

Table 1. Age-Related Macular Degeneration Clinical Trials With Oral Medications

MEDICATION	MECHANISM OF ACTION	TRIAL SUBJECTS	OUTCOMES
AREDS ²⁵	Antioxidant (vitamin C, vitamin E, β -carotene, zinc, copper)	4,757 participants with AMD scales 1 to 4 based on drusen size/area, pigment abnormality, visual acuity, GA, and ocular laterality	25% reduction of progression of intermediate to advanced AMD and 19% reduction in moderate vision loss in a 5-year period; protection against neovascular AMD in a 10-year period
AREDS2 ²⁸	Antioxidant (1) AREDS formulation, (2) AREDS formulation minus β -carotene, (3) AREDS formulation with low-dose zinc, (4) AREDS formulation with low-dose zinc and no β -carotene randomized to placebo, lutein/zeaxanthin, DHA/EPA, or both lutein/zeaxanthin and DHA/EPA supplements	4,203 participants with AREDS AMD scales 1 to 4	Lowering zinc dose and eliminating β -carotene does not affect progression to advanced AMD; formulations that include β -carotene increase the risk of lung cancer in former smokers; lutein and zeaxanthin reduce the risk of AMD progression in patients with low dietary intake of these nutrients
Lutein ³⁸	Antioxidant, abundant in the macula	Meta-analysis of 445 participants	Increased macular pigment optical density with mild improvement in BCVA
Vitamin E ³⁹	Antioxidant	39,876 female participants aged ≥ 45 years	No effects on the risk of AMD
Vitamins B ₆ , B ₉ , B ₁₂ ⁴⁰	Improved endothelial function	5,442 female participants aged ≥ 40 years	Reduced risk of AMD
Zinc ⁴²	Cofactor for antioxidant and metal-chelating enzymes; increase glutathione	Both treatment and placebo arm enrolling 40 participants with BCVA 20/25 to 20/70, macular drusen, and pigment changes	Improved visual acuity, improved contrast sensitivity, and shortened macular light flash recovery time
Statins ^{43,44}	Lipid lowering and anti-inflammatory	114 participants with bilateral intermediate AMD or unilateral nonadvanced AMD with advanced AMD in the fellow eye receiving simvastatin; 26 participants with diagnosis of AMD and the presence of many large, soft drusenoid deposits receiving atorvastatin	Reduced risk of AMD
Ginkgo biloba ⁴⁵	Increased blood flow and reduced free radicals	119 dry AMD participants in two separate trials	Improved visual acuity
Saffron ⁴⁶	Antioxidant	25 participants with early AMD	Increased fERG amplitude, decreased fERG thresholds, and mild improvement in visual acuity
Trimetazidine ⁴⁸	Improved choroidal circulation and oxygen supply	1,086 participants with soft drusen and/or retinal pigment epithelium abnormalities in one eye and choroidal neovascularization in the contralateral eye	Neither prevents choroidal neovascularization or progression of GA
Aspirin ⁵⁰	Anticoagulant and anti-inflammatory	Meta-analysis of 177,683 participants	No effects on the risk of AMD
Emixostat hydrochloride ⁵²	Reduced accumulation of lipofuscin and A2E	72 participants with GA	Suppressed rod photoreceptor sensitivity