

Guide to Cognitive Screening

AHS Provincial Cognitive Screening Working Group

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BACKGROUND & PURPOSE

Recent changes by the developers of the Montreal Cognitive Assessment (MoCA) now require most users of the tool to complete paid, mandatory training and certification. This has created an opportunity for AHS staff and physicians to examine our cognitive screening practices. Through extensive review and consultation, six cognitive screening tools have been identified for routine use within AHS. Each tool can be used in a variety of patient populations, and no patient population is served by only one tool. There are additional domain-specific tools that may be appropriate in specific situations. These additional tools are beyond the scope of this guide. ***Clinicians are encouraged to use their clinical judgement in identifying best practice in their area based on evidence, clinical experience and client and family goals.***

The purpose of this guide is to provide foundational information to support clinical decision-making related to cognitive screening. Healthcare providers should seek appropriate guidance, mentorship and additional resources as required.

For further information, please contact practice.consultation@ahs.ca.

PART A: COGNITIVE SCREENING IN AHS

INTRODUCTION TO COGNITIVE SCREENING

Available as a standalone handout on ahs.ca

Cognitive Screening: WHAT?

Cognitive screens are brief, inexpensive methods of identifying subtle deficits in cognition in order to help triage referrals, monitor known impairments, determine appropriateness for specific programs or identify the need for more in depth assessment. Cognitive screens should be performed when there is a reason to suspect that impairment might exist and are performed by a variety of qualified staff across the continuum of care. **Cognitive screens** help answer the question *“Is there a problem?”* This differs from **cognitive tests** and **cognitive assessments** which help answer specific questions such as *“What kind of problem? What is the degree of the problem? What is the impact of the problem in a specific context?”* Cognitive assessments are performed by experts in their field, which may be occupational therapists, psychologists, nurse practitioners, physicians, speech language pathologists or neuropsychologists (Cady, et al. 2017).

- ✓ Triage referrals
- ✓ Identify appropriateness for specific programs
- ✓ Identify need for more in depth assessment or monitoring

Cognitive Screening: WHY?

- Identify need for further assessment.
- Establish baseline to allow for prospective monitoring of cognitive function over time.
- Flag factors that could be the primary focus for intervention (e.g. attention, memory).
- Prospective monitoring of medication effects.

Identify possible neuropathology in need of further assessment by neuropsychology or medicine (e.g. epilepsy, TBI, dementia).

Identify factors that may impact treatment adherence or successful participation in a program/therapy

“...Screening tests are not considered diagnostic, but are used to identify a subset of the population who should have additional testing to determine the presence or absence of disease.”

(Johns Hopkins Medicine)

Cognitive Screening: WHO?

While the specific training requirements vary by instrument, all of the cognitive screening tools reviewed in this guide are intended for use by clinical staff with competency in cognitive screening.

Professional Responsibilities in Cognitive Screening

- Understand the **risks and benefits** of cognitive screening
- Complete **training requirements** for specific instruments
- **Practice** for proficiency in tool administration, scoring and interpretation of scores
- **Know the limits** of the tool, appropriate conclusions and next steps
- Identify situations in which the use of a tool is **not appropriate**, i.e. the negative effects outweigh the potential benefits of tool administration with an individual (E.g. A client with known dementia who has not experienced a recent change in function and who would become distressed the administration of a cognitive screening tool)
- Identify when a screen is **missing important issues** or score does not tell the entire story (E.g. impact of behavior, culture, sensory impairment)
- Take the time to obtain **informed consent**

Cognitive Screening: WHEN?

- Intake screening (program dependent)
- There is a trigger (reason to suspect impairment)
- There is a question about function
- The situation seems to be changing
- To help decide when to refer, or not refer

How often can screens be repeated?

- At referral or intake to service/program
- When status changes
- When transitioning between services
- At set intervals for some clinics (e.g., geriatrics, neuroscience clinics)
- **Be aware of practice effects!** Use alternative versions of tests when available. Repeated cognitive screening may not be appropriate in cases where cognitive impairment is established and there is no noted change in function,

Skip the screen & proceed directly to assessment when:

- Consequences are high, such as transition (discharge) planning or concerns with capacity / decision making ability
- Diagnosis is needed
- Specific skills need to be examined
- Complex client with comorbidities that require higher degree of clinical reasoning

Cognitive Screening: HOW?

Please refer to *General Tips for Cognitive Screening* section for more information on important considerations, modifications and compensating for sensory, motor, or communication challenges. Ideally, cognitive screening take place in person, however, if it must take place virtually, review Virtual Health Resources such as [Virtual Cognitive/Perceptual Assessment: Occupational Therapy Practice Guideline](#) (AHS staff - click on link).

Limitations of Cognitive Screens:

Risks of Screens

- May miss subtle issues/not consider context
- May have the wrong focus
- May cause undue emotional distress for client/family
- Making hard decisions from soft scores (are the fluctuations in scores clinically significant?)
- Undertrained screeners will make mistakes

Examples of errors

- Temporary health condition: **delirium****, medication change, substance withdrawal
- Not considering impact of sensory impairment (missing glasses/hearing aids)
- Rushing to provide a 'number' or providing only a number without considering context or next steps.
- Lack of background information; low education, limited English
- Lack of context: previous health issue, lack of engagement, pain or sleep deprivation
- Scoring errors: forgetting points, administering only a portion but not adjusting interpretation, deviating from standardized protocol and not documenting details or rationale.
- Interpretation error: using tool to make a diagnosis, rather than a prompt for assessment.
- Losing focus on primary concern or not relating screen back to reason for administering.

DON'T MISTAKE A SCREEN FOR AN ASSESSMENT!

DON'T MISTAKE A SCREEN SCORE FOR REAL LIFE, FUNCTIONAL ABILITY!

*****Clients who are experiencing DELIRIUM are not appropriate for cognitive screening. Consider administration of a tool specifically designed for delirium such as the *Confusion Assessment Method* or *Intensive Care Delirium Screening Checklist*. If this is a new onset of delirium, liaise immediately with client's physician or urgent care provider.***

GENERAL TIPS FOR COGNITIVE SCREENING

Available as a standalone handout on ahs.ca

Setting the Stage:

- Weigh the benefits of performing a standardized screen with the potential burden to the client.
- Be clear on the purpose of the screen; discuss or clarify with referral source as needed. Be aware of how the results will be used and document appropriately.
- Consider the most appropriate time to administer the screen. Is the client medically stable? Emotionally prepared? Consider if beneficial to inform client in advance when the screening is scheduled.
- Obtain informed consent. Help the client understand the purpose of the screen and what to expect. The examiner must provide the client with the rationale for why they are doing the screen including the potential risks and benefits.

SAMPLE INTRODUCTION SCRIPT

"I would like to ask you some questions about your memory and thinking skills. This can help us understand where your strengths are and if there are any areas that are more difficult for you. It will take about 15 minutes and I will share the results with your physician/care team. Do you have any questions? Is it okay to go ahead with my questions?"

"Because this is a standard test, I need to read the questions exactly as they are written and I am not able to answer any questions during the screen. Some of the questions may seem unusual, quite simple or difficult. Just try to answer them as best you can. We will have time for questions at the end. Let's begin."

Client Status & Acceptance Issues:

- Gather relevant information from the client/caregiver and team members to inform what approach is best
- Select the most appropriate tool based on purpose, client age, diagnoses, presenting concerns, identity, language, culture, education level, and communication abilities.

- Recognize that standardized tools may be biased and often assume a particular background of skills and experiences that do not apply to all individuals. Participating in standardized cognitive screening may be perceived as offensive to some. If standardized tools are not appropriate for your client, consider other methods of screening or referral for functional cognitive assessment.
- If a client is depressed, anxious or has difficulty attending, proceed with caution or consider screening another time.
- If client is complex, over-medicated or in an altered mental state (ie. psychosis) consider referral for more in-depth assessment with a professional experienced in complex cognitive assessment.
- Consider timing of medications (analgesics, sedatives) prior to screening.
- Be prepared to discontinue screening if client becomes overly aggressive, agitated, distracted, or paranoid.
- If a client expresses concerns about participating in screening, consider spending more time explaining the purpose and nature of the test and how the results will be used.

Examiner Considerations:

- Have all materials on hand prior to initiating screen. Familiarize yourself with administration guides, tip sheets and manipulatives (stimulus pictures, cue cards, objects).
- Be aware of unintentional cues (verbal, non-verbal).
- Consider impact of timing, the environment and the ability to build rapport when situation allows.
- Health professionals are responsible for ensuring their own competencies related to cognitive screening.
- Health professionals must meet the requirements of their profession and AHS when engaging in screening and subsequent clinical reasoning.

Environmental Considerations:

- Have client sit up in a chair when possible.
- Select a quiet, well-lit testing space; test in an area that provides privacy and no interruptions, if possible. Screening areas should be neat and organized to minimize distraction.
- Test client by themselves whenever possible. If family/support person needs to be present, consider having them out of the client's line of sight and ensure they know they must not cue, encourage or participate in any way. Family should not be used as a translator unless as a last resort.
- If necessary/beneficial to have family present, have a specific conversation regarding expectations and roles.

Compensation for sensory, movement or communication challenges

In general, modification of any items is discouraged. Test questions should be presented per established guidelines, standardized scripts or verbatim instructions and all potential influencing factors should be documented. Only when it is impossible to administer the tool as intended should items be omitted and score reported out of total items administered (i.e. non-functional or absent upper extremity, blind). Document rationale and process for any omissions or deviation from standardized protocol. ***In this situation, test norms or cutoffs are not valid.***

Vision

- Ensure individual has their glasses
- Consider enlarging stimulus items
- Use adaptive devices when appropriate (e.g. magnifier, large-print stimulus cards)
- Consider lighting in the test environment (bright, but ↓ glare)
- Consider the background color/surface you are testing on
- Use a thick black marker pen for any test items requiring drawing/writing so that the individual can see what they are writing

Movement

- Do not deduct points for legibility if the client is writing with their non-dominant hand. If they are able to tell you what they have written, score based on report.
- For praxis tasks, if client unable to use/does not have relevant arm, use other arm

Communication

- Consider if referral to Speech-Language Pathology or Audiologist for assessment prior to proceeding is appropriate
- Consider tools designed to compensate for circumstances (Oxford for aphasia; RUDAS for English as a second language)
- Consider if standardized screening is appropriate at all or if referral to Occupational Therapy for functional cognitive assessment is appropriate
- Do not repeat questions unless administration guidelines indicate you may do so
- Ensure individual has their hearing aid(s) or use a pocket-talker or voice amplifier (e.g. Ear Machine app) where appropriate
- Reduce the amount of background noise in the environment
- Adjust your rate, pitch, and volume of speech as required

- Use visual/written cues and/or instructions, where allowed – if task is testing memory, do not write out words unless it is part of the test.
- AHS staff can access further resources on supporting individuals living with communication challenges on the [Communication Access](#) webpage.

Language or Translation (Available as a standalone handout on [ahs.ca](#))

- If your client is not proficient in English, strongly consider using an interpreter and a tool that was specifically developed for this purpose, such as the RUDAS.
- Interpreters can be obtained through the Language Line phone and video remote interpretation services, and in some cases, in-person.
- Review AHS Provincial Practice Guideline for Use of Interpretation Services.

When using an interpreter, consider the following:

- Make sure that the language spoken by the interpreter (including the dialect) is the same one with which the client is familiar.
- It is important to explain to the test taker that the interpreter is the facilitator and that you will be asking the questions. This may help to avoid confusion during the assessment.
- For in-person interpretation, have the interpreter sit next to the test administrator while the client sits opposite. This will reinforce the adjunctive role of the interpreter and make it easier for the client to synthesize the non-verbal cues from the test administrator and the verbal cues from the interpreter.

Wrapping up/Exiting

Cognitive screening can be a stressful experience for clients. Upon completion of the screen, thank the client for participation, ask if they would like to know results and share what the next steps are. As appropriate, provide client with feedback on performance at a level of detail congruent with context (specific score or general performance).

SAMPLE WRAP UP SCRIPT

- *“It seemed like some of the items such as x/y/z were a bit tough for you but you did well on a/b/c.”*
- *“I need to go and add up all the points. I’ll come back later to let you know the results.”*
- *“I am going to score the screen and let your physician know. They will let you know the results when you see them.”*
- *“This screen gives us an idea of your strengths and where things were a bit more difficult. It might be helpful for us to look at things in more detail/have a more in depth assessment.”*
- *“Paper and pencil tests give us some information but it might be helpful to look at how your thinking skills apply to everyday activities.”*

Interpretation of Results

- Score all items according to scoring guidelines, making note of anything out of the ordinary that occurs during the screen.
- Make note of any physical/psychological/environmental/contextual factors that may have influenced client performance (i.e., fatigue, pain, anxiety, distracting environment, interruptions, suboptimal effort.)
- Note strategies used by client (i.e., scanning patterns, trial and error).
- If appropriate, make note of client’s level of insight or impression of performance.

SAMPLE QUESTIONS TO EXPLORE CLIENT’S LEVEL OF INSIGHT:

- *How do you feel about the test? How do you think you did?*
- *Do you think you did the same, better or worse than other people your age/ with your condition?*
- *Which questions were easy/difficulty for you?*

- Consider not only the deficits but also the client’s strengths that could be utilized for compensation.
- Consider if further assessment is required
 - medical/diagnostic -> physician or psychologist/neuropsychologist
 - functional cognition -> occupational therapist
 - communication/cognitive communication -> speech-language pathologist

PART B: RECOMMENDED COGNITIVE SCREENING TOOLS

Addenbrooke Cognitive Evaluation –III (ACE III)

The ACE III is useful in a variety of neurological populations and has the ability to differentiate between Alzheimer’s and Frontotemporal Dementia. It is also useful for the geriatric population, however takes longer to administer than other tools.

Training Requirements

Review administration guidelines. Consider completing this training module developed by the University of Glasgow. [\[Click here\]](#)
There is no cost but users must register.

Clinical Utility

- Available in 25 languages
- Score out of 100
- Time to administer = 20min or longer
- Includes same domains as the MoCA with more language and visuospatial questions.
- Three alternate versions available for repeat administration.
- **Remote** version available for virtual administration (three alternatives)

Interpretation

Cutoffs for screening purposes:

- <89 for MCI
- <82 for dementia

Psychometric properties

Construct/Convergent Validity

- ✓ MMSE - Excellent (r=0.82)
- ✓ MoCA - Excellent (r=0.85)

High reliability (test-retest = .91, Cronbach α = .89)

Reliable change score

- ✓ 3 points or more in healthy population
- ✓ 7 points or more in mildly cognitively impaired population

Key Target Populations

- Developed for use with mild neurocognitive disorders, dementia, & older adults (60+)
- Particular focus on MCI, FTD, and non-AD presentations
- “Bridge the gap between very brief screening instruments and a full neuropsychological assessment” (Hodges & Lerner, 2017) i.e., provides a look at different cognitive domains (memory, attention, language)

Older Adults:

- Dementia/MCI (Jubb & Evans, 2015)

Adults:

- Early-onset dementias (Elamin et al, 2016)
- Stroke (Morris et al, 2012; Lees et al., 2016)
- Mild stroke/TIA Patients age 18+ (Tariq et al., 2020)
- TBI (Gaber, 2008, Gorgoraptis et al, 2019)

Test forms and manuals

For AHS Staff:

- [ACE-III - US Version A Score Form](#)
- [ACE-III - US Version B Score Form](#)
- [ACE-III US Version C Score Form](#)
- [ACE-III US Administration and Scoring Guide](#)

All others can access score forms via [AHS.ca](#)

AHS staff and all others can access **ACE-III REMOTE** score forms, clinician and caregiver guides via [AHS.ca](#)

Additional Resources

Cognitive Screening Tip Sheet – ACE III (See [AHS.ca](#))

[Introductory Webinar November 24, 2020](#)

[Developer Website](#)

[Developer FAQs](#)

Cognitive Log (CogLog)

The Cog-Log was designed as a bedside screen of general cognition for clients with a traumatic brain injury, stroke, and other acquired cognitive impairment

Training Requirements

Review administration guidelines. Consider viewing the introductory webinar by *Dr. Reno Gandhi, Neuropsychologist*
Watch session [here](#).

Clinical Utility

- Recommended for inpatients after TBI, potentially for serial tracking
- Patient must be able to follow verbal instructions
- Time to administer = ~10min
- Intended for those who are oriented
- 10 items, scored from 0-3; total score can range from 0-30
- Does not require client to draw or write
- Can plot scores for visual depiction over time

Interpretation

Cutoffs for screening purposes: ≥ 25 indicated impaired cognition.

Psychometric properties

Construct validity

- Immediate/delayed memory, working memory = predictive of similar neuropsychiatric measures

Criterion Validity

- MMSE: Excellent ($r=0.75$)
- O-Log: Excellent ($r=.75$)

Reliability

- IRR: spearman r , .75-1.00

- IC: $\alpha = .778$

Key Target Populations

Primarily inpatients with moderate-severe TBI but some use with stroke or other acquired cognitive impairments.

Test forms and manuals

[CogLog – Score form, administration & scoring guide](#)

Additional Resources

- AHS Cognitive Screening Tip Sheet – CogLog (See [AHS.ca](#))
- [Introductory Webinar December 1, 2020](#)
- Further information including score sheet and syllabus see [Centre for Outcome Measurements in Brain Injury \(COMBI\)](#)

Oxford Cognitive Screen (OCS)

The OCS is a stroke-specific cognitive screening tool that is aphasia and neglect friendly. It produces a cognitive profile/domain scoring rather than overall score.

Training Requirements

Review administration guidelines Consider viewing the developer’s training video [[click here](#)]

Clinical Utility

- Screens *attention, language, praxis, numbers, executive functions and memory*. It identifies commonly observed post stroke cognitive impairments including hemispatial neglect, apraxia, and problems with reading and writing
- Alternate versions (A/B) available
- AHS license is for the UK version only. Additional translations are not currently available.
- Time to administer = ~20-25 minutes

Interpretation

Domain specific scores and cut-offs to identify performance as *impaired or spared*. Refer to score sheet for details.

OCS does not provide a total score but does provide:

- A visual snapshot via the OCS report wheel
- A cognitive profile at a glance

Psychometric properties

Test-Retest

- “significant test-retest alternate form reliability on all subtests (Demeyer et al 2016)

Other forms of reliability, including inter/intra-rater reliability or internal consistency have not been evaluated.

Content Validity

- “performance on each subtest correlated with those on standard tests and the total number of impaired subtests correlated significantly with the overall MoCA scores”

Construct/Convergent Validity

- MMSE – Excellent ($r=0.75-0.83$)
- MoCA – Excellent ($r=0.91$)

Divergent Validity

- established through comparison to the Barthel Index and through dissociation of impairments across different domains.

Discriminative Validity

- not established though the authors indicate the OCS can “differentiate different classes of patients even within some domains (ie. egocentric vs allocentric neglect).

Specificity/Sensitivity

- higher sensitivity than MoCA in detecting cognitive impairments; highly sensitive to subtle occurrences of neglect (Demeyere et al, 2016)

Key Target Populations

Client’s with stroke, particularly with communication or neglect concerns.

Test forms and manuals

For AHS Staff:

- [OCS - Score Form Version A](#)
- [OCS - Score Form Version B](#)
- [Oxford Cognitive Screen User Manual \(2018\)](#)
- [OCS Test Booklet Version A](#)
- [OCS Test Booklet Version B](#)

Score Form packets include all single use items for each individual assessment.
Test Booklets include reusable stimulus cards (consider laminating for infection control purposes).

For all others: email practice.consultation@ahs.ca

Additional Resources

- [AHS Cognitive Screening Tip Sheet –OCS \(See \[AHS.ca\]\(#\) \)](#)
- [Introductory Webinar December 2, 2020](#)
- [Developer Website](#)

Rowland Universal Dementia Assessment Scale (RUDAS)

The RUDAS is a 6 item, 30 point screen for dementia designed to minimize the effects of cultural learning and language diversity.

Training Requirements

Review administration guidelines and consider viewing the developer's training video (see below).

Clinical Utility

- Includes 4/6 domains of MoCA
- Ideally administered in client's first language with an interpreter
- Note that the developer indicates that it can be administered with an interpreter in 30 different languages without there being a concern about a change in meaning of the items (refer to developer's website)
- Time to administer = ~10 minutes

Interpretation

Any score of 22 or less suggests cognitive impairment or possible dementia and should be referred on for further assessment.

Psychometric properties

- Excellent diagnostic accuracy for detecting dementia.
- Particularly high specificity across cultures in immigrant populations (91.4%)
- Construct/Convergent Validity
 - ✓ MMSE Excellent (r=0.77)
 - ✓ MoCA Moderate (r=0.49)

Key Target Populations

Developed for baseline screening in culturally and linguistically diverse older adult populations, as an alternative to the MMSE
Dementia/major neurocognitive disorder

Older Adults:

- Community-dwelling elderly in Australia, half had <6 years education (Story et al., 2004)
- Mild Alzheimer disease (Matias-Guiu et al. 2017)
- Very low education, non-English-speaking with MCI and dementia (Goudsmit et al. 2018)
- Arabic-speaking elderly with low literacy (Chaaya et al, 2016)
- Multicultural sample of elderly memory clinics across five European countries (Nielson et al., 2018)

Test forms and manuals

- [RUDAS Score Form](#)
- [RUDAS Administration & Scoring Guide](#)

Additional Resources

- [Developer Website](#)
- [Developer video](#)
- [Introductory Webinar November 25, 2020](#)

Screen for Cognitive Impairment In Psychiatry (SCIP)

The SCIP was designed for rapid and objective screening of cognitive impairments commonly observed in psychotic and affective disorders.

Training Requirements

Please review scoring instructions and view the Introductory Webinar presented by Dr. Scot Purdon ([click here](#))

Clinical Utility

- Includes 3/6 domains of MoCA + processing speed
- 3 alternate forms in order to limit learning effects over repeat testing.
- Total score for screening, 5 domain scores for analysis
- Requires a test form, pencil, and watch
- Available in 17 languages
- Time to administer = ~15 minutes

Interpretation

The SCIP is not to be used alone for diagnosis. It is a screening tool to monitor change, or to encourage referral where necessary. Cognitive limitations detected by the SCIP must be interpreted with caution as they may not necessarily reflect an acquired impairment. Examinee's level of effort and motivation to perform well (or poorly) must be considered, along with age, education, developmental history, clinical history, and current presentation.

Two scoring methods are available.

- Cut-scores offer a method to quickly identify limitations based on a SCIP Total Score derived from the sum of the 5 subtest scores. A SCIP Total Score greater than 74 is within normal limits, but scores less than 75, 65, or 55 may suggest mild, moderate, or severe limitations, respectively.
- Standardized (Z) scores may facilitate more detailed interpretation of subscale scores.

In applying cut-scores or Z-scores it is important to consider the relatively high functioning normative sample from which the interpretive guidelines were derived. A clinical judgement regarding anticipated scores will be required to arrive at an appropriate inference from the SCIP. If possible it is advisable to have a psychologist administer a performance-based test of premorbid intellect that would offer a direct measure for comparison.

It is highly recommended that examinees with limitations below the 'possible mild level of severity' be referred to a clinical neuropsychologist for a comprehensive evaluation to assess the validity of the test scores and to offer a comparison to an appropriate normative sample.

Psychometric properties

Email spurdon@ualberta.ca

Key Target Populations

- The SCIP was designed to screen referrals to the AHS AMH EZ Neuropsychology Service.
- A comprehensive Neuropsychological evaluation is expensive and requires considerable expertise.
- The screen was designed to provide a quantitative basis for triage – see more patients for less money.
- Early clinical applications included psychosis, depression, bipolar, anxiety, and substance use disorders, many with cognitive limitations that impede full functional recovery.
- Subsequent investigations have demonstrated utility in screening adolescent, adult, and senior samples with suspected neurodevelopmental disorders, CNS injury, or degenerative conditions.
- The original norms and cut-scores were derived from a first year university sample. Norms for younger and older samples have recently become available.

Test forms and manuals

For AHS Staff:

- [SCIP – Score Form 1](#)
- [SCIP – Score Form 2](#)
- [SCIP – Score Form 3](#)
- [SCIP – Instructions](#)

For others, please email practice.consultation@ahs.ca

Additional Resources

- AHS Cognitive Screening Tip Sheet - SCIP (See [AHS.ca](#))
- [Introductory Webinar November 10, 2020](#)

Saint Louis University Mental Status Exam (SLUMS)

The SLUMS is an 11 item, 30 point screen appropriate for broad general screening for mild cognitive impairment and dementia. There is sufficient evidence & clinical utility across multiple populations and it is very similar to the MoCA in terms of domains tested, time to administer and education cutoffs

Training Requirements

- To be administered by qualified health care professionals who have viewed the developer’s video available [here](#). The developer request administrators view the training video annually.

Clinical Utility

- Available in 14 languages (multiple versions per country) – see developer website for translated versions
- Score out of 30
- Time to administer ~15 min
- No alternate versions available

Interpretation

Cutoffs for screening purposes:

Cognitive impairment indicated for score of:

- <27 for individuals with a high school education
- <25 for individuals with less than high school education

Additional cutoffs based on level of education on score form should be applied with caution as a screen should not be used for diagnostic purposes.

Psychometric properties

- Correlates with most neuropsychological test variables
- Sensitivity and specificity in detecting MCI and dementia
- Sensitive to change in a study of reversible cognitive impairment.
- Construct/Convergent Validity
 - MMSE - Excellent (r=0.75-0.83)
 - MoCA - Excellent (r=0.91)

Key Target Populations

Developed for use with mild neurocognitive disorders, dementia, & older adults (60+)

Additional validation studies in:

Older Adults

- Community-dwelling older adults (Feliciano et al., 2013)
- Veterans age 60+ (Tariq et al., 2006)
- LTC residents (Stewart et al., 2012)
- Geriatric Evaluation Unit and Rehab unit, as well as community dwelling elderly (Cummings-Vaughn et al., 2014)

Adults

- Non-specific Patient Population age 18+ (Brown et al., 2012)

Test forms and manuals

[SLUMS score form \(Canadian version\)](#)

AHS SLUMS Scoring and Administration Guide ([See AHS.ca](#))

Additional Resources

[Developer's website](#)

[AHS Introductory Webinar \(November 17 2020\)](#)

PART C: IMPLEMENTATION RESOURCES

Comparison Table of Cognitive Tools

[Available as standalone document ([See AHS.ca](#))]

TOOL	DESCRIPTION	POPULATION	STRENGTHS / LIMITATIONS
ADDENBROOKE COGNITIVE EVALUATION III (ACE III)	5 domain, 100 point screen of general cognition	Mild cognitive impairment and dementia. Validated in adults and older adults including early onset dementia, stroke, TIA & TBI.	Bridges the gap between a very brief screen and a full neuropsychological assessment. Particular focus on fronto-temporal dementia and non-Alzheimer’s Disease neurocognitive disorders. Takes a bit longer (<20-25 minutes on average).
COG-LOG	10 items bedside screen of general cognition for clients with a traumatic brain injury, stroke, and other acquired cognitive impairment	Traumatic brain injury, stroke, and other acquired cognitive impairment.	Intended for those who are oriented. Can plot scores for visual depiction over time (potential for serial tracking). Recall information changes. Does not require patient to draw or write but they must be able to follow verbal instructions. Translated versions not available.
OXFORD COGNITIVE SCREEN (OCS)	Stroke-specific cognitive screening tool that is aphasia and neglect friendly.	Clients with stroke, particularly with communication or neglect concerns.	Two alternate versions. Good for clients with aphasia or neglect (more items therefore takes longer to administer – approximately 20 minutes) Translated versions not available at present. Does not provide a total score but does provide: <ul style="list-style-type: none"> • A visual snapshot via the OCS report wheel • A cognitive profile at a glance
ROWLAND UNIVERSAL DEMENTIA ASSESSMENT SCALE (RUDAS)	6 item, 30 point screen for dementia designed to minimize the effects of cultural learning and language diversity.	<i>Mild Cognitive Impairment and Dementia.</i> Validated in non-English speaking background and immigrant populations.	Good for use with clients with language and cultural diversity or very limited formal education. Ideally administered in client’s first language with an interpreter.

<p>SCREEN FOR COGNITIVE IMPAIRMENT IN PSYCHIATRY (SCIP)</p>	<p>Designed for rapid and objective screening of cognitive impairments commonly observed in psychotic and affective disorders.</p>	<p><i>Psychotic and affective disorders</i></p> <p>Early clinical applications included psychosis, depression, bipolar, anxiety, and substance use disorders.</p> <p>Subsequent investigations have demonstrated utility in screening adolescent, adult, and senior samples with suspected neurodevelopmental disorders, CNS injury, or degenerative conditions.</p>	<p>Processing speed considered. 3 alternate forms 15 languages The author recommends examinees with limitations below the ‘possible mild level of severity’ be referred to a clinical neuropsychologist for a comprehensive evaluation to access the validity of the test scores.</p>
<p>SAINT LOUIS UNIVERSITY MENTAL STATUS EXAM (SLUMS)</p>	<p>11 item, 30 point screen appropriate for broad general screening</p> <p>It is very similar to the MoCA in terms of domains tested, time to administer and education cutoffs.</p>	<p><i>Mild Cognitive Impairment and Dementia.</i></p> <p>Validated in ages 18+ including older adults in LTC, community and rehab.</p>	<p>Multiple languages Brief (~15 min) Cutoffs adjusted for level of education No alternate version for repeat testing</p>

Case Studies for Cognitive Screening

[Available as standalone document ([See AHS.ca](#))

Harry is a 75 year old man who is admitted to hospital with a left cerebrovascular accident (CVA). He has some right-sided weakness and he is right hand dominant. He is having difficulty following verbal commands consistently and has significant difficulties verbalizing his needs. SLP assessment is pending to assess his communication. Although he appears confused at times, delirium has been ruled out. Cognitive screening is appropriate for early identification of suspected cognitive impairment to support appropriate care planning and contribute to a formal diagnosis.

First choice for a cognitive screen: Oxford Cognitive Screen (OCS) due to the impact of communication deficits.

Harry has engaged in rehabilitation for 4 weeks and it is decided he will be discharged home with the Early Supported Discharge Team for further in-home rehabilitation. There has been some improvement in communication but he continues to have a combined expressive and receptive aphasia. A cognitive screen is recommended at transitions in care by Canadian Stroke Best Practice Recommendations.

First choice for a cognitive screen: Given the continued communication deficits, the Oxford Cognitive Screen can be repeated using an alternative version but clinician may want to provide a notation regarding short interval between screening dates.

David is a 50 year old man diagnosed with schizoaffective disorder (since age 22 years). He is living in a group home. David has an engineering degree and is thought to have a high level of intelligence. However, he has difficulty following recommendations and appears to not understand consequences of his decisions he makes. He is having difficulty with money management and has a history of poor adherence to the medical management of his illness. David has declined mental health services in the past and appears to have limited understanding regarding the role of medications in his recovery. As a result he was put under a Community Treatment Order. His mental health team is uncertain if his poor adherence is due to his mental illness or due to cognitive issues and are uncertain to whether further testing is indicated. A cognitive screen would help determine if further assessment (OT or psychology) is required.

First choice for cognitive screen: Screen for Cognitive Impairment in Psychiatry (SCIP) due to pre-morbid high level of intelligence and the need to have a preliminary understanding of his executive functioning, attention and memory and, the SCIP was developed for individuals with severe mental illness.

Colette is an 80 year old woman living at home with her husband. Her native language is French but she was able to function in English adequately when she worked in retail. Colette is from a small town in Quebec and achieved grade 8 in school. Her family have noticed that her

English has become very limited. She was previously independent for meal preparation and managed the family finances however, she is now having difficulty with both of these tasks. A cognitive screen is indicated due to changes in level of functioning.

First choice for cognitive screen: Rowland Universal Dementia Assessment Screen (RUDAS) with an interpreter due to language and education factors.

Bina is a 68 year old woman admitted to an Addictions & Mental Health unit with a new onset psychosis. She only communicates in Punjabi. She has no history of psychotic symptoms and previously was independent and fully engaged in family life. Delirium has been ruled out. She has visual hallucinations and delusions. She appears confused on the unit, including poor memory and judgment. The psychiatrist has started Risperdal and her psychotic symptoms are gradually abating but her memory deficits remain and requires prompting to regularly shower. Cognitive screening is indicated given continuing difficulties with memory and impact on function. Cognitive screening would help indicate the need for further assessment.

First choice for cognitive screen: Rowland Universal Dementia Assessment Screen (RUDAS) with a Punjabi interpreter.

William is an 80 year old Chinese man living at home with his wife, two adult children and two grandchildren. Cantonese is his first language but his English is still very good. He has a history of an old Right CVA with apparent full resolution 9 months ago. Addenbrooke's Cognitive Examination-III was used as a cognitive screen at that time. There are concerns about his ability to drive (family needs to help navigate even in familiar areas), play mah-jong and engage in home maintenance activities. His family has noted his memory is becoming worse. The clinician completing the home visit is in the role of consultant with limited time and resources. Cognitive screen is indicated to determine role of cognition on functional difficulties.

First choice for cognitive screen: Addenbrooke's Cognitive Examination-III (ACE-III). Full assessment of cognition is not possible in this context and more items and domains of the ACE-III has the potential to provide more information. The ACE-III was utilized previously and re-test will help determine possible changes overall and in any specific domain.

Linda is a 63 year old woman diagnosed with a right CVA with left-sided weakness however her speech is intact. She is having difficulty with following directions and has impaired memory and is getting lost on the unit. She is also having difficulty with dressing which does not appear to be due to her left sided weakness. A cognitive screen is indicated due to observations made on the unit and the difficulties reported earlier on. Screen will also help indicate whether further assessment is required (OT, psychology).

First choice for cognitive screen: ACE-III has research to support the use of the tool for individuals with the diagnosis of CVA. Client is also quite young and therefore the ACE-III is preferable choice over the Saint Louis University Mental Status (SLUMS) though the SLUMS (originally created for older adults/veterans) would be a viable alternative if Linda had poor activity tolerance.

Fred is a 90 year old man living at home with his wife. He was referred to Home Care for bath assistance due to poor activity tolerance and poor balance. The nurse completed the RAI and noted that he tires very easily. Family note he is not as sharp as he was before and that he is forgetting appointments and has made some unwise financial decisions with bad outcomes. He also loses his temper more quickly than he used to. A cognitive screen is indicated to help the nurse determine overall cognitive status and need for further assessment and in home supports.

First choice for cognitive screen: SLUMS is short and will provide an overall screening of Fred's cognition.

Matthew is a 24 year old man admitted to hospital with a severe Traumatic Brain Injury. He has regained consciousness and there have been functional improvements noted daily by staff. The staff would like an objective measure to gauge cognitive improvement.

First choice for cognitive screen: Cognitive Log (COGLOG) to provide a regular and repeated screen for cognition that can be tracked over time.

Ted is an 85 year old man living alone in an apartment. He is having increasing difficulties with his IADLs and he has poor activity tolerance. His family physician completed a Montreal Cognitive Assessment 18 months ago where he had obtained a score of 20/30. Family have now initiated a referral for Home Care and are questioning whether Ted is able to remain independent. Family have noted a gradual deterioration in his cognition but they are really not sure how much and Ted is now very reluctant to go out and is resistant to changes in routine. The Home Care nurse has referred to OT for a home safety assessment. The nurse would like to complete a cognitive screen to provide additional information for the occupational therapist prior to OT intervention.

First choice for cognitive screen: SLUMS is the closest equivalent and most appropriate with the older adult population to provide a brief screen of cognitive domains.

Lydia is an 88 year old woman presenting at a Senior's health clinic. The family physician has referred Lydia to the clinic due to concerns about her falls risk in her home and in the community. The inter-disciplinary team provides a comprehensive geriatric assessment to help determine possible factors for the falls. One of the areas of assessment is cognition. The nurse has the role of completing cognitive screening to provide information to the geriatrician.

First choice for cognitive screen: SLUMS. This tool is effective in providing an overall screen of cognition fairly quickly and efficiently, especially in the context of several other areas to be assessed on one visit. It will help inform the decisions made by the geriatrician about the need for further assessment (OT, psychology).

Maggie is a 78 year old woman who was admitted to hospital following a fall that resulted in a fractured right hip. She underwent a total hip arthroplasty and was then admitted to a medical unit. Maggie has been experiencing a disrupted sleep/wake cycle and appears quite fearful of staff. She is having significant difficulties with attending to interactions with her by nursing and physicians. Family report this is a drastic change for Maggie though admittedly they do not see her often.

First choice for cognitive screen: Given Maggie's presentation, it would be ideal if a Confusion Assessment Measure (CAM) was completed prior to any cognitive screening. Signs and symptoms are highly suggestive of a delirium.

Algorithms for Cognitive Screening (*Dementia/MCI, Mental Health, Neurological Conditions*)

Algorithms are not meant to be prescriptive but as an adjunct to clinical reasoning. Available as standalone document ([See AHS.ca](#))

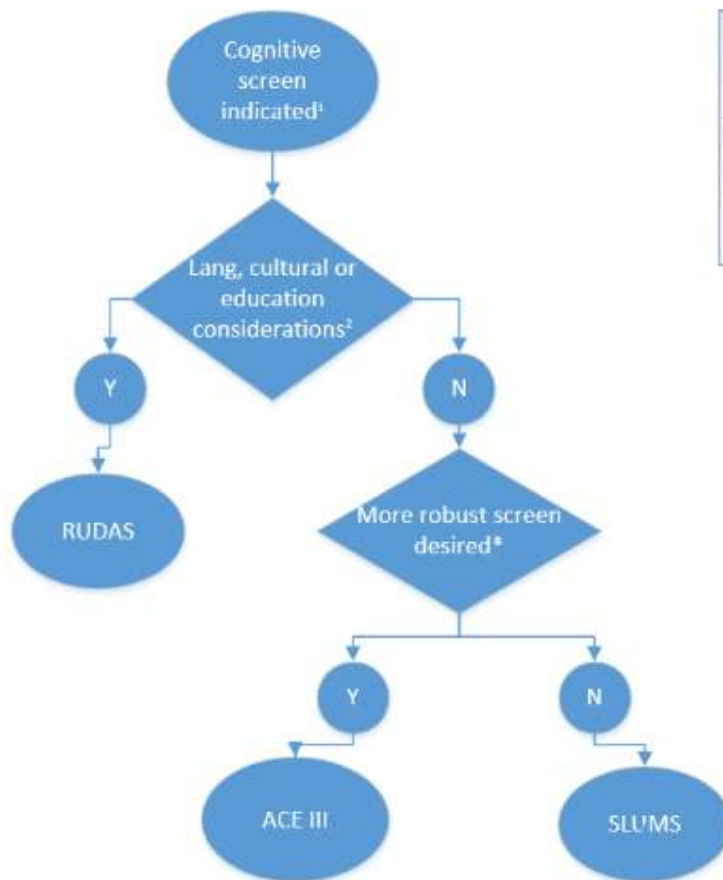
Dementia/MCI

**AHS COGNITIVE
SCREEN ALGORITHM
(Dementia/MCI)**
(Not meant to be prescriptive but
used only to guide clinical
reasoning)

MCI – Mild Cognitive Impairment
Lang – language
Dx – diagnosis
FTD – Fronto-temporal Dementia

If the client has a concurrent
neurological dx and
communication issues, the
clinician may want to consider
using the Oxford Cognitive Screen.

*The ACE III requires more time to
complete and was not meant to be
comparable to the SLUMS as a
replacement for the MoCA



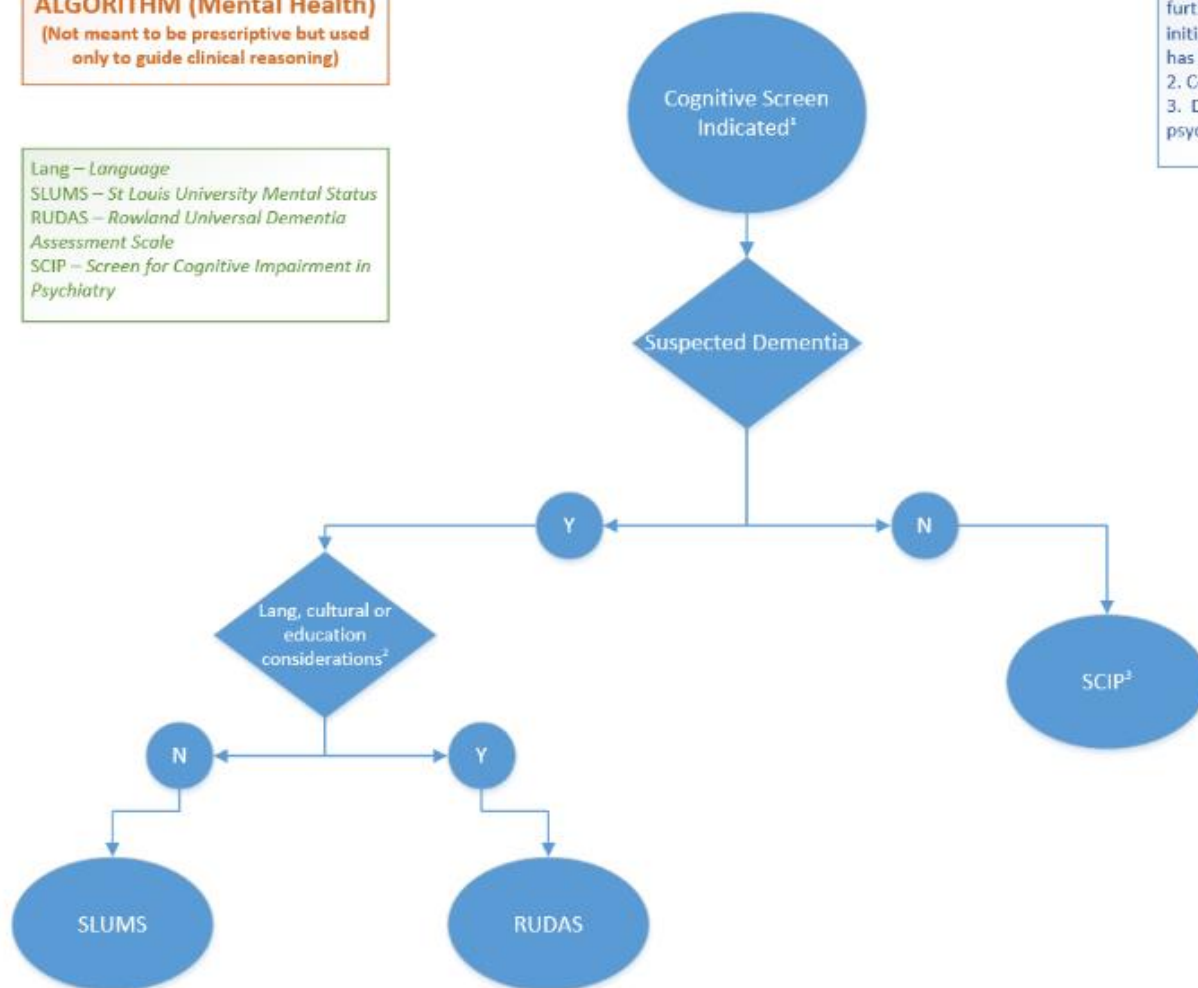
1. Reasons for cognitive screening include: to detect cognitive impairment, identify need for further testing, potential to track progress and initial step in triage. It is assumed delirium has been ruled out.
2. Consider use of translator.

1. Mental Health

**AHS COGNITIVE SCREEN
ALGORITHM (Mental Health)**
(Not meant to be prescriptive but used
only to guide clinical reasoning)

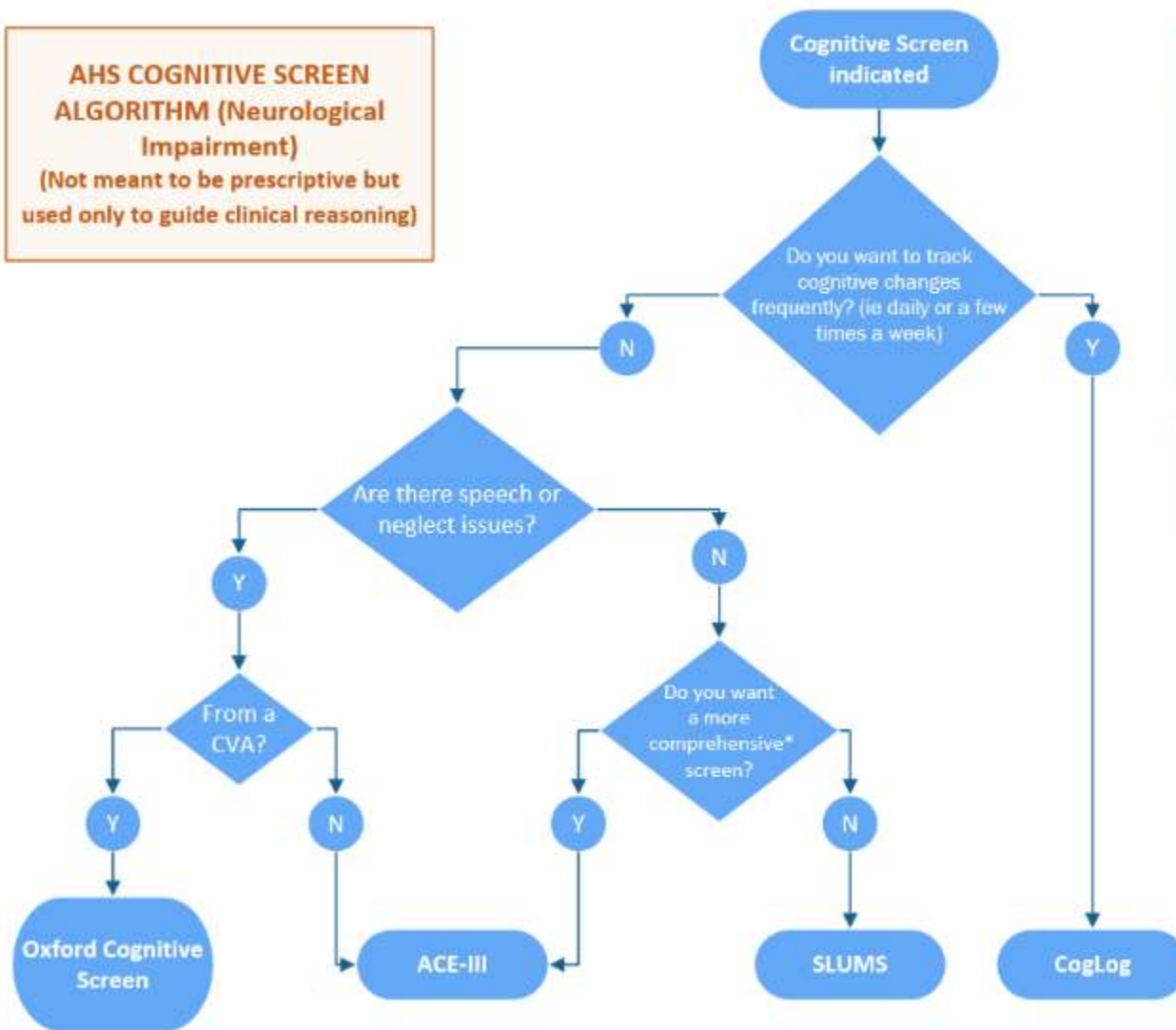
Lang – Language
SLUMS – St Louis University Mental Status
RUDAS – Rowland Universal Dementia
Assessment Scale
SCIP – Screen for Cognitive Impairment in
Psychiatry

1. Reasons for cognitive screening include: to detect cognitive impairment, identify need for further testing, potential to track progress and initial step in triage. It is assumed delirium has been ruled out.
2. Consider use of translator.
3. Developed for use with individuals with psychotic and affective disorders.



2. Neurological impairments

**AHS COGNITIVE SCREEN
ALGORITHM (Neurological
Impairment)**
(Not meant to be prescriptive but
used only to guide clinical reasoning)



Please note: The Oxford Cognitive Screen, ACE-III, SLUMS and CogLog are Cognitive Screens. More in depth cognitive or functional assessment may be required depending on the results of the screen, or if your client is more complex. There may be other times the screens are used that are not captured in this algorithm.

*Longer to administer with more questions pertaining to each domain being screened.

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