

Appendix 2 (as supplied by the authors): Visual Acuity Guideline March 22, 2018

Evidence to Decision Framework

Question

Should **screening for visual acuity** vs. **usual care** be used for **community dwelling adults 65 years of age and older**?

<p>POPULATION: Adults aged 65 years and older</p> <p>INTERVENTION: Screening for visual acuity</p> <p>COMPARISON: Usual care</p> <p>MAIN OUTCOMES: Mortality, fractures, loss of independence, vision-related limitation in function, impaired visual acuity, quality of life, major adverse effects from treatment, and anxiety.</p> <p>SETTING: Primary care</p> <p>PERSPECTIVE: Task Force</p>	<p>Background</p> <p>Impaired visual acuity is the result of a poor or distorted image reaching the retina due to refractive errors, corneal opacities or cataracts, the result of retinal disease, or problems with the central processing of visual neural signals (1). Problems from refractive error or cataracts can be addressed by corrective lenses or other vision-related treatment including surgical correction of cataracts, whereas interventions for retinal disease or processing of neural signals depend on the specific nature of the disorder (1).</p> <p>Among older adults, impaired visual acuity can have a negative impact on vision-related functioning and quality of life, which may be manifested by decreased participation in social, work and leisure activities as well as difficulty in family relationships, symptoms of depression and injuries from accidents including falls and/or the loss of driving privileges (2-5).</p> <p>Many people with reduced visual acuity become aware of it and obtain help on their own. Self-reported data on vision care from the 2005 Canadian Community Health Survey (6) indicated that 59% of adults aged 65 years and older had consulted an eye care professional in the previous year. Comprehensive eye examinations for adults 65 years of age and older are covered by most provincial governments across Canada and are usually free at point-of-care.</p> <p>It is plausible that visual acuity screening in primary care settings could be beneficial to individuals who do not recognise that they have a problem with their vision or who recognise a problem but do not seek treatment.</p> <p>This guideline is directed to primary care providers who have a generalist understanding of eye health and vision care, but do not have specialist expertise or access to specialised equipment. It does not seek to address vision screening undertaken by ophthalmic primary care or optometrists, a professional group with specific expertise in maintaining and optimising healthy vision function, particularly the diagnosis and correction of refractive errors. Screening methods considered include self-report of vision function and objective vision testing.</p>
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Assessment

	JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
TABLE M	Is the problem a	Impaired visual acuity, or clarity of vision, is an important health burden in	

Appendix to: Wilson BJ, Courage S, Bacchus M, et al.; Canadian Task Force on Preventive Health Care. Screening for impaired vision in community-dwelling adults aged 65 years and older in primary care settings. *CMAJ* 2018. doi: 10.1503/cmaj.171430.

	JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
	<p>priority?</p> <ul style="list-style-type: none"> <input type="radio"/> No <input type="radio"/> Probably no <input type="radio"/> Probably yes <input checked="" type="radio"/> Yes <ul style="list-style-type: none"> <input type="radio"/> Varies <input type="radio"/> Don't know 	<p>both developed and developing countries, particularly among older adults (7). It is defined as an objective screening measure of acuity worse than 20/40; the threshold at which some form of vision-related functional limitation often begins. The 2006 Participation and Activity Limitation Survey found that 13% of Canadians aged 75 years and older had a "seeing limitation", of which 31% were described as severe, compared with 0.5% of those aged 15 to 24 years with 17% described as severe (8,9). The proportion of adults with visual impairment is expected to double in Canada by 2032 as the population ages (7,8).</p>	
DESIRABLE EFFECTS	<p>How substantial are the desirable anticipated effects?</p> <ul style="list-style-type: none"> <input type="radio"/> Trivial <input type="radio"/> Small <input type="radio"/> Moderate <input type="radio"/> Large <p><input checked="" type="radio"/> Varies</p> <ul style="list-style-type: none"> <input type="radio"/> Don't know 	<p>Outcomes of interest for which no evidence was identified: The systematic review identified no evidence on the impact of vision screening on mortality, loss of independence, serious adverse effects from treatment, or on anxiety or stress from positive screen results..</p> <p>Reducing fractures: Two RCTs provided very low quality evidence of an uncertain effect of vision screening on reducing fractures (1). Both trials reported on falls, which was used as a surrogate outcome for fractures (1). While one RCT reported an absolute risk reduction (ARR) in the intervention group of 163 fewer falls per 1,000 people screened (ARR= 16.3%; 95% confidence interval (CI): 28 to 292 fewer) and an ARR of falls requiring medical treatment of 48 fewer per 1,000 people screened (ARR=4.8%, 95% CI: 12 to 75 fewer), the authors reported that very few people participated in the vision intervention and indicated that the effect was more likely from the exercise component of the intervention. The other RCT indicated a non-statistically significant absolute risk increase (ARI) of 20 more falls per 1,000 people screened (ARI=2.0%, 95% CI: 48 fewer to 305 more).</p> <p>Long-term vision related functioning: Low quality evidence of no effect of screening on long term vision-related functioning was provided by a single</p>	
UNDESIRABLE EFFECTS	<p>How substantial are the undesirable anticipated effects?</p> <ul style="list-style-type: none"> <input type="radio"/> Large <input type="radio"/> Moderate <input type="radio"/> Small <input type="radio"/> Trivial <ul style="list-style-type: none"> <input type="radio"/> Varies <input checked="" type="radio"/> Don't know 		

	JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
		<p>RCT (mean difference (MD) 0.40 units higher on a 0-100 point scale; 95% CI: 1.25 lower to 2.05 higher; higher scores indicate better function).</p> <p>Changes in visual acuity: A range of metrics were reported measuring changes in visual acuity after screening. Four RCTs provided moderate quality evidence of no effect of screening on mean change in high contrast visual acuity (MD -0.01 logMAR better; 95% CI: -0.05 better to 0.03 worse) over a median of 12 months of follow up. A secondary analysis of individual participant data from one of these RCTs suggested that, in the intervention group, a smaller proportion of participants experienced worse, and a larger proportion experienced better visual acuity at 6 months follow up. In addition, low quality evidence from two RCTs reported that screening was not significantly associated with distance visual acuity with an ARR of 67 fewer people per 1,000 screened with distance visual acuity of <20/40 (bilateral) over 2-47 months of follow up (ARR=6.7%, 95% CI: 7 more to 127 fewer).</p> <p>Self-reported vision outcomes: Moderate quality evidence from ten RCTs indicated no effect of screening on self-reported vision outcomes over a median of 20 months of follow up, with an ARR of 9 fewer people reporting vision issues per 1,000 people screened (ARR=0.9%, 95% CI: 16 more to 31 fewer).</p> <p>Acceptance of referrals: The seven RCTs reporting on rates of referrals for those with a positive screen indicated that 29-75% (median 35%) of patients were offered a referral. Of these, five reported that 18-96% (median 68%) patients agreed to a referral. None of the studies reported the proportion of participants already under the care of an eye care professional at the time of screening.</p>	
CERTAINTY OF EVIDENCE	<p>What is the overall certainty of the evidence of effects?</p> <p>X Very low</p>	<p>Serious concerns about risk of bias in the RCTs providing evidence for the review. Several outcomes for which no evidence was available.</p>	

	JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
	<ul style="list-style-type: none"> ○ Low ○ Moderate ○ High ○ No included studies 		
VALUES	<p>Is there important uncertainty about or variability in how much people value the main outcomes?</p> <ul style="list-style-type: none"> ○ Important uncertainty or variability X Possibly important uncertainty or variability ○ Probably no important uncertainty or variability ○ No important uncertainty or variability 		<p>A focus group and survey of men and women age 65 years and older (n=20) was conducted by the St. Michael's Hospital knowledge translation team to assess their valuations for outcomes of vision screening (10). Participants generally articulated a preference for screening for visual acuity even though likelihood of benefit is unclear. However, some expressed concerns about the availability of screening at a population level and worried that a country-wide screening program might waste health care resources. Participants also indicated concerns about limited time for completing additional screening tests during primary care physician appointments, especially if they already accessed care from an eye care professional. A systematic review of how older adults value benefits versus harms of vision screening was not conducted because of the considerable uncertainty about benefits of screening.</p>
BALANCE OF EFFECTS	<p>Does the balance between desirable and undesirable effects favor the intervention or the comparison?</p> <ul style="list-style-type: none"> X Favors the comparison ○ Probably favors the comparison ○ Does not favor either the intervention or the comparison ○ Probably favors the intervention ○ Favors the intervention ○ Varies ○ Don't know 		

	JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
RESOURCES REQUIRED	<p>How large are the resource requirements (costs)?</p> <ul style="list-style-type: none"> ○ Large costs ○ Moderate costs ○ Negligible costs and savings ○ Moderate savings ○ Large savings ○ Varies ○ Don't know 	<p>Low quality evidence on patient-important outcomes suggests that vision screening is not an effective strategy for improving vision-related functioning in older adults. Cost-effectiveness was not assessed because, in the judgement of the task force, resource considerations would not change the direction or strength of the recommendation.</p>	
CERTAINTY OF EVIDENCE OF REQUIRED RESOURCES	<p>What is the certainty of the evidence of resource requirements (costs)?</p> <ul style="list-style-type: none"> ○ Very low ○ Low ○ Moderate ○ High <p>X No included studies</p>	<p>No information was available from the systematic review.</p>	

	JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
COST EFFECTIVENESS	<p>Does the cost-effectiveness of the intervention favor the intervention or the comparison?</p> <ul style="list-style-type: none"> ○ Favors the comparison ○ Probably favors the comparison ○ Does not favor either the intervention or the comparison ○ Probably favors the intervention ○ Favors the intervention ○ Varies X No included studies 	<p>No information was available from the systematic review.</p>	
EQUITY	<p>What would be the impact on health equity?</p> <ul style="list-style-type: none"> ○ Reduced ○ Probably reduced x Probably no impact ○ Probably increased ○ Increased ○ Varies ○ Don't know 		<p>It is not anticipated that the recommendation would have an impact on health equity.</p>
ACCEPTABILITY	<p>Is the intervention acceptable to key stakeholders?</p> <ul style="list-style-type: none"> ○ No ○ Probably no ○ Probably yes ○ Yes ○ Varies X Don't know 		<p>Responses to FACE survey (n=4) indicated that eye care professionals (n=3) would continue to screen adults aged 65 years and over. Don't know what primary care providers (physicians and nurse practitioners will do).</p>

	JUDGEMENT	RESEARCH EVIDENCE	ADDITIONAL CONSIDERATIONS
FEASIBILITY	<p>Is the intervention feasible to implement?</p> <ul style="list-style-type: none"> <input type="radio"/> No <input type="radio"/> Probably no <input type="radio"/> Probably yes <input type="radio"/> Yes <input type="radio"/> Varies <input checked="" type="radio"/> Don't know 		Responses to FACE survey (n=4) indicated that eye care professionals (n=3) would continue to screen adults aged 65 years and over.

Summary of Judgements

	JUDGEMENT							IMPLICATIONS
PROBLEM	No	Probably no	Probably yes	Yes		Varies	Don't know	
DESIRABLE EFFECTS	Trivial	Small	Moderate	Large		Varies	Don't know	
UNDESIRABLE EFFECTS	Large	Moderate	Small	Trivial		Varies	Don't know	
CERTAINTY OF EVIDENCE	Very low	Low	Moderate	High			No included studies	
VALUES	Important uncertainty or variability	Possibly important uncertainty or variability	Probably no important uncertainty or variability	No important uncertainty or variability				
BALANCE OF EFFECTS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	Probably favors the intervention	Favors the intervention	Varies	Don't know	
RESOURCES REQUIRED	Large costs	Moderate costs	Negligible costs and savings	Moderate savings	Large savings	Varies	Don't know	

	JUDGEMENT							IMPLICATIONS
CERTAINTY OF EVIDENCE OF REQUIRED RESOURCES	Very low	Low	Moderate	High			No included studies	
COST EFFECTIVENESS	Favors the comparison	Probably favors the comparison	Does not favor either the intervention or the comparison	Probably favors the intervention	Favors the intervention	Varies	No included studies	
EQUITY	Reduced	Probably reduced	Probably no impact	Probably increased	Increased	Varies	Don't know	
ACCEPTABILITY	No	Probably no	Probably yes	Yes		Varies	Don't know	
FEASIBILITY	No	Probably no	Probably yes	Yes		Varies	Don't know	

Conclusions:

Should **screening for visual acuity** vs. **usual care** be used for **community dwelling adults 65 years of age and older**?

TYPE OF RECOMMENDATION	Strong recommendation against the intervention ○	Weak recommendation against the intervention x	Conditional recommendation for either the intervention or the comparison ○	Weak recommendation for the intervention ○	Strong recommendation for the intervention ○
RECOMMENDATION	<p>For community-dwelling adults aged 65 years and over we recommend against screening for impaired visual acuity in primary care settings (Weak recommendation, low quality evidence).</p> <p>Screening was defined as questionnaire-based impairment tests as well as objective vision testing, with the expectation of further assessment and possible intervention as indicated by screening test results.</p>				
JUSTIFICATION	<p>Low quality evidence was available on the effect of screening adults 65 years of age and older for impaired visual acuity in primary care settings. There was no evidence of benefit to patients from being screened for visual acuity with the exception of falls which were slightly fewer among those screened in a single study which included an intervention designed to prevent falls in older adults making the impact of vision screening on the outcome uncertain. In the absence of evidence of effectiveness, cost effectiveness was not considered. In the judgement of the task force, benefit from screening older adults for visual acuity has not been demonstrated. Despite no evidence of harms associated with screening older adults for visual acuity, delivering an intervention with no benefit carries an opportunity cost particularly for older adults who can benefit from other evidence-based prevention interventions; therefore, the recommendation is against screening.</p> <p>The recommendation is weak because of low certainty in the evidence and variability noted in patient preferences. A weak recommendation against screening suggests that the primary care providers should not routinely offer screening for visual impairment to asymptomatic community-dwelling adults aged 65 years and older.</p>				
SUBGROUP CONSIDERATIONS	None anticipated.				
IMPLEMENTATION CONSIDERATIONS	<p>The task force recommendation applies to community-dwelling adults age 65 years and older. Subgroups of the population who are known to be at increased risk for impaired visual acuity are not the focus of this recommendation. People at increased risk of vision impairment include older adults with a history of falls, those who live in full-time residential care, and those with a diagnosis of dementia, diabetes, or with a known disorder of the vision system, such as glaucoma. Professionals who care for them should be alert to their potential for impaired visual acuity.</p> <p>Some asymptomatic older adults may be interested in vision screening despite uncertain benefits. It is appropriate to remain alert to the potential benefits of a case-finding approach and to be open to discussion of patient values and preferences on vision screening (33, 34). Knowledge translation tools are provided on the task force website to support shared decision-making in such a situation. Should a primary care provider and patient consider vision screening, thought should be given to the process of referrals for the patient to access treatment.</p>				
MONITORING AND	A weak recommendation against screening for impaired visual acuity screening in community-dwelling adults aged 65 years and older implies that someone who places a relatively higher value				

EVALUATION	on being aware of their vision status may wish to be screened. This weak recommendation emphasizes the need for shared decision-making and recognizes that some older community-dwelling adults will chose to undergo screening, whereas others may not. Therefore, awareness of this recommendation is a performance measure for this guideline.
RESEARCH PRIORITIES	Future trials should evaluate the effectiveness of screening older adults for impaired visual acuity in relation to patient-important outcomes. Complex multi-component screening interventions which include vision screening require clarity about predicted interactions between vision and other components in improving outcomes. The extent to which the effect of vision screening interventions may be modified by age, functional status, or other target population characteristics should be considered.

Reference List Appendix II

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