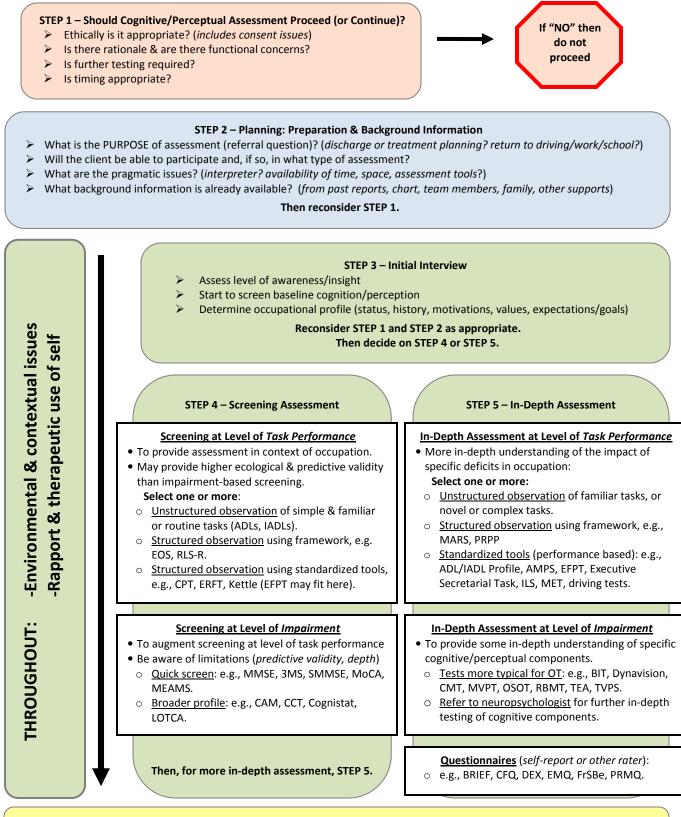# An OT Approach to Evaluation of Cognition/Perception
…for clients from adolescence to old age, from acute care to long term supports
(Vancouver Coastal Health, April 2011/rev 2013)

STEP 1 – Should Cognitive/Perceptual Assessment Proceed (or Continue)?
➢ Ethically is it appropriate? (*includes consent issues*)
➢ Is there rationale & are there functional concerns?
➢ Is further testing required?
➢ Is timing appropriate?

If "NO" then do not proceed

STEP 2 – Planning: Preparation & Background Information
➢ What is the PURPOSE of assessment (referral question)? (*discharge or treatment planning? return to driving/work/school?*)
➢ Will the client be able to participate and, if so, in what type of assessment?
➢ What are the pragmatic issues? (*interpreter? availability of time, space, assessment tools?*)
➢ What background information is already available? (*from past reports, chart, team members, family, other supports*)
Then reconsider STEP 1.

STEP 3 – Initial Interview
➢ Assess level of awareness/insight
➢ Start to screen baseline cognition/perception
➢ Determine occupational profile (status, history, motivations, values, expectations/goals)
Reconsider STEP 1 and STEP 2 as appropriate.
Then decide on STEP 4 or STEP 5.

THROUGHOUT: -Environmental & contextual issues -Rapport & therapeutic use of self

STEP 4 – Screening Assessment

Screening at Level of *Task Performance*
• To provide assessment in context of occupation.
• May provide higher ecological & predictive validity than impairment-based screening.
  Select one or more:
  o Underlined: Unstructured observation of simple & familiar or routine tasks (ADLs, IADLs).
  o Structured observation using framework, e.g. EOS, RLS-R.
  o Structured observation using standardized tools, e.g., CPT, ERFT, Kettle (EFPT may fit here).

Screening at Level of *Impairment*
• To augment screening at level of task performance
• Be aware of limitations (*predictive validity, depth*)
  o Quick screen: e.g., MMSE, 3MS, SMMSE, MoCA, MEAMS.
  o Broader profile: e.g., CAM, CCT, Cognistat, LOTCA.

Then, for more in-depth assessment, STEP 5.

STEP 5 – In-Depth Assessment

In-Depth Assessment at Level of *Task Performance*
• More in-depth understanding of the impact of specific deficits in occupation:
  Select one or more:
  o Unstructured observation of familiar tasks, or novel or complex tasks.
  o Structured observation using framework, e.g., MARS, PRPP
  o Standardized tools (performance based): e.g., ADL/IADL Profile, AMPS, EFPT, Executive Secretarial Task, ILS, MET, driving tests.

In-Depth Assessment at Level of *Impairment*
• To provide some in-depth understanding of specific cognitive/perceptual components.
  o Tests more typical for OT: e.g., BIT, Dynavision, CMT, MVPT, OSOT, RBMT, TEA, TVPS.
  o Refer to neuropsychologist for further in-depth testing of cognitive components.

Questionnaires (*self-report or other rater*):
  o e.g., BRIEF, CFQ, DEX, EMQ, FrSBe, PRMQ.

STEP 6: Analysis, Recommendations & Intervention Planning
• Interpret findings: "triangulate" the data from standardized tests, observations, environmental/contextual assessment.
• Make recommendations (including answering the referral question) and, if applicable, plan intervention(s)

An OT Approach to Evaluation of Cognition/Perception

KEY for suggested assessment tools:

Screening Assessment:	In-Depth Assessment:

Screening at Level of *Task Performance*
o Unstructured observation (simple & familiar tasks):
  ADLs: Activities of Daily Living
  IADLs: Instrumental Activities of Daily Living

o Structured observation (frameworks)
  EOS: Executive Observation Scale
  RLS-R: Rancho Los Amigos Scale – Revised

o Structured observation (standardized tools)
  CPT: Cognitive Performance Test
  ERFT: Executive Function Route-Finding Task
  Kettle: Kettle Test
  (EFPT: Executive Function Performance Test – may fit here)

In-Depth Assessment at Level of *Task Performance*
o Unstructured observation of familiar tasks, or novel or complex tasks.

o Structured observation using framework:
  MARS: Moss Attention Rating Scale
  PRPP: Perceive, Recall, Plan and Perform system of task analysis

o Standardized tools (performance based):
  AMPS: Assessment of Motor and Process Skills
  ADL/IADL Profile
  EFPT: Executive Function Performance Test
  Executive Secretarial Task
  ILS: Independent Living Scales (Loeb, 2003)
  MET: Multiple Errands Test
  Standardized driving tests (driving simulation, road test)

Screening at Level of *Impairment*
o Quick screen:
  MMSE: Folstein Mini Mental Status Exam
  3MS: Modified Mini-Mental Status
  SMMSE: Standardized Mini-Mental Status Exam
  MoCA: Montreal Cognitive Assessment
  MEAMS: Middlesex Elderly Assessment of Mental State

o Broader profile:
  CAM: Cognitive Assessment of Minnesota
  CCT: Cognitive Competency Test
  Cognistat: Neurobehavioral Cognitive Status Examination
  LOTCA: Loewenstein Occupational Therapy Cognitive
    Assessment (LOTCA-G is the geriatric version)

In-Depth Assessment at Level of *Impairment*
o Tests more typical for OT:
  BIT: Behavioural Inattention Test
  Dynavision
  CMT: Contextual Memory Test
  MVPT: Motor-free Visual Perceptual Test
  OSOT: Ontario Society of Occupational Therapists perceptual test
  RBMT: Rivermead Behavioural Memory Test
  TEA: Test of Everyday Attention
  TVPS: Test of Visual Perceptual Skills

o Refer to neuropsychologist for further in-depth testing of cognitive components.

Questionnaires (*self-report or other rater*):
BRIEF: Behavior Rating Inventory of Executive Function
CFQ: Cognitive Failures Questionnaire
DEX: Dysexecutive Questionnaire
EMQ: Everyday Memory Questionnaire
FrSBe: Frontal Systems Behavior scale
PRMQ: Prospective & Retrospective Memory Questionnaire

Thank you to everyone within VCH who contributed to this document!
Questions? Feedback? Please contact Alison McLean, OT: alison.mclean@vch.ca

Resources:

College of Occupational Therapists of British Columbia (2008). Practice Guideline: Obtaining Consent to Occupational Therapy Services. (obtained from http://www.cotbc.org/PDFs/COTBC_ObtainingConsentGuideline.aspx, February 2011)

Groves, D., Coggles, L., Hinrighs, J., Berndt, S., & Bright, L. (2010). An innovative algorithm for cognitive assessments. *OT Now, 2*, 20-23.

Hartman-Maeir, A., Katz, N., & Baum, C. M. (2009). Cognitive Functional Evaluation (CFE) process for individuals with suspected cognitive difficulties. *Occupational Therapy in Health Care, 23*, 1-23

Mental Health Occupational Therapy Algorithm/Guidelines for Cognitive Assessments (August 11, 2010), Vancouver Coastal Health.

> **STEP 1 – Should Cognitive/Perceptual Assessment Proceed?**
> ➢ Ethically is it appropriate? (*includes consent issues*)
> ➢ Is there rationale & are there functional concerns?
> ➢ Is further testing required?
> ➢ Is timing appropriate?

➢ **Ethically is it appropriate to proceed?**
  o Consent:
    ▪ Voluntary consent must be obtained (from the client, spouse, representative or Committee as appropriate).
    ▪ Remember that consent is an ongoing communication process. Consent can be withdrawn at any time.
  o Also consider…
    ▪ ... whether the client understands the purpose and limits of the assessment/screen
    ▪ ... whether or not you have the appropriate assessment tools to answer the referral question
    ▪ ... how the information will be used if, upon assessment, you identify cognitive impairment (e.g., is there some benefit to determining whether or not there is cognitive impairment – to discharge planning? treatment planning?)
    ▪ ... whether the client has awareness of and understands the implications of the assessment/screen (medication changes, housing/placement guidelines, schooling requirements, driving standards, etc.)

➢ **Is there a rationale for assessment & are there functional concerns?**
  o Who is requesting this information (e.g., care team, client, family, case manager etc.)?
  o What information is desired? What information do I want?
  o If a diagnosis is required (e.g. "Does the client have dementia?")…what information can an OT contribute towards making or confirming a diagnosis?
  o Has cognitive screening or testing already been completed by another team member?
  o Has there been a change in cognitive status or functional ability that seems related to cognition?
  o Why am I evaluating this person? (e.g., to determine level of support? to assess capacity?)
  o What information, other than that given to me by the client, do I need to obtain from the family, team, or documentation? (e.g., regarding agitation/inappropriate behaviours/concerns)
  o Are there other factors that may be influencing cognition at this time? (sleep, diet, medication side effects, exacerbation of mental illness, substance abuse, trauma)
  o Are there functional concerns? If not, why is OT required to conduct the assessment?

**If no rationale, then be sure to explain this to the referral source.

➢ **Is further testing required?**
  o Is information already available and, if so, can recommendations already be made?
  o Based on the client's prognosis, can future care or environmental needs be predicted?
  o Based on functional information and observation of the client, does the client require additional support or alternate living arrangements?

**If further testing is not required, then be sure to explain this to the referral source and, if appropriate, assist in making recommendations based on the information that is already available.

➢ **Is the timing of assessment appropriate?**
  o Will the client's current mental status influence the assessment?
  o Is the client medically stable? *including* Is there an acute medical reason for the client's current cognitive status?
  o Is client outside of her/his usual context, such that testing would not reflect performance if s/he was in usual context? (e.g., if in hospital, is s/he in a more supported/stable/uncluttered *etc*. environment than s/he would be if at home?)
  o Can the person tolerate testing?
  o Can the person cooperate with testing?
  o Are the cognitive concerns a new issue or a long standing problem?
  o What is the person's history of cognitive abilities and level of function?

**If timing is not appropriate, then ask for a new referral when timing is appropriate, or monitor until it is appropriate to assess.

STEP 2 – Planning: Preparation & Background Information

Carry out this step after deciding that, yes, cognitive/perceptual assessment should proceed.

➢ **What is the purpose of the assessment?**
   o How does this relate to function/occupational performance/occupation?
   o To help predict safety & performance? (e.g., Discharge planning? Independent living? Return to school or work?)
   o For treatment planning?

➢ **Will the client be able to participate in assessment?**
   o What information is already available about the client's status that might determine their ability to participate in assessment (e.g., level of awareness, attention, sitting tolerance, language skills, fine motor skills, education)?
   o What else do I need to consider in setting up the assessment (time of day? fatigue issues? mental health status?)

➢ **What are the pragmatic issues?**
   o Is an interpreter required?
   o What is available in terms of time, space, assessment tools?

➢ **What background information is already available (prior to meeting the client)?**
   o from past reports, chart, school history/academic record, team members, family, other agencies/support services
   o medical history including information on co-morbid conditions/diagnoses where cognition/perception is affected
   o specific to cognitive/perceptual function and also in terms of the client's overall status/function
   o relating to expectations, goals, concerns (of team, family, client, cultural)

THROUGHOUT: Environmental and Contextual Issues:
- influence of fatigue, mood, mental health issues, pain, medications, etc. on level of cognitive function
- influence of environment/context on performance (e.g., social, cultural, physical, support, stimulation/distractions, etc.)
- influence of home vs. hospital/clinic environments
- novelty of situation
- real task demands
- external strategies: Use of pre-existing vs. new; What supports/strategies are available outside of the testing situation?
- client's response to change (physical, organization, cues/strategies, complexity, routines, external aids, time of day)
- assessment of carry-over of new learning (generalization) between sessions and to other environments/contexts

THROUGHOUT: Rapport & Therapeutic Use of Self
- throughout: consider importance of rapport; influence of your interactive style; your use of compassion & empathy; etc.
- consider your awareness of client's motivations, goals, interests. Does client perceive assessment as relevant?

STEP 3: Initial Interview

➢ **What is the client's level of awareness/insight?**
   o What is the client's self report about his/her cognition and perception?
   o How does this compare to background information and your observations during the interview?
   o If someone is present who knows client well, how does the client's self-report compare to this other person's report?

➢ **What cognitive/perceptual information can be gleaned from initial interview?**
   o e.g. as relates to attention, memory, information processing, visual perception, executive functioning, etc.

➢ **What is the client's occupational profile?**
   o As relates to self-care, leisure, productivity. Consider also history, motivations, values, expectations/goals of client.
   o How does this add to the background information already collected?

Then decide on STEP 4 or STEP 5:

STEP 4: Screening Assessment	STEP 5: In-Depth Assessment

Some reasons to choose STEP 4:
- Only a basic profile is required.
- Little time is available for assessment.
- You do not yet have an overall sense of the client's cognitive/perceptual function (this includes OTs without much experience in assessment of cognition/perception).

Some reasons to choose STEP 5:
- More than just a basic/global profile is required (i.e., you need a more in-depth assessment than was/can be provided by a Screening Assessment).
- Your client is/presents in many ways as fairly high functioning, and therefore there is likely to be a "ceiling effect" with screening

A. Screening at Level of *Task Performance*:

Select this when:

...to ensure ecological validity (i.e., assessment results are an accurate reflection of real life performance) &/or predictive validity (e.g., assessment results will accurately predict safety for discharge).

...to ensure that you have considered the environmental and contextual issues relating to the client's potential to function. E.g., consider the effect on the client's performance when task and/or environment are manipulated.

B. Screening at Level of *Impairment*:

Select this when:

...you need a general, overall (global) measure of cognitive/perceptual abilities;

...you need to measure change (quantitatively);

...other clinicians may need to replicate results.

Considerations for selecting a specific tool:
- If the referral question relates to predicting safety for independent living, which of your available tools have this predictive validity?
- What is the client's age and diagnostic group? (in order to select a measure that is valid and reliable for this population)

> **Then, for more in-depth assessment, STEP 5.**
> **Or, if no further assessment, STEP 6.**

A. In-Depth Assessment at Level of *Task Performance*:

Select this when:

...it is important to have ecological &/or predictive validity. This would be the case in particular for executive functioning;

...environmental and contextual issues are significant in the client's potential to function. E.g., consider the effect on the client's performance when task and/or environment are manipulated.

B. In-Depth Assessment at Level of *Impairment*:

Select this when:

...in-depth understanding is required of a specific cognitive or perceptual component (attention, memory, etc.), such as when you are unsure what is contributing to impaired task/functional performance;

...specific score results are required;

...need to measure change (quantitatively);

...other clinicians may need to replicate results.

Considerations for selecting a specific tool:
- Do your tools have predictive validity, such as to predict function for independent living?
- Client's age and diagnostic group

C. Questionnaires:

Select this when:

...self-report is informative (e.g., obtain client's perspective);

...to provide information about function at home or community where OT is unable to observe;

...to obtain information from family/supports about the client's cognition/perception and impact on function;

...when it is not possible to administer a longer, performance-based evaluation.

STEP 6: Analysis, Recommendations & Intervention Planning

➢ **Analysis:**

- o Remember, OTs do not diagnose medical/health conditions
- o What do the findings indicate regarding the client's cognitive/perceptual strengths & limitations at this point in time?
- o "Triangulate the data" – i.e., does information from all sources point to the same conclusions about cognition, perception and impact on function (background information, interview information and observations, functional observations and behaviours of the client, standardized test results, questionnaires)
- o Do results fit with information from other types of assessment? (e.g. ADL/IADL measures)?
- o Do results fit with results of testing conducted by other clinicians?
- o What other factors have influenced your findings?
  - Mood (anxiety, depression)
  - Fatigue
  - Language barrier
  - Thought content
  - Vision or hearing impairment
  - Motivation
  - Other medical conditions; medications
  - Environmental/contextual factors (including physical, social, cultural, institutional, etc.)
- o Does the client have awareness/insight into their cognitive/perceptual performance – and if not, what implications does this have on your interpretation of findings (in particular from interview and questionnaires)?
- o Do your findings have ecological and predictive validity?
- o What are the client's strengths and limitations observed throughout the screening/assessment process?
- o If a standardized test was used, was it administered in a standardized fashion/protocol – if not, how does this impact your interpretation of findings? Can you score the test?
- o Can you answer the referral question?
- o What is the client's potential to change (environment, ability to learn, skills, strategies, and/or ways of doing things)?
- o Is further assessment required:
  - by the OT? (such as if there are any unanswered questions)
  - by another discipline? (e.g., speech-language pathologist, neuropsychologist, ophthalmologist, driver rehab specialist)

➢ **Recommendations & Intervention Planning**

- o What type(s) of recommendations are required? (refer back to reason for assessment – Step 2)
  - further assessment by OT or another discipline?
  - as relate to the client's return to specific occupations? (e.g., independent living? driving? school? work?)
  - for discharge planning? treatment planning?
  - to identify supports required? (support people, services, agencies, etc.)
- o Who will you share results with? (client, family, health care team, caregivers, teachers, etc.). Is there consent to do so?
- o What documentation is required, and who needs to have a copy of written recommendations? (chart, client, family/caregivers, physician's office, other clinicians?). Is there the appropriate consent to provide this?
- o Does the client have the mental capacity to understand the recommendations, including decisions and consequences regarding safety and independence?
- o For treatment planning, what types of cognitive/perceptual intervention are most appropriate for your client? (e.g., Remedial/process training? Task-specific training? Compensatory strategies? Metacognitive strategies? Environmental changes? Education? Social skills training?)
- o Who will carry out the recommendations and/or interventions?