

# VISION & DEMENTIA

**Article:** "Low Vision & Risk of Dementia: Nationwide Population-Based Cohort Study"

**Authors:** Ji-Sun Paik et al.

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## DEFINITIONS

Dementia is a neurodegenerative disorder characterized by a progressive decline of memory and cognitive function. Alzheimer's disease accounts for 60-80% of cases while vascular dementia, most commonly caused from blockage or damage of blood vessels in the brain, is involved in the majority of remaining cases. Other causes & associated illnesses include Lewy Body Dementia, Frontotemporal Lobar Degeneration & Creutzfeldt-Jakob Disease.

While typically seen in the aging population, low vision & eye disease can be seen in many populations regardless of age with a multitude of causes and implications. Leading causes of blindness & visual impairment are cataracts, refractive error, and age related macular degeneration, which can be treated with surgery and corrective spectacles.



Ji-Sun Paik et al investigates the incidence of dementia in low vision individuals. Through the combination of questionnaires to access subject's lifestyle choices and medical history and information provided by the NHIS, Ji-Sun Paik et al concluded that there was significant

## SUMMARY

correlation between low visual acuity & risk of developing dementia, suggesting low visual acuity may be an independent risk factor for dementia. During the 5 year follow up, the study examined evidence of low vision and onset dementia, but also the progression of vision loss throughout the 5 year period. As the elderly population & incidence of age related illnesses grows, the preparation of health policy & advancement of preventative medicine to mitigate financial & medical burden depends on diagnosis & treatment.

- Longitudinal Prospective Observational Study using National Health Insurance Service (NHIS) Database
  - 6,029,657 subjects aged  $\geq$  40 yrs, Only Included if All Baseline Info Available
- Visual Impairment based on Visual Acuity & Disability Grade
  - Co-morbidity of Disability Impacting Cognitive Function & May Pose Challenges to Diagnosis & Treatment
  - Higher Risk for Subjects with Low Baseline Vision & Progressive Vision Loss During the Study
- Limitations: Lack of Subject Diversity, No Severity Assessment for Cognitive Impairment, Discrepancy in Claim Data & Actual Dementia Population, No Specific Parameters to Define Disability Rating, No Specialist for Alzheimer's Disease or Dementia Involved
- Strengths: Comprehensive Nationwide Database, Included Middle Age Population, Inclusion of Significant Ophthalmologists, No Conflicts of Interest of Researchers or Funding
- Future Clinical Studies May Focus on Common Risks & Hereditary Disposition for Both Diseases, Countries without a Single Payer Healthcare System, Early Diagnosis & Corrective Treatment, & Individuals with Dementia who Live Independently or in a Long Term Care Facility

SESSION SUMMARIES AND COMMENTARIES WERE GIVEN BY TRANG HAU & CHRISTINA WIRA WITH SUPPORT OF THE PREMED SCENE JOURNAL CLUB

5.4 Million Americans

With Dementia

*Alzheimer's Association Report (2016)*

## THE IMPACT

\$600 billion

Annual Cost of Dementia in USA  
*AJMC (2011)*

13.2 Million

Estimate Growth of US Alzheimer's  
Disease by 2050

*JAMA Neurology (2000)*

## Additional Sources

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