

KICK-OUT PD:

An Introduction to Parkinson's Disease and a New Intervention to Fight It

Jori Fleisher, MD MSCE

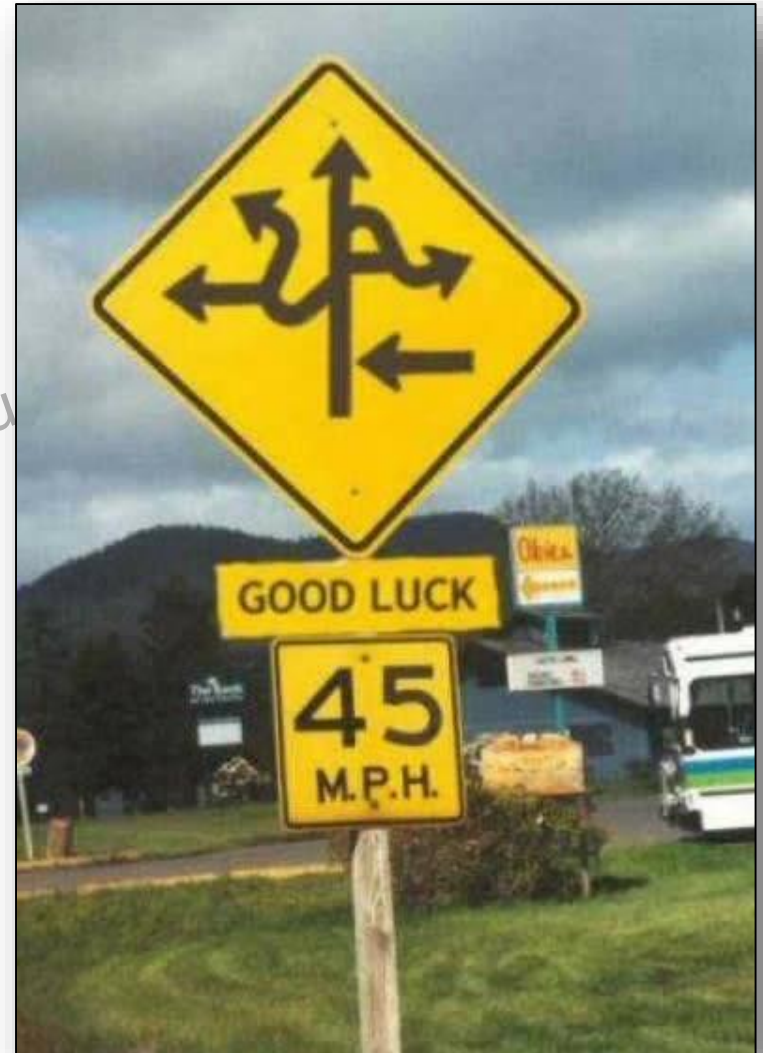
Assistant Professor of
Neurological Sciences

Rush University Medical Center

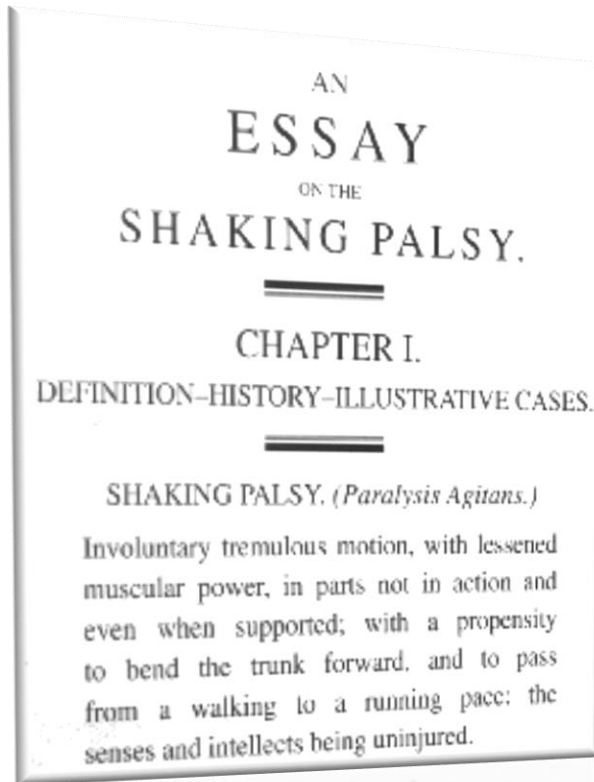


Overview

- What is Parkinson's Disease?
 - Who gets it and when
 - Motor symptoms
 - Non-motor symptoms
- Life with PD
- KICK-OUT PD Study



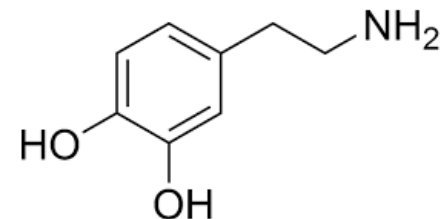
Parkinson's Disease



- **First described in 1817, based on SIX patients!**
- **2nd most common neurodegenerative disease**
 - 1-2% of ppl >65y, 3-5% over age 85
 - 1-2 million people in the US & in Europe
 - More common in men (M:F ~1.5)
- **Progressive over time**
 - Symptoms and time course are **HIGHLY VARIABLE**
 - Every person with PD is different, though the vast majority will **SLOWLY WORSEN** over time
- **Incurable at this time**

Parkinson's Disease

- Symptom onset most often in 50s-60s
- Brain cells that produce dopamine start to die off prematurely
 - Dopamine involved with initiating and controlling movement; also with reward pathways and motivation
- Numerous medications and surgical options
 - Many symptoms can be managed much better and for much longer than ever before
- For most people, does not affect life expectancy



PD Clinical Features

- **Diagnostic features of *parkinsonism*:**

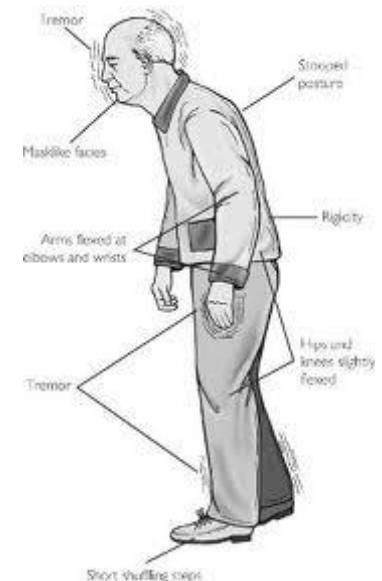
- Slow, small movements (Akinesia/bradykinesia)
- PLUS ONE of the following
 - Tremor (resting, 4-6Hz)
 - Rigidity
 - Postural instability

Tremor

Rigidity

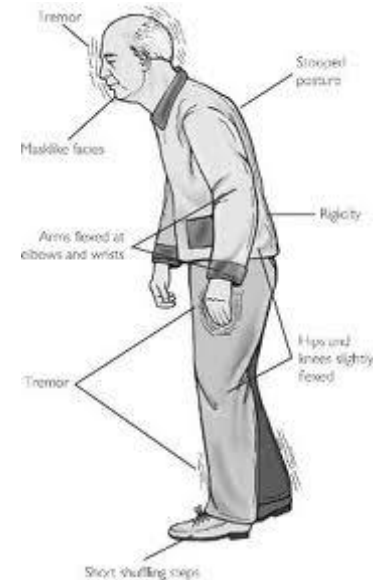
Akinesia

Postural instability



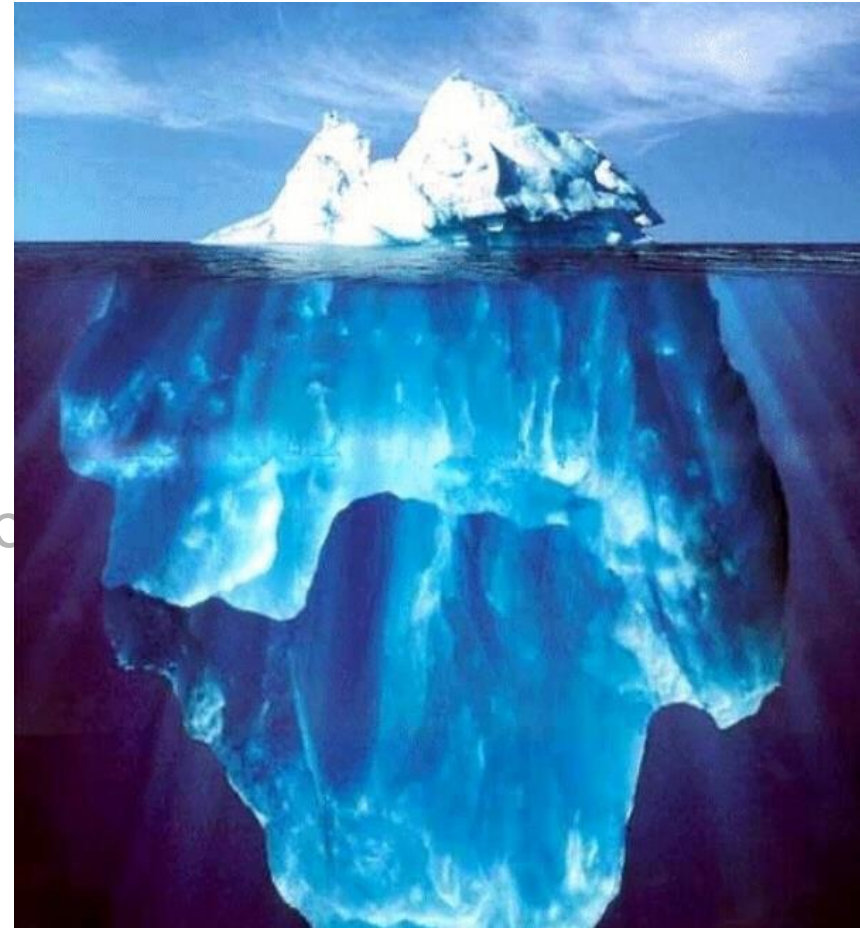
PD Clinical Features

- Supportive criteria for the diagnosis
 - Meets criteria for parkinsonism PLUS
 - Begins on one side
 - Stays asymmetric
 - Progressive disorder
 - Response to levodopa
 - Gait problems: freezing, shuffling, falling
 - Stooped posture
 - Quiet, rushed voice
 - Decreased facial expression
 - Small, illegible handwriting (micrographia)



Motor & nonmotor manifestations

- Motor:
 - T.R.A.P.
- Nonmotor:
 - Sleep disturbances
 - Fatigue
 - Depression & Anxiety
 - Apathy
 - Cognitive changes and dementia
 - Pain & sensory changes
 - Quieter, hoarser, more strained voice
 - Constipation
 - Autonomic dysfunction (low blood pressure, dizziness or passing out)
 - Drooling, trouble swallowing, choking



Medication vs. Exercise

- Medication:
 - Covers up the symptoms
 - Disease progresses unchanged
- Exercise:
 - Covers up the symptoms
 - *May change how quickly disease progresses*



Cognitive changes

- >30% of people with PD have some degree of cognitive change in specific areas
- Things that can be affected:
 - “Tip-of-the-tongue” phenomenon
 - Attention, multitasking
 - Active memory
 - Executive function
 - Visuospatial function
 - Speed of thinking



Autonomic changes

- Orthostatic hypotension:

- After sitting or lying for prolonged period, blood pools in legs.
- Normal reflex on sitting/standing: veins constrict, push blood back to center of body
- PD: reflex is blunted; lightheaded or dizzy on standing too quickly, brain not receiving enough blood flow

- How to help:

- SLOW transitions between lying/seated and standing positions
- If symptomatic, return to horizontal position, slowly transition again
- Adequate hydration is key!

- Excessive sweating:

- Less common but possible; more of a nuisance and dehydration risk; encourage adequate hydration!

Parkinson's Disease

- Late symptoms
 - Motor fluctuations (on/off phenomena)
 - Freezing
 - Loss of drug effect, drug failures
 - Dyskinesias
 - Gait imbalance, freezing



Life with PD

- Patients may be late

- *What if leaving the house took 3 times as long?*
- *What if driving & parking were twice as stressful?*
- *What if you checked the map multiple times before arriving and **still** got lost?*
- *What if you used the restroom twice before arriving but still felt you might have an accident as you waited for the elevator?*

How Can We Help?

- Patients may be late

- Greet them with a smile, “glad you were able to make it”, and benefit of the doubt
 - Traffic is a big source of anxiety for people with parkinsonism
 - Visuospatial processing (getting to a specific office, navigating maps) is challenging, can be a source of embarrassment

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Life with PD

- Patients may be slow

- *What if the more you tried to hurry, the **slower** you became?*
- *What if you were dependent on a pill every few hours to move?*
- *What if you suddenly became frozen and unable to move without warning?*
- *What if the more you tried to rush, the **dizzier** you became?*



How Can We Help?

- Patients may be slow

- Paradox: The more they try to rush, the *slower* things get.
- Solution: *Patience*. Encourage them to take their time, take a breath.
 - Minimize any multitasking or distractions
- Bradyphrenia (slow thinking/processing):
 - Allow an extra few seconds for an answer

Life with PD

- Patients may be hard to understand
 - *What if you thought you were speaking at full volume, but no one could hear you?*
 - *What if you couldn't think of the word you wanted to say when everyone was watching?*

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How Can We Help?

- Patients may be hard to understand

- Hypophonia: Quiet voice that gets quieter, more rushed as person speaks
- Dysarthria: Slurred speech
- Word-finding difficulties
- Pressured or tangential speech
- Ask simple, clarifying questions: “It sounds like you said....”, “Did you mean...?”

KICK-OUT PD

- *Karate Intervention to Change Kinematic OUTcomes in Parkinson's Disease*
- First of its kind pilot study of a karate intervention for people with early to middle-stage PD
- Supported by private philanthropic donation

KICK-OUT PD

- Rationale: Research shows that...
 - Aerobic exercise has symptomatic and neuroprotective benefits in PD
 - Tai chi, yoga, and pilates have benefits for strength and balance in PD
 - Mindfulness training and meditation may be helpful for attention, anxiety, and depression in PD

KICK-OUT PD

- Strong enthusiasm for boxing in PD, especially among people who have not exercised otherwise
 - Aerobic benefits, plus ? emotional benefit
- If aerobic exercise, group exercise, tai chi, and mindfulness are each beneficial....

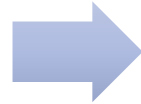
...could karate for PD combine these?

...could it be even more powerful than the individual disciplines?

KICK-OUT PD

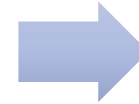
Pre-Intervention Study Visit

- At Rush
- Basic health information; test balance, gait, attention, anxiety, depression
- Focus group to discuss past experience with martial arts and exercise, expectations



Karate Classes

- Wilmette and Park Ridge Dojos
- **10 weeks long**
- **Each participant attends 2 classes per week** at one dojo location
- 15 participants per class



Post-Intervention Study Visit

- Basic health information; test balance, gait, attention, anxiety, depression
- Focus group to discuss experience with classes, goals achieved, future directions

KICK-OUT PD

- We are measuring changes in:
 - Balance
 - Gait
 - Flexibility
 - Attention
 - Anxiety
 - Depression
- Participant's overall impression of change

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Questions?



LET TODAY
BE THE
START OF
Something New

