Dementia Screening and Assessment

What is Dementia?

- Demonstrable impairment of memory
- A cognitive decline from a previous level of function
- Other impairment in at least one or more:

  Language (naming) — Construction/visuospatial function
  Abstraction — Judgment/frontal lobe function
  Personality

- Impairment is sufficient to interfere with function and activities of daily living.
- Insidious, and > 6 months

What are the risk factors? (de la Torre, 2004)

Unpreventable:

- Age <65: 1%, 65: 2%, 70: 4%, 75: 8%, 80: 16% 85: 32%, 90-94: 38%
- Family History- Risk doubles for each first degree relative
- Low education
- Previous CVA/MI

Preventable:

- Vascular Risk Factors- Risk doubles for every vascular risk factor:
  Atrial fibrillation, Diabetes, Heart Disease MI/CAD, Hyperlipidemia, Hypertension, Stroke, Obesity, Smoking.

The Silent Epidemic (Dalziel, 2007; Alzheimer Society)

The facts … The prevalence of dementia in those over age 65 is 8% meaning that an average family physician's practice has approximately 30 to 40 elderly patients with dementia (National Institute on Aging figures)

- A new case in Canada every 4 minutes (100,000 new cases per year)
- From 450,000 (now) to 750,000 (in 2025)
- 3rd most expensive disease in the Canadian Healthcare System
- 1 in 4 Canadians has a family member affected by the disease and half of all Canadians know someone diagnosed with Dementia

Consensus Statements On Dementia Screening

1. Canadian Consensus Conference on Dementia: (Patterson: Can J Neuro Sci 2001; 28 (suppl. 1) S 3-16)

- Memory complaints should be evaluated and the followed to assess progression.
- Complaints should be considered very seriously if confirmed by caregivers/informants..

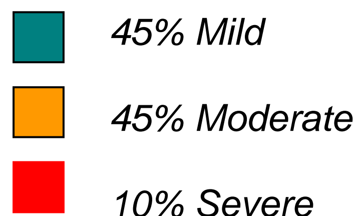
2. American Academy of Neurology

- General cognitive screening instruments (e.g. MMSE) should be considered for the detection of dementia when used in patient populations with an elevated prevalence of cognitive impairment due to age or presence of memory dysfunction. (Peterson: Neurology 2001; 56: 133-42)
- Screening for asymptomatic conditions such as early cognitive impairment should be considered if the condition is common (8% in those over 65) and important (estimated cost over $6 billion). The positive predictive value of screening is much higher if the condition has high prevalence. (The Dementia Tool box: Education Resources for Family Physician, 2006)

Don't Delay Dementia Screening

- On average there is a delay of 2-3 years from first symptom to diagnosis
- Sometimes families delay recognition but if there are caregiver complaints, there should be high suspicion of dementia (96% specific)
- Be careful not to miss dementia because of lack of "complaints" (only 50% sensitive) (Dalziel, 2007)

Studies show that by the time dementia is actually diagnosed, 55% of those diagnosed with dementia are BEYOND the mild stage. (Dalziel, 2007)



Benefits of early cognitive assessment (adapted from Dalziel, 2007)

Social Benefits	Medical Benefits
Allows self determination Early caregiver education/potential lightening of caregiver burden Safety: compliance, driving, cooking Advance directives planning Better quality of life Social/financial planning Earlier identification of driving risk	Reversible cause/component Risk factor treatment Compliance strategies Treatment of other diseases Earlier AChEI treatment Crisis avoidance

Using the Dementia Care Flowchart

The flowchart is divided into colored zones based on the overall process:

Zone 1	Identifying those who need to be screened for dementia
Zone 2	Cognitive assessment
Zone 3	Driving assessment
Zone 4	Diagnosing
Zone 5	Treatment and management

Zone 1: **Identifying those who need to be screened for dementia**

Early Warning Signs Suggesting Cognitive Challenges (Adapted from the Dementia Tool box, 2006)	
Signs Caregivers Can Detect	Signs Health Professionals Can Detect
▪ Difficulty performing familiar tasks ▪ Problems with language ▪ Disorientation of time and place ▪ poor and decreased judgment ▪ problems with abstract thinking ▪ Misplacing things ▪ changes in mood and behavior ▪ changes in personality ▪ loss of initiative ▪ memory loss affecting day-to-day function	▪ Frequent phone calls/appointments – missing/wrong day ▪ Poor historian, vague, seems "off, repetitive questions or stories ▪ Poor compliance meds/instructions ▪ Appearance/mood/personality/behaviour ▪ word-finding/decreased social interaction ▪ Subacute change in function without clear explanation/frequent visits to ER ▪ confusion - surgery/illness/meds ▪ weight loss/dwindles/ "failure to thrive" ▪ driving – accident/problems/tickets/family concerns ▪ Head turning sign (turning to caregiver for answer)

Using the Dementia Risk Calculator

<table>
<tr><td colspan="2">The Dementia Risk Calculator Doubling Rule
(de la Torre, 2004, Gauthier et al.,1997 and Siu, 1991)</td></tr>
<tr><td rowspan="2">Risk doubles for every 5 years of age

<65 years 1%
65 years 2%
70 years 4%
75 years 8%
80 years 16%
85 years 32%</td><td>Each additional vascular risk factor approximately <u>doubles</u> the risk (One risk factor: risk multiplier is 2; 2 or more risk factors: risk multiplier is 4)</td></tr>
<tr><td>Positive family history <u>doubles</u> the risk. (One family member: risk multiplier is 2; 2 or more family members: risk multiplier is 4)</td></tr>
<tr><td colspan="2">Overall risk = age risk _____% x family hx risk multiplier___x vascular risk multiplier ___= ___%</td></tr>
</table>

Dementia Quick Screen

(de la Torre, 2004, Gauthier et al.,1997 and Siu, 1991)

The **Dementia Quick Screen** is comprised of 3 simple tests and takes about 2 minutes to complete. It can be used when mild cognitive impairment is suspected or when the client is at high risk for dementia.

Three Word Recall: Ask the client to repeat and remember three words that you will ask them to recall in a couple of minutes.

- Normal: recalls 2 or 3 words
- Abnormal: recalls 0 or 1 words

Animal Name Generation: Ask the patient to name as many animals they can think of in one minute.

- Normal: ≥ 15 in one minute
- Abnormal: < 15 in one minute
- 10-14 suggest MCI and less than 10 suggest dementia
  (Duff Canning S.J – Neurology Feb. 2004;62:556-62)

Clock Drawing: Ask the client to draw a clock including all of the numbers and the hands drawn so the time shows 10 minutes past 11

- Normal: Correct number/hand placement or only minor spacing problems
- Abnormal: Incorrect number/hand placement

Interpretation:

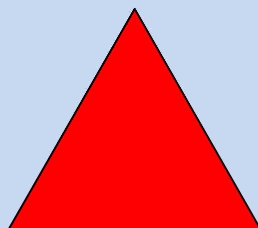
- If all three results are within normal range: Cognitive impairment is unlikely
- If any result are abnormal: possible cognitive impairment; complete or refer for further cognitive evaluation.

Caregiver Informant screen (ABC concerns)

Please tick items in the ABCs where you have concerns

A = ADL's

Finances
Shopping
Driving
Cooking
Travel
Laundry



B = Behaviour

Anger
Irritability
Apathy
Depression

C = Cognition

Forgetfulness
Repetitive questions/stories
Word finding problems
Misplacing objects/getting lost

A 4-item Informant Questionnaire

1. **Does the patient repeat or ask the same thing over and over?**

   Not at all – 0 Mild – 1 Severe – 2

2. **Does the patient have problems remembering appointments, family occasions or holidays?**

   Not at all – 0 Mild – 1 Severe – 2

3. **Does the patient have problems taking medications according to instructions?**

   Not at all – 0 Mild – 1 Severe – 2

4. **Does the patient have problems taking medications as directed?**

   Not at all – 0 Mild – 1 Severe – 2

If total score is > 3 points a full cognitive assessment is recommended

(National Chronic Care Consortium and Alzheimer's Assocation – 1998)

Other Resources Short IQCODE – Jorm (1994)
AD8 Dementia Screening Interview – Galvin et al. (2005)

Zone 2: When a more thorough assessment is needed

History Taking Instrument

Age: Education: ☐ 0-5 years ☐ 5 – 8 years ☐ High School ☐ University

Description of problems (Informant contribution is essential):

____

____

Onset:
Gradual: ____

Abrupt: ____

Progression:
Steady ____

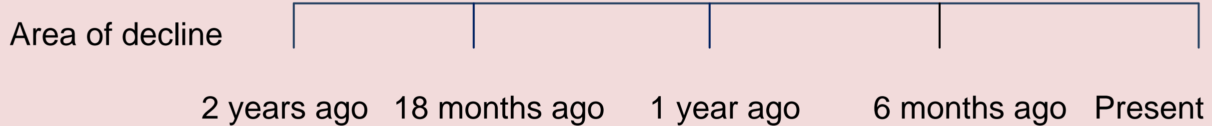
Stepwise ____

Memory:
Is the client's memory worse than 1 year ago? ☐ Yes ☐ No

Progression Pictograph of Cognition – using the normal baseline as a guide please draw your estimate of decline in the time frames indicated

Normal/baseline ____

Area of decline



2 years ago 18 months ago 1 year ago 6 months ago Present

Has There Been An Effect On Functional Activities?

Instrumental Activities of Daily Living	Independent	Can do with difficulty	Needs some help	Dependent on others
1. Pay bills/manage finances (forgets to pay bills, pays bills twice)	0	1	2	3
2. Plan meals and organize shopping (food spoiled)	0	1	2	3
3. Food preparation/Cooking (oven or stove left on, food has "funny" taste, not properly cooked)	0	1	2	3
4. Ability to deal with emergencies (fire, fall, medical emergency, lock outside, power outages)	0	1	2	3
5. Manage medication (misses doses, takes too many)	0	1	2	3
6. Transportation (driving issues, gets lost, wandering)	0	1	2	3
7. Plan trip and outings	0	1	2	3
8. Home maintenance	0	1	2	3
9. Housekeeping/laundry (difficulty using appliances)	0	1	2	3
10. Ability to carry out hobbies	0	1	2	3
11. Telephone use	0	1	2	3
Activities of Daily Living				
1. Feeding	0	1	2	3
2. Bathing	0	1	2	3
3. Grooming (hair, shaving, nails, makeup)	0	1	2	3
4. Dressing	0	1	2	3
5. Toileting	0	1	2	3
6. Transfers	0	1	2	3
7. Ambulation	0	1	2	3
8. Climbing stairs	0	1	2	3

(Adapted from the Dementia Tool Box, 2006)

Other resources: (see appendix)
The Modified Physician Self-Maintenance Scale /Instrumental Activities of Daily Living Scale Lawton-Brody
Functional Assessment Questionnaire (FAQ)
SMAF and e-SMAF – e-mail to get French and English copies and information:
iugs@ssss.gouv.qc.ca

Has there been any psychobehavioural change?

Yes ☐ **No** ☐

☐ Apathy
☐ Agitation
☐ Temper outburst (shout, threaten)
☐ Anxiety
☐ Depression
☐ Disinhibition (e.g. displaying inappropriate sexual behaviour)
☐ Hallucinations (e.g. sees/feels animals, persons that are not there)
☐ Delusions (e.g. “this is not my house”, “you are not my wife/husband”, “People are stealing things”, “There is a stranger in the house”)
☐ Frustration
☐ Resistance (e.g. pushing)
☐ Aggressiveness
☐ Irritability

(Adapted from The Dementia Tool Box, 2006)

Causes that must be ruled out:

- Delirium
- Depression
- Alcohol
- Hypothyroid
- Drug side effects (including OTC/herbals)
- Significant hearing/vision problem
- Recent head injury/fall

MMSE (See appendix for form and interpretation)

- 30- point scale
- Focus on memory/orientation (16/30 points) - good for AD, poor for non-Alzheimer’s dementias
- Poor at upper end at discrimination between normal (especially highly educated) and MCI
- Poor with those < grade 5 education (cut off = 20 for 80 y/o, 19 for 85 y/o)
- If MMSE ≤ 22/30 and functional problems related to cognition, preferable to complete assessment with MoCA
- Standard deviation (test/retest) is 2 points

(Dalziel, 2007)

MoCA (see appendix for form and interpretation)

Montreal Cognitive Assessment (MoCA),
a cognitive screening tool for detection of MCI

- 30-point scale
- Available free of charge in multiple languages at www.mocatest.org
- Comprehensive: Many more domains than MMSE (good for AD and non AD)
- Minor: adjustment for education (add 1 point if ≤ grade 12)
- MCI = MOCA <26
- Using a cut-off score <26 provides sensitivity of 80%, and specificity of 91% to distinguish MCI from normal
- Much better discrimination between

Normal	**vs**	**MCI**	**and**	**Dementia**
≥ 26		< 26		< 26
		(usually 21-25)		(usually < 20)
		(function OK)		(function affected)

(Dalziel, 2007)

C) Flowchart zone 3: Driving

Refer to dementia and driving

D) Flowchart zone 4: **Diagnostic**

Diagnosing is Family Physician's role but could be supported by Interdisciplinary Health Care Professional in disclosure of dementia diagnosis.

Why is it important to diagnose what type of dementia it is?

- Different prognosis
- Different treatment

Clinical features which, if present, should make the FP consider a diagnosis other than Alzheimer's (AD).

	THINK OF
1. ☐ memory complaints ☐ Objective memory loss (MMSE: MOCA:) ☐ Preservation of function ☐ General condition normal ☐ no other explanation for memory loss	Mild cognitive impairment (MCI)
2. ☐ Cognitive decline within 3 months of CVA /TIA ☐ Focal neurological symptoms ☐ Focal neurological signs ☐ Abrupt onset / stepwise decline ☐ Previous CVA or TIA	Vascular Dementia (VAD) Mixed AD/VAD
3. ☐ Visual hallucinations – (detailed / recurrent) ☐ Pronounced fluctuation in cognition over hours / days ☐ Parkinsonism (especially rigidity) / bradykinesia ☐ Executive function worse than memory ☐ Neuroleptic sensitivity ☐ Unexplained falls / loss of consciousness	Lewy Body Dementia
4. ☐ Behavioral changes: disinhibition / apathy ☐ Impulsivity / poor judgment ☐ Self neglect / socially inappropriate ☐ Executive function worse than memory ☐ Language problems ☐ Abnormal gait	Frontotemporal Dementia
5. ☐ Incontinence early in course of dementia ☐ Rapidly progressing dementia ☐ gait abnormality	Normal Pressure Hydrocephalus (NPH)

Regional Geriatric Program of Eastern Ontario
Programme gériatrique régional de l'Est de l'Ontario
RGPs OF ONTARIO
GiiC geriatrics interprofessional interorganizational collaboration
CERAH Centre for Education & Research on Aging & Health

E) Flowchart Zone 5: **Treatment and Management**

Role of Interprofessional Health Care Professional

- Linking with AD Society, CCAC or other community resources
- Follow-up at 3 months:
    - Formal mental status tests (MMSE, MoCA)
    - Client and caregiver global impression
    - Diary or target symptom checklist for drug treatment follow-up (refer to appendix)

- If client/caregiver impression is better or the same: positive response – continue treatment. Then follow-up every 6 month to a year.
- If patient/caregiver impression is worse: negative response – stop and try a different AChEI . Then follow-up at 3 months.

(adapted from Dementia Tool Box, 2006)

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