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(Dementia)

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## The Need for On-line Screening for Dementia

### Background

Dementia is becoming a much more common disorder among older persons. Access Economics have estimated that the number of patients with dementia in Australia will continue to grow from around 250,000 to over 1 million in 30 year's time. Alzheimer's disease and vascular dementia account for the majority of cases of dementia. Most people first see their GP if they suspect that there is problem. After a thorough history and physical examination, including a discussion with other family members, a baseline measurement of cognitive function can be obtained. The Mini-Mental State Examination is the most commonly used instrument to document cognitive impairment. Initial laboratory evaluation includes tests for thyroid-stimulating hormone and vitamin B12 levels. Structural neuroimaging with noncontrast computed tomography or magnetic resonance imaging may also be done. Other testing can be guided by the history and physical examination. Neuropsychological testing can help determine the extent of cognitive impairment, but it is not recommended on a routine basis. Neuropsychological testing may be most helpful in situations where screening tests are normal or equivocal, but there remains a high level of concern that the person may be cognitively impaired.

Dementia is not a single entity, but a syndrome of gradual onset and continuing decline of higher cognitive functioning. It is a common disorder in older persons and becomes more prevalent in each decade of life. Approximately 3-11 percent of adults 65 years and older, and 25 to 45 percent of adults older than 85 years will develop dementia. It is common for older patients to present to family physicians with concerns of memory loss. With an accurate and timely diagnosis of dementia, appropriate therapies can be initiated to reduce further cognitive decline, to improve quality of life and to protect the interests of the person. Therefore, family physicians play a key role in evaluating patients with suspected dementia. Given conflicting recommendations about the initial evaluation of patients with dementia, the availability of genetic markers for Alzheimer's disease, and new neuro-imaging methods such as positron emission tomography, confusion may arise concerning how best to evaluate these patients.

Despite the scope of these investigations several problems arise. Firstly there continues to be a high rate of misdiagnosis as dementia can take many forms that do not start with memory loss (the most frequently recognised symptom of dementia) and involve other early symptoms such as language, movement, mood or behaviour change that may not be diagnosed as early stage dementia. Secondly, memory loss can be the result of other illnesses, drugs or toxins or psychological factors resulting in a diagnosis of dementia when it is not warranted.

The other major impediment to early diagnosis is the reluctance of the patient and/or family to admit to the possibility and to seek medical advice.

The development of a comprehensive on-line screening test aims to broaden the amount of information that may be useful in assessing the evidence regarding the initial evaluation of the patient who presents with memory loss or other cognitive changes and this can be presented to their doctor to reduce the time involved in making a decision, to encourage a broad view of the possible causes of symptoms. Moreover, the ability to complete a screening test privately may encourage a person to then seek medical help if their concerns are confirmed or if they believe that the problems they are experiencing may not be dementia and are treatable.

The test may also indicate when someone is needlessly concerned about age-related decline or when stress or depression are creating uncertainty. At this time the test would also be useful for people to complete some time later to determine if there has been any subsequent decline in scores that may then encourage them to seek medical advice. The cost saving involved to the individual and the community would be quite substantial both in the case where someone has avoided an unnecessary visit to their doctor or when they have been prompted to seek early diagnosis and treatment

### **Initial Evaluation of Dementia Using an On-line Instrument**

An on-line dementia screening test that is being developed comprising 86 carefully selected questions that cover a range of issues that are very important in helping understand what is happening if people have concerns about their memory or mental functioning. Many Questions relate to problems that cause dementia-like symptoms that are not dementia and which are treatable. The test may also indicate if scores are in line with the normal aging process.

They areas examined include:

Language

Memory

Thinking and Problem Solving

Visual/Spatial Abilities

Depression,

Substance Abuse

Head Injury

Low and High Level Functioning.

It also includes some questions on Family History, Recent Traumatic or Stressful Events, Recent Operations or General Anesthetics and if changes have occurred Suddenly or Gradually and whether there has been a diagnosis of dementia or if you have concerns about it.

Each of the nine areas that are examined are scored to indicate whether the patient's score is within the normal range, or to indicate possible cases of dementia that need to be further examined.

The computer programmed responses that are generated are based on each person's answers to the multiple choice questions are specific to the score on each of the areas being tested. They are not designed to diagnose the presence of otherwise of the disease but are designed to encourage people take some action. They are encouraged to print out the results and to take them to their GP.

Diagnosing Dementia is a complex problem, mainly because many symptoms can be other things that look like dementia that need to be ruled out. The aim of the test is to prevent needless worry or else encourage people to seek early treatment and reap enormous benefits from doing something about it without delay.

### **The Development of the Screening Test**

The prototype screening test and the cut-off scores has resulted from the collection from 100 people who are 60 years or older who have not been diagnosed with dementia or concerned that they may be suffering from the disease and comparing their result on the new screening test to the results of the following test and questionnaire:

#### Memory Test

1. Write down the day of the week, month and year:

.....

2. Look only once at the words below then cover them up. When you have finished doing the test write them down from memory:  
orange, television, cushion
  
3. Without looking at your watch, write down the time you think it is. Then look at your watch and write down the actual time  

Guessed	time.....	Actual
time.....		
  
4. What are the names of the last five (5) Prime Ministers?  
  - 1.....
  - 2.....
  - 3.....
  - 4.....
  - 5.....
  
5. Describe what each the following items are for:  

Cane .....	Pen .....	Fork .....	
Piano .....	Heater .....	Glasses.....	
Shop .....	Button .....		
  
6. Can you write down the address of the last place you lived?  
.....
  
7. Can you recall what you were doing on each of the previous seven (7) evenings?  
Yes No (circle one)
  
8. Have people told you that you repeat yourself in conversations or have you found yourself doing this?  
Yes No (circle one)
  
9. Are you ever aware that people are getting irritated with you because you have forgotten something?  
Yes No (circle one)
  
10. Do you ever return from shopping to find you have forgotten some essential item?  
Yes No (circle one)
  
11. Do you find it increasingly difficult to follow directions?

Yes No (circle one)

12. Do you get lost in places you have visited frequently

Yes No (circle one)

13. Do you have trouble recalling words, even though you know that you know them?

Yes No (circle one)

14. Do you misplace things practically every day?

Yes No (circle one)

15. Are your memory difficulties impinging on your work or social life? For example, do you sometimes avoid people because you cannot remember their name?

Yes No (circle one)

16. Without looking back write down the three (3) words you memorized earlier for question 2?

- 1.....
- 2.....
- 3.....

Have you ever been diagnosed as suffering from Dementia (Alzheimer's Disease)?

Yes No (circle one)

Do you believe you may be suffering from Dementia?

Yes No (circle one)

Are you worried that your memory and thinking is worse than it should be at your age?

Yes No (circle one)

Do you suffer from Diabetes?

Yes No (circle one)

Do you have high blood pressure?

Yes No (circle one)

Do you take medication to control your blood pressure?

Yes No (circle one)

Do you take medication for high cholesterol?

Yes No (circle one)

Do you take medication to thin your blood (Aprin, Wolfram)?

Yes No (circle one)

Have you ever suffered from a stroke?

Yes No (circle one)

Do you suffer from Chronic pain?

Yes No (circle one)

Have you had any problems with your Thyroid?

Yes No (circle one)

Do you suffer from Epilepsy

Yes No (circle one)

Have you been diagnosed with Depression?

Yes No (circle one)

Do you think you suffer from Depression?

Yes No (circle one)

Are you taking anti-depression medication?

Are you taking medication?

Are you taking any other psychiatric medication?

Are you taking medication?

The test is still being developed and some assistance to refine it will be needed. There is a need in having people who have been diagnosed with early-stage dementia to complete the test to

more accurately determine cut-off scores. Information about other aspects of the condition would also be elicited, which would be of some benefit in conceptualizing the nature of the disease, particularly the reason for the high incidence of depression.

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