




**A peek inside the brain:
a neurocognitive
perspective**



Anthony LoGalbo, PhD, ABPP-CN

Board Certified Clinical Neuropsychologist
Associate Professor of Psychology, Florida Tech
Director of Neuropsychology, Health First Memory Disorders Clinic

What is a Neuropsychologist?

- Examine the relationship between brain and behavior
- Thinking skills
 - Memory, concentration
- Mood and emotions
 - Sadness, nervousness, irritability


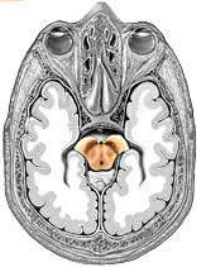
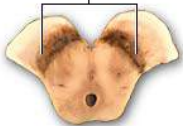
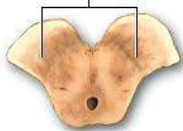



PD & the brain

Cut section of the midbrain where a portion of the substantia nigra is visible

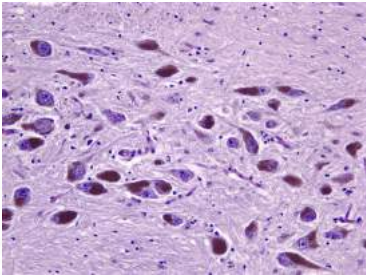
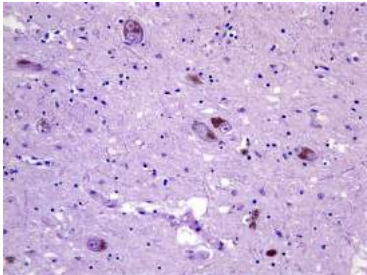
Substantia nigra

Diminished substantia nigra as seen in Parkinson's disease







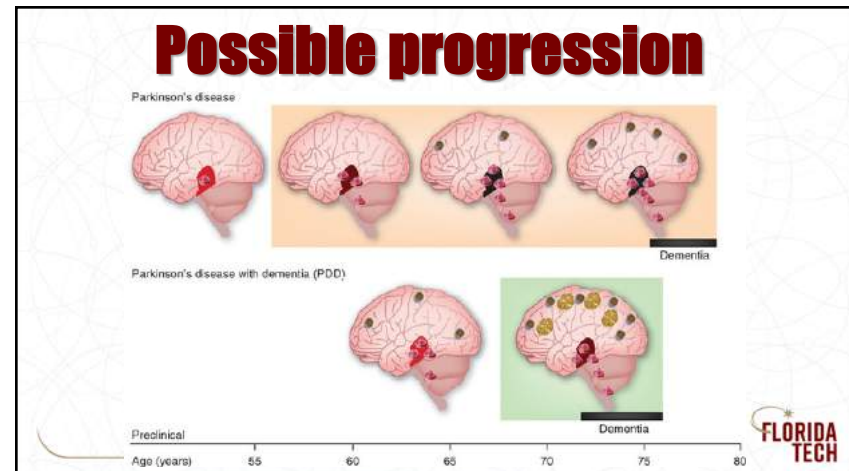
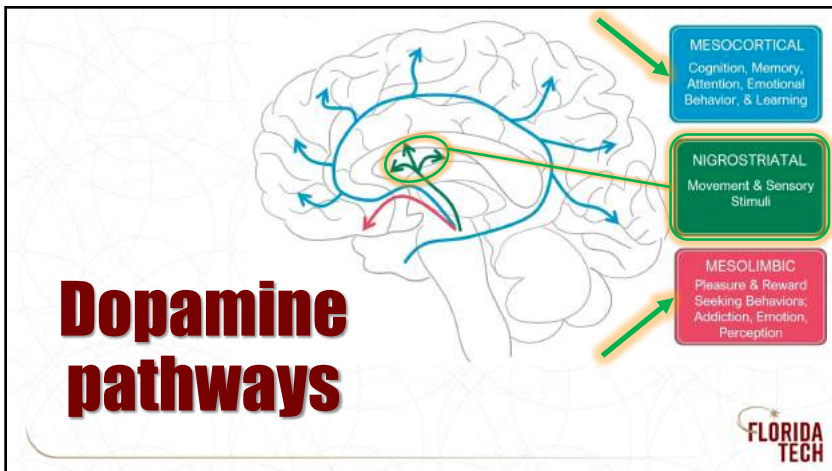
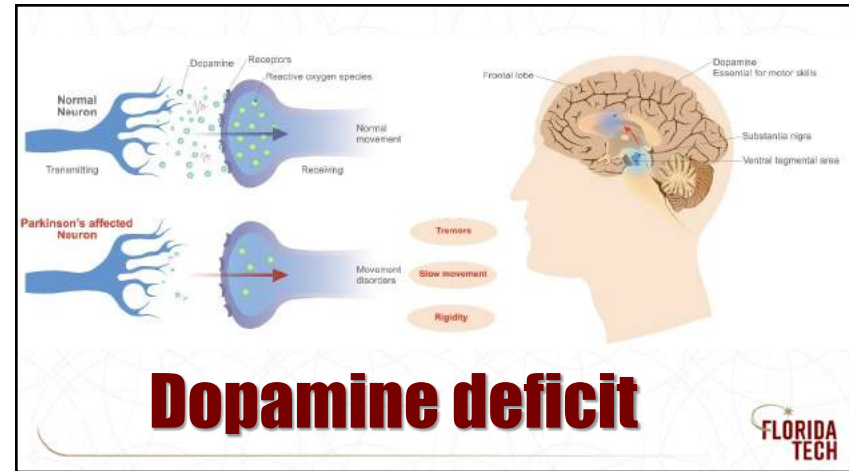
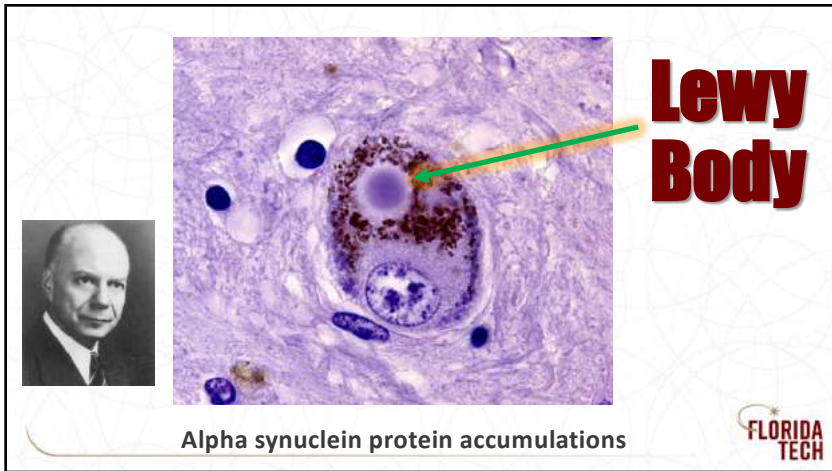
ADAM. FLORIDA TECH

Neuronal loss

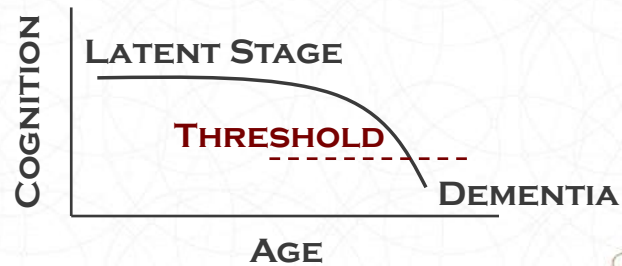



Normal PD



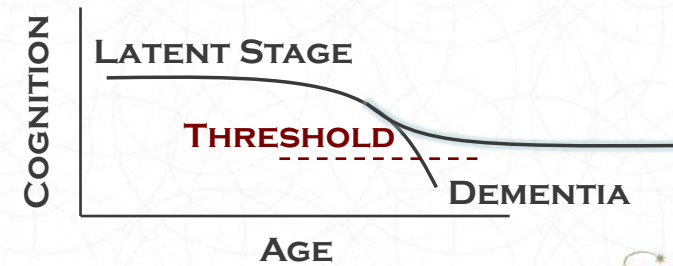


Development of dementia



FLORIDA
TECH

Development of dementia



FLORIDA
TECH

Parkinson's disease: Symptom Categories

- Physical/motor
- Cognitive
- Mood and behavior

FLORIDA
TECH

Parkinson's disease: Symptom Categories

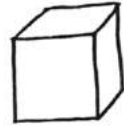
- Physical/motor
- Cognitive**
- Mood and behavior**

FLORIDA
TECH

Cognitive Symptoms

Different than Alzheimer's

- **Visual-spatial** problems
- **Slow** mental processing speed
- Takes **longer** to complete tasks
- Difficulty **focusing** or paying **attention**
- Difficulties with **planning, organizing, multi-tasking, decision-making, problem solving**



Common Problems

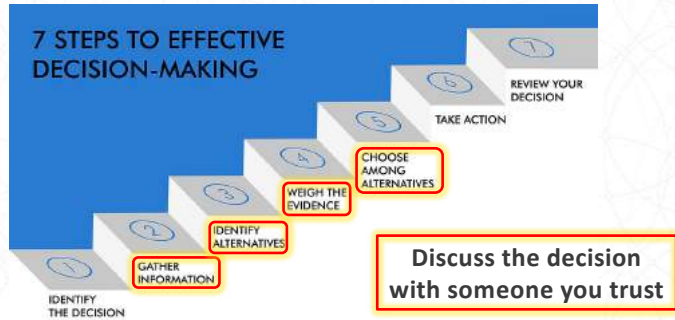


- Slower and takes longer to do things
 - Causes frustration!
 - Balance speed and accuracy
 - Easier for someone else to do it?
- Sense of accomplishment
- Loss of control and independence



Judgment and Making Decisions

7 STEPS TO EFFECTIVE DECISION-MAKING



What is a Neuropsychological Evaluation?



- Question/answer and paper/pencil
- Learning and memory
- Attention and processing speed
- Executive functioning
- Language
- Visual-spatial skills
- Mood, behavior, personality changes



Mood and behavioral symptoms

New onset or change

- Depression, sadness
- Apathy, lack of initiative
- Anxiety, worry, nervousness
- Frustrated/upset more easily
- Excessive daytime sleepiness
- Fluctuating level of attention or arousal



FLORIDA
TECH



Mood and behavioral symptoms

- **Depression** is the *most common non-motor symptom* in PD
- Up to **60%** of people with PD have depression
- Depression can be a **first sign** of PD
- Frequently **unrecognized and untreated**

FLORIDA
TECH

Mood and behavioral symptoms

Depression and PD

- Because of how common it is, there is likely a **neurological** basis for it
- However, it is also difficult **emotionally** to accept and adjust to physical limitations imposed by the disease

FLORIDA
TECH

Mood and behavioral symptoms

Depression doesn't always look the same

- **Sadness**, feeling down/blue, apathy, **not caring** about anything
- Feeling **discouraged** or hopeless
- **Irritability**, anger, having a **short fuse**, hard to calm down
- Difficulty controlling emotional reactions (**mood swings**)
- **Reduced interest**, engagement in, or enjoyment of activities
- **Less desire** to be social or talk to people
- Change in behavior or personality (disinhibited, inappropriate)
- Reduced (or increased) sleep or appetite



Mood and behavioral symptoms

Depression: Treatment!

Study of Antidepressants in Parkinson's Disease (SAD-PD)
Neurology (Richard, 2012)

- Selective serotonin reuptake inhibitor (SSRI)
 - Paxil (paroxetine)
- Serotonin norepinephrine reuptake inhibitor (SNRI)
 - Effexor XR (venlafaxine)

Effective without increasing motor symptoms



Mood and behavioral symptoms

Treatment side effects?

- Medications that **increase dopamine** are often used in PD, but may **cause**:
 - Sleepiness
 - Drowsiness
 - Delusions
 - Paranoia
 - Hallucinations

Why are there never any good side effects? Just once I'd like to read a medication bottle that says, "May cause extreme sexiness."

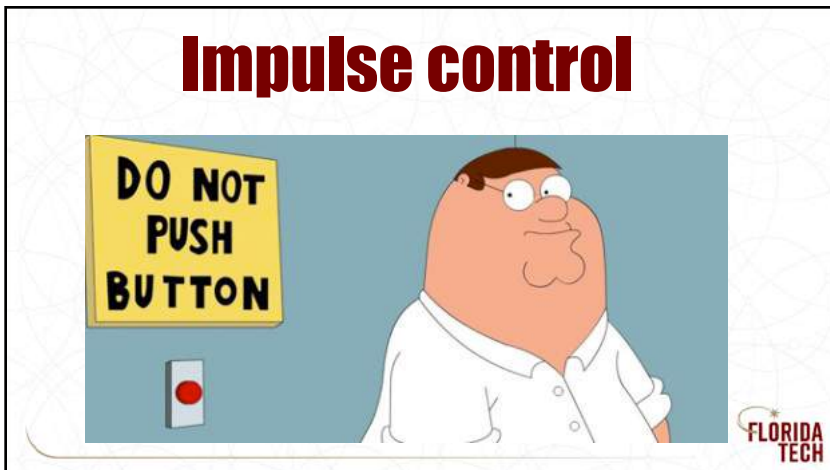
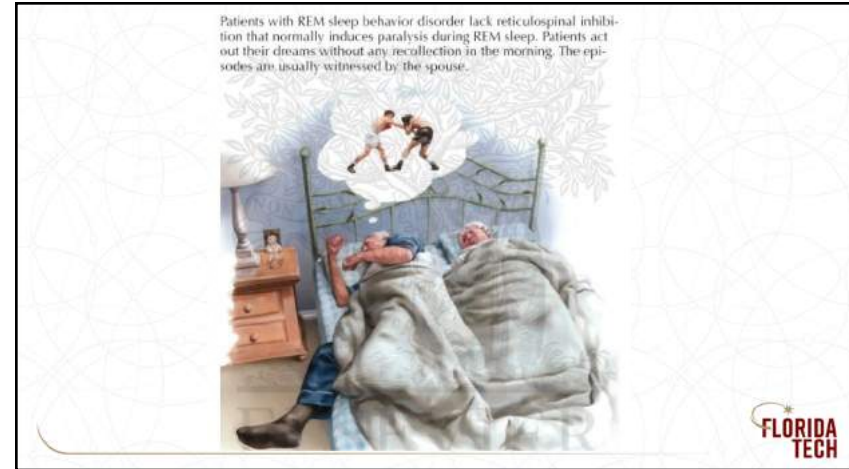


Mood and behavioral symptoms

Anxiety and worry about:

- Unexpected motor symptom exacerbation
- Being unable to function or perform
- Falling
- Being left alone
- Being around others (embarrassment)
- Condition worsening over time
- Impact or burden on family





Strategies

- Organization!
- Notes and checklists
- Day planner or calendar
- Set alarms as reminders
- Routine, scheduled activities

FLORIDA TECH



Strategies



- **Allow more time** to get things done
- **Slow down**, especially conversation
- **Do one thing at a time**
- **Reduce distractions**
- **Ask others** for advice or opinions



Strategies




- Family and social support
- Support groups
- Learning and education
- Meditation, relaxation
- Recreation
- Counseling




Other challenges...

- Managing finances
- Managing medications
- Driving



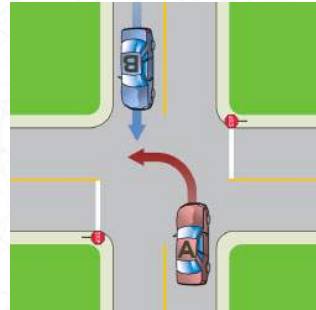
M 0226/19/11

- Why might these be a problem?



Driving issues

- Difficulty multi-tasking — driving while listening to the radio or conversating
- Veering to one side
- Difficulty parking
- Misjudging turns
- Clipping side view mirrors
- Misjudging distance or speed of other vehicles



FLORIDA
TECH

When to seek a Neuropsych Eval

- Noticing changes in memory or other aspects of mental functioning
- To better understand cognitive and emotional changes
- DBS candidates
- To develop a plan for the future

FLORIDA
TECH

