Canadian Task Force
on Preventive Health Care

Reaffirmation of the 2016 Canadian Task Force on Preventive Health Care guideline on screening for cognitive impairment in older adults: A pilot

Donna L. Reynolds[1], Heather Limburg[2], Ahmed M. Abou-Setta[3], Scott Klarenbach[4], Greg Traversy[2], Julie Wu[2], Roland Grad[5] and Brenda J. Wilson[6]; for the Canadian Task Force on Preventive Health Care*^

[1] Department of Family and Community Medicine and Dalla Lana School of Public Health, University of Toronto, Toronto, Ontario, Canada

[2] Public Health Agency of Canada, Ottawa, Ontario, Canada

[3] Department of Community Health Sciences, University of Manitoba, Winnipeg, Manitoba, Canada

[4] Department of Medicine, University of Alberta, Edmonton, Alberta, Canada

[5] Department of Family Medicine, McGill University, Montreal, Quebec, Canada

[6] Department of Medicine, Memorial University, St. John's, Newfoundland, Canada

* Corresponding author

E-mail: info@canadiantaskforce.ca

^ A list of collaborating members is provided in the Acknowledgements. The complete list of all current members of the Canadian Task Force on Preventive Health Care is available at http://canadiantaskforce.ca/about/members

Abstract

Objective: As part of the Canadian Task Force on Preventive Health Care (task force) five-year update review cycle, the 2016 guideline on screening for cognitive impairment in older adults was deemed a candidate for a reaffirmation pilot. New task force methods were piloted to determine if the 2016 guideline could be reaffirmed.

Design A pilot of the task force reaffirmation methodology to determine if the 2016 guideline on screening for cognitive impairment could be reaffirmed.

Setting: Screening for cognitive impairment in community-dwelling older adults within a primary care setting. The target audience of this is primary care providers.

Participants: This guideline applies to community-dwelling older adults (≥65 years of age) who do not have noticeable signs or symptoms suggestive of mild cognitive impairment or dementia.

Methods: New evidence was gathered based on a rapid review of the literature, clinical expert feedback, and clinical trial registry search. The evidence was analysed and compared against the task force considerations (criteria) for reaffirmation.

Main Findings: The task force reaffirms the 2016 recommendation - We recommend against instrument-based screening of asymptomatic older adults (≥65 years) for cognitive impairment (strong recommendation; low certainty evidence). This guideline does not apply to individuals who are concerned about their own cognitive performance or who are suspected of having mild cognitive impairment or dementia by clinicians or non-clinicians and/or have symptoms suggestive of mild cognitive impairment or dementia.

Conclusion: The task force judged that the evidence gathered would not change the direction or strength of the screening recommendation and reaffirms the guideline against instrument-based screening asymptomatic of adults (≥65 years of age) for cognitive impairment.

Introduction

Cognitive impairment (e.g., mild cognitive impairment (MCI), major neurocognitive disorders (e.g., Alzheimer's disease or other dementias)) is a condition of gradual memory loss and cognitive decline (1). This guideline focuses on neurodegenerative cognitive decline; however, within population-based screening, the etiology of cognitive impairment would not initially be known.

MCI (also diagnosed as mild neurocognitive disorder) causes noticeable changes (e.g., loss of memory, attention, language) but does not impact daily functioning (1,2), while dementia (major neurocognitive disorder) impacts a patient's day-to-day life and can lead to further cognitive declines (e.g., loss of executive functioning, or behavioural or psychological symptoms) (1,3). MCI is a risk factor for dementia but may remain stable or revert to a normal cognitive state (4–8).

Age standardized annual incidence and prevalence rates of dementia were 1,418 and 6,540 respectively per 100,000 Canadians ≥ 65 years in 2017 (9). Risk of cognitive impairment increases with age with a reported 0.8% of Canadians aged 65-69 years and 24.6% aged ≥85 years living with dementia in 2013-2014 (10). Prevalence rates of MCI vary based on differing diagnostic cut-offs and Canadian data are not readily available. MCI prevalence data from the United States ranges from 6.7-25.2% depending on age and diagnostic criteria (11,12). Preventive actions are outside the scope of this guideline (e.g., effectiveness of brain health counselling) (13–15).

Screening involves universal administration of a test to all asymptomatic individuals in a particular setting to identify those that may benefit from an intervention. Tests to assess for

cognitive impairment have typically focused on neuropsychological instruments (e.g., Mini Mental State Examination (MMSE) (16), MiniCog (17), Montreal Cognitive Assessment (MoCA) (18)). Newer biological markers (e.g., amyloid beta, pTau, TDP-43) have generated interest but are not regularly used in Canada (19–21).

In 2016, the Canadian Task Force on Preventive Health Care (task force) recommended against screening asymptomatic adults (≥65 years of age) for cognitive impairment (22) given no randomized trials had evaluated screening at that time. As part of our 5-year update review cycle on this topic, we had the option to conduct a full update (with protocol development and a new systematic review), reaffirm previous recommendation or sunset (i.e., archive) the guideline (23). Given a lack of new evidence that would alter the direction or strength of the recommendation, we deemed the 2016 guideline on screening for cognitive impairment in older adults a candidate for reaffirmation. This study will pilot new task force reaffirmation methods to determine if the 2016 guideline can be reaffirmed.

Materials and methods

Scope

This guideline is intended for primary care practitioners, defined as health professionals who provide accessible, continued, comprehensive, coordinated care and who are the first health system contact (24). The target population is community dwelling adults aged ≥ 65 years who do not have noticeable signs or symptoms suggestive of MCI or dementia. Screening is limited to the clinical administration of a neuropsychological instrument. This recommendation does not apply to usual care where the provider asks questions about and discusses a patient's cognitive health and proceeds based on their clinical judgment. This guideline does not address prevention, diagnostic accuracy, or effectiveness of treatment interventions.

The task force is an independent panel of clinicians and scientists that makes recommendations on primary and secondary prevention in primary care (http://www.canadiantaskforce.ca). A working group (WG) of five members of the task force (D.R., A.A., S.K., B.W. A.M.) conducted this reaffirmation with scientific support from Public Health Agency of Canada (PHAC) staff (H.L., G.T., J.W.).

In September 2020, we piloted a reaffirmation methodology (23) to review the 2016 guideline on screening for cognitive impairment in older adults (22). This guideline included key questions on the benefits and harms of screening for cognitive impairment and on treatment of MCI. Potential screening benefits included cognition, function, behaviour, global status, and mortality. Harms included serious adverse events due to treatment (i.e., hospital admission or death) and psychosocial harms (e.g., lack of independence, stress, depression) (22). Contextual questions included diagnostic accuracy, cost-effectiveness and patient values and preferences. Reaffirmation methods included gathering new evidence from a rapid review, clinical expert feedback, and a clinical trial registry search. The evidence was analysed and compared against the considerations (criteria) for reaffirmation (Table 1).

Table 1. Considerations for reaffirmation.

Considerations	**Response**
Is there new evidence on this topic?	Yes, new evidence from 1 RCT (25)
Is the new evidence consistent with the previous guideline?	Yes, the 1 RCT (25) findings were consistent
Does feedback from clinical experts and Working Group chairs or members indicate key advances in evidence or practice in this	There was no new evidence received that would alter the strength or direction of the previous recommendation. Response to

Considerations	Response
area since the guideline was published? This may include changes to healthcare models, patient management, regulatory changes, equity, feasibility, patient values and preferences, acceptability or costs exist that might impact this guideline.	clinical expert feedback was incorporated into the reaffirmed guideline where applicable (see Discussion and Implementation sections).
Are there relevant clinical trials that are expected to be completed within the next few years?	Yes, the search of clinical trial registries found one RCT (26) that examined caregiver outcomes for screening versus no screening for cognitive impairment. No current publications are available and are not expected until late 2024. Preliminary, non-published results from this study suggest that they will not alter our recommendations (Dr. Fowler, personal communication, April 18, 2024).
Are there unaddressed gaps or limitations in the previous guideline that could be improved with additional key questions or changes to key aspects (e.g., population(s), intervention(s), comparator(s), outcome(s), timing, setting(s))?	Unaddressed gaps persist as per the 2016 guideline. The previous guideline raised patient values and preferences (PVP) as a contextual question; This was not addressed given that there was no evidence to support screening. For reaffirmation, there was no evidence that would suggest that PVP have changed significantly and would influence our strong recommendation (given the lack of evidence to support screening).

Reaffirmation focused on the benefits and harms of screening as treatment and contextual questions (diagnostic accuracy, cost-effectiveness and patient values and preferences) given the lack of screening benefit and previous strong recommendation. However, if a change in recommendations strength or direction appeared likely, a full update of these topics would be undertaken.

A Canadian Agency for Drugs and Technologies in Health (CADTH) rapid report was conducted for new systematic reviews (SRs), randomized controlled trials (RCTs) and evidence-based guidelines on the clinical utility (benefits and harms) of cognitive impairment screening in asymptomatic community-dwelling older adults (27,28). Outcomes included but were not limited to: cognitive function, quality of life, depression, anxiety, mortality, health care utilization, health effects of false positive or negative test result, and any other associated harms of screening. Medline, PsycInfo, the Cochrane Library, the University of York Centre for Reviews and Dissemination databases, and websites of Canadian and major international health technology agencies were searched for documents published between January 1, 2016, and September 29, 2020 (later updated to January 2022). We also examined evidence that had been gathered through our routine surveillance of high impact journals and appraisals of relevant articles via the Prevention Plus alert system (29).

The following databases and websites were searched for clinical trials: European Union Clinical Trials Register, ClinicalTrials.gov, National Institute on Aging, Mayo Clinic, Alzheimer's Association TrialMatch, Alzheimer Society Research Portal and the World Health Organization International Clinical Trials Registry Platform, for trials registered from January 2002 to November 2020 (later updated to January 2022).

The task force reaffirmation methodology does not update GRADE (Grading of Recommendations, Assessment, Development and Evaluations) assessments (23). Therefore, we cannot comment on the certainty of the evidence beyond what was found in the original guideline. However, if new evidence isn't convergent with the previous guideline, the task force would recommend a full update (including GRADE evaluation).

The entirety of the evidence collected was analysed and compared against the task force considerations for reaffirmation (Table 1) (23). The entire task force approved reaffirmation of this guideline through its consensus process (30).

Results

The 2016 guideline found 0 studies on benefits and harms of screening (22). The treatment review found that pharmacotherapy for mild cognitive impairment did not produce a clinically meaningful benefit (22). Additionally, the likelihood of a false positive was 10-14% (MMSE) and 25% (MoCA) (22). Given the lack of evidence on benefits and harms analyses of cost-effectiveness, patient values and preferences were not performed. No Canadian data were found on willingness to be screened or to receive a diagnosis of mild cognitive impairment (22).

Our current review found 1 new SR (31), 1 RCT (25) and 3 evidence based guidelines (19,32–34). This included the U.S. Preventive Services Task Force (USPSTF) guideline and accompanying SR (31,33,34). The USPSTF concluded that current evidence is insufficient to assess the balance of benefits and harms of screening.

The other two guidelines were both from the Canadian Consensus Conference on the diagnosis and treatment of dementia which recommended against screening asymptomatic individuals for cognitive impairment (19,32).

The RCT (25) examined n=4005 community dwelling adults ≥65 years over a 12 month follow-up. Screening interventions included the Memory Impairment Screen (MIS) assessment (35) and Mini-Cog (17). Due to loss to follow-up and data excluded for quality control, only 2000 participants completed the study. Results showed no benefits of screening for dementia on identified primary outcomes (health-related quality of life, depressive symptoms, anxiety symptoms) or secondary outcomes (healthcare utilization, advance care planning, and dementia recognition) (25). Details of this study can be found in Appendix 1.

The search of clinical trial registries found one ongoing RCT (26) examining the impact of screening on caregivers. The trial authors were contacted, and publication is not expected until late 2024. Additionally, preliminary, non-published results from this study suggest that they will not alter our recommendations (Dr. Fowler, personal communication, April 18, 2024).

Feedback from a clinical expert and previous WG member did not identify any additional evidence that would change the direction or strength of our recommendation. Considerations raised included; changes in the conceptual framework of dementia, enhancements in diagnostic accuracy, potential biases of currently available screening tools (e.g., language, education, culture), recognition of changes in behaviour or personality as symptoms of early neurodegenerative disease, the importance of including family members for a proper assessment and when to initiate diagnostic testing (see Appendix 2).

Recommendations

We reaffirm the 2016 guideline as follows: **We recommend against instrument-based screening of asymptomatic older adults (≥ 65 years) for cognitive impairment. (Strong recommendation; low certainty evidence)**

This recommendation is about screening and does not apply to symptomatic individuals such as those who are concerned about their own cognitive performance (i.e., the patient has raised complaints about cognitive changes with their clinician or others) or who are suspected of having mild cognitive impairment or dementia by clinicians or non-clinicians (caregivers, family, or friends) and/or have signs or symptoms suggestive of mild cognitive impairment or dementia (such as loss of memory, language, attention, visuospatial, or executive functioning, or behavioural or psychological symptoms that may either mildly or significantly impact a patient's day-to-day life or usual activities).

Discussion

Evidence from the current review reaffirms the 2016 findings as the new RCT (Fowler et al., 2020) did not show any benefit of screening (25). Screening did not affect health-related quality of life or show a difference in depressive or anxiety symptoms (25). Screening also did not impact healthcare utilization, advance care planning or incidence of cognitive impairment diagnoses and/or treatment (25). Screening tools used in this study (MIS and Mini-Cog) were shown by the 2020 USPSTF SR to have adequate test performance (33). The task force also considered the opportunity cost of screening all asymptomatic older adults to be important.

There were concerns with Fowler, et al., 2020 due to missing data (loss to follow-up, excluded for quality control) and low dementia incidence (25). However, baseline characteristics remained similar and control of missing data via multiple imputations did not show any difference in outcomes.

Treatment evidence was considered indirect and therefore a rapid review was not performed during reaffirmation. The task force is aware of new drug treatments for dementia (specifically aducanumab, lecanemab or other monoclonal antibodies) (36–41). However, there

have been no trials performed in a screening population. The 2020 USPSTF SR found some improvement in function (e.g., acetylcholinesterase inhibitors and memantine) but the effect sizes were small with limited follow-up (33). Non-pharmacological treatments were not studied but USPSTF showed small intervention benefits of uncertain clinical importance (33).

Although there may be advances in diagnostic test accuracy and detection of cognitive impairment, this would not impact the rationale underlying the original recommendation as it was based on a lack of evidence of benefit of screening. However, evidence from screening trials using biomarkers could prompt an update and the task force will continue monitoring the literature.

Implementation

This recommendation against screening emphasizes the importance of good clinical practice, in which clinicians inquire about and are alert to changes in physical and mental health symptoms of their patients. The USPSTF notes that instruments such as MMSE, MoCA, MiniCog can adequately detect cognitive impairment (33) and these instruments could be a resource for diagnostic assessment of patients. As noted by the clinical expert, sensitivity, specificity, length of administration, cost and cultural, language or educational biases of validated screening tools as well as inclusion of information from family or caregivers are important considerations for diagnostic investigations.

Certain comorbidities may put individuals at a higher risk of cognitive impairment (e.g., vascular disease, hearing loss) (13,14). However, the available screening evidence did not stratify by risk and therefore we cannot make separate recommendations.

Although we cannot comment on the certainty of the updated evidence, based on the new rapid review we can reaffirm the previous recommendation's strength as strong against. Further

information on implementation and knowledge translation tools can be found in the original guideline: https://canadiantaskforce.ca/guidelines/published-guidelines/cognitive-impairment/.

Other guidelines

The task force guideline is consistent with the Canadian Consensus Conference on the Diagnosis and Treatment of Dementia (19) and UK National Screening guidelines (42) which do not recommend universal screening for dementia. The USPSTF guideline states that the current evidence is insufficient to assess the balance of benefits and harms of screening (31) (Table 2).

Table 2. Current recommendations on screening for cognitive impairment from other organizations.

Organization	Recommendation
5th Canadian Consensus Conference on the diagnosis and treatment of dementia, 2020 (19)	1. Cognitive testing to screen asymptomatic adults for the presence of mild cognitive impairment or dementia, including asymptomatic persons with risk factors such as family history or vascular risk factors, is not recommended. 1C (95%) 2. Primary care health professionals should be vigilant for potential symptoms of cognitive disorders in older or at-risk individuals, including but not limited to: reported cognitive symptoms by the patient or an informant, otherwise unexplained decline in instrumental activities of living, missed appointments or difficulty remembering or following instructions or taking medications, decrease in self-care, victimized by financial scams, or new onset later-life behavioral changes including new depression or anxiety (1C). If there is a clinical concern for a cognitive disorder (which may not always be shared by the patient due to anosognosia) then validated assessments of cognition, activities of daily living, and neuropsychiatric symptoms are indicated (see subsequent sections for suggestions for valid tools). 1A (95%)

Organization	Recommendation
U.S. Preventive Services Task Force, 2020 (31)	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for cognitive impairment in older adults. (I statement)
UK National Screening Committee, 2019 (42)	Systematic population screening for dementia is not recommended as a population screening programme in the UK.

Future directions

More high-quality evidence is needed as there was only one RCT examining screening versus not screening for cognitive impairment (25). Additionally, this RCT had serious limitations due to high rate of loss to follow-up and data excluded for quality control. Evidence on the impact of screening on family and caregivers is also lacking but may be addressed in an ongoing trial (26). More research into the effect of screening on cognitive function or decline, independent living, safety, and harms is needed. Finally, trials of screening including risk stratification, updated diagnostic tests (including biomarkers) and new treatments would help inform future updates.

Limitations

The reaffirmation approach does not include an analysis of the certainty of evidence (23). However, when no new evidence is identified, or new evidence is consistent with the previous guideline, the task force is confident in reaffirming the previous recommendation strength (strong recommendation). In this case, there were concerns with the quality and power of the identified RCT to detect a difference in outcomes. However, even if this study was rated with very-low certainty this would still result in a reaffirmation based on no new evidence of benefit.

The CADTH rapid report was limited to RCTs, systematic reviews and evidence-based guidelines. While observational studies may have been missed, impactful observational studies would likely have been identified by clinical experts or previous WG members.

Like the original guideline, we did not include a systematic review or rapid report on patient values and preferences, equity or feasibility given the lack of evidence on the effectiveness of screening. Clinical experts and previous WG members were asked about new evidence in these areas.

There is a small risk that the task force could reaffirm a guideline that may be better suited to undergo a full update. To help mediate this risk, all reaffirmed guidelines continue to undergo ongoing surveillance via Prevention Plus (29).

This analysis was a pilot and future reaffirmations are expected to be completed with shorter time frames between the literature search, clinical expert feedback and analysis. Additionally, upcoming reaffirmations will require feedback from at least 3 clinical experts.

Conclusions

The task force judged that the above evidence would not change the direction or strength of the recommendation and reaffirms the guideline against instrument-based screening asymptomatic adults (≥65 years of age) for cognitive impairment (strong recommendation, low certainty evidence).

Acknowledgments

The authors would like to acknowledge the contributions of collaborating task members Jennifer A. Flemming, Eddy Lang, Patricia Li, Henry Yu-Hin Siu, Nathalie Slavtcheva, Guylene Theriault and Keith Todd. The authors would like to thank prior task force members Heather Colquhoun, Tina Korownyk, Emily G. McDonald, Ainsley Moore, Navindra Persaud, John J. Riva and Brett Thombs who were present during the early development of the guideline. The authors thank Maurica Maher of the Global Health and Guidelines Division at the Public Health Agency of Canada, who supported the development of the guideline; and the Knowledge Translation Program, Li Ka Shing Knowledge Institute, St. Michael's Hospital for their contributions knowledge translation work related to this report. They would also like to thank Dr. Zahinoor Ismail (University of Calgary, Calgary, Alb.) for feedback as a clinical expert. Clinical and content experts may or may not agree with the task force recommendations.

References

1. Hugo J, Ganguli M. Dementia and Cognitive Impairment. Clin Geriatr Med. 2014 Aug;30(3):421–42.
2. Jongsiriyanyong S, Limpawattana P. Mild Cognitive Impairment in Clinical Practice: A Review Article. Am J Alzheimer's Dis Other Dementiasr. 2018 Dec 1;33(8):500–7.
3. Arvanitakis Z, Shah RC, Bennett DA. Diagnosis and Management of Dementia: Review. JAMA. 2019 Oct 22;322(16):1589.
4. Roberto N, Portella MJ, Marquié M, Alegret M, Hernández I, Mauleón A, et al. Neuropsychiatric profiles and conversion to dementia in mild cognitive impairment, a latent class analysis. Sci Rep. 2021 Mar 19;11(1):6448.
5. Zhang Y, Natale G, Clouston S. Incidence of Mild Cognitive Impairment, Conversion to Probable Dementia, and Mortality. Am J Alzheimer's Dis Other Dementiasr. 2021 Jan 1;36:153331752110122.
6. Mitchell AJ, Shiri-Feshki M. Rate of progression of mild cognitive impairment to dementia - meta-analysis of 41 robust inception cohort studies. Acta Psychiatr Scand. 2009 Apr;119(4):252–65.
7. Overton M, Pihlsgård M, Elmståhl S. Diagnostic Stability of Mild Cognitive Impairment, and Predictors of Reversion to Normal Cognitive Functioning. Dement Geriatr Cogn Disord. 2019;48(5–6):317–29.
8. Ganguli M, Snitz BE, Saxton JA, Chang C-CH, Lee C-W, Vander Bilt J, et al. Outcomes of Mild Cognitive Impairment by Definition. Arch Neurol. 2011 Jun 1;68(6).
9. Public Health Agency of Canada. Canadian Chronic Disease Surveillance System (CCDSS): Dementia, including Alzheimer disease [Internet]. 2021 [cited 2022 Aug 18]. Available from: https://health-infobase.canada.ca/ccdss/data-tool/
10. Public Health Agency of Canada. Dementia in Canada, including Alzheimer's disease: Highlights from the Canadian Chronic Disease Surveillance System [Internet]. 2017 [cited 2022 Aug 18]. Available from: https://www.canada.ca/en/public-health/services/publications/diseases-conditions/dementia-highlights-canadian-chronic-disease-surveillance.html
11. Rajan KB, Weuve J, Barnes LL, McAninch EA, Wilson RS, Evans DA. Population estimate of people with clinical Alzheimer's disease and mild cognitive impairment in the United States (2020–2060). Alzheimer's Dement. 2021 Dec 27;17(12):1966–75.
12. Petersen RC, Lopez O, Armstrong MJ, Getchius TSD, Ganguli M, Gloss D, et al. Practice guideline update summary: Mild cognitive impairment. Neurology. 2018 Jan 16;90(3):126–35.
13. Livingston G, Huntley J, Sommerlad A, Ames D, Ballard C, Banerjee S, et al. Dementia prevention, intervention, and care: 2020 report of the Lancet Commission. Lancet. 2020 Aug;396(10248):413–46.
14. World Health Organization. Risk Reduction of Cognitive Decline and Dementia: WHO

Guidelines [Internet]. 2019 [cited 2023 Sep 20]. Available from: https://iris.who.int/bitstream/handle/10665/312180/9789241550543-eng.pdf

15. Lisko I, Kulmala J, Annetorp M, Ngandu T, Mangialasche F, Kivipelto M. How can dementia and disability be prevented in older adults: where are we today and where are we going? J Intern Med. 2021 Jun 10;289(6):807–30.

16. Arevalo-Rodriguez I, Smailagic N, Roqué-Figuls M, Ciapponi A, Sanchez-Perez E, Giannakou A, et al. Mini-Mental State Examination (MMSE) for the early detection of dementia in people with mild cognitive impairment (MCI). Cochrane Database Syst Rev. 2021 Jul 27;2021(7).

17. Borson S, Scanlan J, Brush M, Vitaliano P, Dokmak A. The Mini-Cog: a cognitive vital signs measure for dementia screening in multi-lingual elderly. Int J Geriatr Psychiatry. 2000 Nov;15(11):1021–7.

18. Nasreddine ZS, Phillips NA, Bedirian V, Charbonneau S, Whitehead V, Collin I, et al. The Montreal Cognitive Assessment, MoCA: A Brief Screening Tool For Mild Cognitive Impairment. J Am Geriatr Soc. 2005 Apr;53(4):695–9.

19. Ismail Z, Black SE, Camicioli R, Chertkow H, Herrmann N, Laforce R, et al. Recommendations of the 5th Canadian Consensus Conference on the diagnosis and treatment of dementia. Alzheimer's Dement. 2020 Aug 29;16(8):1182–95.

20. Simrén J, Ashton NJ, Blennow K, Zetterberg H. An update on fluid biomarkers for neurodegenerative diseases: recent success and challenges ahead. Curr Opin Neurobiol. 2020 Apr;61:29–39.

21. Solje E, Benussi A, Buratti E, Remes AM, Haapasalo A, Borroni B. State-of-the-Art Methods and Emerging Fluid Biomarkers in the Diagnostics of Dementia—A Short Review and Diagnostic Algorithm. Diagnostics. 2021 Apr 27;11(5):788.

22. Pottie K, Rahal R, Jaramillo A, Birtwhistle R, Thombs BD, Singh H, et al. Recommendations on screening for cognitive impairment in older adults. Can Med Assoc J. 2016 Jan 5;188(1):37–46.

23. Canadian Task Force on Preventive Health Care. Updating, reaffirmation and sunsetting clinical practice guidelines: Methods from the Canadian Task Force on Preventive Health Care [Internet]. 2023 [cited 2023 Oct 4]. Available from: https://canadiantaskforce.ca/methods/updating-reaffirmation-and-sunsetting-clinical-practice-guidelines-methods-from-the-canadian-task-force-on-preventive-health-care/

24. World Health Organization. What are the advantages and disadvantages of restructuring a health care system to be more focused on primary care services? [Internet]. 2004 [cited 2021 Nov 5]. Available from: https://www.euro.who.int/__data/assets/pdf_file/0004/74704/E82997.pdf

25. Fowler NR, Perkins AJ, Gao S, Sachs GA, Boustani MA. Risks and Benefits of Screening for Dementia in Primary Care: The Indiana University Cognitive Health Outcomes Investigation of the Comparative Effectiveness of Dementia Screening (IU CHOICE) Trial. J Am Geriatr Soc. 2020 Mar 2;68(3):535–43.

26. Fowler N. Caregiver Outcomes of Alzheimer's Disease Screening (COADS) [Internet].

2021 [cited 2022 Jan 26]. Available from: https://clinicaltrials.gov/ct2/show/NCT03300180

27. CADTH. Screening for Cognitive Impairment in Asymptomatic Community-Dwelling Older Adults: Clinical Utility and Guidelines [Internet]. 2020 [cited 2024 Jul 12]. Available from: https://canadiantaskforce.ca/wp-content/uploads/2024/07/Screening-for-Cognitive-Impairment-A-CADTH-rapid-response-search-update-to-inform-the-CTFPHC-reaffirmation-2020.pdf

28. CADTH. Screening for Cognitive Impairment in Asymptomatic Community-Dwelling Older Adults: A 2022 Update [Internet]. 2022 [cited 2024 Jul 12]. Available from: https://canadiantaskforce.ca/wp-content/uploads/2024/07/Screening-for-Cognitive-Impairment-A-CADTH-rapid-response-search-update-to-inform-the-CTFPHC-reaffirmation-2022.pdf

29. McMaster University Health Information Research Unit. Prevention Plus [Internet]. 2022 [cited 2022 Apr 11]. Available from: https://plus.mcmaster.ca/PreventionPlus/

30. Canadian Task Force on Preventive Health Care. Methods [Internet]. 2022 [cited 2022 Nov 21]. Available from: https://canadiantaskforce.ca/methods/

31. Owens DK, Davidson KW, Krist AH, Barry MJ, Cabana M, Caughey AB, et al. Screening for Cognitive Impairment in Older Adults: US Preventive Services Task Force Recommendation Statement. JAMA. 2020 Feb 25;323(8):757.

32. Tang-Wai DF, Smith EE, Bruneau M, Burhan AM, Chatterjee A, Chertkow H, et al. CCCDTD5 recommendations on early and timely assessment of neurocognitive disorders using cognitive, behavioral, and functional scales. Alzheimer's Dement Transl Res Clin Interv. 2020 Jan 11;6(1).

33. Patnode C, Perdue L, Rossom R, Rushkin M, Redmond N, Thomas R, et al. Screening for Cognitive Impairment in Older Adults: An Evidence Update for the U.S. Preventive Services Task Force (Evidence Synthesis, No. 189.) [Internet]. Rockville (MD): Agency for Healthcare Research and Quality (US); 2020 [cited 2022 Jan 25]. Available from: https://www.ncbi.nlm.nih.gov/books/NBK554654/

34. Patnode CD, Perdue LA, Rossom RC, Rushkin MC, Redmond N, Thomas RG, et al. Screening for Cognitive Impairment in Older Adults. JAMA. 2020 Feb 25;323(8):764.

35. Buschke H, Kuslansky G, Katz M, Stewart WF, Sliwinski MJ, Eckholdt HM, et al. Screening for dementia with the Memory Impairment Screen. Neurology. 1999 Jan 1;52(2):231–231.

36. Sevigny J, Chiao P, Bussière T, Weinreb PH, Williams L, Maier M, et al. The antibody aducanumab reduces Aβ plaques in Alzheimer's disease. Nature. 2016 Sep 1;537(7618):50–6.

37. Cavazzoni P. FDA's Decision to Approve New Treatment for Alzheimer's Disease [Internet]. FDA Center for Drug Evaluation and Research. 2021 [cited 2022 Jan 26]. Available from: https://www.fda.gov/drugs/news-events-human-drugs/fdas-decision-approve-new-treatment-alzheimers-disease

38. Mintun MA, Lo AC, Duggan Evans C, Wessels AM, Ardayfio PA, Andersen SW, et al.

Donanemab in Early Alzheimer's Disease. N Engl J Med. 2021 May 6;384(18):1691–704.

39. Watt JA, Marple R, Hemmelgarn B, Straus SE. Should Canadian patients look forward to aducanumab for Alzheimer disease? Can Med Assoc J. 2021 Sep 13;193(36):E1430–1.

40. van Dyck CH, Swanson CJ, Aisen P, Bateman RJ, Chen C, Gee M, et al. Lecanemab in Early Alzheimer's Disease. N Engl J Med. 2023 Jan 5;388(1):9–21.

41. Eli Lilly and Company. A Study of Remternetug (LY3372993) in Participants With Alzheimer's Disease (TRAILRUNNER-ALZ 1) [Internet]. 2023 [cited 2023 Sep 20]. Available from: https://classic.clinicaltrials.gov/ct2/show/NCT05463731

42. UK National Screening Committee. Adult screening programme: Dementia [Internet]. 2019 [cited 2022 Aug 18]. Available from: https://view-health-screening-recommendations.service.gov.uk/dementia/#:~:text=UK%20NSC%20screening%20recommendation%20Based,dementia%20before%20they%20show%20symptom