

# Advanced macular degeneration is associated with an increased risk

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Older people with late-stage, age-related macular degeneration (AMD) appear to be at increased risk of brain hemorrhage (bleeding stroke), but not stroke caused by brain infarction (blood clot), according to research presented at the American Stroke Association's International Stroke Conference 2011.

"Other studies have found there are more strokes in older individuals with late AMD, but ours is the first to look at the specific types of strokes," said Renske G. Wieberdink, M.D., study researcher and epidemiologist at Erasmus Medical Center in Rotterdam, the Netherlands. "We found the association is with brain hemorrhage, but not brain infarction."

AMD is degeneration of the macula, which is the part of the retina responsible for the sharp, central vision needed to read or drive. Because the macula primarily is affected in AMD, central vision loss may occur. Age-related [macular degeneration](#) usually produces a slow, painless loss of vision. Early signs of vision loss from AMD include shadowy areas in your central vision or unusually fuzzy or distorted vision.

Because the number of brain hemorrhages observed in the study was small, the findings will need to be corroborated in a larger group, Wieberdink said.

"These findings should be considered preliminary," she said. "Patients and physicians must be very careful not to over-interpret them. We don't

know why there are more brain hemorrhages in these patients or what the relationship with AMD might be. This does not mean that all patients with late-stage AMD will develop brain hemorrhage."

Beginning in 1990, the Rotterdam Study is a prospective, population-based cohort investigation into factors that determine the occurrence of cardiovascular, neurological, ophthalmological, endocrinological and psychiatric diseases in older people.

The researchers tallied stroke incidence among 6,207 participants 55 years and older. All of the participants were stroke-free at the study's outset. AMD was assessed during scheduled eye examinations, and participants with the condition were divided into five different stages of AMD, and whether their condition was wet AMD or dry AMD. Participants were tracked for an average of 13 years. Of the 726 persons who suffered a stroke in that time, 397 were brain infarctions, 59 were brain hemorrhages and the stroke type was not available for 270.

Late AMD (stage 4) was associated with a 56 percent increased risk of any type of stroke. Late AMD, both the dry and the wet form, was strongly associated with more than six times the risk of brain hemorrhage, but not with brain infarction. Early AMD (stages 1-3) did not increase the risk of any [stroke](#). Associations were adjusted for possible confounders, such as diabetes, blood pressure, anti-hypertensive medications, smoking status, body mass index, alcohol use and C-reactive protein levels.

"We cannot yet say if there is a common causal pathway or mechanism of action yet — this association needs to be further investigated," Wieberdink said. "But I don't think it is a causal relationship. It seems more likely that late AMD and [brain](#) hemorrhage both result from some as yet unknown common mechanism."

If the findings are replicated, it may be possible to develop some stratification of risk among such patients, Wieberdink said.

Provided by American Heart Association

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