

Parkinson's Disease

Recognizing Depression and Anxiety, Managing Suicide Risk

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Michael G. Mercury PhD

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"Off-label" uses of medications
I will not be discussing any "off-label" uses of any medications.


Unapproved/investigative use of a commercial device
I do not anticipate discussing unapproved/investigate use of commercial products/devices.




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Objectives

1. Depression and Anxiety: Non-motor symptoms in Prodromal Parkinson's Disease
2. Screening and Managing Depression and Anxiety in Parkinson's Disease
3. Screening and Managing Suicide Risk in Parkinson's disease and Deep Brain Stimulation Surgery (DBS)



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Depression and Anxiety: Non-motor Symptoms in Prodromal Parkinson's Disease


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The Challenge of Accepting Depression and Anxiety

Disease or "Weakness of Character?"

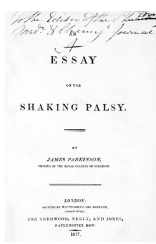

- Initially in medicine, depression and anxiety were considered "functional" whereas the rest of clinical medicine was "organic" and organized under neurology, cardiology, and general medicine
- The specialties of Neurology and Neuropsychiatry have helped us to begin to understand the role the brain plays in our thoughts, feelings and actions.
- These thoughts, feelings and actions are further influenced by the neurobiology of certain neurological disease, like Parkinson's Disease.

(adapted from Schiffer, 1999; Rathje, 2018)




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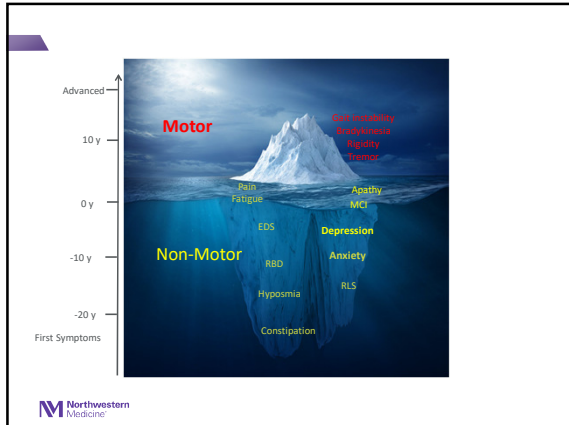
Depression and Anxiety in Parkinson's Disease

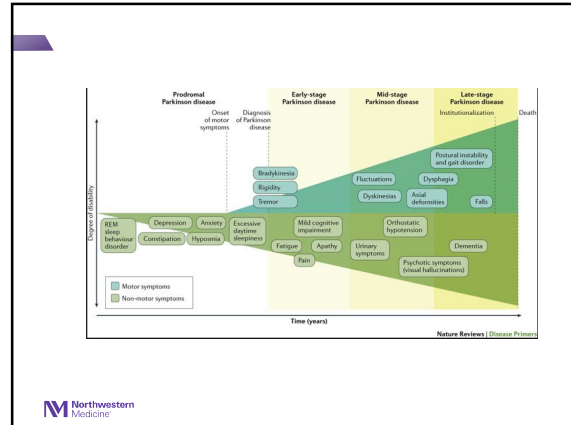
- Regarding a patient referred to Dr. Parkinson by a colleague, Dr. Maty: "A more melancholy object I never beheld."
- Dr. Parkinson's description of "apprehension" associated with falling and gait, may reflect anxiety.



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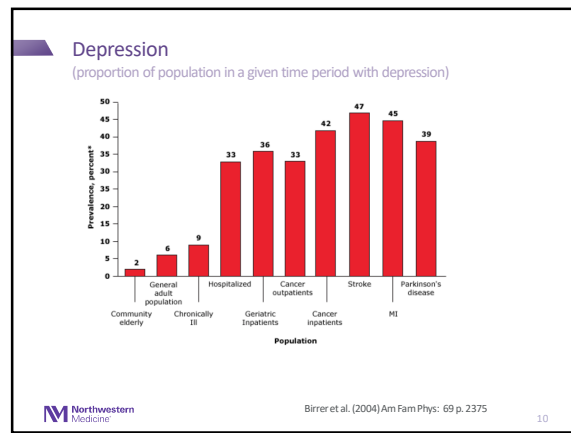


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Northwestern Medicine

Screening and Managing Depression in Parkinson's Disease

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Etiology of Depression in Parkinson's Disease*

Adapted from Even & Weintraub (2012)

Comorbid

- Patients who would have been depressed even if they had no PD (nonspecific-casual comorbid).
- Patients who would have been depressed if they had another disabling medical illness (nonspecific reactive comorbid).

Non-motor Symptom

- Patients who have depression related to the underlying pathophysiology of PD (specific comorbid).

*Depression is not limited to the patient – 20% of family caregivers, twice the rate of the general population. Some studies show ~60% of family caregivers experience depression when dementia is involved. With COVID-19, loneliness (Russell 1996) which is the feeling of being disconnected from others, is a contributing factor to depression (Gallagher 2020).

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Psychiatric Disorder: Major Depression DSM 5

- Experiencing symptoms almost every day for at least two weeks.
- More intense than the normal fluctuations in mood that all of us experience

At least five symptoms from the list below.

- At least one of these:
 - Depressed mood most of the day, almost every day (e.g. sadness, emptiness, or hopelessness).
 - Diminished interest or pleasure in all or almost all activities most of the day nearly every day.
- And three to four of these:
 - Significant weight loss when not dieting or weight gain.
 - Inability to sleep or oversleeping nearly every day.
 - Psychomotor agitation or retardation nearly every day.
 - Fatigue or loss of energy nearly every day.
 - Feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day.
 - Diminished ability to think or concentrate, or indecisiveness, nearly every day.
 - Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide.
- Cannot be due to a medical condition


Adapted from <http://evolutioncounseling.com/major-depressive-disorder-dsm-5-criteria/>

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Typical Symptoms of Depression in Parkinson's Disease

More Common	Less Common
<ul style="list-style-type: none"> • Anguish • Irritability • Anhedonia (inability to feel pleasure) • Decreased interest in activities • Pessimism regarding the future • Suicidal Ideation (20-33%) • Anxiety [13.5% comorbid (Wee et al, 2015)] 	<ul style="list-style-type: none"> • Guilt • Feelings of worthlessness • Self-Blame • Suicide


Depression is a major contributor to disability and poor quality of life (Schrag 2007).



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Challenges in Diagnosing Depression in Parkinson's Disease

Parkinson's Disease	Depression
<ul style="list-style-type: none"> • Masked Face • Decrease in spontaneity and speed of movements and reflexes (bradykinesia) • Sleep Disorder <ul style="list-style-type: none"> – Poor sleep efficiency – Decreased sleep time – Early morning awakening • Decreased Appetite 	<ul style="list-style-type: none"> • Blunted Affect • Psychomotor slowing "Soon evident are the slowed-down responses, near paralysis ... Ultimately the body is affected and feels sapped, drained. (William Styron 1991). • Sleep Disorder <ul style="list-style-type: none"> – Poor sleep efficiency – Decreased sleep time – Early morning awakening • Decreased Appetite




Chou et al., 2021

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Diagnosing Depression in Parkinson's Disease


- Face valid, self-report measures
 - Beck Depression Inventory (BDI-II)
 - Geriatric Depression Scale (GDS-30)
- Observer rating scales (collateral screening measure)
 - GDS – 15 renamed "Mood Assessment Scale"
- Structured interview
 - Hamilton Depression Rating Scale (HDRS)



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Depression Changes How People Perceive the World


- People with depression often say that they experience the world differently from others.
- "Time seems to drag on" and this altered perception of time may lead to feelings of helplessness, or the feeling that one is not in control of their lives
- William Styron (1991) wrote "In depression ... faith in deliverance, in ultimate restoration, is absent. The pain is unrelenting, and what makes the condition intolerable is the foreknowledge that no remedy will come, not in a day, an hour, a month or a minute. It is the hopelessness even more than pain that crushes the soul. Nearly immobilized and in a trance of supreme discomfort."
- Increased pain sensitivity



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Depression Can Exacerbate Symptoms of PD


- Cognitively
 - Executive dysfunction (e.g. slowed processing).
 - Retrieval memory problems.
 - Lack of motivation impacting decreased interest in activities.
- Physically
 - Psychomotor slowing increasing bradykinesia.
 - Sleep disorders.
 - Reduced sensitivity to visual contrast compared with healthy controls.




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Treatment of Depression in Parkinson's Disease

- No specific guidelines.
- Treatment is multifactorial.
 - depends on patient's medical status.
 - severity of depression.
 - patient preference for a given treatment.
 - neurologist's expertise in treating depression or psychiatrist's expertise in Parkinson's Disease (neuropsychiatrist, if available)
 - Exercise
 - Medication
 - Cognitive Behavioral Therapy
 - Repeat Transcranial Magnetic Stimulation
 - Electroconvulsive Therapy (for treatment resistant)
 - Deep Brain Stimulation (experimental for treatment resistant depression, Helen S. Mayberg MD).



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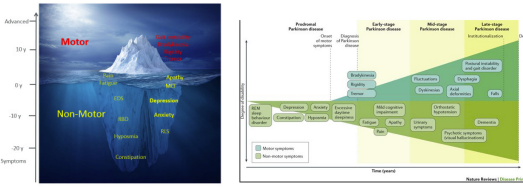


Screening and Managing Anxiety in Parkinson's Disease


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Anxiety in Parkinson's Disease

Non-Motor, Early Symptom




The iceberg diagram shows 'Non-Motor' symptoms (e.g., Hyposmia, Constipation, Depression, Anxiety, Fatigue, Sleep, Cognitive) below the water line and 'Motor' symptoms (e.g., Tremor, Rigidity, Bradykinesia, Postural instability, Falls) above it. The flowchart on the right tracks the 'Time course' from 'Preclinical Parkinson's disease' through 'Early-stage Parkinson's disease' to 'Mid-stage Parkinson's disease' and 'Late-stage Parkinson's disease'. It lists various non-motor symptoms like 'Depression', 'Anxiety', 'Fatigue', 'Cognitive', 'Sleep', 'Constipation', 'Hyposmia', 'Bladder', 'Pain', 'Parkinson's disease (motor)', 'Parkinson's disease (non-motor)', 'Parkinson's disease (mixed)', 'Parkinson's disease (atypical)', 'Parkinson's disease (rare)', 'Parkinson's disease (genetic)', 'Parkinson's disease (idiopathic)', 'Parkinson's disease (familial)', 'Parkinson's disease (sporadic)', 'Parkinson's disease (idiopathic)', 'Parkinson's disease (familial)', 'Parkinson's disease (sporadic)', 'Parkinson's disease (idiopathic)', 'Parkinson's disease (familial)', 'Parkinson's disease (sporadic)'.



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Anxiety

- Anxiety –faulty activation of fight or flight system at times when there is no fear-causing stimulus present.
- Affects ~40% of people with Parkinson's Disease.
 - May predate motor symptoms by 10 years.
 - May be comorbid with depression.




<http://www.northwestern.edu/parkinsons/psychiatry>

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Diseases Associated with Anxiety

- Parkinson's disease
- Stroke
- Heart disease
- Diabetes
- Thyroid (e.g. hyperthyroidism)
- Respiratory disorders
- Alcohol, drugs, medications
- Chronic pain or irritable bowel syndrome
- Insomnia
- Rare tumors



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Etiology of Anxiety in Parkinson's Disease


Adapted from Richard (2005)

Comorbid

- Patients who would have been anxious even if they had no PD.
- Patients with a disease associated with anxiety (e.g. heart disease).
- A particular subtype of depression (e.g. anxious or agitated depression).

Non-motor Symptom

- Patients who have anxiety related to the underlying pathophysiology of PD.
 - Age of onset for anxiety in PD (and particularly panic disorder) is older than expected for psychiatric anxiety disorders.



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Psychiatric Disorder: Anxiety DSM 5


- Excessive anxiety and worry (apprehensive expectation) at least 6 months about a number of events
- The worry is hard to control

Anxiety and worry associated with three (or more) symptoms from the list below.

- Restlessness, feeling keyed up or on edge
- Being easily fatigued
- Difficulty concentrating or mind going blank
- Irritability
- Muscle tension
- Sleep disturbance (difficulty falling or staying asleep, or restless, unsatisfying sleep)

– Cannot be due to a medical condition


Adapted from Reynolds & Kamphaus (2013)



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Challenges in Diagnosing Anxiety in Parkinson's Disease


- May be mistaken for:
 - Akathisia which is motor restlessness secondary to levodopa withdrawal.
 - Restless legs syndrome unpleasant or uncomfortable urge to move the legs that occurs during periods of inactivity, particularly in the evenings, and is transiently relieved by movement. During sleep, most patients with RLS have characteristic limb movements, called periodic limb movements of sleep (PLMS).
 - Autonomic dysfunction such as excessive perspiration.



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Common Types of Anxiety in Parkinson's Disease


- Generalized Anxiety Disorder
 - Excessive, ongoing anxiety and worry that are difficult to control and interfere with day-to-day activities.
- Social Anxiety Disorder (Social Phobia)
 - discomfort around social interaction, and concern about being embarrassed and judged by others
 - experienced as fear and anxiety, and will be accompanied by autonomic arousal, including perspiration, apnea, tremors, tachycardia, and nausea
- Panic Disorder
 - Sudden episode of intense fear that triggers severe physical reactions such that one might think they are losing control, having a heart attack or even dying.



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Diagnosing Anxiety in Parkinson's Disease


- Face valid, self-report measures
 - Adult Manifest Anxiety Scale (AMAS) – adult and geriatric versions
 - Beck Anxiety Inventory (BAI)
 - State Trait Anxiety Inventory (STAI)
- Observer rating scales
 - not available
- Structured interview



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Anxiety Changes How People Perceive the World


- Produces confusion and distortion of perception: time and space but also of persons and the meanings and events. In PD, patients have difficulty interpreting the other person's nonverbals (e.g. happy, sad).
- Selectivity of attention: anxious people select certain things in their environment and overlook others in their effort to prove that they are justified in considering the situation frightening. In PD, patients often have problems multitasking. Hampers concentration and new learning.
- Rumination (“moping behavior”) need or desire to be alone with your own thoughts and to “deal with your anxiety” without the help of others, without engaging in fun life activities. Ironically your thoughts are your enemy. Isolation.
- Agoraphobia – fear of being unable to escape – someone that refuses to leave a few very select environments (like home). Isolation.



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Anxiety can exacerbate symptoms of PD


- Cognitive
 - The awareness of being nervous and frightened, along with the physiological sensations (e.g. perspiration) interferes with attention and concentration. Indirectly this can compromise other cognitive functions such as memory.
- Physical
 - Increase tremor.
 - Cause excessive perspiration. Autonomic dysfunction, off periods and dyskinesias in PD can be associated with excessive sweating.
 - Increase fatigue and interfere with quality of sleep.



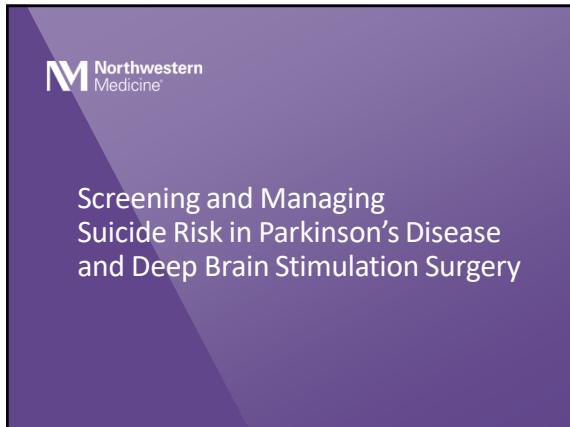
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Treatment of Anxiety in Parkinson's Disease

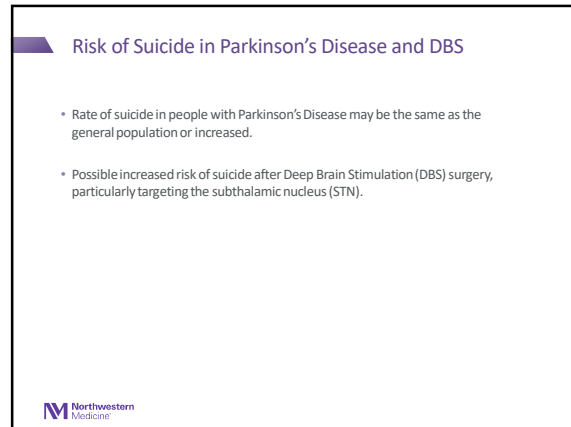
- No specific guidelines
- Is limited and comes mainly from randomized trials for the treatment of depression in Parkinson's in which anxiety was a secondary outcome.
- First manage other diseases that cause/contribute to anxiety.
- May involve levodopa dosing strategies to mitigate “wearing off.”
- Cognitive Behavioral Therapy (CBT) using systematic desensitization.



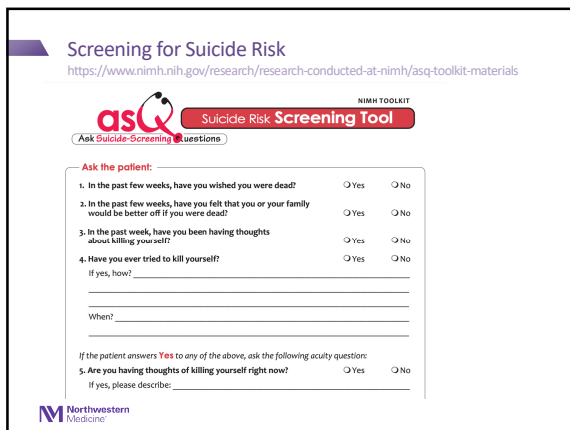
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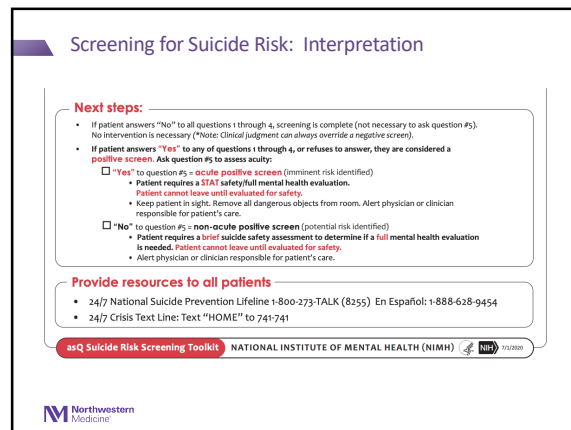
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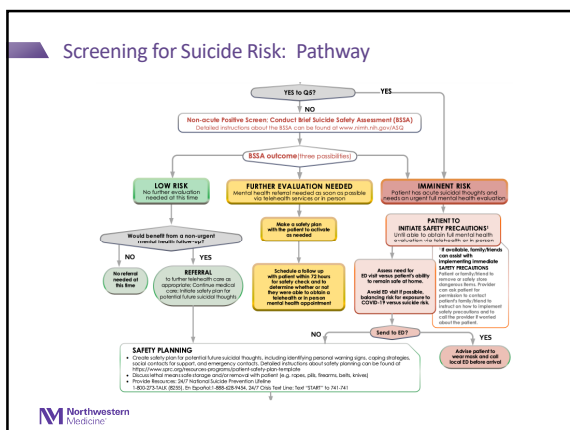
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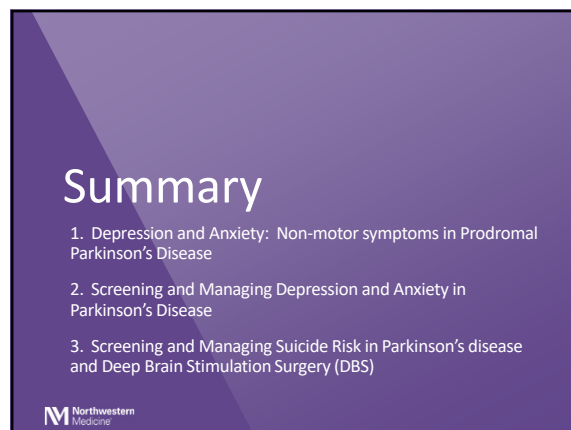
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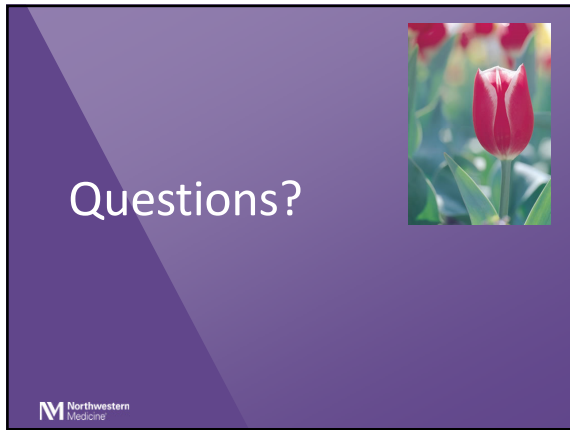
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