Associations between visual, hearing, and dual sensory impairments and history of motor vehicle collision involvement of older drivers.

OBJECTIVES: To examine the association between visual and hearing impairment and motor vehicle collision (MVC) involvement in older drivers.

DESIGN: Retrospective cohort study.

SETTING: North central Alabama.

PARTICIPANTS: Population-based sample of 2,000 licensed-drivers aged 70 and older.

MEASUREMENTS: Visual acuity was measured using the Electronic Visual Acuity test. Contrast sensitivity was measured using the Pelli-Robson chart. Presence of subjective hearing loss and other health conditions were determined using a general health questionnaire. Information regarding MVCs for all participants spanning the 5 years before study enrollment was obtained from the Alabama Department of Public Safety.

RESULTS: After adjustment for age, race, sex, number of miles driven, number of medical conditions, general cognitive status, and visual processing speed, older drivers with visual acuity and hearing impairment (rate ratio (RR) = 1.52, 95% confidence interval (CI) = 1.01-2.30), contrast sensitivity impairment alone (RR = 1.42, 95% CI = 1.00-2.02), and contrast sensitivity and hearing impairment (RR = 2.41, 95% CI = 1.62-3.57) had higher MVC rates than drivers with no visual or hearing impairments. Drivers with...
visual acuity loss alone or hearing loss alone did not have MVC rates that were significantly different from those of the no impairment group after adjustment for multiple variables.

**CONCLUSION:** Older drivers with dual sensory impairment are at greater MVC risk than those with a visual acuity or hearing deficit alone. A combined screening approach of screening for hearing and visual impairment may be a useful tool to identify older drivers at risk of MVC involvement.

DOI: [10.1111/jgs.12091](http://dx.doi.org/10.1111/jgs.12091)

Alternate Journal: *J Am Geriatr Soc*  
PubMed ID: [23350867](https://pubmed.ncbi.nlm.nih.gov/23350867/)

PubMed Central ID: PMC3573212

Grant List:  
P30 AG022838 / AG / NIA NIH HHS / United States  
P30AG22838 / AG / NIA NIH HHS / United States  
R01 EY018966 / EY / NEI NIH HHS / United States  
R01EY18966 / EY / NEI NIH HHS / United States