Guideline Summary NGC-10869

Guideline Title
Recommendations on screening for cognitive impairment in older adults.

Bibliographic Source(s)
PubMed

Guideline Status
This is the current release of the guideline.
This guideline updates a previous version: Patterson CJ, Gass DA. Screening for cognitive impairment and dementia in the elderly. Can J Neurol Sci. 2001 Feb;28(Suppl 1):S42-S1. [94 references]
This guideline meets NGC’s 2013 (revised) inclusion criteria.

Scope
Disease/Condition(s)
Cognitive impairment

Guideline Category
Evaluation
Screening

Clinical Specialty
Family Practice
Geriatrics
Neurology
Psychiatry
Psychology

Intended Users
Advanced Practice Nurses
Allied Health Personnel
Nurses
Physician Assistants
Physicians

Guideline Objective(s)
To provide evidence-based recommendations on screening for cognitive impairment in adults

Target Population
Asymptomatic adults 65 years of age and older

Note: The guideline focuses on screening asymptomatic adults. This does not apply to men and women who are concerned about their own cognitive performance or who are suspected of having mild cognitive impairment or dementia by clinicians or nonclinicians and/or have symptoms suggestive of mild cognitive impairment or dementia.

Interventions and Practices Considered
Screening of asymptomatic adults (65 years of age or older) for cognitive impairment (not recommended)

Major Outcomes Considered
- Safety
- Health-related quality of life (HRQoL)
- Cognitive function or decline
- Unanticipated health care utilization
- Independent living
- Medication adherence or errors
- Other symptoms (e.g., insomnia, depression or agitation)
Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Note from the National Guideline Clearinghouse (NGC): A systematic review was prepared by the McMaster Evidence Review and Synthesis Centre (ERSC) Team, McMaster University, Hamilton, Ontario for the Canadian Task Force on Preventive Health Care (CTFPHC) (see the "Availability of Companion Documents" field).

Search Strategy

The search was based on a search conducted by the United States Preventive Services Task Force (USPSTF) for their 2013 systematic review entitled: Screening for Cognitive Impairment in Older Adults: An Evidence Update for the U.S. Preventive Services Task Force. The reviewers modified their strategy to narrow it to those with mild cognitive impairment (MCI). They searched Medline, EMBASE and the Cochrane Central Register of Controlled Trials for the period of Dec 2012-Dec 2014. See Appendix A in the systematic review for the full search strategy.

For the question on test properties (Key Question 3), a separate search, without date or language limits, was conducted in Medline, EMBASE and PsycINFO for test properties of the Montreal Cognitive Assessment (see Appendix B in the systematic review for the full search strategy). In addition, a specific targeted search was also undertaken using Google Advanced, limited to Canada and with the search terms "(MoCA OR Montreal Cognitive Assessment) AND (cognitive OR cognition)."

For the contextual questions, the reviewers searched Medline and EMBASE from January 1, 2004 to December 8, 2014. The detailed search strategies can be found in Appendix C of the systematic review.

Study Selection

After removing all duplicates, citations found through the updated search, as well as citations from the USPSTF review and a recent systematic review conducted by Tricco et al., were uploaded to a web-based systematic review software program for screening. The titles and abstracts of papers considered for the key questions and sub questions were reviewed in duplicate; articles marked for inclusion by either team member went on to full text relevance testing. Full text screening was done independently by two people with consensus required for inclusion or exclusion.

For citations located in the contextual questions search, title and abstract screening was done by two people. Full text screening and data extraction was done by one person. Results have been reported narratively.

Inclusion and Exclusion Criteria

Language

The published results of studies had to be available in either English or French.

Population

The population of interest for this review is community-dwelling older adults, average age 65 years or older diagnosed with MCI.

Excluded from this review are studies that focused on people institutionalized and people who reside in intermediate care facilities (i.e., rehabilitation centers or skilled nursing facilities).

Interventions

Pharmacologic interventions used to treat MCI for the purpose of preventing cognitive decline: approved drugs for use in Canada. Non-pharmacologic interventions aimed at patients MCI.

Study Design and Comparison Groups

Randomized controlled trials (RCTs) with placebo or usual care control groups

Search Results

After removing duplicates, the reviewers uploaded 403 unique citations from the search, as well as 163 unique citations from the USPSTF review and the Tricco et al. systematic review to DistillerSR for screening at title and abstract. They excluded 429 articles at title and abstract, leaving 137 to be reviewed at the full text level. At this level the reviewers identified 22 systematic reviews and excluded 98 studies. They identified no additional studies through a hand search of the included studies lists of 22 relevant systematic reviews. The team included 17 studies.

In the search for test properties data, the reviewers uploaded 292 unique citations after removing duplicates to be screened at title and abstract. They excluded 267 articles at title and abstract, leaving 25 to be screened at full text. After exclusions at full text, the reviewers included 2 studies on test properties. The findings from these studies are reported narratively.

Please see the PRISMA 2009 Flow Diagram–Test Properties in the systematic review for details.

Number of Source Documents

Summary of Included Studies

The McMaster Evidence Review and Synthesis Centre (ERSC) team included 17 randomized controlled trials (RCTs); 12 answered the question of benefits of treatment for mild cognitive impairment (MCI); 11 answered the question on harms of treatment for MCI. Five studies examined the effects of pharmacological treatments on MCI. Seven studies focus on dietary supplements/vitamins as treatment for MCI and seven studies investigated behavioural interventions. Refer to the systematic review (see the "Availability of Companion Documents" field) for more information on the literature search results.

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Grading of Recommendations Assessment, Development and Evaluation (GRADE) Working Group Grades of Evidence

<table>
<thead>
<tr>
<th>Quality Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>High quality</td>
<td>Further research is very unlikely to change confidence in the estimate of effect.</td>
</tr>
<tr>
<td>Moderate quality</td>
<td>Further research is likely to have an important impact on confidence in the estimate of effect and may change the estimate.</td>
</tr>
<tr>
<td>Low quality</td>
<td>Further research is very likely to have an important impact on confidence in the estimate of effect and is likely to change the estimate.</td>
</tr>
<tr>
<td>Very low quality</td>
<td>The Canadian Task Force on Preventive Health Care (CTFPHC) is very uncertain about the estimate.</td>
</tr>
</tbody>
</table>

Methods Used to Analyze the Evidence

Meta-Analysis
Methods Used to Formulate the Recommendations

The development of these recommendations was led by a workgroup of eight members of the Canadian Task Force on Preventive Health Care (CTFPHC) and scientific staff at the Public Health Agency of Canada. They established this topic as a priority based on the potential to decrease inconsistencies in screening in primary care practice and a need to determine whether benefits of screening outweigh harms.

The US Preventive Services Task Force (USPSTF) recently published a systematic review on screening and treatment for cognitive impairment. Initially, the CTFPHC updated the USPSTF review, assessing the effects of screening for mild cognitive impairment on health outcomes. The Evidence Review and Synthesis Centre at McMaster University independently conducted the systematic review (see the "Availability of Companion Documents" field) evaluating the effectiveness of screening for cognitive impairment (see Appendix 1 in the online appendices [see the "Availability of Companion Documents" field]).

Given that the Evidence Review and Synthesis Centre found no evidence on the benefits or harms of screening, the CTFPHC decided to also review the literature on the effectiveness of treatment interventions for mild cognitive impairment (MCI) to inform the screening guidelines. The workgroup established the research questions and the analytical framework for the guideline (see Appendix 2 in the online appendices). This second systematic review updated the search conducted for the USPSTF systematic review on the effectiveness of treatment; however, the USPSTF’s inclusion criteria were modified by the CTFPHC to examine the effectiveness of treatment only in individuals with a diagnosis of MCI. The assumptions were that, if clinicians are able to identify individuals with MCI early through screening and either slow down or stop its progression through effective treatment, the incidence of cognitive impairment (measured through cognition, function, behaviour and global status) may decline. Also, if individuals are identified at the stage of MCI, when their comprehension and decision-making capacity and autonomy are not affected, they will have the opportunity to plan for the future in different areas of their lives (e.g., medical, legal, financial), which may ultimately improve other patient-important outcomes, such as a reduction of caregiver burden.

The CTFPHC workgroup decided to treat the key question regarding the accuracy of screening tools (see Key Question 6 in Appendix 2 in the online appendices) as a contextual question. This was because there were no trials of screening programs and there was evidence that treatment of MCI does not produce clinically meaningful benefit. Thus, the accuracy of potential screening tools was less important for determining an overall recommendation, but it was still important to understand the likely burden of false-positive results if screening were to be implemented. As such, a systematic review of the evidence on diagnostic test properties was not conducted. Instead, two recent high-quality systematic reviews (A Measurement Tool to Assess Systematic Reviews [AMSTAR]) scores of 9 and 10, respectively) were used to report on the sensitivity and specificity of screening tools. As well, false-positive rates were reported, which was defined as the proportion of people without cognitive impairment who would be incorrectly classified as having cognitive impairment.

More information about the CTFPHC’s methods can be found in the original guideline document and the systematic review.

Analytic Framework, Key Questions and Contextual Questions

Please see Figure 1 in the systematic review for the analytic framework.

Key Questions

- **Key Question 1:** Do pharmacological or non-pharmacological interventions for MCI in community dwelling adults (≥65 years of age) improve: 1) cognition, 2) function, 3) behaviour, 4) global status, or 5) mortality?
  a. How effective are the screening tools validated for Canadian populations (e.g., MoCA) in improving: 1) cognition, 2) function, 3) behaviour, 4) global status, or 5) mortality?
- **Key Question 2:** What are the adverse events (AE) including serious (hospitalization or death) and psycho-social harms such as depression, lack of independence, etc., of pharmacological or nonpharmacological interventions for MCI?
- **Key Question 3:** What are the diagnostic properties of screening tools validated in a Canadian population of adults older than age 65?
  a. What are the cut-offs for MCI in adults 65 years and over and how well they work (i.e., examine how well the screening tools differentiate between no cognitive impairment and MCI, and between MCI and severe cognitive impairment).

Contextual Questions

- **Contextual Question 1:** People’s willingness to be screened for MCI and elements that factor into this decision process (I am willing because; I am not willing because…)
- **Contextual Question 2:** People’s willingness to be diagnosed for MCI (i.e., interest in knowing the diagnosis if MCI was found [given available treatment options] and elements that are factored into this decision process [I am willing because; I am not willing because…])

Grading of Recommendations

Recommendations are graded according to the Grading of Recommendations Assessment, Development and Evaluation (GRADE) system. GRADE offers two strengths of recommendation: strong and weak. The strength of recommendations is based on the quality of supporting evidence, the degree of uncertainty about the balance between...
Potential Benefits

Benefits of Screening and Treatment

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Benefits of Screening and Treatment
The evidence review identified no trials that examined the effectiveness of screening for cognitive impairment on patient outcomes (function, quality of life, health care utilization and safety), family and caregiver outcomes (quality of life, caregiver burden) or societal outcomes (safety) (see Appendix 1 in the online appendices [see the "Availability of Companion Documents" field]). The review identified 12 randomized controlled trials (RCTs) that examined the effects of treatment interventions for mild cognitive impairment on cognition, function, behaviour and global status. No studies were identified that examined the effect of treatment interventions on mortality.

For all results on the outcome of cognition reported, it is important to note that negative and positive effects are outcome-measure dependent. For Mini-Mental State Examination (MMSE), increases in score (positive values) indicate an improvement; however, for Alzheimer’s Disease Assessment Scale (ADAS-cog), decreases in score (negative values) indicate an improvement. See the original guideline document for specific interventions, such as cholinesterase inhibitors, dietary supplements and vitamins, and nonpharmacologic interventions.

**Potential Harms**

**Harms**

No studies were identified by the Evidence Review and Synthesis Centre on the harms of screening (shown in Appendix 1 in the online appendices [see the "Availability of Companion Documents" field]).

The systematic review for treatment also used randomized controlled trials (RCTs) to examine harms associated with the treatment of mild cognitive impairment and found no evidence that pharmacologic treatments were associated with an increased number of serious adverse events or psychosocial harms (e.g., depression and lack of independence) compared with controls. Seven RCTs that examined the effects of dietary supplements or vitamins or the effects of nonpharmacologic treatments reported that no serious adverse events occurred.

**Qualifying Statements**

**Qualifying Statements**

The views of the funding bodies have not influenced the content of the guideline; competing interests have been recorded and addressed. The views expressed in this article are those of the authors and do not necessarily represent those of the Public Health Agency of Canada.

**Gaps in Knowledge**

No identified trials directly studied the benefits and harms of screening adults for cognitive impairment. Current evidence evaluating the effect of pharmacologic treatment on mild cognitive impairment was limited to low-quality randomized controlled trials (RCTs) of the effect only on cognition. Further research is needed to evaluate other patient-important outcomes, such as function, behaviour and mortality. Research into nonpharmacologic interventions for older people and their families may warrant ongoing investigation. As well, research into how older people value various outcomes and the factors they consider in determining their willingness to be screened will be important for future recommendations on screening and treatment for cognitive impairment. Finally, more research exploring the clinical benefits of screening and treatment in high-risk groups is required.

**Implementation of the Guideline**

**Description of Implementation Strategy**

**Considerations for Implementation**

The Canadian Task Force on Preventive Health Care (CTFPHC) has developed tools to help practitioners interpret these recommendations for their patients (available at http://canadiantaskforce.ca/ctfphc-guidelines/2015-cognitive-impairment-2[5]). The CTFPHC uses a rigorous and collaborative usability testing process to develop knowledge translation tools targeting various end-user groups (e.g., clinicians and patients) to accompany its guidelines. Tools are informed by feedback from clinicians and patients obtained in interviews or focus groups. Although the CTFPHC recommends against screening for cognitive impairment, practitioners should examine and assess cognitive functions and functional autonomy whenever a patient presents with signs and symptoms of impairment or when family members or patients express concerns about potential cognitive decline.

It is difficult to establish the potential value of screening in older populations, such as people over 85 years of age. The prevalence of mild cognitive impairment and dementia increases in older groups (e.g., >85). However, given the lack of high-quality evidence showing the effectiveness of treatment and the potential for high false-positive rates from screening across all age groups, the CTFPHC considers it is not appropriate to recommend population screening in any group aged 65 years or older. Instead, the CTFPHC acknowledges the importance of clinical evaluation or case-finding in the context of signs and symptoms to ensure patients are attended to and treated individually.

Refer to the original guideline document for a discussion of cognitive screening instruments.

**Patient Values and Preferences**

Patient values and preferences were reviewed in the systematic review; however, no identified Canadian data described the willingness to be screened for or to receive a diagnosis of mild cognitive impairment.

One international study examined the willingness to be screened among first-degree relatives of people with Alzheimer disease (i.e., children of older people with a diagnosis of probable Alzheimer disease). The study interviewed 93 participants with a mean age of 50.7 years and found that 32% were willing to be screened within the next year and 42% during the next five years. Such willingness to be screened was mainly related to obtaining help to prepare for the future.

Participants’ responses in terms of factors that may influence their willingness to be screened included “help me and my physician plan for future treatments” (57%); “help me deal with the problem if there was one” (54%); and “help me plan my life” (52%). Interestingly, other responses included cost (performing an evaluation is costly, 30%); time (performing an evaluation is time-consuming, 28%); or it takes time to go see a physician for cognitive impairment screening, 26%) and other things that are more important for them than screening (36%).

Because these participants were relatives of people with a diagnosis of cognitive impairment, it is uncertain whether the findings are generalizable to the broader population of candidates for population screening.

**Suggested Performance Measures**

Given that the CTFPHC has recommended against screening, a suggested performance measure for this guideline could be declining use of population screening.

**Implementation Tools**

- Foreign Language Translations
- Mobile Device Resources
- Quick Reference Guides/Physician Guides
- Resources
- Slide Presentation

For information about availability, see the Availability of Companion Documents and Patient Resources fields below.

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Institute of Medicine (IOM) National Healthcare Quality Report Categories
IOM Care Need
Staying Healthy
IOM Domain
Effectiveness
Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

Adaptation
Not applicable: The guideline was not adapted from another source.

Date Released
2016 Jan 5

Guideline Developer(s)
Canadian Task Force on Preventive Health Care - National Government Agency [Non-U.S.]

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Funding for the Canadian Task Force on Preventive Health Care (CTFPHC) is provided by the Public Health Agency of Canada and the Canadian Institutes of Health Research.

Guideline Committee
Canadian Task Force on Preventive Health Care (CTFPHC) Guideline Workgroup

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Financial Disclosures/Conflicts of Interest
The views of the funding bodies have not influenced the content of the guideline; competing interests have been recorded and addressed.

Competing interests: None of the authors (members of the guideline writing group) have declared competing interests.

Guideline Endorser(s)
College of Family Physicians of Canada - Professional Association

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Guideline Availability

Availability of Companion Documents
The following are available: