

Cognition, Depression, and Anxiety, and How to Manage Them

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Disclosures

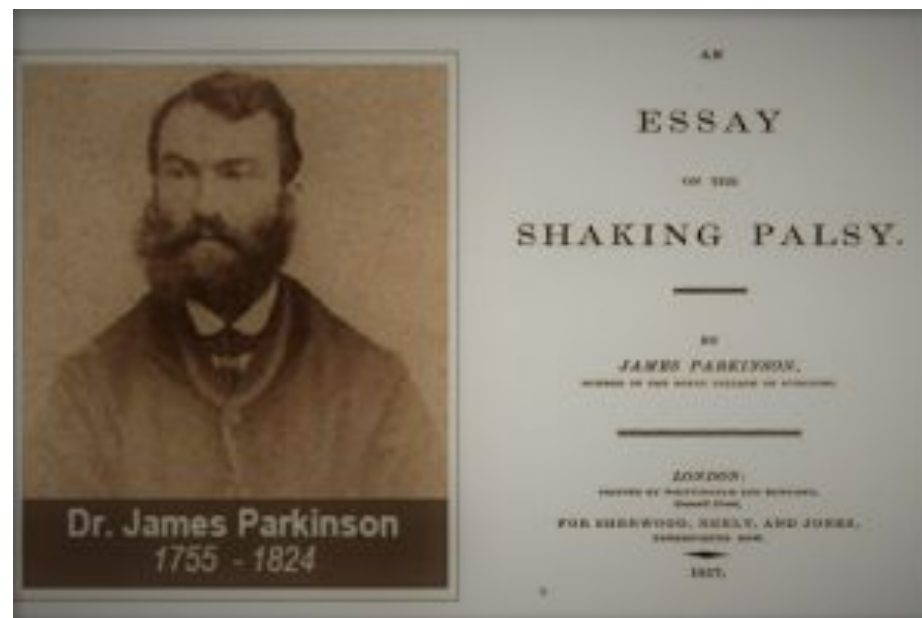


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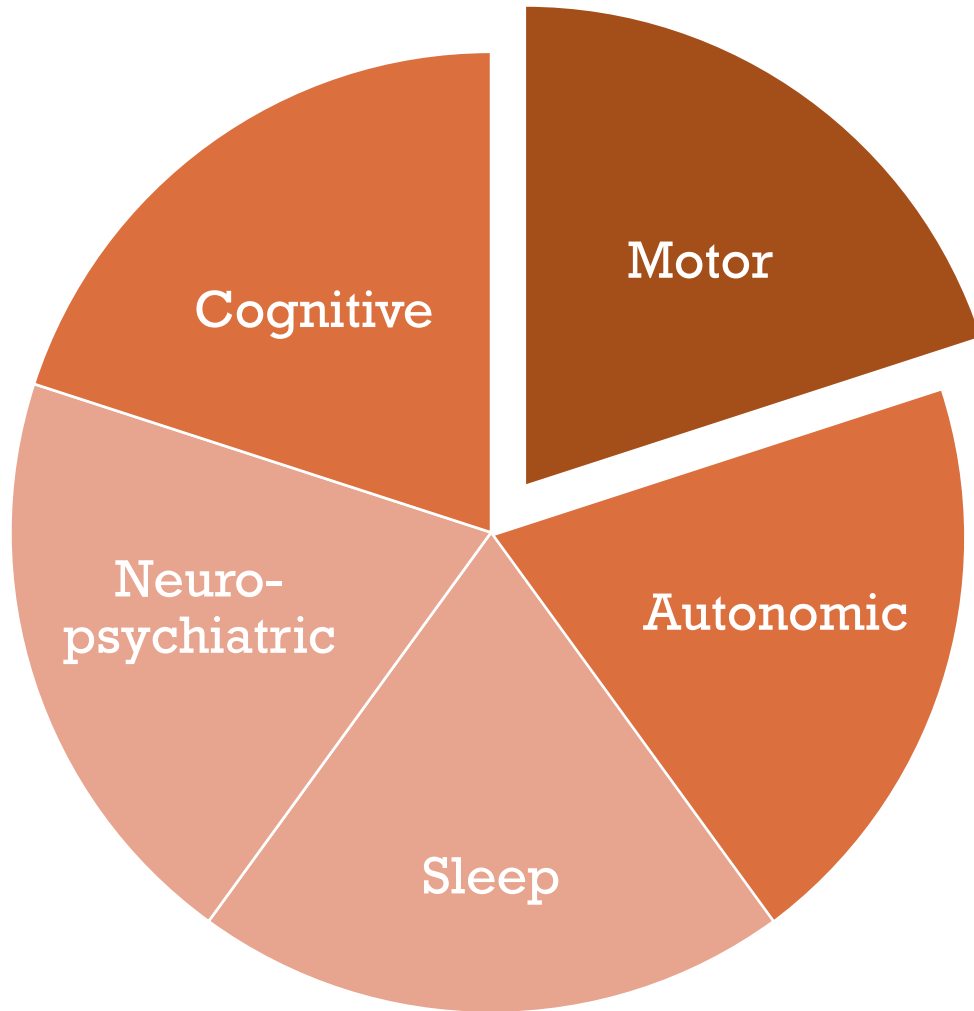
In The Beginning



- Tremor
- Rigidity
- Bradykinesia
- Gait and balance problems



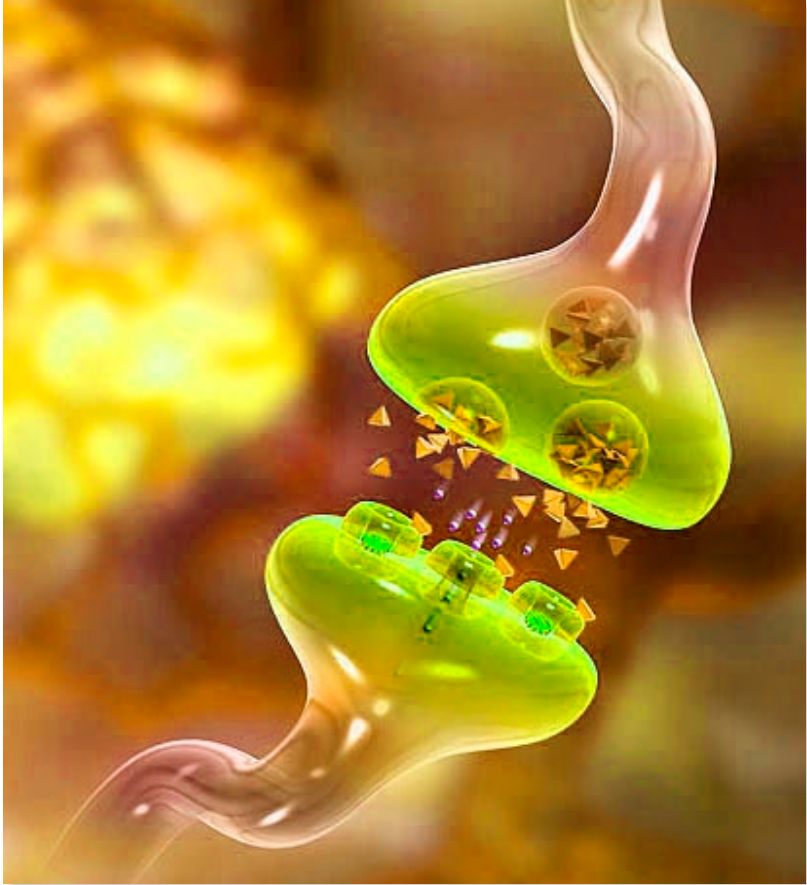
Recognition of Non-Motor Features



Symptom	% of PD patients
Olfactory dysfunction	90%
Dementia	78%
Depression	40-50%
Autonomic dysfunction	80%
Orthostatic hypotension	50%
GI symptoms	50-95%
Urogenital dysfunction	57-83%
Pain	40-50%
Sleep disorders	66%
Fatigue	50%

Chaudhuri et al, Lancet Neur 2006

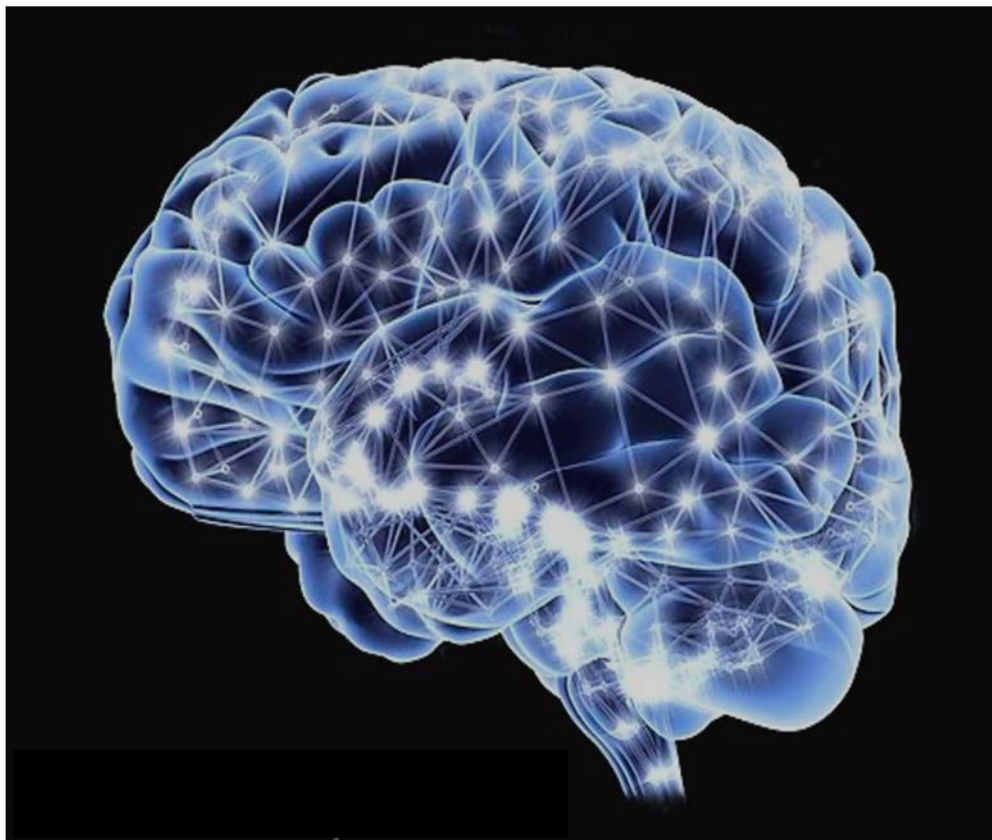
From Neurons to Behavior



Neurons

- Workhorses of the brain
- Communicate using chemicals including dopamine

From Neurons to Behavior

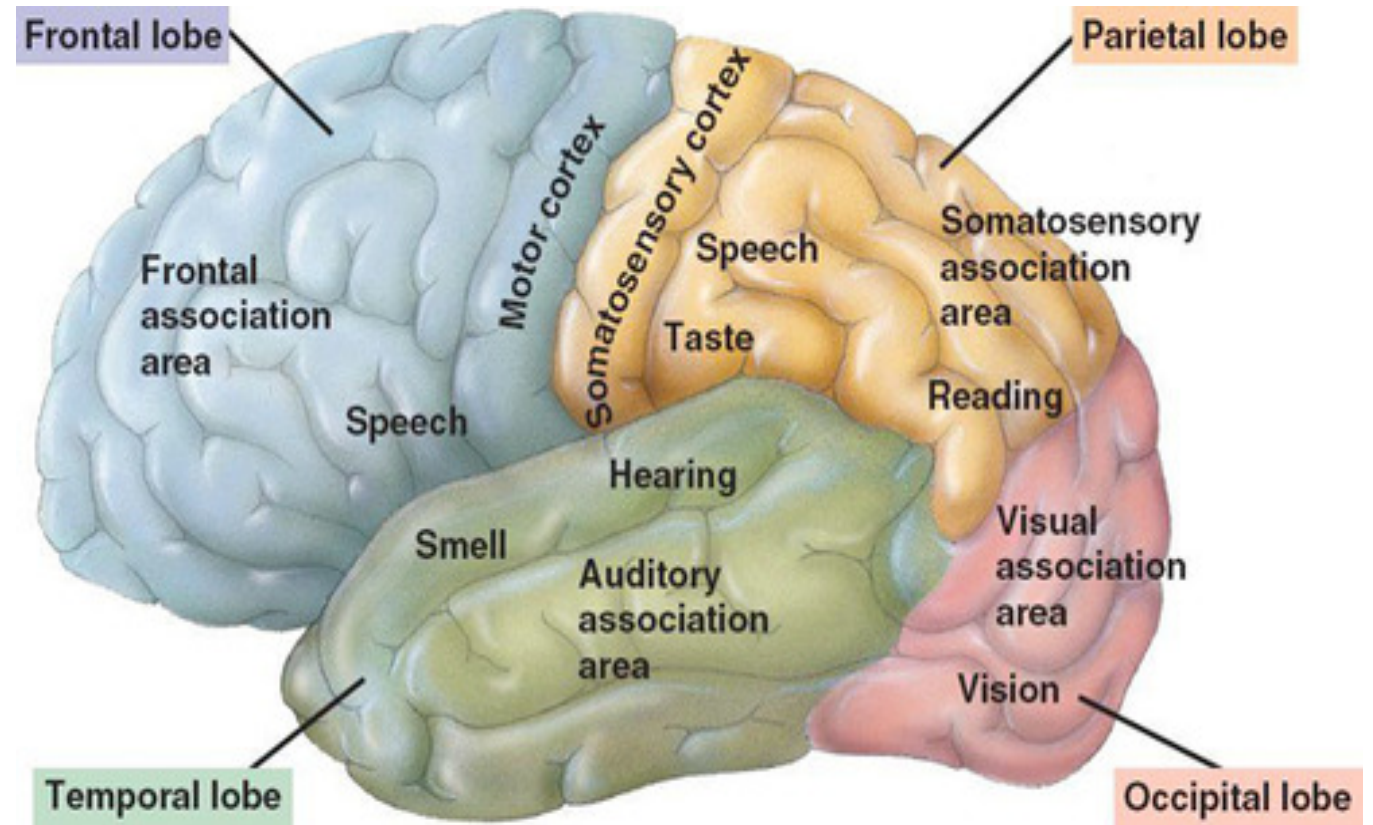


Neurons

- Connected in large networks
- Networks operate in different parts of the brain

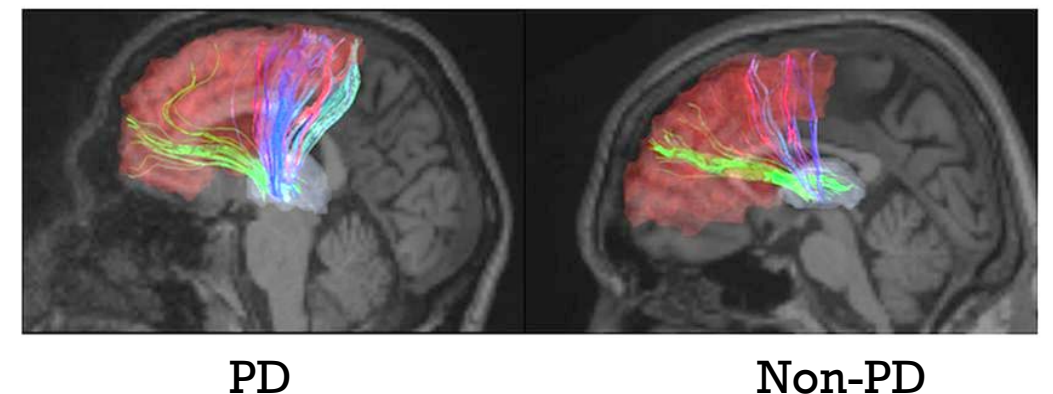
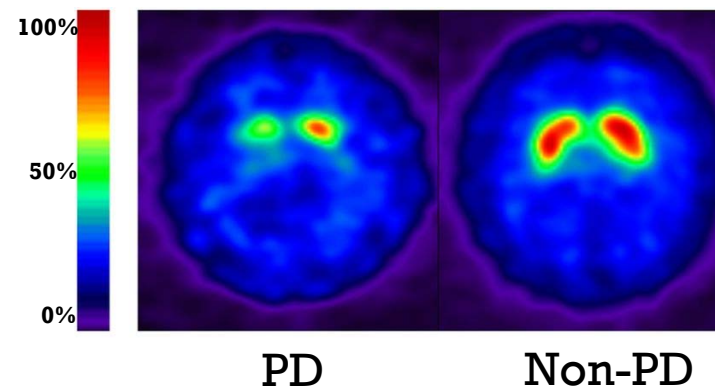
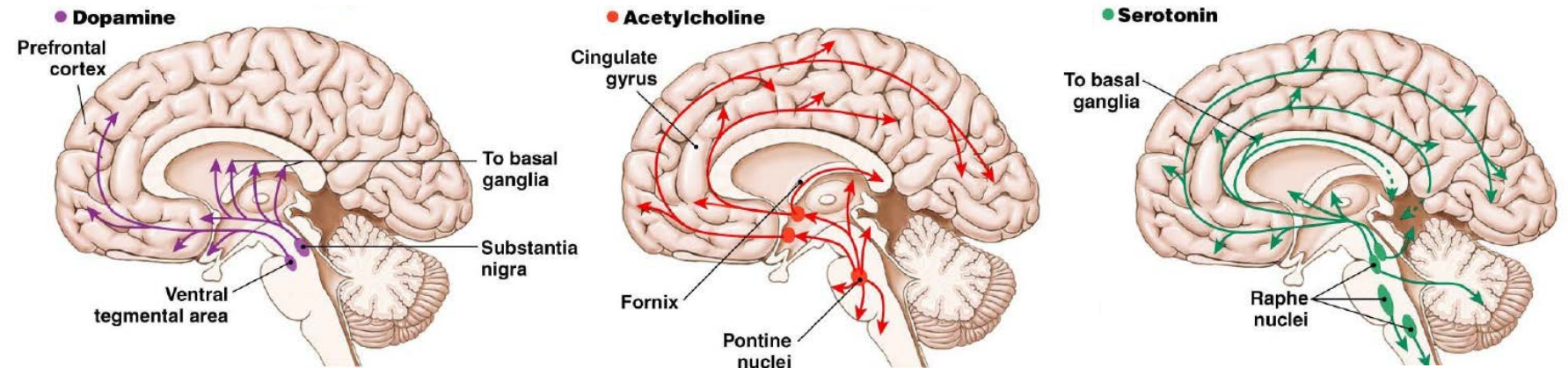
From Neurons to Behavior

- Different parts of the brain are responsible for different behaviors



What Causes Non-Motor Symptoms?

- Cells that produce dopamine and die off
- Many areas of the brain are affected



Son & Park, Scientific Reports 2016

Pre-Motor Symptoms

- Increasingly recognized pre-clinical phase
- Can occur years to decades before motor symptoms
- Characterized by:
 - Loss of sense of smell
 - REM behavior disorder
 - Excessive sleepiness
 - Mood disorders
 - Constipation



Impact of Non-Motor Symptoms

- Very common; affecting majority of patients (>90%)
- Typically less predominant in early disease, but increase with disease duration
- Non-motor symptoms have a great impact on quality of life
- Source of significant caregiver burden
- May impact relationships and finances (ICD)
- Greatest risk factors for assisted living are dementia or neuropsychiatric features

Depression

- Very common in Parkinson's (up to 50%)
- Depression
 - Feelings of sadness lasting at least two weeks
 - Changes in sleep or appetite
 - Decreased concentration or attention
 - Increased fatigue
 - Feeling “slowed down” or restless
 - Feeling worthless or guilty
 - Suicide ideas or a wish for death
 - More predictive of distress than motor disability
 - More frequent in males and those with prior episodes or family history

Depression (cont)

- Cause may be multi factorial
 - Psychological factors
 - Coping with chronic illness, isolation, early retirement, restriction of activities
 - Biological
 - Neurochemical: dopamine, serotonin, norepinephrine
- Challenges
 - Some people may not report mood changes
 - Some people have difficulty recognizing changes in mood state
 - Hard to distinguish depression symptoms from motor symptoms

Anxiety

- Anxiety
 - Feelings of tension or worry lasting six months
 - Decreased concentration or attention
 - Feeling overwhelmed
 - Concentration problems
 - Irritability
 - Poor sleep
- Can be experienced as
 - Generalized anxiety
 - Anxiety attacks
 - Obsessive-compulsive disorder
 - Social avoidance

Anxiety (cont)

- Cause may be multi factorial
 - Psychological factors
 - Coping with chronic illness, isolation, early retirement, restriction of activities
 - Biological
 - Neurochemical: serotonin, norepinephrine, dopamine
- Challenges
 - Worry about symptoms may not be true anxiety
 - Legitimate concerns about physical risks (falls)
 - Motor symptoms may be mistaken for anxiety

Impulse Control

- Impulse Control Disorders
 - Difficulty controlling impulses
 - Hypersexuality
 - Binge eating
 - Compulsive behaviors: Shopping/gambling
 - Acting without thinking
- Most commonly seen during treatment with specific drugs
- May be similar in presentation to OCD or addictive behavior
- Upsetting to patients and families
- May lead to damage to relationship and/or finances

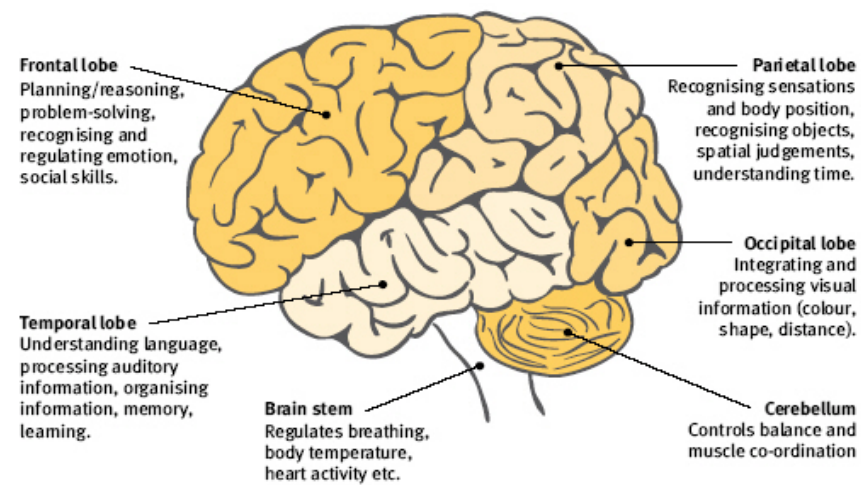
Hallucinations

- Perceiving something that isn't really there
 - Seeing, hearing, touch (occasionally)
 - Stress-related
 - May occur in low light conditions
 - Fleeting and non-disturbing
- Can often be treated
 - Side effect of some medications
 - 25% taking Parkinson's medications may experience hallucinations
 - Inform your doctor!



Cognitive Symptoms

- Cognitive changes are very common (>70%)
- Dementia affects ~25% of all people with Parkinson's
- Cognitive changes are related to slow information transfer
- Memory loss, word-finding are most troubling to patients and caregivers
- Cognitive Domains
 - Attention and Processing Speed
 - Executive Dysfunction
 - Language
 - Memory
 - Visuoperception



Attention and Processing Speed

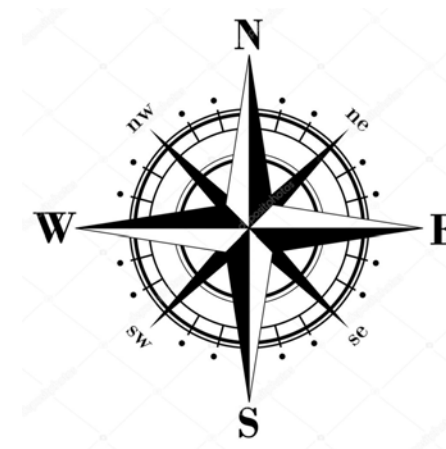
- Main problem is an overall slowing of information transfer in brain areas supporting cognition
- Bradyphrenia is cognitive equivalent of bradykinesia
 - Delay in responding to verbal or other stimuli
 - Take longer to complete tasks
- Difficulty sustaining attention over long periods of time
- Can be mistaken for depression

Executive Function

- Problems planning and completing multi-step tasks
 - Difficulties generating, maintaining, shifting, and blending different ideas and concepts
- Difficulties with problem-solving
 - Takes longer and may lead to feelings of being overwhelmed
- May show impaired judgment or impulse control
- May have difficulty initiating new tasks or behaviors
- Caused by reduced neurotransmitters to frontal lobes of the brain and overall slowed information transfer

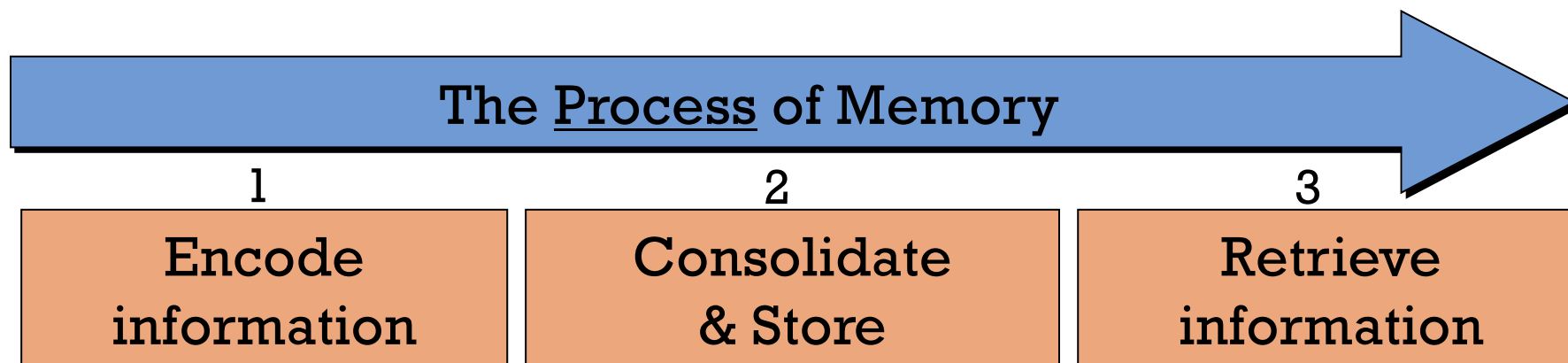
Language and Visuoception

- Language
 - Most reported difficulty is word retrieval
 - “Tip-of-the-tongue”
 - Likely due to slowed processing speed
 - Will be more noticeable in individuals with lower vocabulary skills
 - Also tend to use simpler speech and speak less overall
- Visuoception
 - Poor depth perception and navigation
 - Driving can become unsafe



Memory

- Roughly half of people with Parkinson's report memory changes
- Due to poor encoding and retrieval, not retention
- Different pattern than Alzheimer's disease
- Benefit from cueing
- Retentive memory loss in Parkinson's may indicate dementia



Parkinson's Dementia

- More severe cognitive changes
- Cognitive changes affect ability to do daily tasks
- Generally include significant memory loss
- Usually occurs late in disease
- May affect 25-50% of people with Parkinson's
- Not all patients develop dementia



What Can You Do?

- Brain Fitness Strategies
 - Medications
 - Stress reduction
 - Physical activity
 - Other lifestyle choices
 - Diet
 - Mental activity



Mental Activity

- Accelerates the rate new brain cells are created
- Enhances the chances of new neurons' survival
- Strengthens the synapses (connections) among neurons
- Leisure activity involving mental effort decreases risk for dementia

Mental Activity

- The 3 key principles for good brain exercise
 - Novelty
 - Variety
 - Challenge



Mental Activity

- Any kind of mentally challenging activity could be protective
 - Crosswords
 - Social interactions
 - Learning language(s) (reading)
 - Listening to music
 - Card games
 - Chess and strategy games
 - Visit museums and historical sites
 - Attend workshops



Mental Activity

- Try to learn something new every day:
 - a new concept
 - a new word
 - a new exercise
 - engage with people
 - use your brain instead of a device



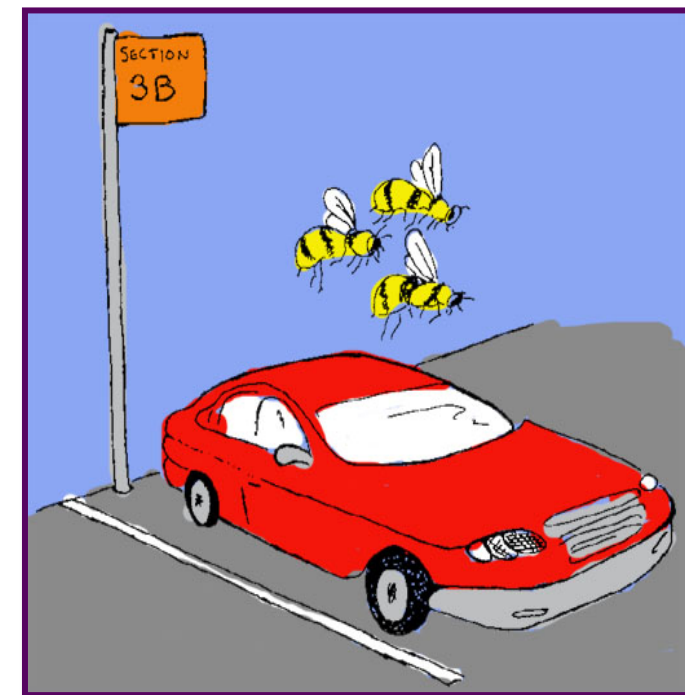
Tips To Strengthen Your Memory

- It's easier to remember things you have practiced!
- The more a memory is activated, the stronger the memory becomes
- Poor input of memories makes retrieval of memories more difficult
- Reduce distractions when trying to create new memories
- Use memory strategies
 - Chunking, rhyming, music, linking



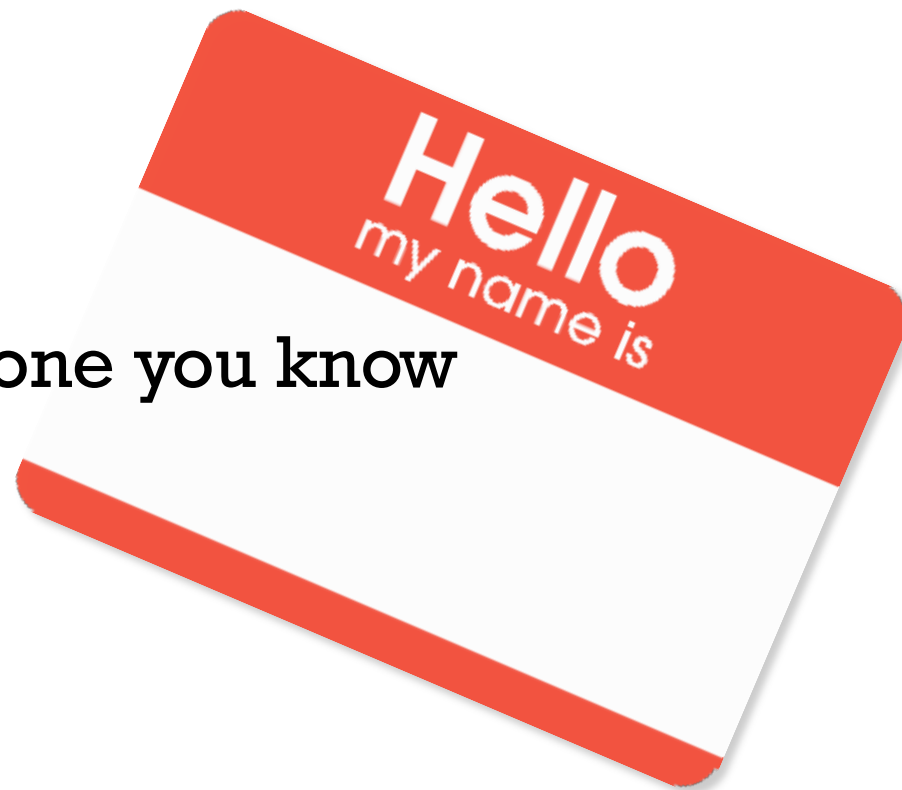
Remembering New Information

- **Attend**
 - Actively pay attention and reduce distractions
 - Focus on what you are doing
- **Visualize**
 - Create a vivid mental image
 - The more outrageous the better
- **Connect**
 - Link images to create a memorable scene



Remembering Names

- Commit yourself to learning the name
- Repeat name during conversation
- Comment if person reminds you of someone you know
- Ask the name's spelling or pronunciation
- Use the name when you say good-bye



Recommendations for Care Partners

- Written notes and lists are helpful,
 - ...but only if you orient to them
 - Put them in a prominent place in the home
- Use prompts and cues if possible
 - “Did Linda call?”
- Keep things in routine places
- Elaborate on information
- Allow time to come up with words or information



Take Home Points

- If you have non-motor symptoms, ask your doctor to evaluate them and report their impact on your quality of life
- Recognize that care partner stress is related to severity of non-motor symptoms
- Most cognitive symptoms are related to slowing of information processing, similar to motor symptoms
- Keep your brain active with novelty, variety, challenge
- Focus on learning something new every day
- Commit to remembering and use cues and strategies

Thank you for your attention!