# ICD-10 Diagnostic Criteria for Dementia (any cause)

- G1.1 decline in memory, esp. learning new information; both verbal and nonverbal material
- G1.2 decline in other cognitive abilities; deterioration in judgment and thinking
- G2 Preserved awareness of environment
- G3 decline in emotional control or motivation, or change in social behaviour, eg emotional lability ,irritability, apathy, coarsening of social behaviour
- G4 criterion G1 clearly present for at least 6 months

# Epidemiology of Dementia

- Prevalence in Canada:
  - Over age 65: 8%
  - Over age 85: 35%
  - Over age 95: 58%
  - At least 250,000 cases
- Incidence:
  - 1% each year (25,000 new cases)

#### Classification of Dementias

#### Irreversible dementias

- ✓ neurodegenerative
- ✓ vascular dementia (9 33%)
- ✓ mixed—vascular & Alzheimer's (10 36%)

#### Reversible dementias

(less than 3%)

- ✓ Secondary dementias
- ✓ medical conditions usually resulting in chronic delirium
- psychiatric pseudodementias

## Neurodegenerative Dementias

- Alzheimer's disease (60%)
- diffuse Lewy body disease
  (15 27%)
- Pick's disease
- Parkinson's disease

- Huntingdon disease
- progressive supranuclear palsy
- amyotrophic lateral sclerosis with dementia
- olivopontocerebellar degeneration

#### Vascular Dementias

- cardiac disorders
- vasculitis of central nervous system
- delayed effects of irradiation

- hemorrhage
- hypoperfusion
- multiple infarcts
- strategic single infarct
- senile leukoencephalopathy

## Secondary Dementias

- normal pressure hydrocephalus
- mass lesions
- infectious diseases
- Collagen-vascular diseases
- endocrine disorders
- nutritional dementias
- Miscellaneous

## Medical Conditions Usually Resulting in Chronic Delirium

- disturbances in fluid and electrolytes
- hepatic failure
- renal failure
- pulmonary failure
- infection
- cardiovascular disorders
- postoperative status
- medication toxicity

### Medication Toxicity

- tricyclic antidepressants
- neuroleptics
- benzodiazepines
- lithium
- psychostimulants
- barbiturates; nonbarbiturate sedatives
- anticholinergic agents

- antihypertensive agents; diuretics
- anticonvulsants
- antihistamines
- narcotic analgesics
- antiparkinsonian agents
- cardiovascular agents
- others

# Ten Warning Signs of Alzheimer Disease (Alzheimer's Association, U.S.)

- Memory loss that affects day-to-day function
- Difficulty performing familiar tasks
- Problems with language
- Disorientation of time and place
- Poor or decreased judgment

- Problems with abstract thinking
- Misplacing things
- Changes in mood or behavior
- Changes in personality
- Loss of initiative

# Why Screen for Dementia?

- Treatments are available
- Identify those at risk for delirium
- To permit planning for the future, eg mandates, research
- To identify drivers at risk for accidents

## Severity of Dementia

#### mild

although work and social activities are significantly impaired, the capacity for independent living remains, with adequate personal hygiene and relatively intact judgment

#### moderate

independent living hazardous, some supervision necessary

#### severe

activities of daily living are so impaired that continual supervision is required

#### Global Deterioration Scale (GDS)

Stage	Cognitive Decline	
1	None	Experiences no problems in daily living
2	Very mild	Forgets names and locations of objects
		May have trouble finding words
3	Mild	Has difficulty travelling to new locations
		<ul> <li>Had difficulty handling problems at work</li> </ul>
4	Moderate	<ul> <li>Has difficulty with complex tasks (finances, shopping, planning dinner for guests)</li> </ul>
5	Moderately severe	Needs help to choose clothing
		<ul> <li>Needs prompting to bathe</li> </ul>
6	Severe	Needs help putting on clothing
		<ul> <li>Requires assistance bathing; may have a fear of bathing</li> </ul>
		Has decreased ability to use the toilet, or is incontinent
7	Very severe	Vocabulary becomes limited, eventually declining to single words
		• Loses ability to walk and sit
		Becomes unable to smile

### Diagnostic Criteria

(NINDS-ADRDA: National Institute of Neurological Disorders and Stroke-Alzheimer's Disease and Related Disorders Association)

- Definite AD
  - Clinical criteria for probable AD
  - Histopathologic evidence from autopsy or biopsy
- Probable AD
- Possible AD

#### Probable AD

- dementia established by clinical examination, documented by mental status testing, and confirmed by neuropsychologic tests
- deficits in two or more areas of cognition

- progressive worsening of memory and other cognitive functions
- onset between ages 40 and 90 yrs
- absence of other disorders that could account for the dementia

# Features which suggest other diagnoses

- Presence of Parkinsonian signs
- Absence of language impairment
- Absence of visuospatial impairment
- Early, marked personality change
- Focal neurological signs

#### Risk Factors for Alzheimer's

- family history of dementia
- family history of Down's syndrome
- family history of Parkinson's disease
- late maternal age
- head trauma
- viral agents

- smoking
- aluminum and other toxic agents
- depression
- vitamin B12
- apolipoproteins
- estrogen
- atherosclerosis

#### Course of Alzheimer's

Progression	Manifestations
Stage I (1 to 3 years)	<ul><li>recent memory dysfunction</li><li>anomia</li><li>topographic disorientation</li><li>depression</li></ul>
Stage II (2 to 10 years)	<ul> <li>prominent amnesia</li> <li>fluent aphasia</li> <li>constructional impairment</li> <li>acalculia</li> <li>personality change</li> </ul>
Stage III (8 to 12 years)	<ul> <li>severe dementia</li> <li>nonsense speech or mutism</li> <li>rigidity and flexion posture</li> <li>incontinence</li> </ul>

#### Behavioural Disturbances in Dementia

- Occur in 90% of dementia patients
- Disinhibition: 35%
- Apathy-indifference: 31%
- Catastrophic reaction: 32%
- Sundowning: 62%
- Denial: 37%
- Sexual disinhibition: 3%
- Self-destructive behaviours: 3%

### Agitation

pacing, aimless wandering, inappropriate dressing or disrobing, spitting, hitting/kicking, throwing objects, making strange noises or screaming, biting, self-destructive acts, cursing or verbal aggression, constant unwarranted complaints/requests/statements, and general restlessness

#### Categories:

- Aggressive
- Repetitious
- Sociallyobjectionable

### Wandering

- stress—noise, clutter, crowding
- lost—looking for someone or something familiar
- restless, bored—no stimuli
- medication side effect
- lifelong pattern of being active or usual coping style
- needing to use the toilet
- environmental stimuli—exit signs, people leaving

### Difficulty with personal care tasks

- task too difficult or overwhelming
- caregiver impatience, rushing
- cannot remember task
- pain involved with movement
- cannot understand or follow caregiver instructions
- fear of task—cannot understand need for task or instructions
- inertia, apraxia; difficulty initiating and completing a task

# Suspiciousness, paranoia

- forgot where objects were placed
- misinterpreting actions or words
- misinterpreting who people are; suspicious of their intentions
- change in environment or routine
- misinterpreting environment
- physical illness
- social isolation
- someone is actually taking something from patient

## Agitation

(also: "sundowning", catastrophic reactions)

- discomfort, pain
- physical illness (such as urinary tract infection)
- fatigue
- Overstimulation—noise, overhead paging, people, radio, television, activities
- mirroring of caregiver's affect
- overextending capabilities (resulting in failure); caregiver expectations too high

- being "quizzed" (multiple questions that exceed abilities)
- medication side effect
- thwarted from desired activity (for example, attempting to escape)
- lowered stress threshold
- unfamiliar people or environment; change in schedule or routine
- restless

#### Incontinence

- infection, prostate problem, chronic illness, medication side effect, stress or urge incontinence
- difficulty in finding bathroom
- lack of privacy
- difficulty undressing
- difficulty in seeing toilet
- impaired mobility
- dependence created by socialized reinforcement
- cannot express need
- task overwhelming

## Sleep disturbance

- illness, pain, medication effect (for example, causing daytime sleep or nocturnal awakening)
- depression
- less need for sleep
- too hot, too cold
- disorientation from darkness
- caffeine or alcohol effect

- hunger
- urge to void
- normal age- and disease-related fragmentation of sleep (like that of an infant or toddler)
- daytime sleeping
- fear of darkness
- restless

# Inappropriate or impulsive sexual behaviour

- misinterpreting caregiver's interaction
- uncomfortable—too warm, clothing too tight; need to void; genital irritation
- need for attention, affection, intimacy
- self-stimulating, reacting to what feels good

#### Treatments for Alzheimer's - 1

# Treatments to improve cognition

- Medication
  - Selegiline
  - Vitamin E
  - Ginkgo Biloba
  - Donepezil
  - Estrogen
- 3R MentalStimulationProgramme

# Management of problem behaviours

- Medication
  - Antipsychotics
  - Anxiolytics
  - Antidepressants
  - Anticonvulsants
  - b-blockers
- ECT
- Light
- Behaviour modification

# Selegiline

- Used for Parkinson's disease.
- Believed to reduce neural damage.
- Increases the time until a primary outcome, defined as death, institutionalization, development of marked dependency, or progression to severe dementia.
- Adverse effects: falls, fainting; also nausea, hallucinations, confusion, depression, loss of balance.

#### Vitamin E

- Functions in the body as an anti-oxidant
- Thought to help stabilize or "slow down" the degenerative process in AD
- As effective as selegiline in delaying time to primary outcome, but is safer and cheaper
- In megadoses: anticoagulant effect
- Study dose: 2000 IU per day

# Ginkgo Biloba Extract

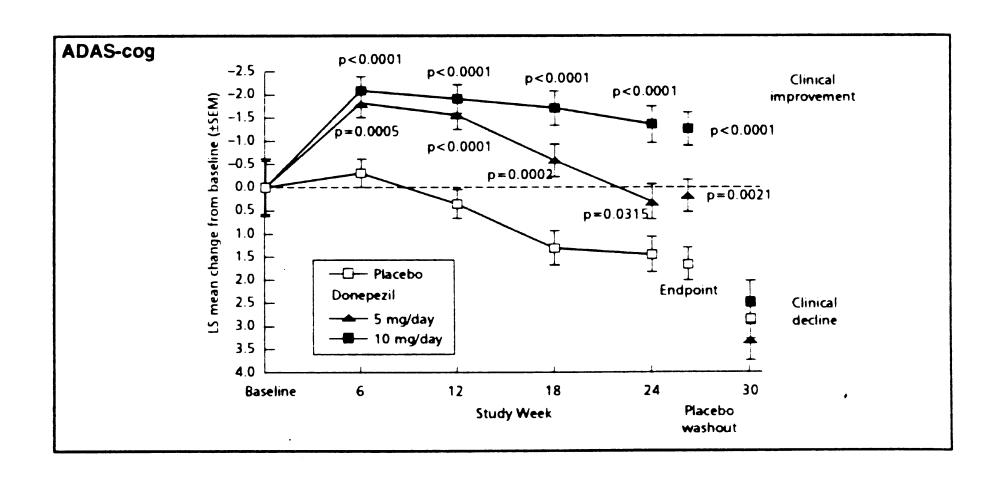
- Approved in Germany for treatment of dementia
- A combination of substances which act as antioxidants.
- Thought to be a stabilizing agent.
- In North America, there are no standards, so potency can vary considerably.
- The dose used in the study was 40 mg 3 times daily before meals.

# Donepezil (Aricept)

- An acetylcholinesterase inhibitor.
- Families report improvements in functioning which are bigger than suggested by improvements in tests of cognitive functioning.
- Can potentially cause a slow heart rate, bladder obstruction, increased stomach acid, seizures, and can worsen obstructive lung disease.

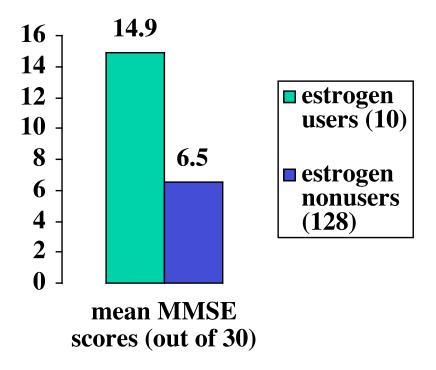
- Side effects: nausea, diarrhea, vomiting, insomnia, fatigue, anorexia, muscle cramps.
- In practice, is very well tolerated.
- Start at 5 mg per day; increase to 10 mg after 4-6 weeks if well tolerated.

### Donepezil 5 & 10 mg

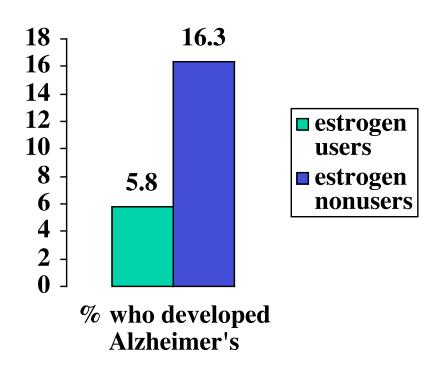


# Estrogen & Alzheimer's

138 women with probable Alzheimer's



1124 women aged 70 or over, followed for 5 years

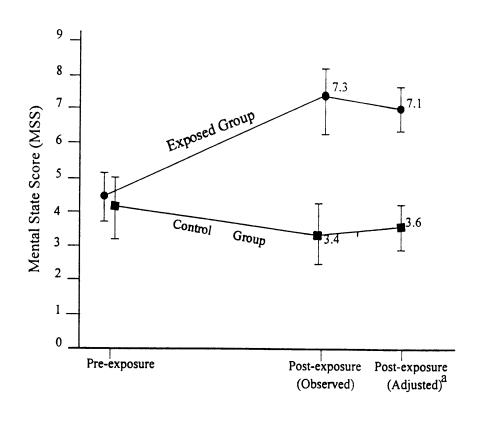


# Estrogen and Vascular Dementia

- Some evidence of vascular disease in > 50%
- Evidence of AD in 50% of vascular dementia
- In both: diminished regional blood flow
- No studies on estrogen in multi-infarct dementia
- Estrogen effective in vascular dementia of the small vessel type

# 3R Mental Stimulation Programme

- Reminiscence
- Reality orientation
- Remotivation
- Group meetings weekly for 8 weeks, each with a specific topic
- Goal: to stimulate the senses



# Management of Problem Behaviours

- Medications
  - antipsychotic agents
  - anxiolytic agents
  - antidepressants
  - anticonvulsants
  - β-blockers
  - other medications

- ECT
- Bright light therapy
- Behaviour modification
- Other interventions

#### Behaviour modification

- identify the behaviour
- identify an alternative behaviour
- complete a behavioural analysis
- identify the antecedents/precursors
- identify the reinforcer(s)
- identify reinforcer(s) to reduce problematic behaviours
- finally, develop a strategy

# Other Interventions for Disruptive Behaviours

- Validation therapy
- Group programs
- Low lighting and music at meals
- Sounds to decrease screaming
- Massage and Therapeutic Touch
- Pet therapy
- Stimulus items
- Education in nonverbal communication

#### Other issues

- Resuscitation
- Tube feeding
- Mandates
- Institutional care issues
  - Abuse
  - Restraints
  - Medication
  - Changing attitudes
- consequences of apolipoprotein E testing