

Memory Loss

Early Diagnosis, Work-up, Medications

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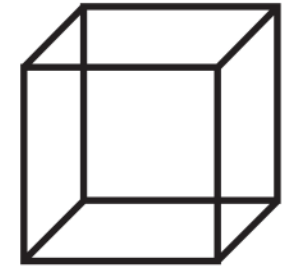
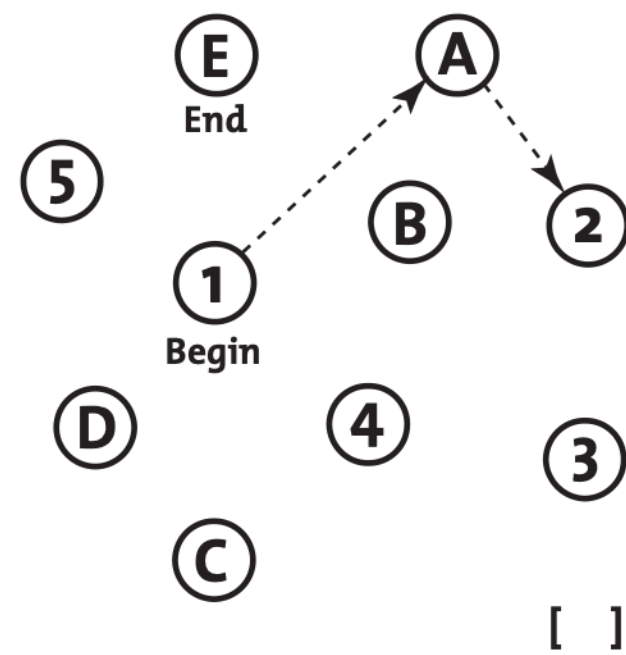
Points to Remember

- Medical perspective now focused on very early intervention and treatment because brain changes
- Current medications more likely to slow progression when given early in disease
- Differentiation between Normal Age-Related changes, Mild Cognitive Impairment (MCI) and Mild Dementia can be difficult and requires baseline assessment and follow up
- Medicare's Annual Wellness Visit (AWV) requires primary care provider is to check for cognitive impairment
- Medicare covers a more comprehensive cognitive assessment and written plan of care

MONTREAL COGNITIVE ASSESSMENT (MOCA)

NAME : _____
 Education : _____ Date of birth : _____
 Sex : _____ DATE : _____

VISUOSPATIAL / EXECUTIVE



Copy cube

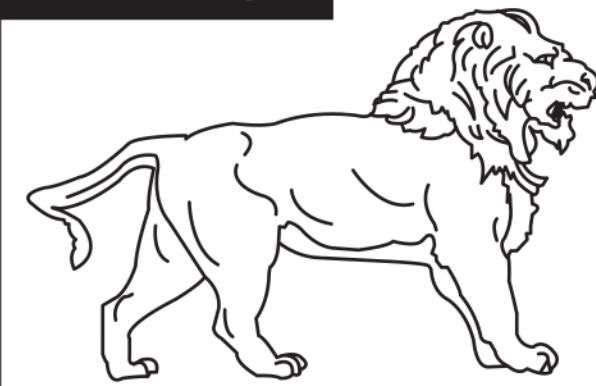
Draw CLOCK (Ten past eleven)
(3 points)

POINTS

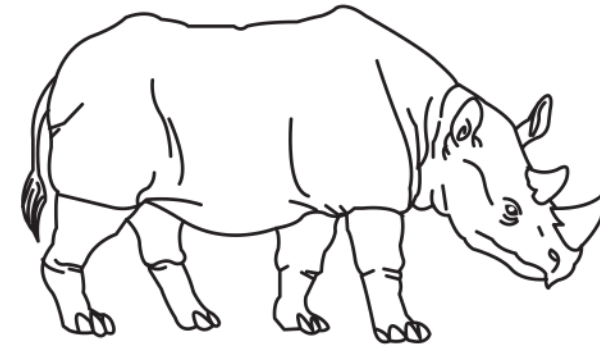
[] Contour [] Numbers [] Hands

___/5

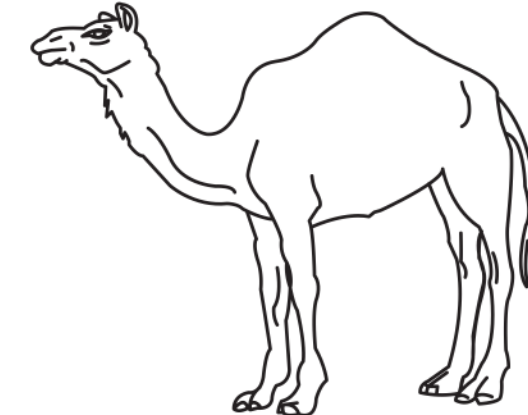
NAMING



[]



[]



[]

___/3

MEMORY

Read list of words, subject must repeat them. Do 2 trials. Do a recall after 5 minutes.

	FACE	VELVET	CHURCH	DAISY	RED
1st trial					
2nd trial					

No points

ATTENTION

Read list of digits (1 digit/ sec.).

Subject has to repeat them in the forward order [] 2 1 8 5 4
 Subject has to repeat them in the backward order [] 7 4 2

___/2

Read list of letters. The subject must tap with his hand at each letter A. No points if ≥ 2 errors

[] FBACMNAAJKLBAFAKDEAAAJAMOF AAB

___/1

Serial 7 subtraction starting at 100

[] 93 [] 86 [] 79 [] 72 [] 65
 4 or 5 correct subtractions: 3 pts, 2 or 3 correct: 2 pts, 1 correct: 1 pt, 0 correct: 0 pt

___/3

LANGUAGE

Repeat : I only know that John is the one to help today. []
 The cat always hid under the couch when dogs were in the room. []

___/2

Fluency / Name maximum number of words in one minute that begin with the letter F [] _____ (N ≥ 11 words)

___/1

ABSTRACTION

Similarity between e.g. banana - orange = fruit [] train - bicycle [] watch - ruler

___/2

DELAYED RECALL

Has to recall words WITH NO CUE	FACE []	VELVET []	CHURCH []	DAISY []	RED []
Optional Category cue					
Optional Multiple choice cue					

Points for UNCUE recall only

___/5

ORIENTATION

[] Date [] Month [] Year [] Day [] Place [] City

___/6

Normal Cognitive Changes with Age

Individual Variability

- Changes in 1)processing speed
- 2)Working Memory
- 3)Executive function- multitasking, changing tasks
- 4) finding words and remembering names
- DO NOT interfere with daily functioning
- vocabulary, reading and verbal reasoning are unchanged or improve in normal aging

Mild Cognitive Impairment

- MCI is a condition which causes slight but noticeable changes in memory and/or other cognitive abilities which are not severe enough to affect daily functioning
- May be a stable condition or represent the earliest stage of Alzheimer's Disease
- No medications indicated for MCI except if diagnosed as MCI-AD
- Cognitive screening and Neuropsychological testing very helpful in identifying MCI
- Must have serial follow up to identify if progressive decline

Dementia

Generic term for decrease in cognitive abilities

- Most common form of dementia is Alzheimer's disease
- Pathological changes characterized by: deposition of amyloid plaques and neurofibrillary tangles
- Clinical presentation characterized by: amnesia (memory loss), aphasia (language deterioration), agnosia (visuospatial/ perceptual decline, inability to recognize) and apraxia (inability to carry out previously learned motor activities)
- Non-cognitive symptoms of behavioral changes of psychosis and/or depression and anxiety are often present

Dementia

Less Common

- Other Neurodegenerative Dementias: Parkinson's Disease , Lewy Body Dementia (presents with prominent hallucinations and fluctuations in cognitive ability) and Frontotemporal Dementia(most common form of dementia in patients below the age of 60)
- Vascular Dementia - often present with Alzheimer's Disease
- Reversible Dementias: Pseudodementia of depression, B12 or folate deficiency, Normal pressure hydrocephalous (NPH), sleep apnea, hypothyroidism, infection, medication induced
- Distinguish from Delirium- common potentially treatable and reversible decrease in attention, concentration, and memory usually related to surgery or medical illness

Memory Loss

Office workup

- Detailed history of current illness as well as educational level achieved and occupational history from patient and informant such as a family member or caregiver
- Review of medical history, past psychiatric history, family history of memory disturbance
- Review of ALL medications with current doses- prescription as well as non-prescription
- Brief neurological exam, cardiopulmonary exam
- Screening exam - MOCA- Montreal Cognitive Assessment, Geriatric Depression Scale

Memory Loss

Laboratory Workup needed to Rule out Reversible Causes of Cognitive Decline

- Tests: Chemistry profile, thyroid profile, complete blood count, with B12 and folate levels, urinalysis
- Additional lab tests may be indicated depending on history
- CT or MRI scan of brain
- Neuropsychological testing- may be done virtually or in office, more detailed and lengthier assessment of cognitive functions especially important for early cognitive changes

Alzheimer's Disease

Risk Factors

- AGE and Genes
- SPORADIC AD: APOE4 is a form of the apolipoprotein E gene which is responsible for the protein that packages cholesterol and other fats in the circulation
- Presence of APOE4 allele associated with increased number of amyloid plaques
- Strongest genetic risk factor: 25% of the population carry one copy and 2-3% of population have 2 copies. Increases risk but does not cause disease.
- EARLY ONSET FAMILIAL AD : autosomal dominant- one copy of gene sufficient to cause disease , accounts for less than 5% of AD cases , Chromosome 14, 1 and 21

Memory Loss

Lifestyle Changes to Reduce Risk

- Physical exercise daily-aerobic and weight bearing
- Cognitive exercise daily: reading, word games (WORDLE, spelling bee), learning new skills
- No smoking, minimize alcohol use
- Maintain healthy body weight
- Diagnose and treat hypertension, atrial fibrillation, elevated cholesterol and pre-diabetes and diabetes

Dementia

Treatment: Medications

- FDA approved medications for Alzheimer's Disease slow progression and help to maintain cognition as well as activities of daily living
- ORAL MEDICATIONS DO NOT CHANGE PATHOLOGY
- Cholinesterase Inhibitors: Donepezil (Aricept), Galantamine (Razadyne), Rivastigmine capsules and patch (Exelon)- approved Parkinsons Disease and Lewy body Dementia
- NMDA (N-Methyl D- Aspartate) Receptor Antagonist - Memantine (Namenda) prevents overactivation of receptor which contributes to death of neurons (brain cells)
- Standard of treatment to combine both medications and to start as early as possible

Dementia

Treatment: Medications approved for AD

- Current clinical trials include Monoclonal Antibodies which target amyloid-beta production, aggregation or clearance
- Aduhelm (Aducanumab) First medication to act on the pathology present in AD and received accelerated approval by FDA
- Reduced amyloid beta plaques and slowed decline in MCI-AD patients and patients with mild AD
- Data from March 2022 showed reductions in amyloid beta plaque levels present which persisted over 2 and 1/2 years and associated with less clinical decline
- Administered by monthly intravenous infusions for patients demonstrated to have amyloid plaques on special imaging scans (amyloid PET)
- Side effect of ARIA (Amyloid related imaging abnormalities)- brain swelling and hemorrhage, headache, dizziness, nausea

Medications Used for Behavioral Symptoms Associated with Dementias

- Antidepressants-escitalopram, citalopram, sertraline, mirtazapine ; indicated for depression, anxiety and agitation
- Antipsychotics-quetiapine, risperidone, olanzapine; indicated for aggressive outbursts and paranoid ideation; Black Box Warning
- Pimavanserin (Nuplazid) novel atypical antipsychotic - Parkinson's Disease psychosis, antagonist/inverse agonist at 5HT_{2A} serotonin receptor, less potent 5HT_{2C}; different mechanism of action

Summary

- Do not dismiss concerns about memory or other cognitive changes especially if mild
- Important to obtain a screening with the MOCA or baseline neuropsychological testing for future follow up
- If dementia diagnosed clarify specific type and whether medication is indicated
- Consult with Memory Disorders Program at academic medical center
- Nonpharmacologic Treatments- Adult Day Care, Assisted Living Memory Care, Home Care Routines and Caregiver Support

Resources

Memory Clinics Washington/ Baltimore

- memory.georgetown.edu Dr. Scott Turner Neurologist, Director Memory Disorders Program 202-784-6671
- Memory Clinic George Washington Medical Faculty Associates 202-741-3000
- Memory and Alzheimer's Disease Treatment Center Johns Hopkins Medicine Department of Psychiatry and Behavioral Sciences Bayview Medical Center Baltimore 410-550-6337 hopkinsmedicine.org
- cms.gov/cognitive
- memory.ucsf.edu educational videos