

Scams and the Aging Brain

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**VENTURA COUNTY APS
RAPID RESPONSE
EXPERT TEAM**

Who Are We?

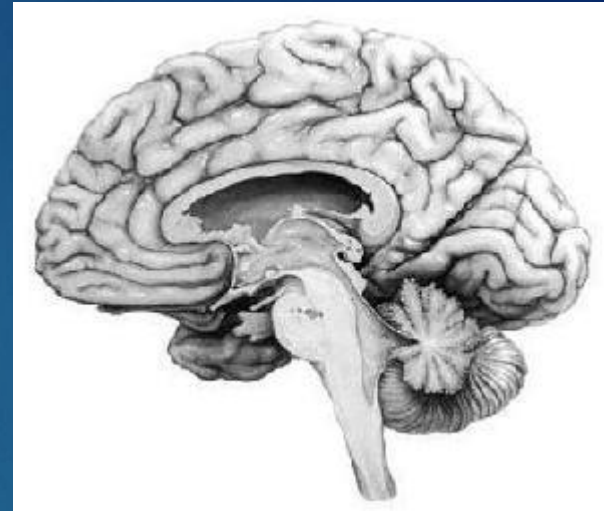
How Are We Handling Questions Today?



What in the World is a Neuropsychologist?

Neuropsychology

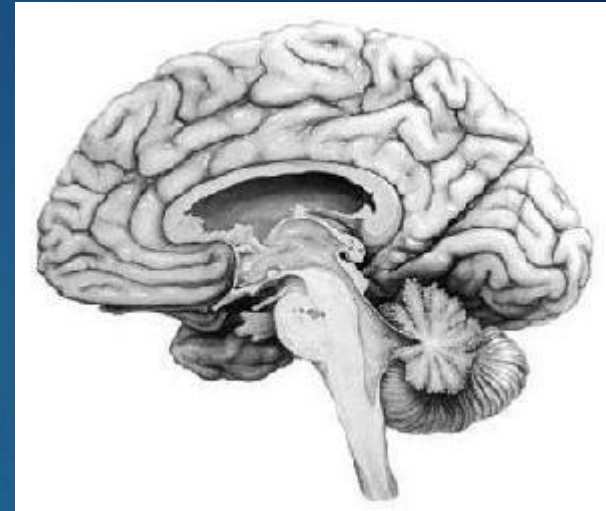
- The study of how behavior and thinking skills are related to the brain's structures and systems



What in the World is a Neuropsychologist?

Neuropsychologists:

- Assess a person's thinking skills
- Assist physicians with diagnosis of brain conditions
- Help with care and treatment planning



What in the World is a Neuropsychologist?



What in the World is a Neuropsychologist?



tricks

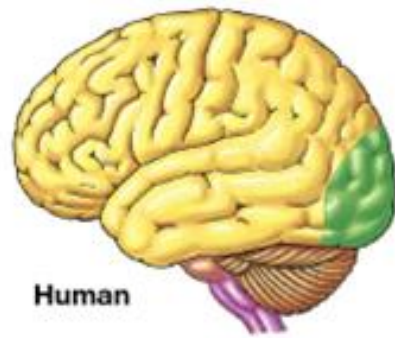
rackets

Scams

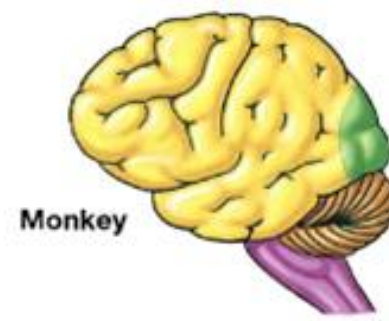
SWINDLES

ruses

Confidence games



Human



Monkey



Cat



Goose



Alligator

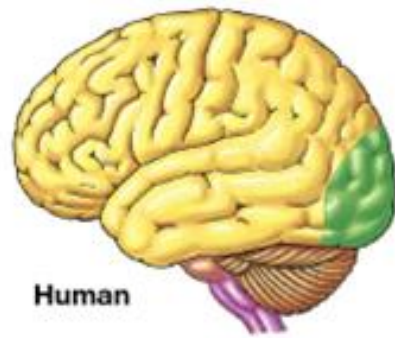


Frog

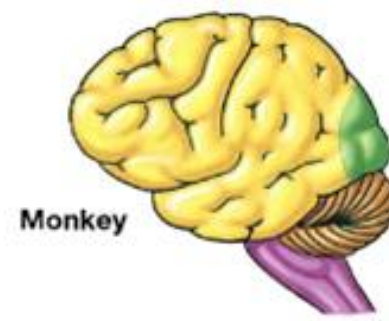


Codfish

- Forebrain
- Visual Cortex
- Cerebellum
- Medulla
- Midbrain
- Pituitary



Human



Monkey



Cat



Goose



Alligator



Frog



Codfish

- Forebrain
- Visual Cortex
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Why Do Scams Work?



Techniques of Persuasion

- ▶ Visceral rewards
- ▶ Emphasize urgency
- ▶ Use a personal touch
- ▶ Demonstrate authority



Techniques of Persuasion

- ▶ Visceral rewards
- ▶ Emphasize urgency
- ▶ Use a personal touch
- ▶ Demonstrate authority

CERTIFICATE OF APPROVAL

This is to certify that, the quality management of:
PLATINUM LOTTERY INTERNATIONAL

4th Floor Apex Tower
P.O. Box 18534,
36 Empire Road, Sandton, 2001,
Johannesburg, South Africa.

HAVING BEEN AUDITED IN ACCORDANCE WITH THE REQUIREMENTS OF THE PROVISIONAL TERMS
OF THE LOTTERY AWARD ACT. OF 1991, SECTION C PARAGRAPH V, AND WE ARE PROUD TO
PRESENT THIS AWARD

With

Ref No: GML-S343-KKT-8811

Batch No: 56T-DTH78-SAR99


Category: 2ND

BENEFICIARY AMOUNT: US\$ 1, 450,000.00 (ONE MILLION, FOUR HUNDRED AND FIFTY
THOUSAND UNITED STATES DOLLARS).

THEREFORE YOU MERIT THIS LOTTERY AWARD
GIVEN AT PLI ZONAL OFFICE SOUTH AFRICA ON 15TH OF JANUARY, 2007

BENEFICIARY NAME: PARASCHIVA KARACSONY
BENEFICIARY COUNTRY: UNITED KINGDOM

*WE HEREBY AWARD A CERTIFICATE UNDER THE PROVISIONS TERMS OF THE CONTRACT AWARD ACT. OF 1991,
SECTION C PARAGRAPH V.*

Authorized Sign: 
DIRECTOR OF ADMIN.
DAVID COULSON



Why Do Scams Work?

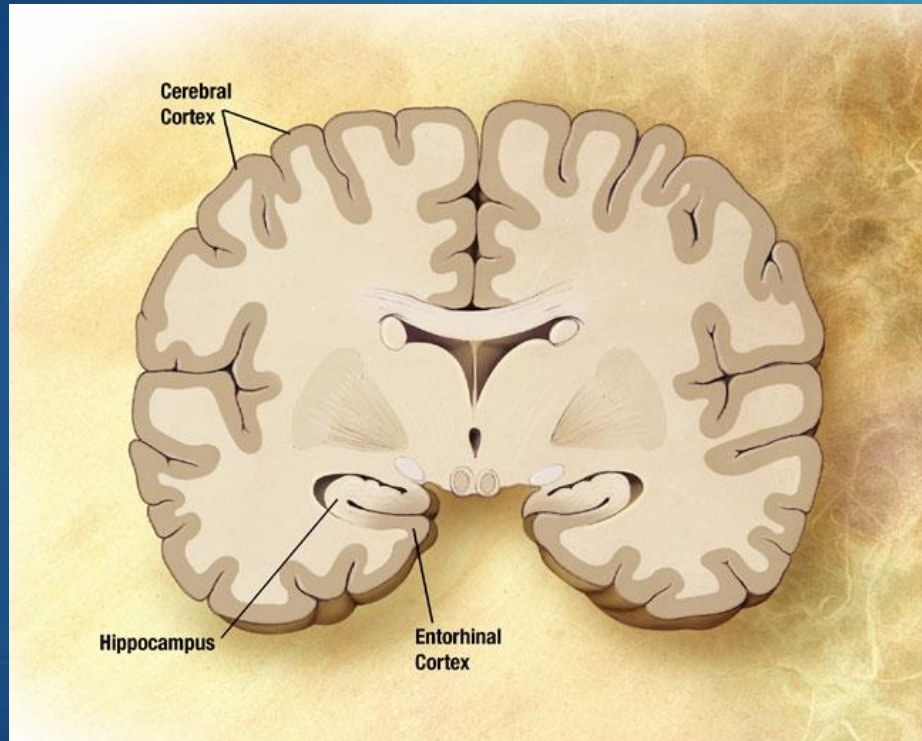


The Aging Brain

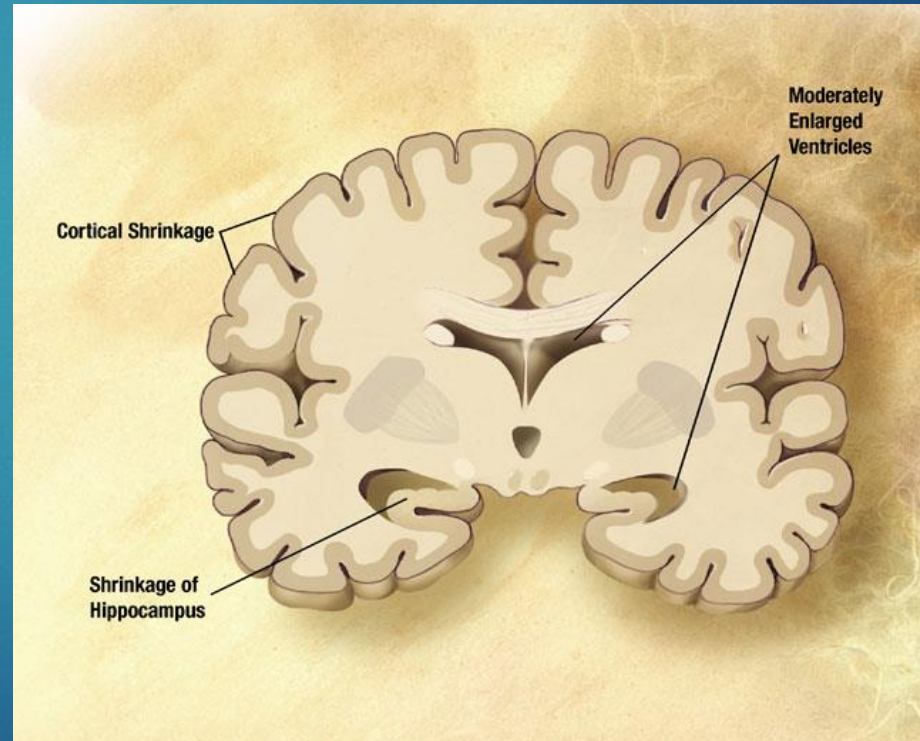


Normal Aging

Young Brain



Aging Brain



Thinking Changes in Normal Aging

- ▶ Decreased speed and efficiency of processing
- ▶ Decreased complex attention
- ▶ Problem solving more difficult for unfamiliar tasks
- ▶ Language, reasoning, memory storage and basic attention all remain intact
- ▶ We develop wisdom





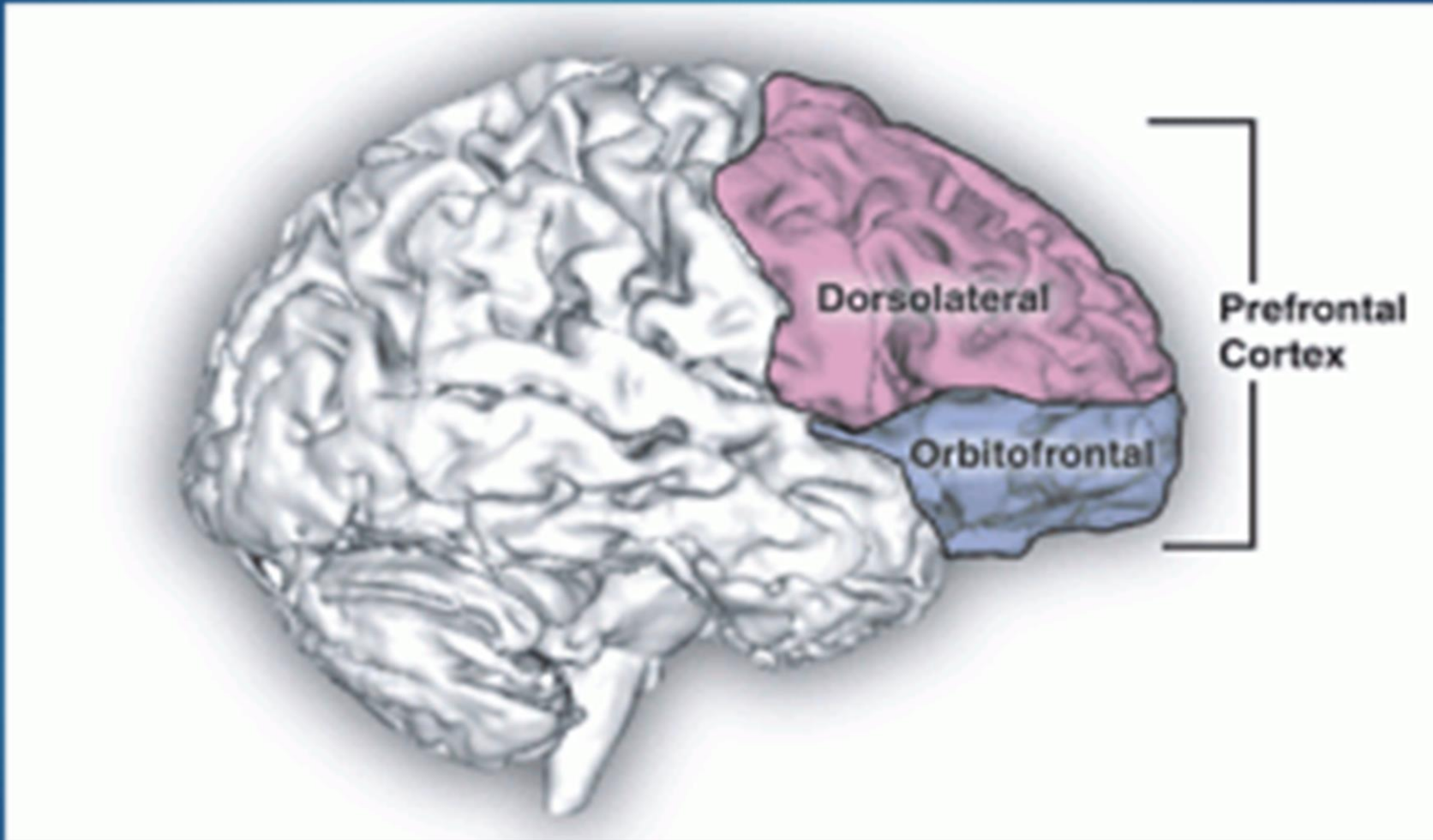
Memory Changes as We Age

- ▶ Short term memory changes little, but worse if it needs complex processing
- ▶ Storage and recall becomes somewhat inefficient
- ▶ Visual memory decreases more than verbal
- ▶ Memory complaints are unreliable

Thinking Changes in Normal Aging

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Frontal Lobe Hypothesis of Aging



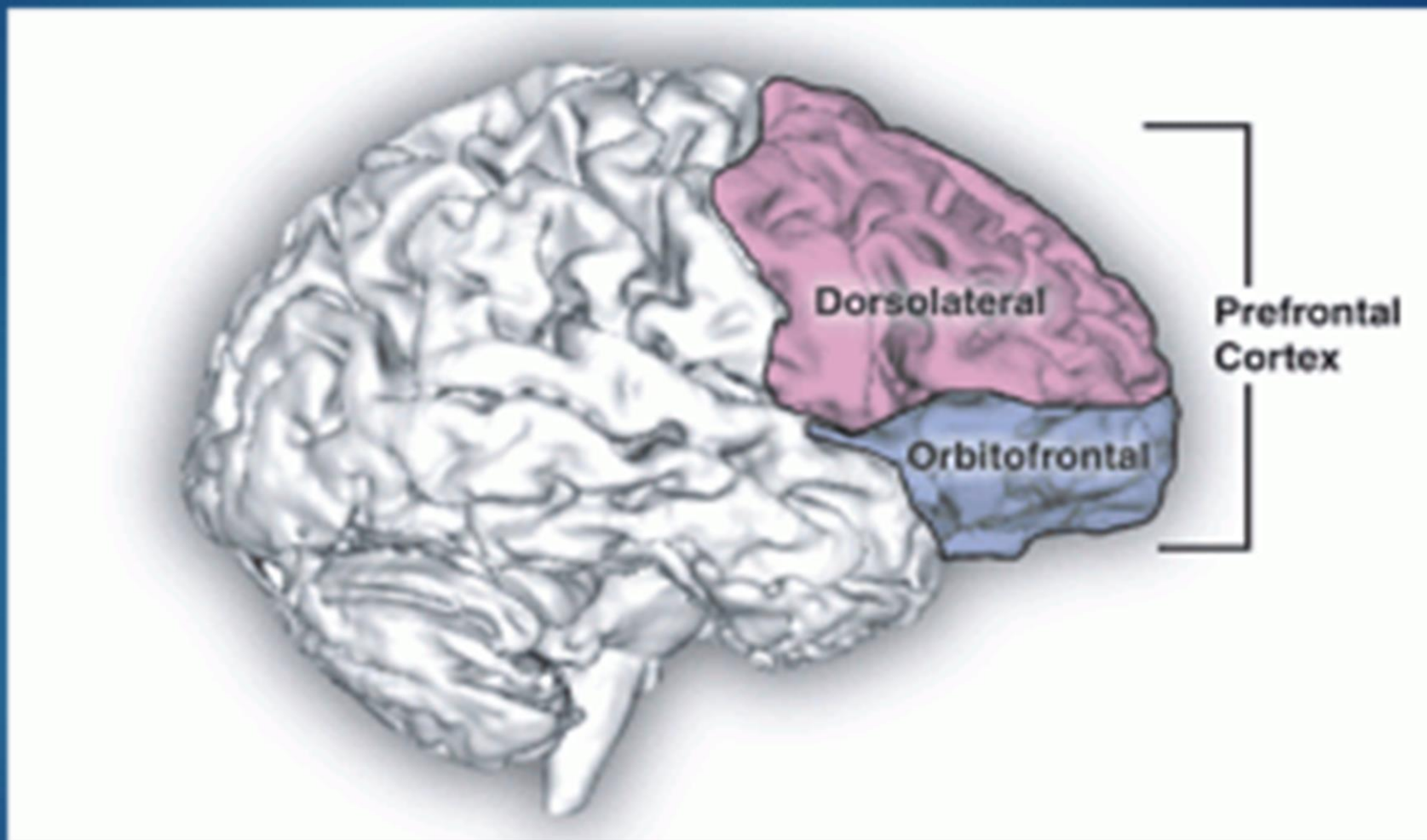
West RL (1996) An application of prefrontal cortex function theory to cognitive aging. Psychological Bulletin 120:272-292.

Why is the Frontal Lobe So Important?

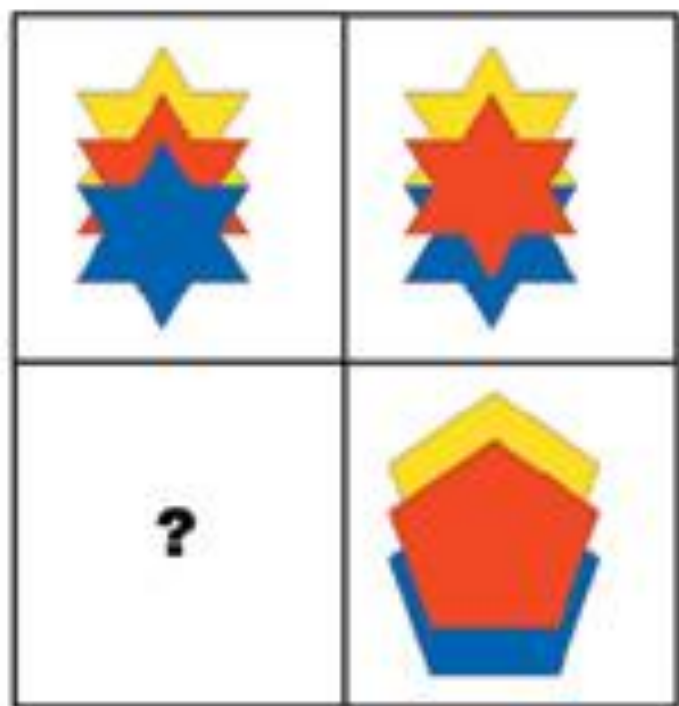
- ▶ “Experience generator”
- ▶ Judgment
- ▶ Cause and effect
- ▶ Complex attention
- ▶ Organizational skills
- ▶ Inhibition



Frontal Lobe Hypothesis of Aging



West RL (1996) An application of prefrontal cortex function theory to cognitive aging. Psychological Bulletin 120:272-292.



1

2

3

4

5

Iowa Gambling Test



IGT and the PFC



- ▶ PFC damage results in difficulty learning from one's mistakes and decreased self-awareness
- ▶ Similar performance is seen in those with disinhibition conditions

IGT and Seniors



Denburg NL, Tranel D, Bechara A. The ability to decide advantageously declines prematurely in some normal older persons. *Neuropsychologia* 2005;43(7):1099–1106.

Denburg, N. L., Cole, C. A., Hernandez, M., Yamada, T. H., Tranel, D., Bechara, A., & Wallace, R. B. (2007). The orbitofrontal cortex, real-world decision-making, and normal aging. *Annals of the New York Academy of Sciences*, 1121, 480–498.

Fein, G., McGillivray, S., & Finn, P. (2007). Older adults make less advantageous decisions than younger adults: Cognitive and psychological correlates. *Journal of the International Neuropsychological Society*, 13, 480–489.

- ▶ Those over 55 generally do worse than those under 55
- ▶ Similar performance to those with disinhibition
- ▶ These are normal older adults who do not have dementia

Scams and Normal Aging

Decreased Processing Speed

- More vulnerable to false urgency
- May not “figure it out” until it’s too late
- Easily overwhelmed

Decreased Memory Efficiency

- May have trouble remembering if they have paid already
- May be unsure who they can reach out to for support

Frontal Lobe Issues

- May not think through possibilities
- More likely to use emotional reasoning rather than logic
- Less efficient at decision making

Emotional Risk Factors

- ▶ Phase of life
 - ▶ Generativity vs stagnation (40-65)
 - ▶ Ego integrity vs despair
- ▶ Loss of spouse/loved ones
- ▶ Loneliness
- ▶ Depression, anxiety, and fear
- ▶ Economic uncertainty, burden on others



Age Associated Financial Vulnerability

- ▶ Coined by Mark Lachs, MD, an epidemiologist
- ▶ a pattern of financial behavior in older adults that:
 - ▶ Puts them at substantial risk for a considerable loss of resources
 - ▶ Can result in dramatic changes in quality of life
 - ▶ Is inconsistent with patterns of financial decision making in younger life
 - ▶ Can occur in absence of dementia or neurodegenerative problems

Need for AAFV

- ▶ **Association of a Negative Wealth Shock With All-Cause Mortality in Middle-aged and Older Adults in the United States.**
 - ▶ [Pool LR](#)¹, [Burgard SA](#)^{2,3,4}, [Needham BL](#)³, [Elliott MR](#)^{4,5}, [Langa KM](#)^{4,6,7,8}, [Mendes de Leon CF](#)³.
 - ▶ [JAMA](#). 2018 Apr 3;319(13):1341-1350. doi: 10.1001/jama.2018.2055.
- ▶ Financial Incompetency: legal test generally requires a disabling condition causing cognitive impairment that results in impaired functional skills



When Things Go Wrong

- Dementia
- Mild Cognitive Impairment
- Alzheimer's Disease

Dementia

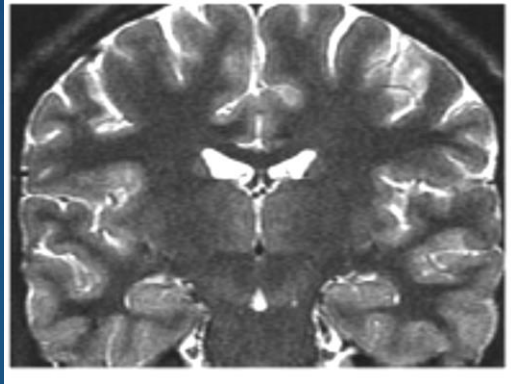
(Major Neurocognitive Disorder)

- A clinical syndrome
- multiple cognitive deficits, usually including memory impairment
- functional decline

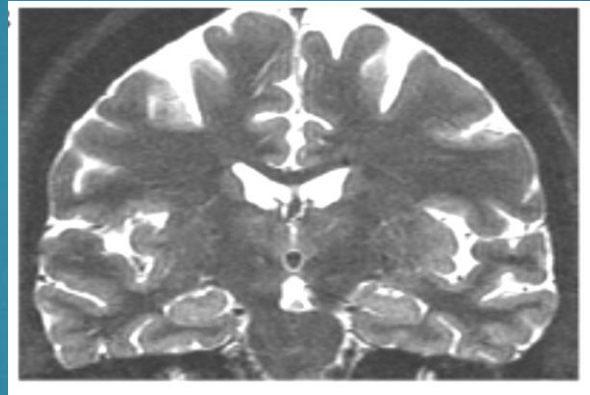
Mild Cognitive Impairment

- The loss of a single mental function that is more severe than seen with normal aging
- Usually Memory
- Functional abilities generally not impaired

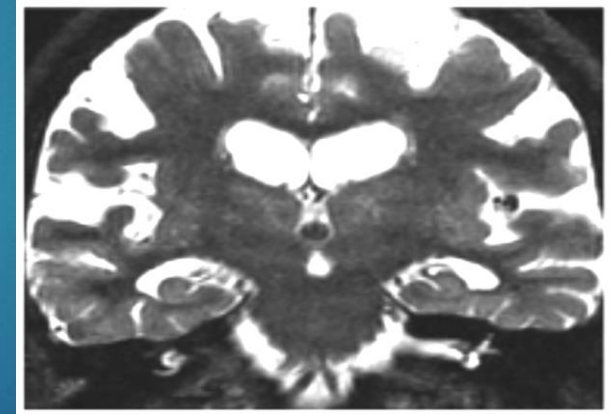
Loss of Brain Tissue in Alzheimer's Disease



Normal Aging



Mild
Cognitive
Impairment



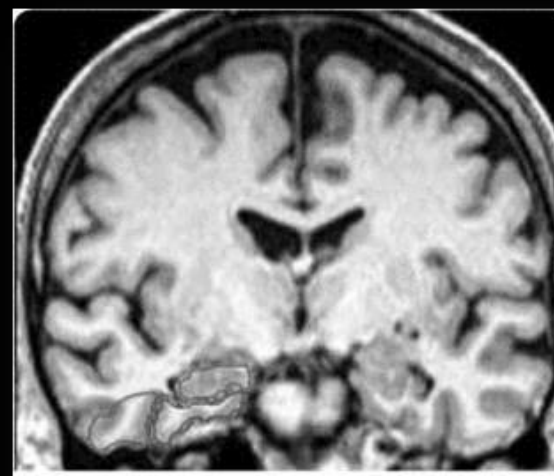
Alzheimer's
Disease

Warning Signs

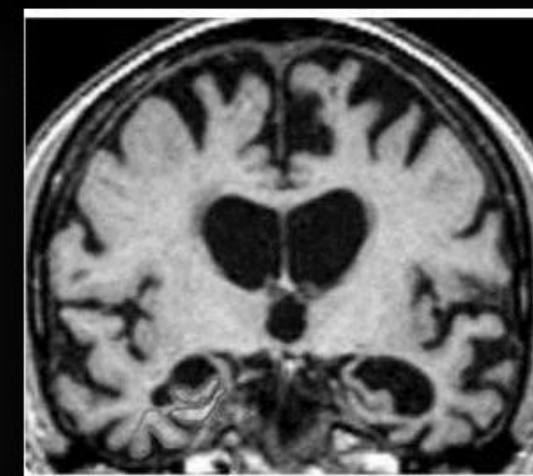
Symptoms	Normal Aging	Mild Cog. Impairment	Dementia
Poor Memory	At times	More frequent	Most of the time
Poor Testing	None	Mild to moderate	Moderate to severe
Other Problems (Judgment)	Rare	Mild, slightly affects daily life	Affects daily life notably
Trouble w/ Household Tasks	None	Occasional w/ complex activities	Moderate to severe problems

Alzheimer's Disease

- ▶ Progressive cortical degeneration starting in the temporal lobes
- ▶ Loss of short-term memory
 - ▶ New learning vs retrieval
 - ▶ Eventually remote memory impairment
- ▶ Language difficulties
- ▶ Progression ~8 years
 - ▶ Regression toward dependency



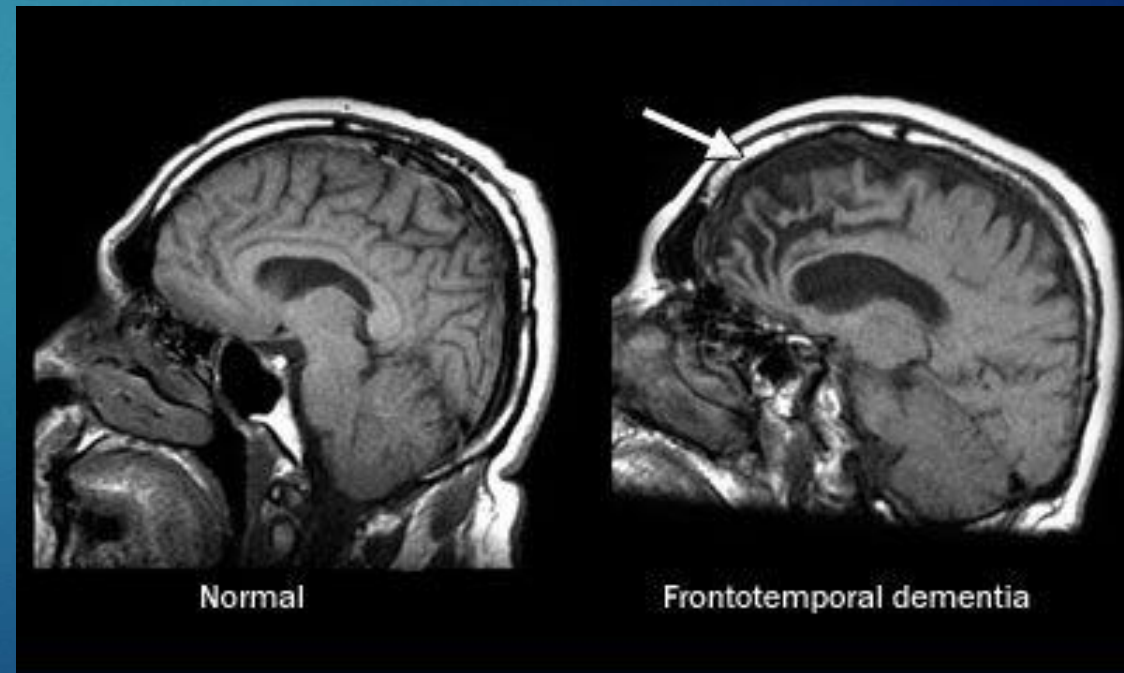
Normal MRI



AD MRI

Frontotemporal Dementia

- ▶ Progressive degeneration of the cortex beginning in the frontal lobes
- ▶ Significant personality change
- ▶ Disinhibition and impulsivity
- ▶ Poor judgment
- ▶ Diet changes

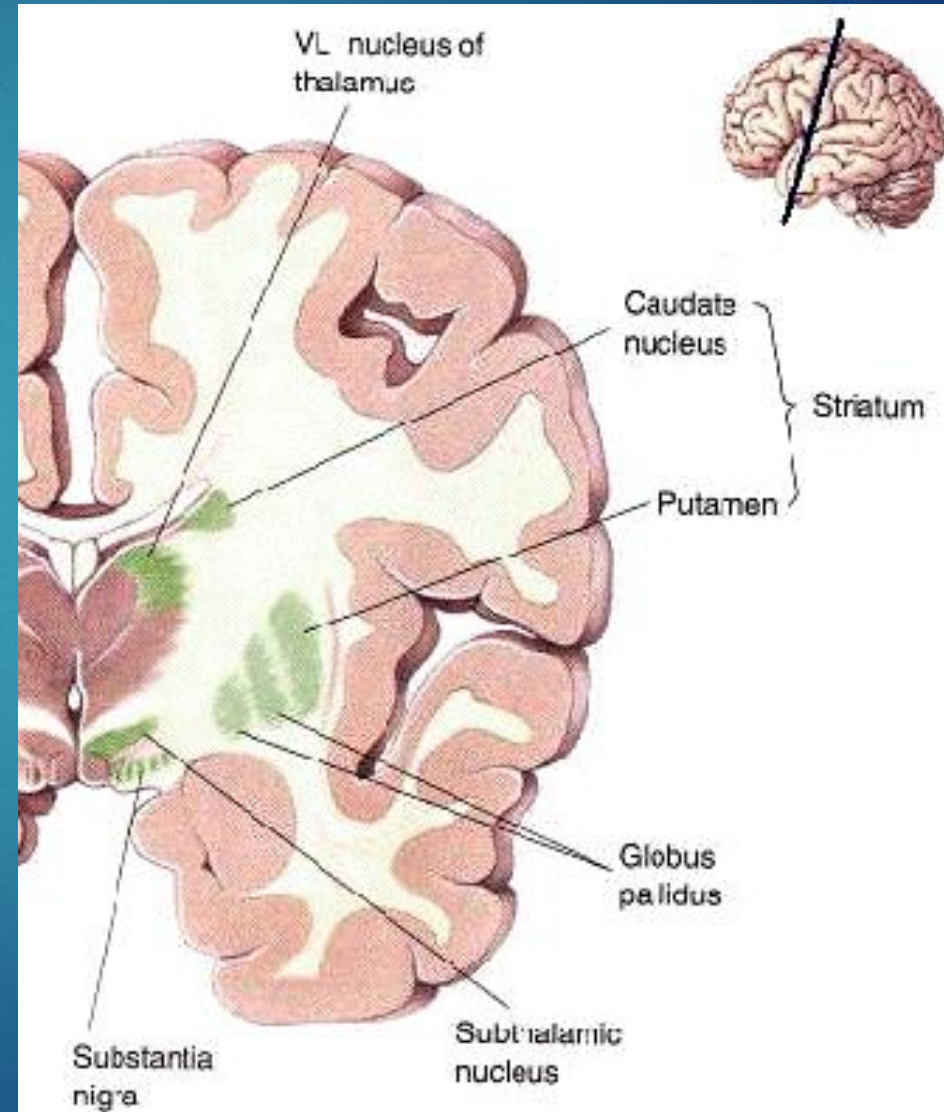


Dementia with Lewy Bodies

- ▶ “Parkinson’s Plus Condition”
- ▶ Movement difficulties
- ▶ Thinking skills deficits
- ▶ Delusions/hallucinations
- ▶ Day-to-day fluctuation



Parkinson's Disease



IGT in Alzheimer's and MCI

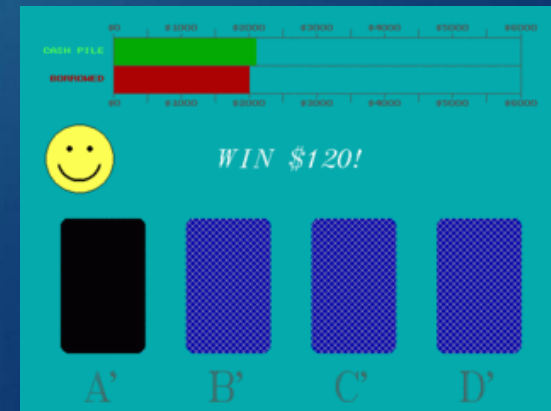
- ▶ Looks different than that seen in healthy seniors
- ▶ More random responses and poor strategy stability



Zamarian, L., Weiss, E.M., & Delazer, M. (2010). The impact of mild cognitive impairment on decision making in two gambling tasks. *Journal of Gerontology: Psychological Sciences*, 66B(1), 23–31,

Conclusions

- ▶ Aging disproportionately affects the frontal lobe, which is involved in executive functions such as decision making and judgment
- ▶ Results in decreased ability to process information in a rapid manner
- ▶ Results in generally increased susceptible to scams involving urgency and visceral/emotional information



How Do We Help?



Identify Warning Signs



- ▶ Obvious confusion or severe memory loss
- ▶ Confusion during complex tasks or difficulty following a sequence
- ▶ Difficulty keeping up with pace of normal conversation
- ▶ Language difficulties
- ▶ Defensive/secretive regarding personal affairs
- ▶ Disorganization
- ▶ Isolation
- ▶ Drug or alcohol abuse

Financial Warning Signs



- ▶ Changes in financial behavior
- ▶ Disorganization
- ▶ Decreased checkbook management skills
- ▶ Arithmetic mistakes
- ▶ Financial concepts confusion

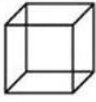
Screening For Vulnerability

- ▶ Mental status
 - ▶ MOCA vs MMSE
- ▶ Financial questions
 - ▶ Who manages your money?
 - ▶ What is your monthly income?
 - ▶ What are your expenses?
- ▶ Have you won money or prizes?
- ▶ Have you ever paid for services by purchasing money cards?
- ▶ Do you talk to friends online?
 - ▶ May not know online vs phone
 - ▶ Have you met any new people?

MONTREAL COGNITIVE ASSESSMENT (MOCA)

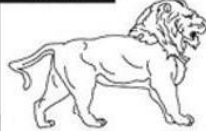
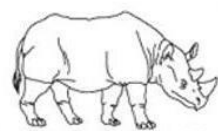
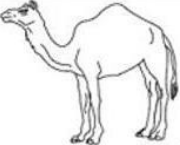
NAME: _____ Education: _____ Date of birth: _____
 Sex: _____ DATE: _____

VISUOSPATIAL / EXECUTIVE

Copy cube  Draw CLOCK (Ten past eleven) (3 points)

Points: /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	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
2nd trial	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

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

Points: /2

Read list of letters. The subject must tap with his hand at each letter A. No points if 2 or more errors
 F B A C M N A A J K L B A F A K D E A A A J A M O F A A B

Points: /1

Serial 7 subtraction starting at 100 93 86 79 72 65

4 or 5 correct subtractions: 3 pts. 3 or 4 correct: 2 pts. 2 or 3 correct: 1 pt. 0 correct: 0 pt

Points: /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.

Points: /2

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

Points: /1

ABSTRACTION

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

Points: /2

DELAYED RECALL

Has to recall words WITH NO CUE

	FACE	VELVET	CHURCH	DAISY	RED
Category cue	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Multiple choice cue	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Points for UNCUED recall only

Points: /5

ORIENTATION

Date Month Year Day Place City

Points: /6

© Z. Nasreddine MD Version November 7, 2004 Normal ≥ 26 / 30

www.mocatest.org

TOTAL /30

Add 1 point if ≤ 12 yr edu

Pocket Guide on Elder Investment Fraud and Financial Exploitation

Should I be concerned?

Red Flags in patient/client history:

- ❑ Social Isolation
- ❑ Bereavement
- ❑ Dependence on another to provide care
- ❑ Financially responsible for adult child or spouse
- ❑ Alcohol or drug abuse
- ❑ Depression or mental illness

Red Flags from clinical observations:

- ❑ Cognitive problems
- ❑ Fearful, emotionally labile, or distressed
- ❑ Suspicious, delusional
- ❑ Change in appearance, poor hygiene
- ❑ Accompanied by caregiver who is overly protective; dominates patient/client
- ❑ Change in ability to perform activities of daily living, including self-care, daily finances, medication management



What Can We Do?

- ▶ May or may not be “impaired” overall
- ▶ Educate on common themes and specific examples of scams
 - ▶ Frame in a way that does not make them the “dumb one”
 - ▶ May be incapable of insight depending on the issue
- ▶ If unable to recognize problems, may need someone to step in and take over to some degree
- ▶ Start with least restrictive approach to respect autonomy
 - ▶ Auto bill pay, supervision, limiting access, helping to block numbers
- ▶ Collaborative and empathetic approach
- ▶ REMEMBER, we want to help while respecting their autonomy!



FEDERAL TRADE COMMISSION

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...Pass it ON



Share This Page



Chances are good that someone you know has been scammed. They may not talk about it, but the statistics do.

The truth is that sharing **what** you know can help protect someone **who** you know from a scam.

Yes. You. People listen to you because they trust you. You're a friend, a neighbor, a relative.

And that's why we created these articles, presentations, video and activities — to help you start that conversation, and pass on some information that could help someone you know.

Reporting

- ▶ If you feel that an elder is being financially abused, you may break confidentiality to report to Adult Protective Services
- ▶ Educate and encourage client to utilize resources for reporting
 - ▶ Reporting fraudulent charges to their bank
 - ▶ Police reports
 - ▶ IC3.gov Internet Crime Complaint Center
- ▶ Offer to collaboratively report
- ▶ Ask permission to discuss options with family members

Approaches to Prevention

- ▶ “Family awareness” programs about financial vulnerability of older loved ones?
- ▶ Consider it similar to addictive/disinhibited conditions such as drug abuse, suggesting similar Tx programs?
- ▶ Involvement of local banks, brokers, and other financial professionals
- ▶ The best source of protection for a financially vulnerable elder is usually an aware and caring family

Any Questions?



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Justin Gauthier, PhD
VA Palo Alto Health Care System

Alexis Olson, PhD
Advanced Neurobehavioral Health



*Please feel free to contact us
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