

TITLE: Prognostic factors for age-related macular degeneration - An overview of systematic reviews

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Purpose of Study:

Because current treatments for age-related macular degeneration (AMD) are non-curative, identifying prognostic factors (PFs) that can inform lifestyle changes and improve monitoring of disease status is essential for at-risk individuals. We synthesized and evaluated evidence from systematic reviews (SRs) to identify predictors of AMD onset and progression, aiming to inform clinical practice and guide research priorities.

Methods Used:

We searched a database of 8,875 SRs curated by Cochrane Eyes and Vision (CEV) that covers PubMed, Embase, and the Cochrane Library and is current to September 2024. We used Covidence to extract review characteristics and any associations between PFs and AMD progression, and assessed the methodological reliability of each review using a tool developed by CEV for clinical and guideline development work. We also extracted reported risk of bias assessments for the primary studies included in each review.

Summary of Results:

Seventeen systematic reviews and meta-analyses met inclusion criteria, reporting a total of 218 prognostic factors, of which 79 were highlighted by authors as particularly important or prevalent. Reviews included a median of 20 studies (range 6–94) and 9,182 participants (range 379–208,056), with nearly half judged to be methodologically reliable. The most frequently studied prognostic factor categories were functional or structural biomarkers (59%), lifestyle factors (41%), and intervention-related characteristics (41%), while demographic, social, and genetic factors were less often examined. Among modifiable factors, the strongest evidence supported increased dietary antioxidant or multivitamin supplementation and smoking cessation as associated with slower progression, though evidence for other intervention-related or lifestyle factors remained limited. The majority of identified prognostic factors were non-modifiable, with imaging and structural biomarkers—particularly optical coherence tomography findings—most consistently linked to disease progression. Notably, no reviews examined social determinants as potential prognostic factors.

Conclusions:

Most prognostic factors for AMD progression are non-modifiable, but incorporating high-risk imaging findings, biomarker assessments, and comorbidity profiles can improve prognostication and patient counseling. Future research should explore social, systemic, and lifestyle factors to broaden our understanding of disease progression.