

# Screening for Glaucoma in Adults: Updated Evidence Report and Systematic Review for the US Preventive Services Task Force

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**IMPORTANCE:** Two 2013 systematic reviews to inform the US Preventive Services Task Force (USPSTF) found insufficient evidence to assess benefits and harms of screening for primary open-angle glaucoma (OAG) in adults.

**OBJECTIVE:** To update the 2013 reviews on screening for glaucoma, to inform the USPSTF.

**DATA SOURCES:** Ovid MEDLINE, the Cochrane Central Register of Controlled Trials, and the Cochrane Database of Systematic Reviews (to February 2021) ; surveillance through January 21, 2022.

**STUDY SELECTION:** Randomized clinical trials (RCTs) of screening, referral, and treatment; and studies of screening test diagnostic accuracy.

**DATA EXTRACTION AND SYNTHESIS:** One investigator abstracted data and a second checked accuracy. Two investigators independently assessed study quality.

**RESULTS:** Eighty-three studies (N = 75 887) were included (30 trials and 53 diagnostic accuracy studies) . One RCT (n = 616) found screening of frail elderly persons associated with no difference in vision outcomes vs no screening but with significantly greater falls risk (relative risk [RR], 1.31 [95% CI, 1.13-1.50]) . No study evaluated referral to an eye health professional. For glaucoma diagnosis, spectral domain optical coherence tomography (providing high-resolution cross-sectional imaging; 15 studies, n = 4242) was associated with sensitivity of 0.79 (95% CI, 0.75-0.83) and specificity of 0.92 (95% CI, 0.87-0.96) and the Humphrey Visual Field Analyzer (for perimetry, or measurement of visual fields; 6 studies, n = 11 244) with sensitivity of 0.87 (95% CI, 0.69-0.95) and specificity 0.82 (95% CI, 0.66-0.92) ; tonometry (for measurement of intraocular pressure; 13 studies, n = 32 892) had low sensitivity (0.48 [95% CI, 0.31-0.66]) . Medical therapy for ocular hypertension and untreated glaucoma was significantly associated with decreased intraocular pressure and decreased likelihood of glaucoma progression (7 trials, n = 3771; RR, 0.68 [95% CI, 0.49-0.96]; absolute risk difference -4.2%) vs placebo, but 1 trial (n = 461) found no differences in visual acuity, quality of life, or function. Selective laser trabeculoplasty and medical therapy had similar outcomes (4 trials, n = 957) .

**CONCLUSIONS AND RELEVANCE:** This review found limited direct evidence on glaucoma screening, showing no association with benefits. Screening tests can identify persons with glaucoma and treatment was associated with a lower risk of glaucoma progression, but evidence of improvement in visual outcomes, quality of life, and function remains lacking.

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