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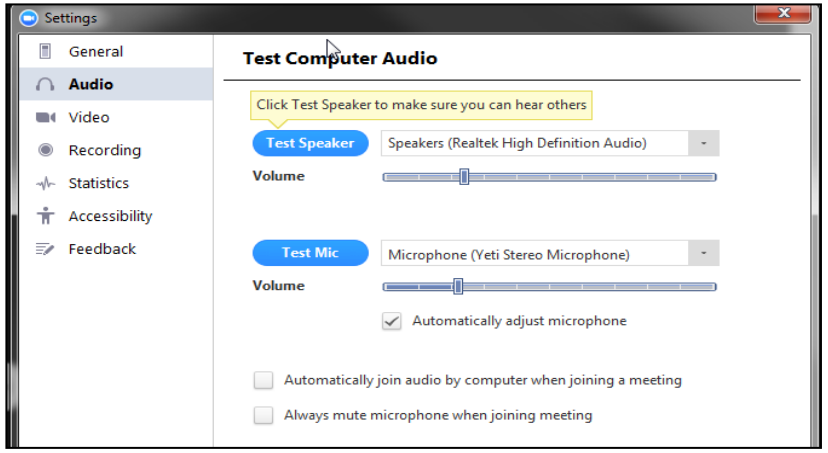

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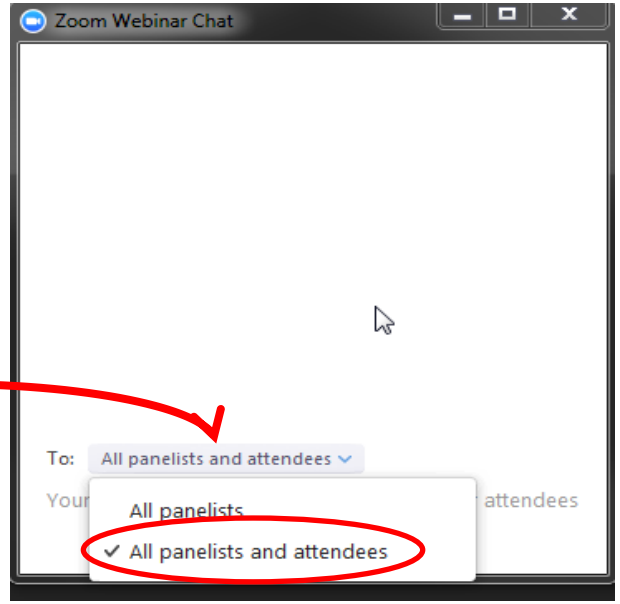

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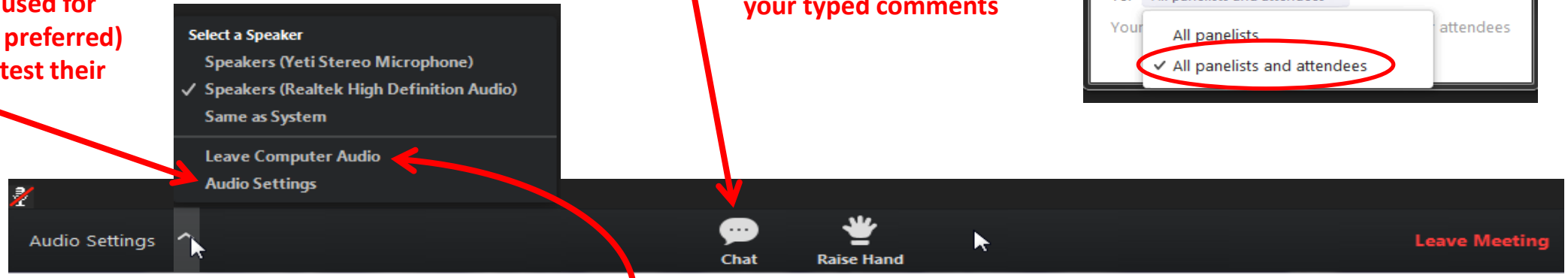

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RGP of Toronto Network Webinar

Clinical Screening in the Geriatric Population

July 11 2018, 12-1pm

Screening and Triage

Dr. Katherine Krause, PGY5

Geriatric Medicine, University of Toronto

Screening for MCI and Dementia

Dr. Mauli Mehta, PGY5

Geriatric Medicine, University of Toronto

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RGP REGIONAL GERIATRIC PROGRAM OF TORONTO

Better health outcomes for frail seniors

Screening and Triage in a Geriatric Population

Katie Krause

PGY5 Geriatrics

Sunnybrook Webinar Series

Conflicts of Interest

- None

Outline of Presentation

- Overview of screening in medicine
- Importance of screening
- Screening in geriatric medicine
- Differences between screening and triage in practice
- Overview of triage and its importance
- Triage in geriatric medicine

Questions for you!

1. Do you know the different between a screening and triage?

2. Who uses a screening tool in their working life?

3. Who uses tools that triage patients or clients in their working life?

Screening

- The objective of medical screening is to identify disease in its preclinical state

US Commission of Chronic Illness (1951)

"The presumptive identification of unrecognized disease or defect by the application of tests, examinations, or other procedures which can be applied **rapidly**"

Morabia and Zhang 2004
Commission on Chronic Illness 1957

Screening

- Rose and Barker (1978) indicated that in order to determine whether screening is beneficial, doctors had to answer 3 questions:

1. Does earlier treatment **improve the prognosis**?
2. How valid and **repeatable** is the screening test?
3. What is the **yield** of the screening service?

Morabia and Zhang 2004
Rose and Barker 1978
Commission on Chronic Illness 1957

Screening

- Only in the 20th century were these conditions able to be met:
  - Appropriate test
  - Validity
  - Availability

- Not intended to be diagnostic

- Those with suspicious findings must be referred for diagnosis and necessary treatment

Morabia and Zhang 2004
Rose and Barker 1978
Commission on Chronic Illness 1957

Screening

- Mental tests for officers, drafted and enlisted (1917)
- The purpose: *"to eliminate from the Army at the earliest possible moment those recruits whose defective intelligence would make them a menace to the military organization"*
- Army Alpha
  - 50 min with 100-200 men at once
  - Large populations
  - Repeatable
  - Administered rapidly
  - 'High degree of validity' – 7749 men for excluded from service

1. A company advanced 6 miles and retreated 2 miles. How far was it then from its first position?
2. A dealer bought some mules for $1,200. He sold them for $1,500, making $50 on each mule. How many mules were there?

Morabia and Zhang 2004
Commission on Chronic Illness 1957

Screening

- Screening is now commonplace in medicine:
  - Cancer: breast, colon, cervical
  - Metabolic: thyroid, diabetes
  - Infections: syphilis, TORCH
- Integration of screening in medicine has lead to improved health outcomes for various illnesses
  - Improved detection
  - Early identification and implementation of treatment
  - Prevention of complications
  - Improved survival

Morabia and Zhang 2004
Canadian Cancer Society

Screening

- Limitations:
  - False positives
  - False negatives
  - Overdiagnosis/overtreatment
  - May lead to additional testing

Geriatric Screening

- Many screening programs APPLY to geriatric populations
  - Dr. Mehta will discuss screening in MCI and dementia
    - STAY TUNED!

- Can we screen for who should be seen by a geriatrician??
- Standardized approach can improve care quality and outcomes[1]
  - Tools are being developed and adapted to screen older adults for appropriateness
    - Assessment Urgency Algorithm (AUA)

CTFPHC 2015

1. Boorsma et al. 2006

Geriatric Screening

- Assessment Urgency Algorithm (AUA)
  - RAPID risk screening tool for older adults based on 6 domains to guide referrals
    - Self-reliance Indicator (Decision-making and ADLs)
    - Caregiver stress
    - Mood
    - Self-rated health
    - Presence of unstable medical conditions
    - Dyspnea

Geriatric Screening

- Now used in:
  - ED
  - Physiotherapy clinics across Ontario
  - Seniors mental health
  - Family health teams

Is screening the same as triage?

- NO!

Triage

- The original concepts of triage were focused on mass casualty situations
- Triage, from French ‘trier’, originally 1792, applied to a process of sorting patients by Baron Dominique Jean Larrey, Surgeon in Chief to Napoleon’s Imperial Guard
    - Developed originally for sorting surgical patients in battlefield settings
    - Also contributed to the organization of a care system for the ongoing management of casualties

Robertson-Steel 2006

Triage

- 1900s saw triage emerging in the ED in the US, Canada, UK, and Europe
  - Brief clinical assessment determining the time and sequence in which a patient should be seen by a **limited resource**

- Triage is a dynamic process as the persons status can change

Robertson-Steel 2006

Triage

- For those requiring routine care, triage takes on a different purpose
  - Identification of patients who require more urgent assessment
  - Goal is reduction of morbidity from disease
  - Common thread:

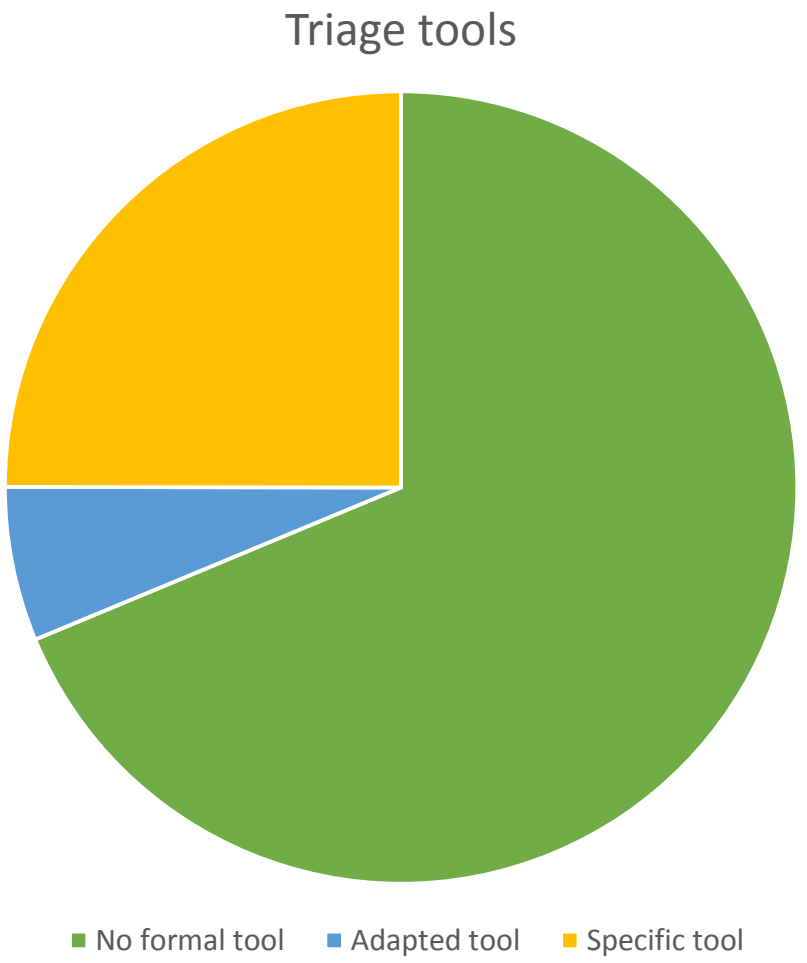
Limited resource!

Robertson-Steel 2006

Triage - Geriatrics

- Not a lot of literature in this area
- Many ‘homegrown’ triage tools

- No formal tool – patient-specific, clinician judgement
- Adapted tool – from another service or sector
- Specific tool – characteristics and timeframes, mostly very urgent issues (1 or 2 urgent examples)



Triage - Geriatrics

- Example: No formal tool
  - ‘RN, NP, Geriatrician reviews referrals with ‘gestalt’ view of needs based on written referral
  - If GP calls, patient given more urgent status
  - If ‘urgent’ indicated on referral, patient given more urgent status
  - ‘Seen more urgently if recently in ED’

  - No specific timeframes

Triage - Geriatrics

- **Priority 1 (red)**
  - Failure to thrive with identifiable risks to self
  - Health care provider screening/identified as priority/urgent on referral
  - Imminent hospital admission and/or recurrent ER presentations secondary to geriatric syndrome
  - Suspected Delirium
  - New responsive behavior (community patient)
    - ***For any patients with the above information, a telephone call is required.***
- **Priority 2 (Yellow)**
  - Frequent falls
  - Caregiver burnout
- Priority 3 (no colour)
  - Not at risk of hospitalization
  - Community supports in place
  - LTC resident
  - All other reasons for referral

Triage - Geriatrics

Table 2 Wait Time Standards

Triage Category	**Examples** (not all inclusive)	Standard Wait Time
Urgent	Rapid functional decline Pre-op cognitive assessment Rapid cognitive decline	Within 14 days
Non-Urgent	Frail elderly with multiple problems Memory disorders Frail elderly with multiple medications Falls	Within 56 days
Non-Urgent Day Hospital	Frail elderly with multiple problems Memory disorders Frail elderly with multiple medications Falls	Within 84 days

Our Project

- Our study aims to create the first ever Canada-wide expert consensus administrative triage tool for the prioritization of patients in a geriatric outpatient clinic.
  - This will help expedite services to highly vulnerable older adults which may ultimately reduce burden on acute care centers and emergency departments.
    - Poll active geriatricians across Canada
    - Modified Delphi technique
    - Creation of a ranked list of patient characteristics
    - Final expert panel

Questions for you!

1. Is triage in geriatrics outpatient clinics necessary?

2. Which patient characteristics, in your opinion, would be considered URGENT within a triage tool for a geriatric outpatient clinic?
    - Pick all that apply
    - If you chose ‘other’, you can respond in the discussion box below

Thank you!

- Questions after Dr. Mehta’s presentation

References

1. Morabia and Zhang. 2004. History of Medical Screening: From Concept to Action. Postgrad Med J. 80: 463-469.
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5. Canadian Cancer Society. http://www.cancer.ca/en/prevention-and-screening/reduce-cancer-risk/find-cancer-early/screening-for-cancer/benefits-and-limitations-of-regular-cancer-screening/?region=on
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Screening in MCI and Dementia

Webinar Presentation

Mauli Mehta

July 11, 2018

UNIVERSITY OF TORONTO

Overview

- Background of Dementia and MCI
- Screening principles applied to Dementia/ MCI
- Current Recommendations

Background - Dementia

- DSM-V: “Major neurocognitive disorder”
- Cognitive decline that is significant enough to interfere with independence in instrumental activities of daily living (IADLs)
- Major dementia syndromes include:
  - Alzheimer's disease (AD)
  - Vascular dementia (VaD)
  - Frontotemporal dementia (FTD)
  - Dementia with Lewy Bodies
  - Parkinson’s disease with dementia (PDD)
  - Dementia of mixed etiology

Background - MCI

- DSM-V: “Mild neurocognitive disorder”
- Cognitive impairment is not severe enough to interfere with independence in daily life
- Cognitive decline as evidenced by
  - self/informant/clinician report
  - impairment on objective cognitive tasks +/or evidence of decline over time on objective tasks

Natural History

- Dementia
  - The most common types are irreversible and usually progressive.
  - Early stages generally affect IADLs, ability to learn and retain new information. As dementia progresses, patients are unable to carry out basic ADLs.
  - Onset and progression is highly variable and depends on the etiology or type.
- MCI
  - May have some clinical utility for predicting later dementia.
  - Rates of stability, progression, and regression of MCI vary between studies. Variation likely reflects the complex underlying pathology, differences in diagnostic criteria, and differences in population settings and participants.

Rationale for screening in Older Adults

- 29 - 76% of patients with dementia or probable dementia are not diagnosed by primary care physicians.
- Sensitivity of a clinician's diagnosis appears to be strongly related to dementia severity.
- Rapidly growing population at risk for dementia
- Pharmaceutical agents for treatment of AD
- Media attention to the human suffering associated with AD
- Growing potential of research to improve the outlook for affected patients and their families

Benefits of Early Detection

- Social
  - Right/ need to know
  - Financial/ social planning
  - POA planning and advance directives
  - Safety (driving, medications, cooking)
  - Early education of caregivers on how to manage the patient
- Medical
  - Management of comorbid conditions (consent, medication management, treatment modifications)
  - Treat reversible causes and risk factor management
  - Compliance strategies
  - Initiation of treatment early
  - Crisis avoidance

Ashford J.W. *et al*. Should older adults be screened for dementia. It is important to screen for evidence of dementia. *Alzheimers Dement*. 2007;3(2):75-80

Barriers of early detection

- Biggest barriers:
  - Time restrictions
  - Psychological effects and work-up for false-positives
  - Adverse effects from labelling
- Poorly studied

Ashford J.W. *et al*. Should older adults be screened for dementia. It is important to screen for evidence of dementia. *Alzheimers Dement*. 2007;3(2):75-80

Reviewing screening principles

- Must be common
- Must have sensitive and specific tests available for detection
- Must have efficacious treatment
- If treatment exists, treated patients must have better outcomes than untreated patients
- Benefits from screening must outweigh the harms

Must be Common

- Alzheimer Society's Statistics:
  - 500,000 Canadians living with dementia
  - 25,000 new cases diagnosed every year
  - By 2031, that number is expected to rise to 937,000
  - 1 in 11 over 65 has dementia
  - 1 in 4 has a family member with dementia
  - 1 in 2 Canadians know a person with dementia
- Prevalence of dementia is strongly related to increasing age. Estimated mean prevalence in the United States and Canada:
  - 60 – 64 yrs.: 0.8%
  - 65 – 69 yrs.: 1.7%
  - 70 – 74 yrs.: 3.3%
  - 75 – 79 yrs.: 6.5%
  - 80 – 84 yrs.: 12.8 %
  - 85 + yrs.: 30.1%
- Median prevalence 26.4% for MCI

Société Alzheimer Society CANADA

Alzheimer Society Website: http://alzheimer.ca/en/Home/Get-involved/Advocacy/Latest-info-stats

Sensitive and Specific Tests

Screening Test

- Basic purpose of screening tests is to indicate likelihood of genuine cognitive impairment
- Screening tool must:
  - high sensitivity and specificity
  - high positive predictive value
  - easy to administer
  - achievable in the minimum time possible
  - obtain indices of key cognitive domains in a brief consultation
- Problems encountered:
  - Overemphasis on memory dysfunction with neglect of other domains such as language, praxis or executive function
  - Emphasis on cut-off scores rather than profiles of impairment

Cognitive Tests to Detect Dementia
A Systematic Review and Meta-analysis

Kelvin K. F. Tsoi, PhD; Joyce Y. C. Chan, MPH; Hoyee W. Hirai, MSc; Samuel Y. S. Wong, MD; Timothy C. Y. Kwok, MD, PhD

JAMA Intern Med. 2015;175(9):1450-1458

Study Design

- Systematic review and meta-analysis of 149 studies
- Assessed the accuracy of MMSE and 10 other screening tests for the detection of dementia.
- Inclusion:
  - involved participants studied for the detection of dementia associated with Alzheimer disease, vascular dementia, or Parkinson disease in any clinical or community setting
  - Screened patients or caregivers with a face-to-face interview
  - Used standard diagnostic criteria as the criterion for defining dementia
  - Reported the number of participants with dementia and evaluated the accuracy of the screening tests, including sensitivity, specificity, or data that could be used to derive those values.
- Exclusion
  - Not written in English
  - administration time longer than 20 minutes
  - Test was identified in fewer than 4 studies in the literature search
  - If was administered to participants with visual impairment.

Tsoi K. *et al*. Cognitive Tests to Detect Dementia: A systematic review and meta-analysis. *JAMA Intern Med*. 2015;175(9):1450-1458

Table 1. Characteristics of the 11 Screening Tests for Dementia

Screening Test (Administration Time)	Total Score[a]	No. of Questions[b]	Components of Screening Tests
MMSE (6-10 min)[7]	0-30	20[c,d]	Orientation, memory, language, attention, and visuospatial
Very brief (≤5 min)			
CDT			
Shulman et al[29]	0-5/1-6	1	Visuospatial and executive function
Sunderland et al[28]	1-10	1	
Mini-Cog test[10]	0-5	2	Memory, visuospatial, and executive function
MIS[30]	0-8	1[e]	Memory
VF test[33]	NA[f]	1	Memory and language
Brief (≤10 min)			
AMT[27]	0-10	10	Orientation, memory, and attention
GPCOG[g,11]	0-15	15	Orientation, memory, language, visuospatial, executive function, and other daily living functions
MoCA[31]	0-30	18[d]	Orientation, memory, language, attention, and executive function
Detailed (≤20 min)			
ACE-R[9]	0-100	39[c]	Orientation, memory, language, attention, visuospatial, and executive function
IQCODE[h]			
Short form[13]	16-80	16	
Long form[12]	26-130	26	Orientation, memory, language, and other daily living functions
3MS[32]	0-100	34[c,d]	Orientation, memory, language, attention, and visuospatial

Abbreviations: ACE-R, Addenbrooke's Cognitive Examination Revised; AMT, Abbreviated Mental Test; CDT, Clock Drawing Test; GPCOG, General Practitioner Assessment of Cognition; IQCODE, Informant Questionnaire on Cognitive Decline in Elderly; MIS, Memory Impairment Screen; MMSE, Mini-Mental State Examination; MoCA, Montreal Cognitive Assessment; 3MS, modified Mini-Mental State Examination; NA, not applicable; VF, verbal fluency.

[a] High score stands for good cognitive function, except for the IQCODE test.

[b] Number of questions only include questions that counting marks.

[c] For the orientation part, year, month, date, day, and season are counted as 5 questions.

[d] For the naming test, the test has to ask the name of each item, so each item counts as one question.

[e] Only count the free recall and not the cued recall (cued recall conduct only if unable to perform free recall).

[f] No maximum score for the VF test.

[g] Six of 15 marks were asked for informants.

[h] The test is only for feedback from informants, and a high score indicates severe cognitive deficits.

Tsoi K. *et al*. Cognitive Tests to Detect Dementia: A systematic review and meta-analysis. *JAMA Intern Med*. 2015;175(9):1450-1458

Results

- Most common screening test used was MMSE (68.5%) followed by MoCA (13.4%)
- Patients mainly from community or clinic settings (80.3%)
- MCI:
  - MMSE - 0.62 sensitivity (95% CI, 0.52-0.71) and 0.87 specificity (95% CI, 0.80-0.92)
  - MOCA - 0.89 sensitivity (95% CI, 0.84-0.92) and 0.75 specificity (95% CI, 0.62-0.85)

Tsoi K. *et al*. Cognitive Tests to Detect Dementia: A systematic review and meta-analysis. *JAMA Intern Med*. 2015;175(9):1450-1458

Table 3. Meta-analyses for Diagnostic Accuracy on Dementia

Screening Test	No. of Study Cohorts	Pooled (95% CI)		Pooled LR (95% CI)	
		Sensitivity	Specificity	Positive	Negative
MMSE[7]	108	0.81 (0.78-0.84)	0.89 (0.87-0.91)	7.45 (6.25-8.88)	0.21 (0.18-0.25)
Very brief (≤5 min)					
CDT					
Shulman et al[29]	9	0.83 (0.75-0.89)	0.84 (0.69-0.92)	5.02 (2.61-9.64)	0.20 (0.14-0.29)
Sunderland et al[28]	9	0.76 (0.69-0.83)	0.85 (0.76-0.91)	5.09 (3.18-8.13)	0.28 (0.20-0.38)
Mini-Cog test[10]	9	0.91 (0.80-0.96)	0.86 (0.74-0.93)	6.56 (3.25-13.24)	0.10 (0.04-0.25)
MIS[30]	6	0.797 (0.68-0.86)	0.91 (0.84-0.96)	9.18 (4.81-17.55)	0.23 (0.15-0.36)
VF test[33]	7	0.80 (0.73-0.86)	0.82 (0.73-0.88)	4.38 (2.82-6.79)	0.24 (0.17-0.35)
Brief (≤10 min)					
AMT[27]	14	0.88 (0.82-0.92)	0.85 (0.81-0.89)	5.94 (4.46-7.91)	0.15 (0.10-0.22)
GPCOG[11]	5	0.92 (0.81-0.97)	0.87 (0.83-0.90)	6.79 (5.33-8.64)	0.10 (0.04-0.22)
MoCA[31]	20	0.91 (0.84-0.95)	0.81 (0.71-0.88)	4.78 (3.10-7.39)	0.12 (0.07-0.20)
Detailed (≤20 min)					
ACE-R[9]	13	0.92 (0.90-0.94)	0.89 (0.84-0.93)	8.60 (5.62-13.16)	0.09 (0.06-0.11)
IQCODE					
Short form[13]	7	0.89 (0.85-0.92)	0.82 (0.63-0.93)	4.91 (2.19-11.01)	0.14 (0.11-0.18)
Long form[12]	17	0.84 (0.81-0.87)	0.82 (0.75-0.87)	4.73 (3.42-6.55)	0.19 (0.16-0.22)
3MS[32]	9	0.86 (0.83-0.89)	0.85 (0.74-0.92)	5.81 (3.20-10.55)	0.17 (0.13-0.21)

Abbreviations: ACE-R, Addenbrooke's Cognitive Examination Revised; AMT, Abbreviated Mental Test; CDT, Clock Drawing Test; GPCOG, General Practitioner Assessment of Cognition; IQCODE, Informant Questionnaire on Cognitive Decline in Elderly; LR, logistic regression; MIS, Memory Impairment Screen; MMSE, Mini-Mental State Examination; MoCA, Montreal Cognitive Assessment; 3MS, modified Mini-Mental State Examination; VF, verbal fluency.

Tsoi K. *et al*. Cognitive Tests to Detect Dementia: A systematic review and meta-analysis. *JAMA Intern Med*. 2015;175(9):1450-1458

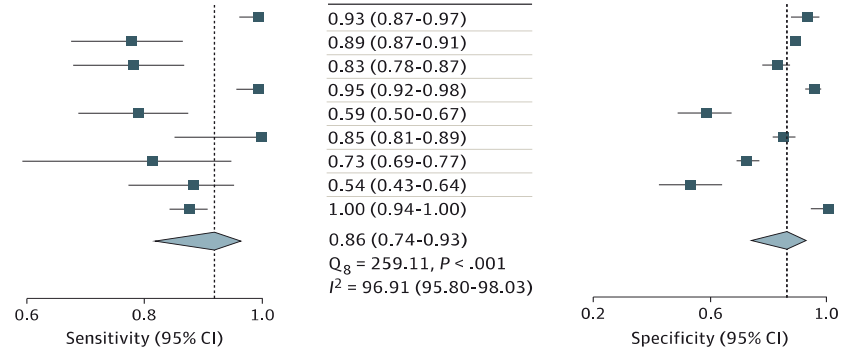
Summary

- Mini-Cog test and the ACE-R had better diagnostic performance for dementia when compared to MMSE
- MoCA had better diagnostic performance for MCI compared to MMSE

Figure 2. Forest Plots for the Pooled Sensitivity and Specificity

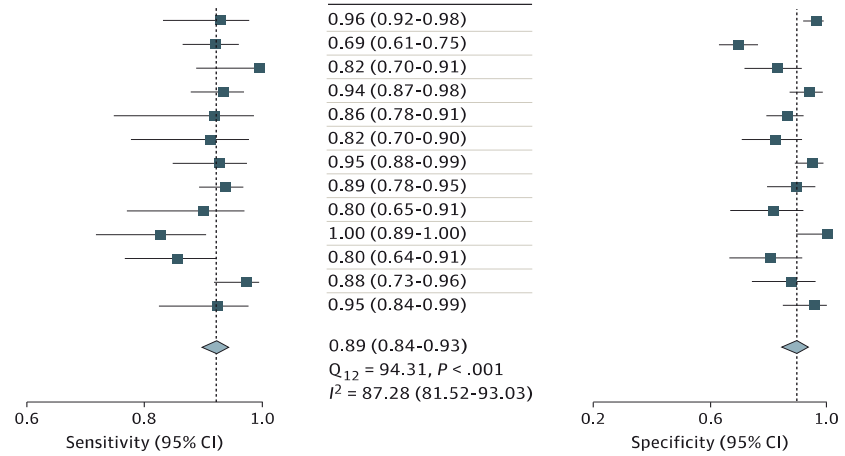
A Studies of Mini-Cog test scores for dementia

	Sensitivity (95% CI)	Specificity (95% CI)
Borson et al,[10] 2000	0.99 (0.96-1.00)	0.93 (0.87-0.97)
Borson et al,[34] 2003	0.76 (0.65-0.85)	0.89 (0.87-0.91)
Borson et al,[35] 2005	0.77 (0.66-0.86)	0.83 (0.78-0.87)
Borson et al,[36] 2006	0.99 (0.95-1.00)	0.95 (0.92-0.98)
Carnero-Pardo et al,[37] 2013	0.78 (0.71-0.84)	0.59 (0.50-0.67)
Fuchs et al,[38] 2012	1.00 (0.84-1.00)	0.85 (0.81-0.89)
Holsinger et al,[39] 2012	0.80 (0.56-0.94)	0.73 (0.69-0.77)
Kaufer et al,[40] 2008	0.87 (0.76-0.95)	0.54 (0.43-0.64)
Milian et al,[41] 2012	0.87 (0.83-0.90)	1.00 (0.94-1.00)
Combined	0.91 (0.80-0.96)	0.86 (0.74-0.93)
	$Q_8 = 71.76$, $P < .001$	$Q_8 = 259.11$, $P < .001$
	$I^2 = 88.85$ (82.94-94.76)	$I^2 = 96.91$ (95.80-98.03)



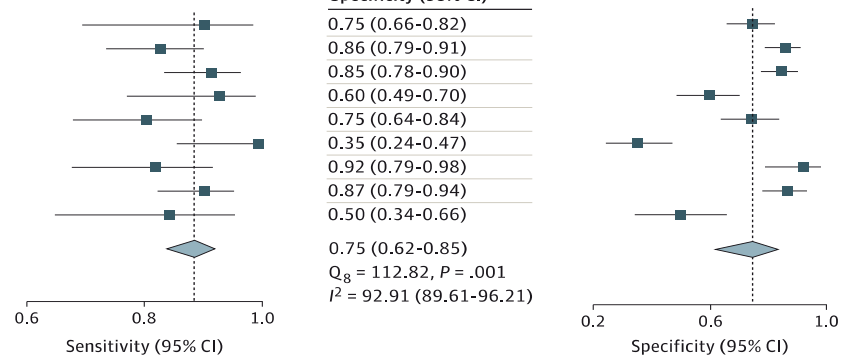
B Studies of ACE-R scores for dementia

	Sensitivity (95% CI)	Specificity (95% CI)
Alexopoulos et al,[42] 2010	0.93 (0.83-0.98)	0.96 (0.92-0.98)
Bastide et al,[43] 2012	0.92 (0.86-0.96)	0.69 (0.61-0.75)
Carvalho et al,[44] 2010	1.00 (0.89-1.00)	0.82 (0.70-0.91)
dos Santos Kawala et al,[45] 2012	0.94 (0.88-0.97)	0.94 (0.87-0.98)
Fang et al,[46] 2014	0.92 (0.74-0.99)	0.86 (0.78-0.91)
Konstantinopoulou et al,[47] 2011	0.91 (0.77-0.98)	0.82 (0.70-0.90)
Kwak et al,[48] 2010	0.93 (0.85-0.98)	0.95 (0.88-0.99)
Mioshi et al,[9] 2006	0.94 (0.89-0.97)	0.89 (0.78-0.95)
Pigliautile et al,[49] 2011, study 1	0.90 (0.76-0.97)	0.80 (0.65-0.91)
Pigliautile et al,[49] 2011, study 2	0.82 (0.71-0.90)	1.00 (0.89-1.00)
Terpening et al,[50] 2011	0.85 (0.76-0.92)	0.80 (0.64-0.91)
Torralva et al,[51] 2011	0.98 (0.92-1.00)	0.88 (0.73-0.96)
Wong et al,[52] 2013	0.93 (0.82-0.98)	0.95 (0.84-0.99)
Combined	0.92 (0.90-0.94)	0.89 (0.84-0.93)
	$Q_{12} = 25.54$, $P = .01$	$Q_{12} = 94.31$, $P < .001$
	$I^2 = 53.02$ (23.44-82.60)	$I^2 = 87.28$ (81.52-93.03)



C Studies of MoCA scores for MCI

	Sensitivity (95% CI)	Specificity (95% CI)
Dalrymple-Alford et al,[53] 2010	0.90 (0.70-0.99)	0.75 (0.66-0.82)
Dong et al,[54] 2012	0.83 (0.74-0.90)	0.86 (0.79-0.91)
Hu et al,[55] 2013	0.92 (0.84-0.97)	0.85 (0.78-0.90)
Larner,[56] 2012	0.93 (0.77-0.99)	0.60 (0.49-0.70)
Cummings-Vaughn et al,[57] 2014	0.81 (0.68-0.90)	0.75 (0.64-0.84)
Luis et al,[58] 2009	1.00 (0.86-1.00)	0.35 (0.24-0.47)
Martinelli et al,[59] 2014	0.82 (0.68-0.92)	0.92 (0.79-0.98)
Nasreddin et al,[31] 2005	0.90 (0.83-0.96)	0.87 (0.79-0.94)
Smith et al,[60] 2007	0.85 (0.65-0.96)	0.50 (0.34-0.66)
Combined	0.89 (0.84-0.92)	0.75 (0.62-0.85)
	$Q_8 = 11.66$, $P = .17$	$Q_8 = 112.82$, $P = .001$
	$I^2 = 31.38$ (0.00-84.37)	$I^2 = 92.91$ (89.61-96.21)



mild cognitive impairment.

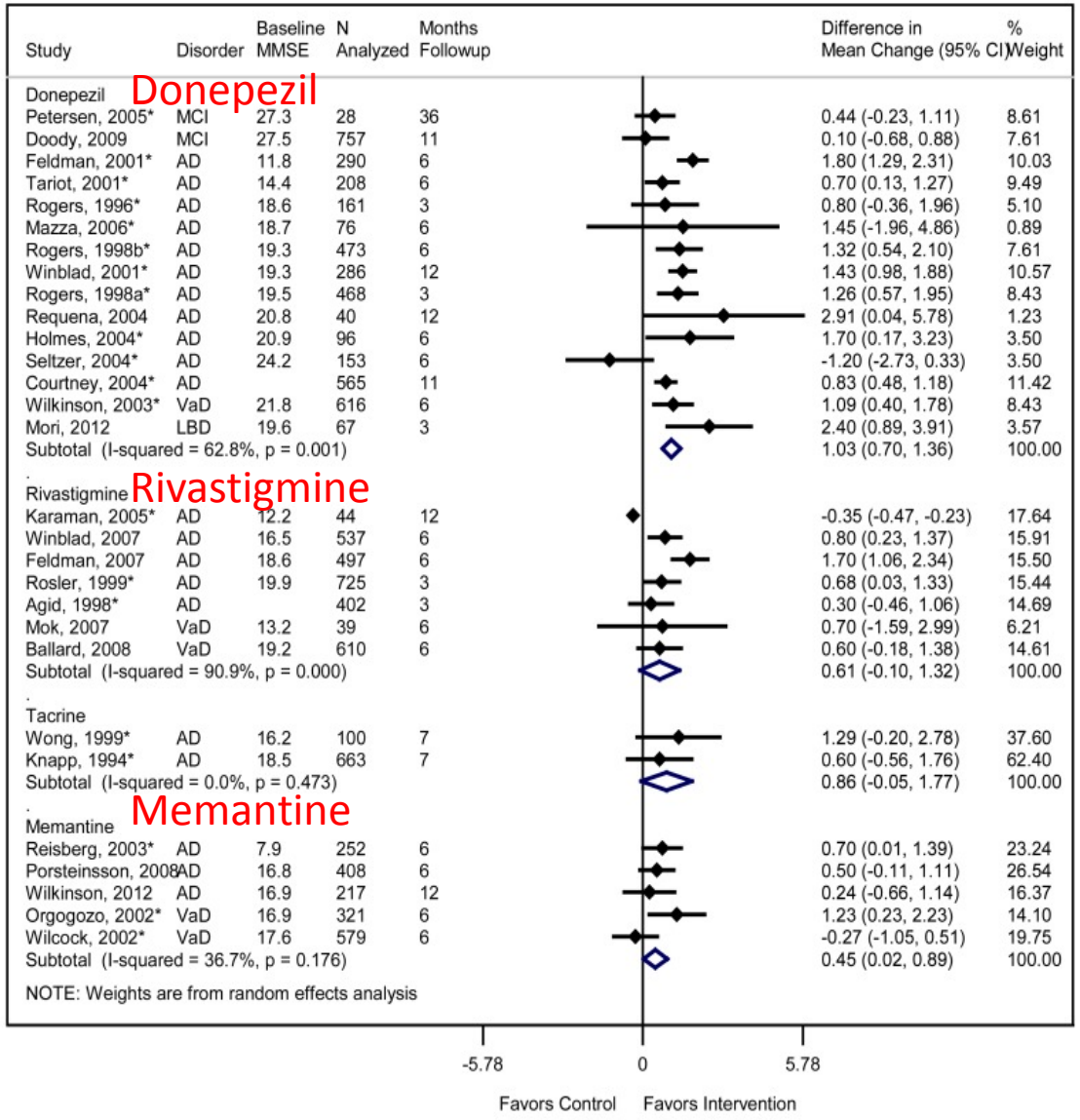
Tsoi K. *et al*. Cognitive Tests to Detect Dementia: A systematic review and meta-analysis. *JAMA Intern Med*. 2015;175(9):1450-1458

Discussion…

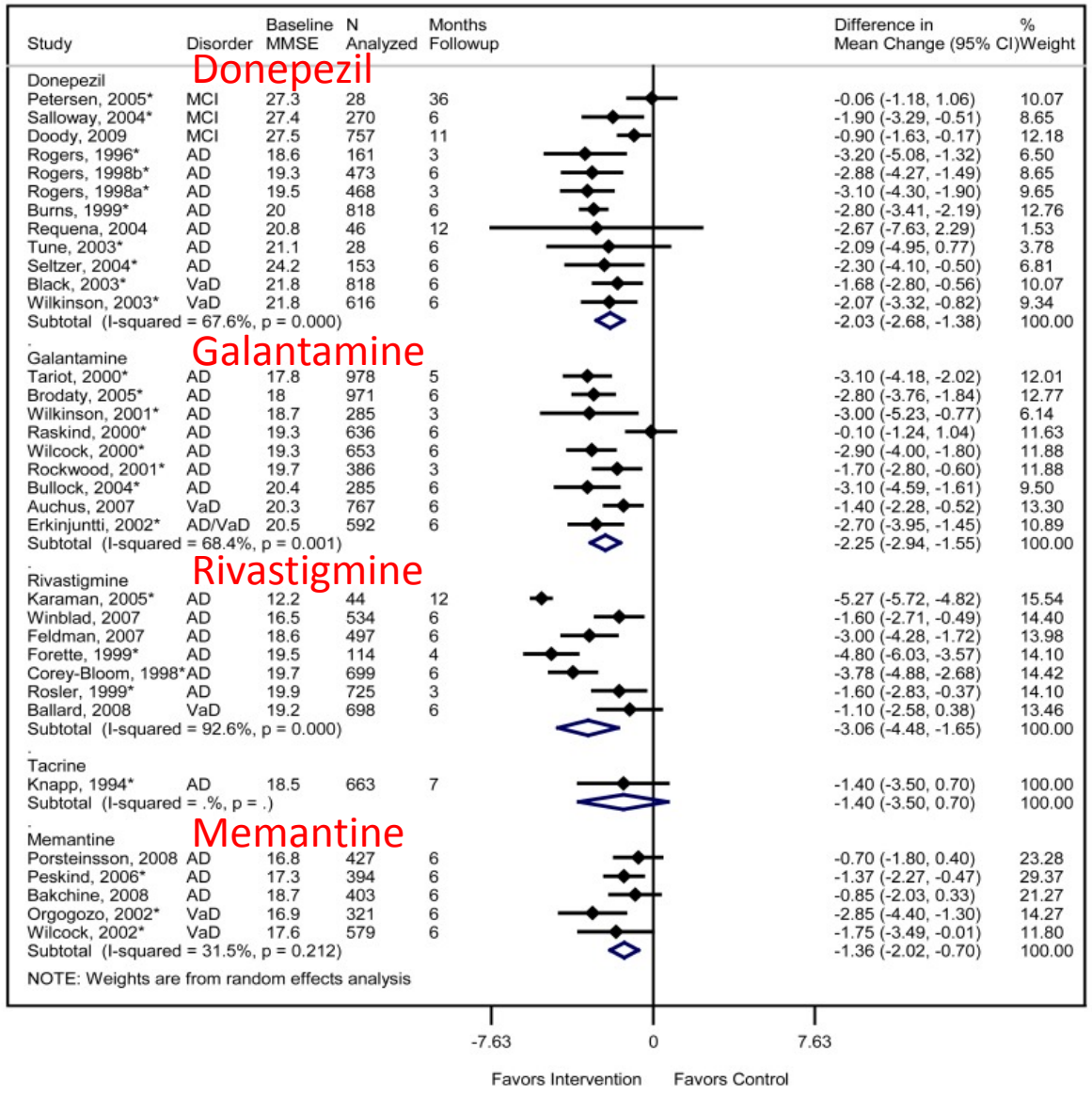
What screening tests are used in your clinic?

Must have efficacious treatment

Meta-Analyses for AChEIs and Memantine on Global Cognitive Function, Measured by the ADAS-Cog

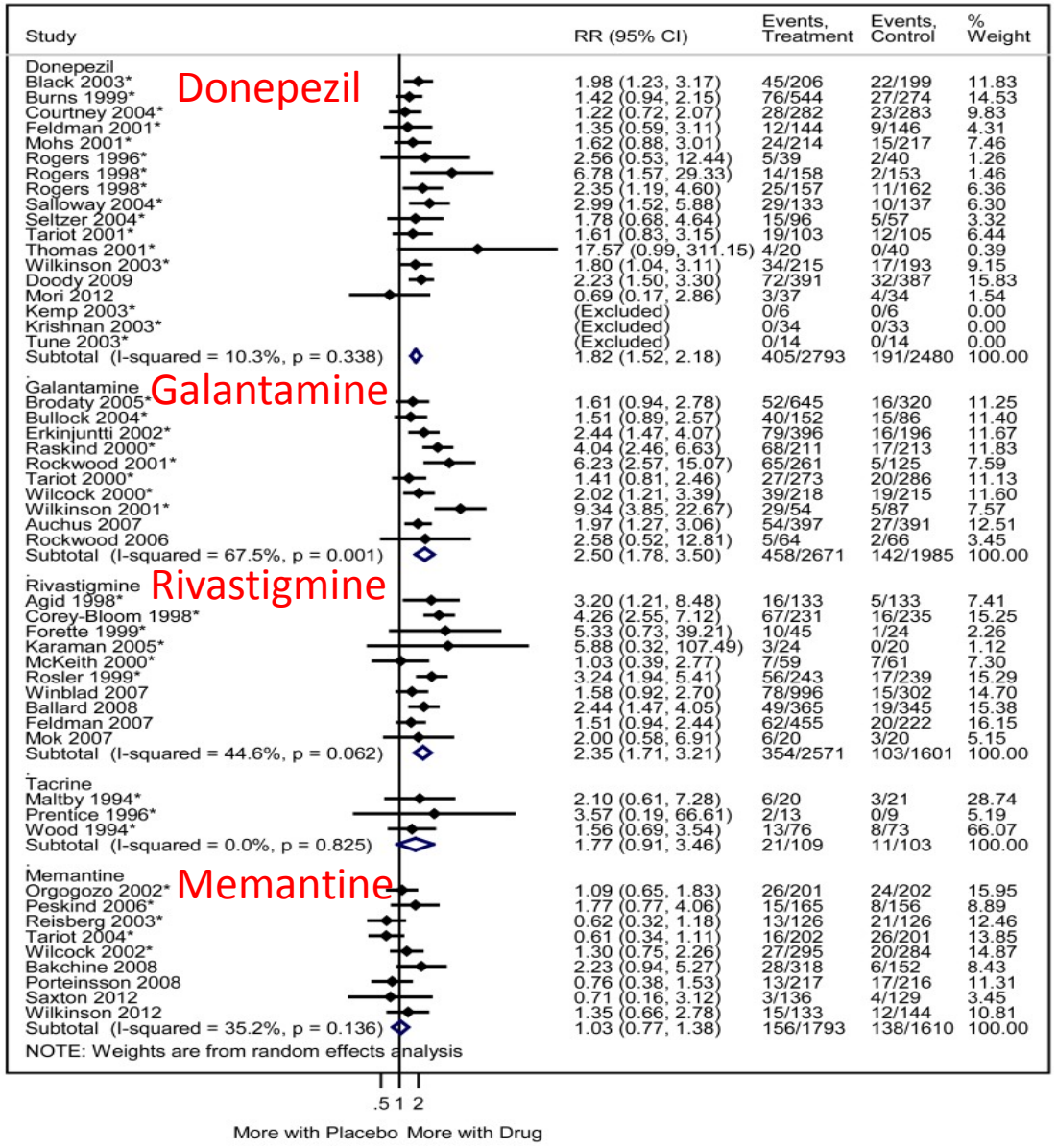


Meta-Analyses for AChEIs and Memantine on Global Cognitive Function, Measured by the MMSE

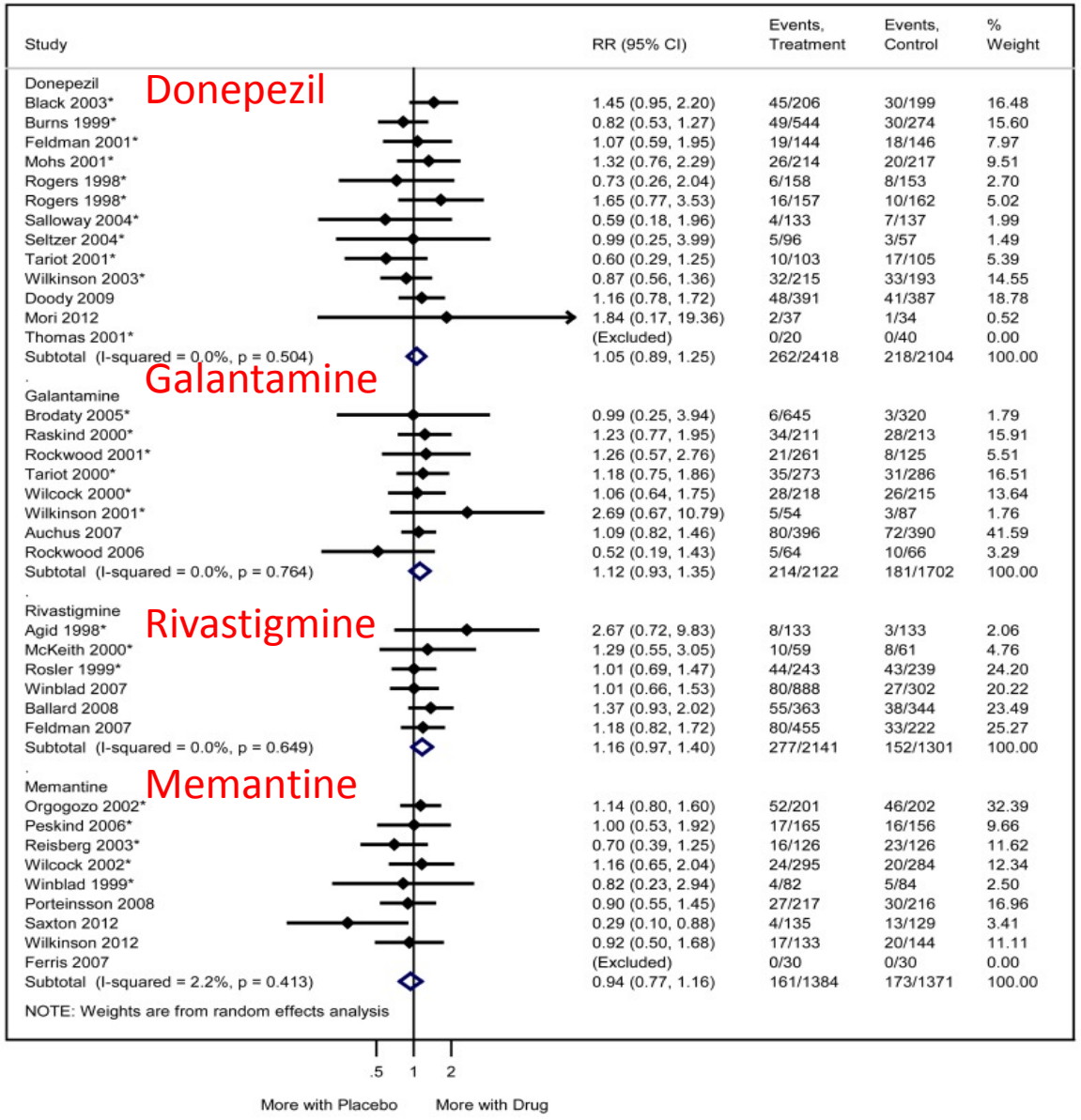


Lin J. *et al*. Screening for Cognitive Impairment in Older Adults: An Evidence Update for the U.S. Preventive Services Task Force Agency of Healthcare Research and Quality. 2013.

Meta-Analyses for AChEIs and Memantine on Withdrawals Due to Adverse Events

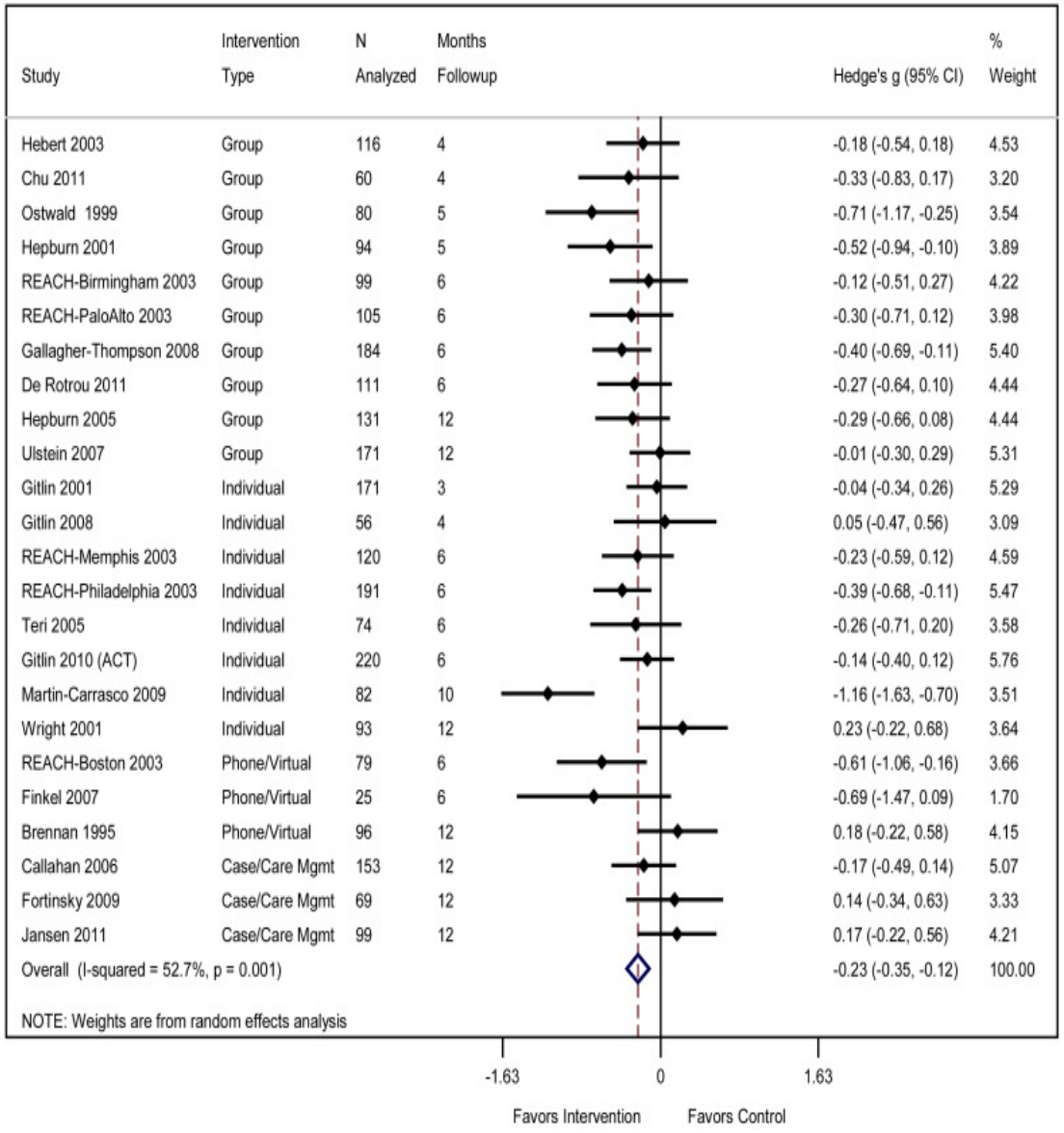


Meta-Analyses for AChEIs and Memantine on Serious Adverse Events



Lin J. *et al*. Screening for Cognitive Impairment in Older Adults: An Evidence Update for the U.S. Preventive Services Task Force Agency of Healthcare Research and Quality. 2013.

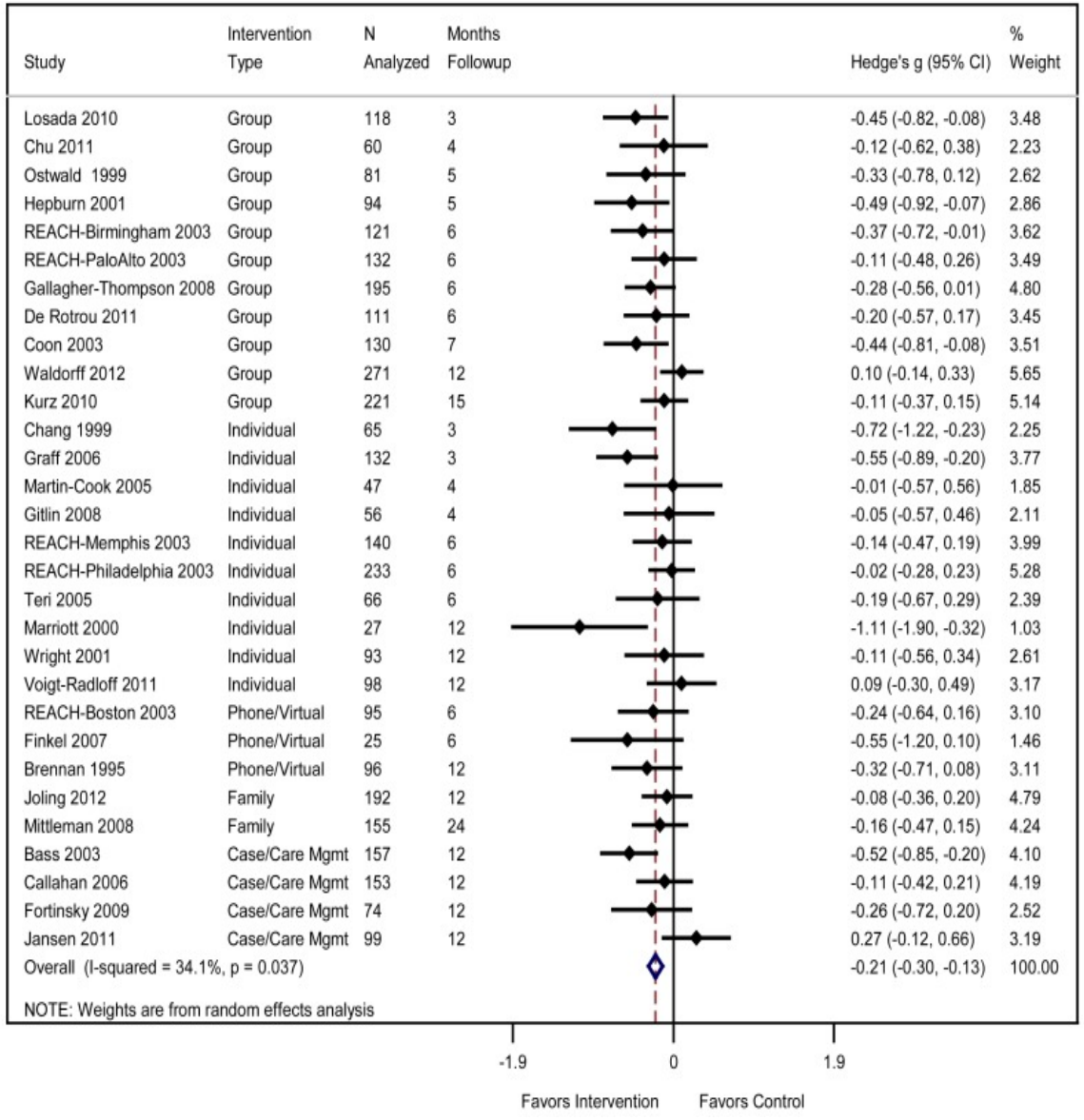
Meta-Analyses for Psychoeducational Caregiver Interventions on Caregiver Burden



Study	Intervention Type	N Analyzed	Months Followup	Hedge's g (95% CI)	% Weight
Hebert 2003	Group	116	4	-0.18 (-0.54, 0.18)	4.53
Chu 2011	Group	60	4	-0.33 (-0.83, 0.17)	3.20
Ostwald 1999	Group	80	5	-0.71 (-1.17, -0.25)	3.54
Hepburn 2001	Group	94	5	-0.52 (-0.94, -0.10)	3.89
REACH-Birmingham 2003	Group	99	6	-0.12 (-0.51, 0.27)	4.22
REACH-PaloAlto 2003	Group	105	6	-0.30 (-0.71, 0.12)	3.98
Gallagher-Thompson 2008	Group	184	6	-0.40 (-0.69, -0.11)	5.40
De Rotrou 2011	Group	111	6	-0.27 (-0.64, 0.10)	4.44
Hepburn 2005	Group	131	12	-0.29 (-0.66, 0.08)	4.44
Ulstein 2007	Group	171	12	-0.01 (-0.30, 0.29)	5.31
Gitlin 2001	Individual	171	3	-0.04 (-0.34, 0.26)	5.29
Gitlin 2008	Individual	56	4	0.05 (-0.47, 0.56)	3.09
REACH-Memphis 2003	Individual	120	6	-0.23 (-0.59, 0.12)	4.59
REACH-Philadelphia 2003	Individual	191	6	-0.39 (-0.68, -0.11)	5.47
Teri 2005	Individual	74	6	-0.26 (-0.71, 0.20)	3.58
Gitlin 2010 (ACT)	Individual	220	6	-0.14 (-0.40, 0.12)	5.76
Martin-Carrasco 2009	Individual	82	10	-1.16 (-1.63, -0.70)	3.51
Wright 2001	Individual	93	12	0.23 (-0.22, 0.68)	3.64
REACH-Boston 2003	Phone/Virtual	79	6	-0.61 (-1.06, -0.16)	3.66
Finkel 2007	Phone/Virtual	25	6	-0.69 (-1.47, 0.09)	1.70
Brennan 1995	Phone/Virtual	96	12	0.18 (-0.22, 0.58)	4.15
Callahan 2006	Case/Care Mgmt	153	12	-0.17 (-0.49, 0.14)	5.07
Fortinsky 2009	Case/Care Mgmt	69	12	0.14 (-0.34, 0.63)	3.33
Jansen 2011	Case/Care Mgmt	99	12	0.17 (-0.22, 0.56)	4.21
Overall (I-squared = 52.7%, p = 0.001)				-0.23 (-0.35, -0.12)	100.00

NOTE: Weights are from random effects analysis

Meta-Analyses for Psychoeducational Caregiver Interventions on Caregiver Depression



Study	Intervention Type	N Analyzed	Months Followup	Hedge's g (95% CI)	% Weight
Losada 2010	Group	118	3	-0.45 (-0.82, -0.08)	3.48
Chu 2011	Group	60	4	-0.12 (-0.62, 0.38)	2.23
Ostwald 1999	Group	81	5	-0.33 (-0.78, 0.12)	2.62
Hepburn 2001	Group	94	5	-0.49 (-0.92, -0.07)	2.86
REACH-Birmingham 2003	Group	121	6	-0.37 (-0.72, -0.01)	3.62
REACH-PaloAlto 2003	Group	132	6	-0.11 (-0.48, 0.26)	3.49
Gallagher-Thompson 2008	Group	195	6	-0.28 (-0.56, 0.01)	4.80
De Rotrou 2011	Group	111	6	-0.20 (-0.57, 0.17)	3.45
Coon 2003	Group	130	7	-0.44 (-0.81, -0.08)	3.51
Waldorff 2012	Group	271	12	0.10 (-0.14, 0.33)	5.65
Kurz 2010	Group	221	15	-0.11 (-0.37, 0.15)	5.14
Chang 1999	Individual	65	3	-0.72 (-1.22, -0.23)	2.25
Graff 2006	Individual	132	3	-0.55 (-0.89, -0.20)	3.77
Martin-Cook 2005	Individual	47	4	-0.01 (-0.57, 0.56)	1.85
Gitlin 2008	Individual	56	4	-0.05 (-0.57, 0.46)	2.11
REACH-Memphis 2003	Individual	140	6	-0.14 (-0.47, 0.19)	3.99
REACH-Philadelphia 2003	Individual	233	6	-0.02 (-0.28, 0.23)	5.28
Teri 2005	Individual	66	6	-0.19 (-0.67, 0.29)	2.39
Marriott 2000	Individual	27	12	-1.11 (-1.90, -0.32)	1.03
Wright 2001	Individual	93	12	-0.11 (-0.56, 0.34)	2.61
Voigt-Radloff 2011	Individual	98	12	0.09 (-0.30, 0.49)	3.17
REACH-Boston 2003	Phone/Virtual	95	6	-0.24 (-0.64, 0.16)	3.10
Finkel 2007	Phone/Virtual	25	6	-0.55 (-1.20, 0.10)	1.46
Brennan 1995	Phone/Virtual	96	12	-0.32 (-0.71, 0.08)	3.11
Joling 2012	Family	192	12	-0.08 (-0.36, 0.20)	4.79
Mittleman 2008	Family	155	24	-0.16 (-0.47, 0.15)	4.24
Bass 2003	Case/Care Mgmt	157	12	-0.52 (-0.85, -0.20)	4.10
Callahan 2006	Case/Care Mgmt	153	12	-0.11 (-0.42, 0.21)	4.19
Fortinsky 2009	Case/Care Mgmt	74	12	-0.26 (-0.72, 0.20)	2.52
Jansen 2011	Case/Care Mgmt	99	12	0.27 (-0.12, 0.66)	3.19
Overall (I-squared = 34.1%, p = 0.037)				-0.21 (-0.30, -0.13)	100.00

NOTE: Weights are from random effects analysis

Lin J. *et al*. Screening for Cognitive Impairment in Older Adults: An Evidence Update for the U.S. Preventive Services Task Force Agency of Healthcare Research and Quality. 2013.

Reviewing screening principles

Principles	
Must be common	Yes
Must have sensitive and specific tests available for detection	Yes
Must have efficacious treatment	Unclear
If treatment exists, treated patients must have better outcomes than untreated patients	Unclear
Benefits from screening must outweigh the harms	Unclear

Recommendations

The USPSTF - current evidence is insufficient to assess the balance of benefits and harms of screening for cognitive impairment.

BUT also states “although the overall evidence on routine screening is insufficient, clinicians should remain alert to early signs or symptoms of cognitive impairment (for example, problems with memory or language) and evaluate as appropriate.”

Canadian Consensus Guidelines - no evidence for or against screening

https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/cognitive-impairment-in-older-adults-screening

Dementia Screening Indicator

Can help guide clinician decisions of when it may be appropriate to screen for cognitive impairment in the primary care setting.

Do you think your patient may have cognitive impairment based on:

☐ your observations ☐ concerns of patient ☐ concerns of family or others

If yes to any: Your patient should be screened for cognitive impairment.

Is your patient age 80 years or older? ☐ yes ☐ no

If yes: Your patient should be screened for cognitive impairment.

If no: Administer Dementia Screening Indicator.

Dementia Screening Indicator			Points
1. How old is your patient? _____ years *If 65-79 years, assign 1 point per year above age 65. Example: age 65 years receives 0 points; age 72 years receives 7 points.*			
2. Does your patient have < 12 years of education? [1]	No (0)	Yes (9)	
3. Is your patient's BMI < 18.5 kg/m^2? [2]	No (0)	Yes (8)	
4. Does your patient have a history of type 2 diabetes?	No (0)	Yes (3)	
5. Has your patient ever had a stroke?	No (0)	Yes (6)	
6. Does your patient need help from others to manage money or medications? [3]	No (0)	Yes (10)	
7. Does your patient currently take anti-depressant medications OR report that "everything was an effort" ≥3 days per week over the past week? [4]	No (0)	Yes (6)	
Total point score: *If ≥ 22, your patient should be screened for cognitive impairment.*			

[1] Did not graduate from high school or pass a General Educational Development (GED) Test

[2] http://nhlbisupport.com/bmi/

[3] Ask your patient and/or family member if present: *Do you need help from others to manage money or medications?*

[4] Ask your patient: *In the past week, how many days did you feel that everything was an effort?*

☐ rarely (<1 day) ☐ little (1-2 days) ☐ moderate (3-4 days) ☐ most (5-7 days)

If the answer is either "moderate" or "most," then item 7 in the Dementia Screening Indicator receives a score of 6 points.

Barnes DE, Beiser AS, Lee A, et al. Development and validation of a brief dementia screening indicator for primary care. *Alzheimers Dement.* 2014 Feb 1.

Some Thoughts…

- Can Screen Patients when:
  - The person, family members, or others express concerns about changes in his or her memory or thinking
  - You observe problems/changes in the patient's memory or thinking
  - The patient is age 80 or older
- Other risk factors: low education, history of type 2 diabetes, stroke, depression, and trouble managing money or medications.
- Refer to a specialist if needed

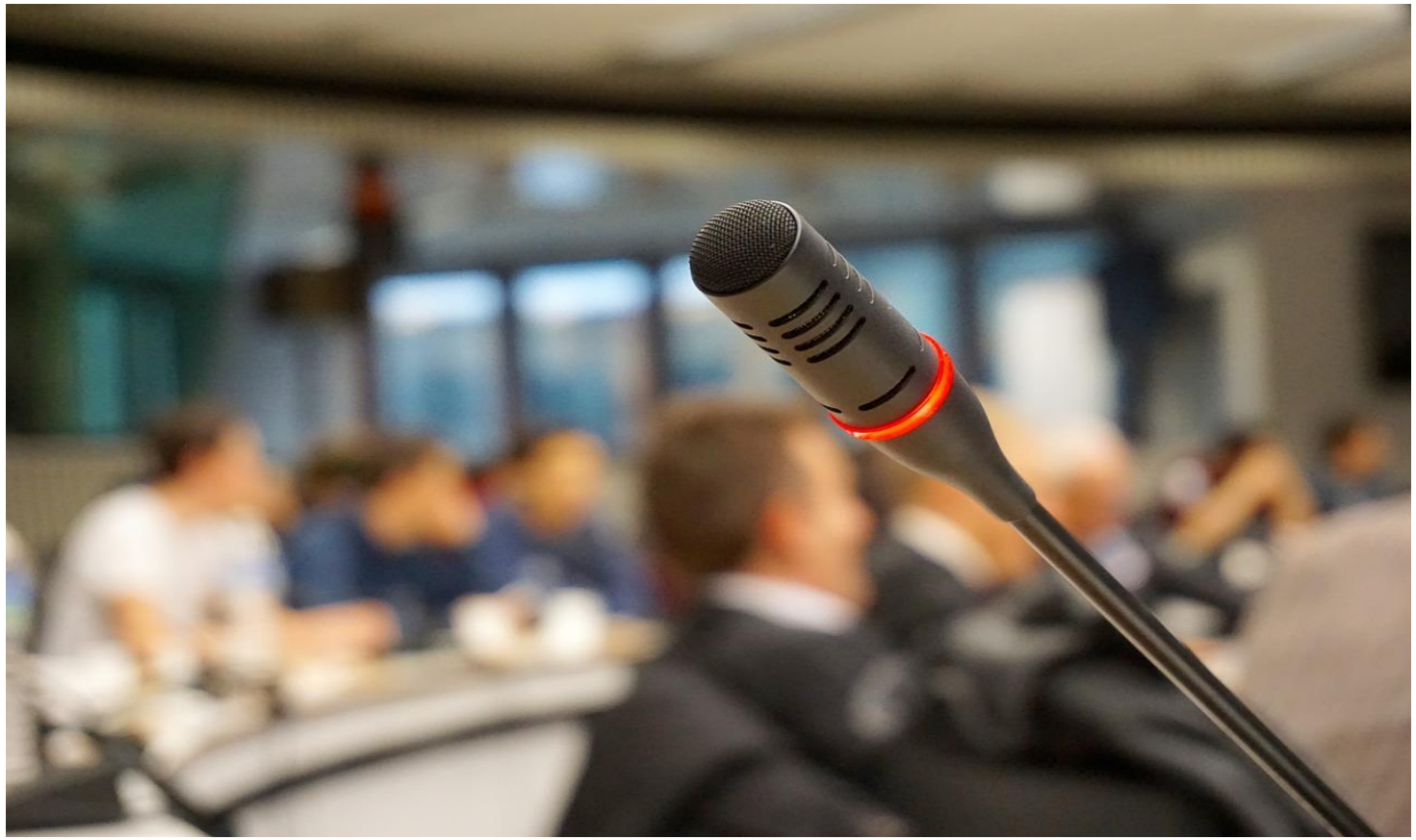
New Integrated Cognitive Test (ICA)

- *Cognetivity Neurosciences* waiting for approval for Health Canada
- App based - Clinical validation study ongoing
- ICA test has 5 steps and involves use of images from nature to assess a person's short term memory
- May help screen for dementia early

Conclusion

- Unclear evidence demonstrating that screening for cognitive impairment improves health outcomes or important patient
- Not recommend for screening at this time
- Age is the biggest risk factor for cognitive impairment. Therefore, if screening is advisable, then using age to target cognitive screening is a reasonable strategy.

Questions and Discussion……



Thank you for attending this webinar!

You will receive a quick evaluation survey by email – please share your suggestions for future sessions. A link to presentation slides and a recording will be provided.

And please join us for our next presentation, **September 12 2018 at 12–1pm**

Introduction to the Senior Alcohol Misuse Indicator (SAMI) Tool: A senior-friendly approach to screening for alcohol use in older adults

Dr. Bonnie Purcell, PhD, C.Psych
Behavioural Response Team, Geriatric Mental Health Program
London Health Sciences Centre

Contact ken.wong@sunnybrook.ca to get on the mailing list for information on upcoming presentations.