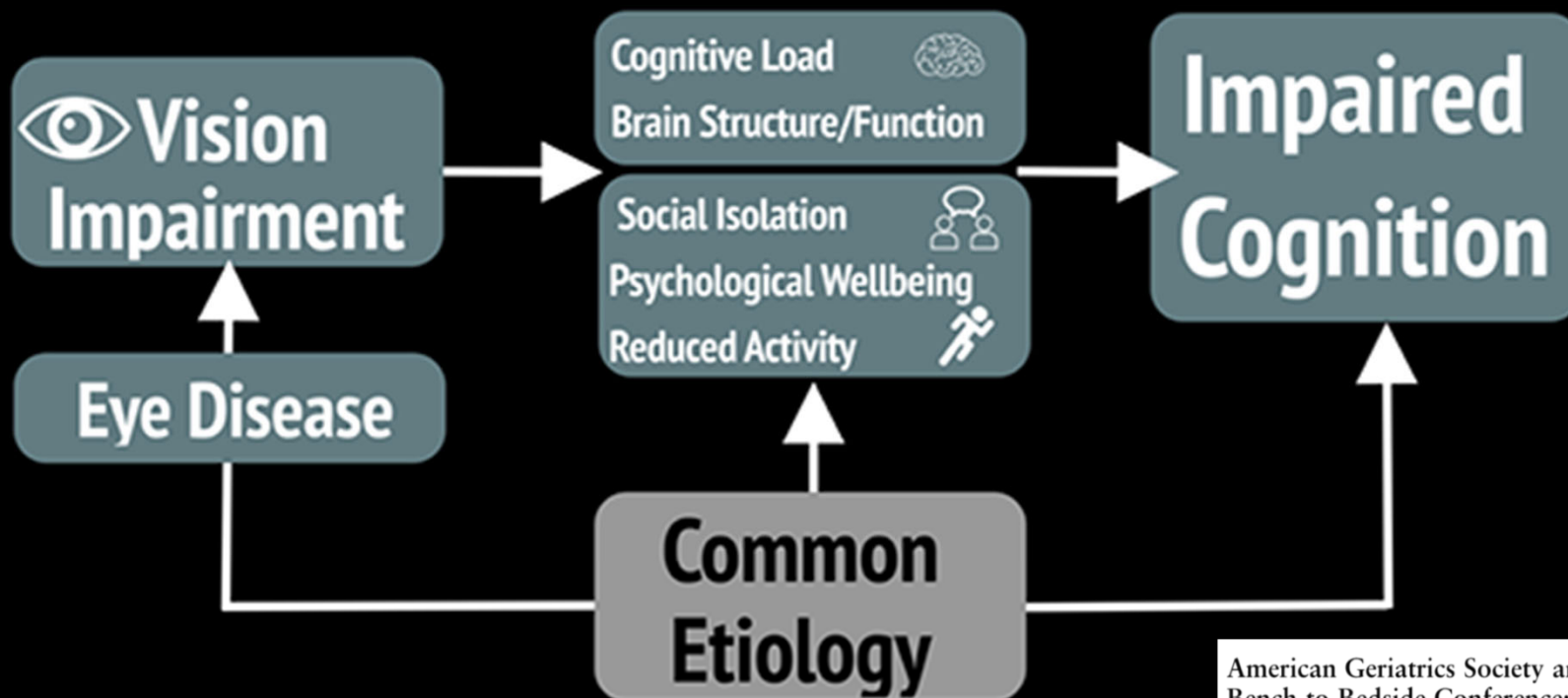
Lee MJ, et al. Gerontol Geriatr Med. 2019.
Saydah et al. MMWR. 2019.



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American Geriatrics Society and National Institute on Aging
 Bench-to-Bedside Conference: Sensory Impairment and Cognitive
 Decline in Older Adults

Heather E. Whitson, MD, MHS,† Alice Cronin-Golomb, PhD,‡ Karen J. Cruickshanks, PhD,§
 Grover C. Gilmore, PhD,¶ Cynthia Owsley, PhD, MSPH,|| Jonathan E. Peelle, PhD, **
 Gregg Recanzone, PhD,†† Anu Sharma, PhD,‡‡ Bonnielin Swenor, PhD, MPH,§§
 Kristine Yaffe, MD,¶¶ and Frank R. Lin, MD, PhD§§*

Whitson HE, et al. J Am Geriatr Soc. 2018.

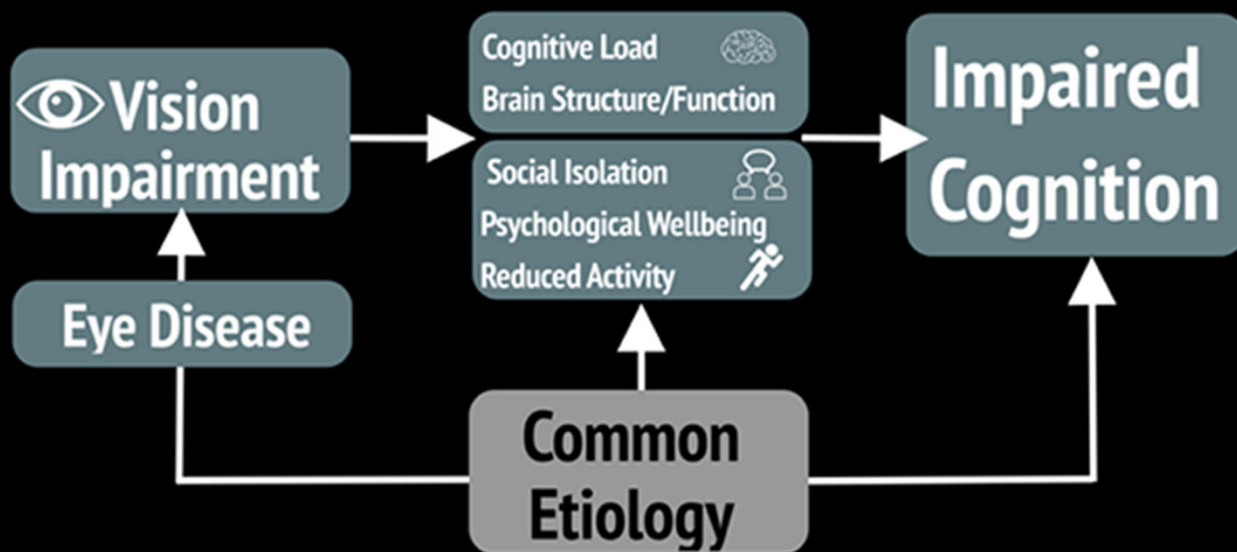


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Mechanisms → Interventions



Whitson HE, et al. J Am Geriatr Soc. 2018.

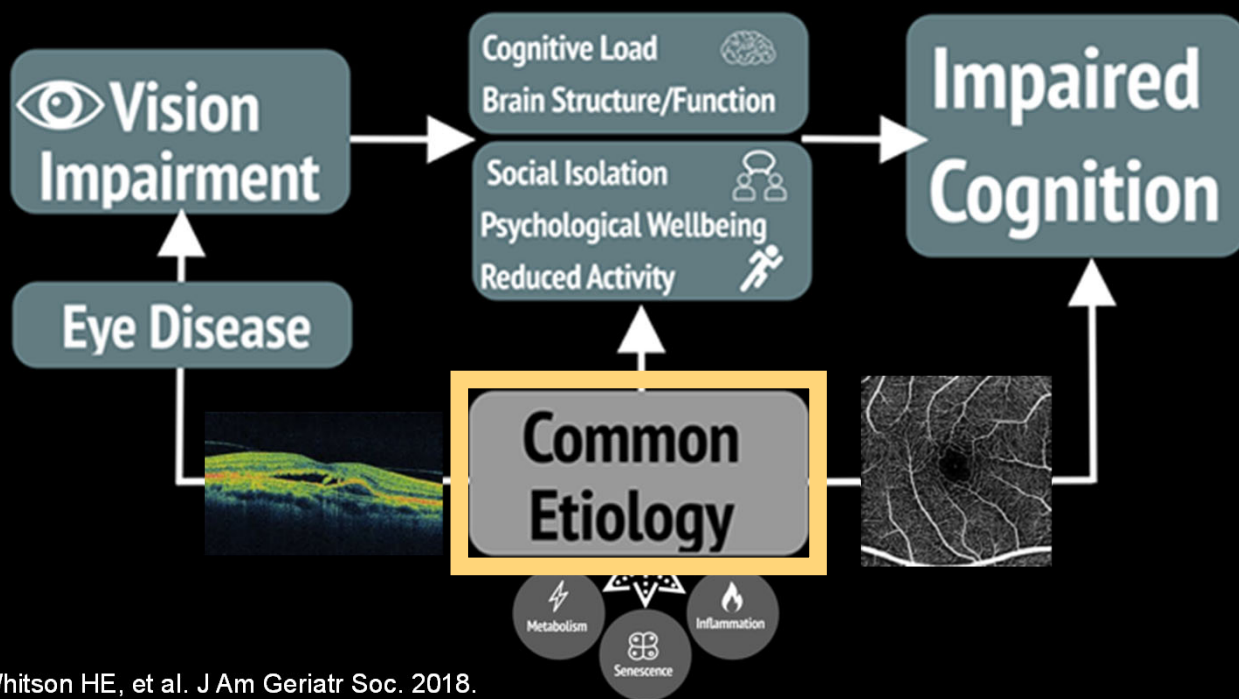


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Mechanisms → Interventions



Common
“Cause”
Pathway

Whitson HE, et al. J Am Geriatr Soc. 2018.

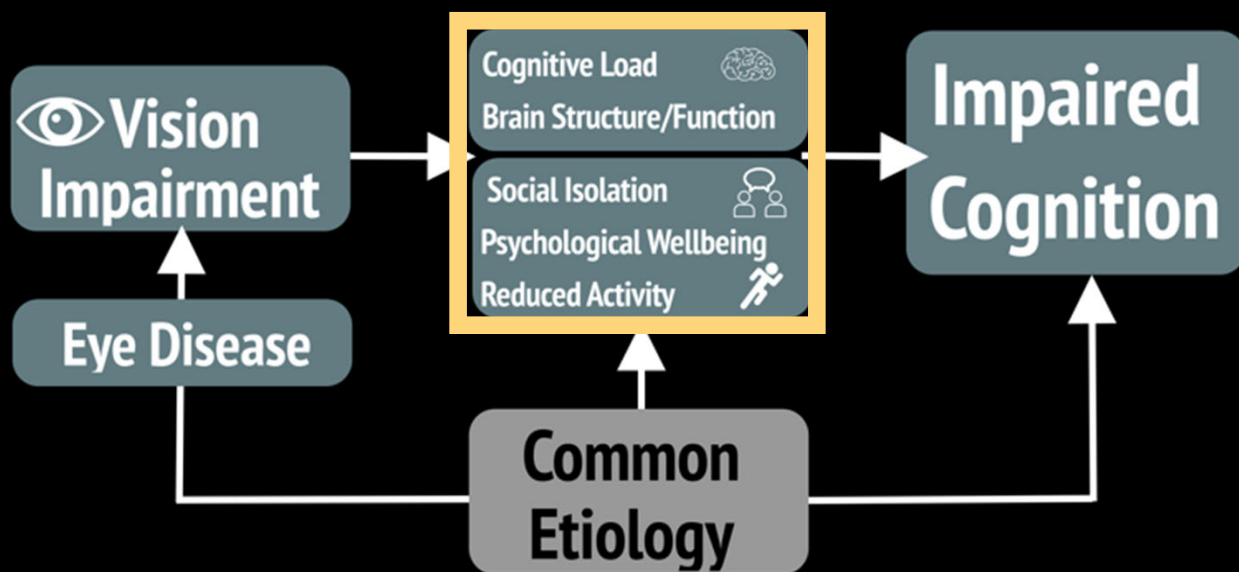


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Mechanisms → Interventions



Vision Loss Consequence Pathway

Whitson HE, et al. J Am Geriatr Soc. 2018.



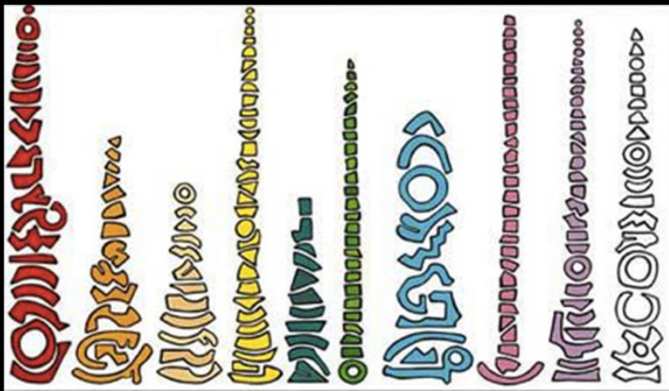
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Vision & eye health are critical components of the aging picture



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