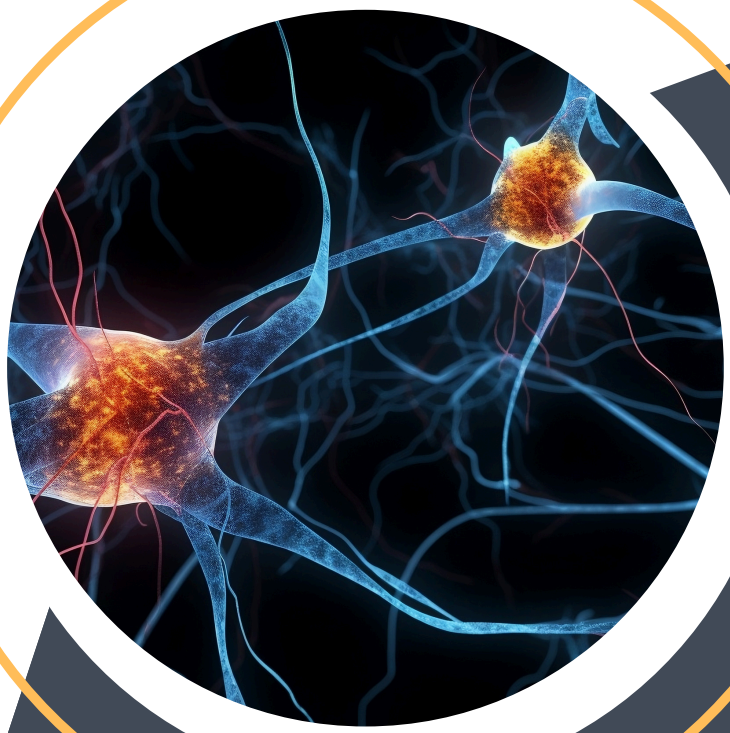
Buffalo Occupational Therapy



PARKINSON'S DISEASE
CLINICIAN GUIDE

Buffalo Occupational Therapy

PARKINSON'S DISEASE INFORMATION

A CLINICIAN RESOURCE

TABLE OF CONTENTS

EDUCATION ON PARKINSON'S DISEASE

OVERVIEW OF PARKINSON'S DISEASE

Parkinson's Disease is a slowly progressing condition that affects the brain. While it is not life-threatening, there is currently no cure. If not managed well, it can become very challenging. Parkinson's impacts both movement and thinking skills, which means it can affect all parts of daily life.

KEY POINTS

Progressive Condition: Parkinson's gets worse over time and affects how you move and think.

Dopamine Depletion: It reduces the brain's ability to make dopamine, a chemical that helps control movement. This is usually helped by dopaminergic medication that is increased throughout your life journey with Parkinson's Disease.

Lewy Bodies: Some people with Parkinson's have extra brain cell problems called Lewy Body Clusters, which can make symptoms worse.

Medication: Medicines like levodopa are often used to help manage symptoms by increasing dopamine levels.

Occupational Impact: Understanding Parkinson's helps in creating strategies to keep you independent and improve your quality of life.

NEUROLOGICAL IMPACT

Parkinson's mainly affects the part of the brain that produces dopamine. This area, called the basal ganglia and substantia nigra, helps control complex movements and automatic body functions. With Parkinson's, these areas stop working well, which makes movement difficult.

The substantia nigra becomes lighter in color and produces less dopamine. Dopamine is important for smooth and controlled movements. Without enough dopamine, you may experience symptoms like shaking, stiffness, and slow movement.

MEDICATION AND MANAGEMENT

As Parkinson's disease progresses, pharmacologic management often includes dopaminergic agents such as levodopa. These medications function by supplementing dopamine levels in the striatum, addressing the underlying neurotransmitter deficit associated with motor symptoms. Improved dopamine availability can significantly enhance motor control, reduce bradykinesia and rigidity, and support greater functional independence in daily activities.

FUNCTIONAL IMPLICATIONS

Understanding the neurophysiological and functional impact of Parkinson's disease is essential for developing effective, personalized care plans. As the disease progresses, motor and non-motor symptoms can interfere with daily routines, mobility, cognition, and mood. Educating clients about the disease process promotes self-efficacy, enhances adherence to therapy, and supports long-term independence.

Clinical Tips for Practitioners:

- Explain symptom patterns (e.g., bradykinesia, rigidity, tremor, postural instability) using simple analogies and visual aids.
- Link brain function to task performance, such as how dopamine loss affects motor initiation and sequencing.
- Encourage clients to track fluctuations (on/off times) and share these with their healthcare team to optimize medication timing and therapy sessions.
- Promote activity modification strategies (e.g., breaking tasks into steps, using cues, or adaptive equipment) to support engagement in meaningful occupations.
- Foster routine education updates to help clients anticipate and manage new symptoms proactively, increasing participation and emotional resilience.

SYMPTOMS OF PARKINSON'S DISEASE

EARLY SYMPTOMS

Nonmotor Symptoms: These include loss of smell, constipation, sleep disorders, mood changes, urgent need to urinate, and low blood pressure when standing up.

KEY SYMPTOMS OF PARKINSON'S DISEASE

Tremor: Shaking, often in the hands, called "resting tremor" or "pill rolling." It usually stops when you move or sleep but can get worse with stress.

Postural Instability: You might have rounded shoulders, a forward head, a stooping posture, and trouble with balance and reflexes, making it harder to walk normally.

Bradykinesia: This means very slow movement and is the main symptom doctors look for when diagnosing Parkinson's. It can make starting and doing movements very difficult.

Muscle rigidity and cramps: Your muscles can feel stiff and tight, causing a jerky or "cogwheel" movement pattern.

Decreased Muscle Coordination: The muscles that should work together (agonist and antagonist muscles) don't coordinate well, making movements less smooth and more difficult. This is true even with medication or treatments like deep brain stimulation.

MOVEMENT AND MOBILITY ISSUES

Gait Disturbances: Look for small steps (shuffling), uneven steps (instability), freezing (suddenly stopping and having trouble starting again), and general difficulties in walking and posture.

MANAGING SYMPTOMS

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STAGES OF PD

THERE ARE 5 STAGES OF PARKINSON'S DISEASE.

Stage one: Symptoms affect only one side of the body.

Stage two: Symptoms begin affecting both sides of the body, but balance is still intact.

Stage three: Symptoms are mild to moderate and balance is impaired, but the person can still function independently

Stage four: Symptoms cause severe disability, but clients can still walk or stand without assistance

Stage five: Symptoms cause the client to become wheelchair-bound or bedridden, unless assisted.

PHYSICAL HEALTH

LSVT BIG and LOUD

Incorporate principles from evidence-based programs such as LSVT BIG (motor amplitude training) and LSVT LOUD (vocal intensity training) to enhance gross motor movements and vocal projection in individuals with Parkinson's disease.

- **Tip 1:** Use large, exaggerated movement cues during mobility tasks to combat bradykinesia.
- **Tip 2:** Integrate vocal exercises to support breath support and speech intelligibility, especially during self-care ADLs or community participation.

Postural Control

Facilitate dynamic postural activities that challenge anticipatory and reactive balance. Use task-based reaching and object manipulation at varied heights and distances to stimulate trunk rotation, weight shifting, and coordination.

- **Tip 1:** Vary object weight and visual complexity to increase challenge.
- **Tip 2:** Integrate postural training into meaningful occupations (e.g., reaching for items in a kitchen or closet).

Reaction Time and Agility

Design interventions that address delayed motor initiation and directional change. Include step-tap drills, visual cueing, and dual-task challenges to support real-world mobility and fall prevention.

- **Tip 1:** Use auditory or visual timers to simulate real-world reaction demands.
- **Tip 2:** Gradually layer in dual-task demands to simulate daily environmental complexity.

Managing Muscle Stiffness

Introduce gentle active stretching and moist heat to manage rigidity and reduce the risk of contractures. Educate clients and caregivers on early prevention techniques.

- **Tip 1:** Focus on slow, sustained stretches of flexor groups, particularly in the upper limbs and neck.
- **Tip 2:** Encourage incorporation of stretching into daily routines (e.g., morning or bedtime) to improve compliance and function.

COGNITIVE HEALTH

Protecting Cognitive Abilities

Cognitive decline in Parkinson's disease can affect executive function, working memory, and task-switching. Use engaging, function-based cognitive activities that integrate dual-tasking and real-world problem-solving.

- **Tip 1:** Incorporate everyday tasks (e.g., medication sorting, scheduling) to target real-life executive demands.
- **Tip 2:** Use metacognitive prompts to build insight into errors and develop flexible thinking.

Repetition and Learning

Utilize principles of errorless learning, spaced retrieval, and rhythm-based cueing to support procedural and declarative memory during daily routines.

- **Tip 1:** Pair tasks with consistent environmental cues (e.g., brushing teeth after breakfast music).
- **Tip 2:** Practice tasks in the same sequence and context to reinforce motor-cognitive learning.

Memory Strategies

Train clients to use internal strategies (visualization, association, chunking) and external supports (planners, alarms, checklists) to reduce cognitive load and support recall.

- **Tip 1:** Select memory techniques based on client strengths (e.g., visual vs. auditory learners).
- **Tip 2:** Rehearse strategies in situational role-play for greater carryover.

Clear Communication

Cognitive and motor symptoms may affect receptive language. Educate communication partners to speak at a slower pace with simplified phrasing.

- **Tip 1:** Model slowed and clearly enunciated speech for caregivers and family.
- **Tip 2:** Teach clients cueing techniques to advocate for clarification or repetition.

PSYCHOSOCIAL SKILLS

Group Support

Facilitate opportunities for clients to engage in peer-led or clinician-guided support groups. These groups provide emotional validation, reduce isolation, and promote shared coping strategies among individuals with Parkinson's disease.

- **Tip 1:** Recommend local or virtual groups that match the client's comfort level and stage of disease.
- **Tip 2:** Debrief after group sessions to reinforce insights and emotional regulation skills.

Addressing Social Barriers

Target psychosocial goals related to self-advocacy, self-perception, and stigma management. Use

cognitive-behavioral strategies to reduce feelings of embarrassment and foster confident communication in social settings.

- **Tip 1:** Role-play social scenarios to help clients practice setting boundaries or disclosing symptoms.
- **Tip 2:** Incorporate goal-setting for social participation in meaningful life roles (e.g., volunteering, family events).

Therapeutic Conversations

Include structured time within sessions for reflective dialogue. Guided discussions of emotional highs and lows can strengthen therapeutic alliance, improve emotional awareness, and serve as informal mood screening.

- **Tip 1:** Use tools like mood thermometers or journaling prompts to guide conversations.
- **Tip 2:** Document themes over time to identify patterns related to symptom fluctuations or social triggers.

ENVIRONMENT-BASED INTERVENTIONS

Home Modifications

Assess the home for modifiable barriers that interfere with safe and efficient ADL/IADL performance. Interventions should promote access while avoiding unnecessary restriction of mobility or engagement in valued spaces.

- **Tip 1:** Emphasize client-centered modifications (e.g., grab bars, lighting, step markings) that support independence, not avoidance.
- **Tip 2:** Monitor for "life space shrinkage"—where clients progressively limit their physical world. Encourage safe participation in diverse home zones and community settings.

Equipment

Prescribe durable medical equipment (DME) judiciously. Prioritize restorative or compensatory strategies first to promote neuromotor engagement. Use mobility aids as transitional tools rather than permanent solutions when appropriate.

- **Tip 1:** Use dynamic support (e.g., trekking poles, gait belts) during therapeutic activity to promote active balance reactions.
- **Tip 2:** Educate clients on the “use it or lose it” principle, especially for lower limb strength, proprioception, and reaction time.

Life Space

Utilize tools like the Life Space Assessment to evaluate how often and how far a client moves through their environment. Use findings to guide therapy goals that expand safe engagement within the home and community.

- **Tip 1:** Integrate Life Space metrics into goal tracking (e.g., from “within-room only” to “community mobility 3x/week”).

OCCUPATION-BASED INTERVENTIONS

Daily Activities

Target functional mobility and self-care tasks that are commonly disrupted in Parkinson’s (e.g., bed mobility, dressing, reaching, and gait transitions). Use rhythmic auditory stimulation (e.g., metronomes or beat-based cues) to improve motor planning and timing.

- **Tip 1:** Incorporate task-specific training with real-world objects in the client’s natural environment.
- **Tip 2:** Practice tasks in varying contexts to promote generalization and motor adaptability.

Minimizing Freezing

Freezing of gait and movement can be reduced by minimizing clutter, providing visual cueing (e.g., floor markers), and maintaining predictable routines.

- **Tip 1:** Introduce external cueing strategies like laser canes, counting steps aloud, or taped gridlines for gait initiation.
- **Tip 2:** Identify environmental triggers (e.g., thresholds, crowds) and create personalized response plans.

Employment

Address vocational engagement using occupation-based assessments and tools like the Kawa River Model for contextual identity mapping and the Self-Efficacy Scale to guide goal development and monitor progress.

- **Tip 1:** Collaborate with employers on reasonable accommodations under ADA guidelines (e.g., adjusted hours, rest breaks).
- **Tip 2:** Use work simulations or graded return-to-work tasks to evaluate cognitive and physical stamina**.**

EDUCATION CHECKLIST:

✅	Education Topic	Date Completed
☐	**Speed & Sensory Awareness** – Goal: Improve speed, acceleration, and movement awareness	_____
☐	**Muscle Force & ADL Participation** – Activities: Stretching, walking, biking, resistance, eccentric training	_____
☐	**Gait & Rhythmicity** – RAS and sensorimotor synchronization to improve step quality	_____
☐	**Postural Control & Balance** – Dynamic standing tasks on unstable surfaces	_____
☐	**Mobility & Standing Balance** – End-weighted coordination, spinal mobilization, multi-surface walking	_____
☐	**Posture Improvement** – Sit-to-stand drills, ladder stepping, unstable surface navigation	_____
☐	**Dual Tasking** – Combine motor + cognitive challenges to simulate real-world demands	_____
☐	**Proprioception Enhancement** – Activities include agility ladders, cue-based starts/stops, and weighted tools	_____
☐	**Coordination Improvement** – Visual/auditory reaction drills and anticipatory posture training	_____

Comments:

ADDITIONAL INFORMATION:

SPEED AND SENSORY AWARENESS

Goal: Increase speed, acceleration, and sensory awareness of movement.

MUSCLE FORCE PRODUCTION AND ADLS PARTICIPATION

Goal: Increase muscle strength, communication, cognitive function, and participation in daily activities (ADLs); decrease bradykinesia.

Activities: Stretching, Walking, Riding a bike, Standard resistance training, High-force eccentric training

GAIT AND RHYTHMICITY IMPROVEMENT

Goal: Enhance step rhythm and walking ability.

Method: Rhythmic Auditory Stimulation (RAS) using sensorimotor synchronization (SMS) as gait cues.

Benefits: Improves step length, duration, speed, and variability.

POSTURAL CONTROL AND BALANCE

Goal: Improve postural control and automaticity.

Activity: Stand on a moving platform (cushion, rocker board, or Bosu) and perform a motor task like force-matching precision grip while maintaining balance.

MOBILITY AND STANDING BALANCE

Goal: Improve symptoms, mobility, and standing balance.

Activities:

- Two-handed coordination exercises with end-weighted sticks
- Stabilization and spinal mobilization exercises
- Trunk and limb movement with correct posture
- Strengthening exercises with and without added weights
- Movements with visual pacing, standing, walking, running, and jumping on different surfaces

POSTURE IMPROVEMENT

Benefits: Enhance control, modify trunk inertia, and improve dual-tasking abilities.

Activities:

- Stand to sit on unstable surfaces while holding weighted hand tools
- Rhythmic and reciprocal limb and trunk movements with increasing speed
- Stepping into the eye of a rope ladder laid on unstable surfaces
- Stepping onto exercise blocks of varying stiffness and height

COMBINING ACTIVITIES FOR DUAL TASKING

Combine any of these activities to create dual-tasking exercises that reflect the multi-system requirements of daily activities.

PROPRIOCEPTION ENHANCEMENT

Rationale: Improve joint position sense, force, and velocity awareness.

Activities:

- Walking through an agility ladder with and without trunk rotation
- Rapid response to visual and auditory cues
- Concurrent arm and trunk movements
- Predictable and unpredictable start and stop of movements
- Exercises using hand-held sticks with ball-shaped weights

COORDINATION IMPROVEMENT

Rationale: Improve reactive movements, anticipatory postural adjustments, and multisensory stimulation.

Activities:

- Reactive movements to external auditory and visual stimuli
- Anticipatory postural adjustments
- Action observation and auditory cueing

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