Physical therapist management of Parkinson disease: a clinical practice guideline from the American Physical Therapy Association.

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American Physical Therapy Association (APTA)

Osborne JA, Botkin R, Colon-Semenza C, et al. Physical therapist management of Parkinson disease: a clinical practice guideline from the American Physical Therapy Association. Phys Ther. 2022 Apr 1;102(4):pzab302. [291 references] PubMed

View Original Guideline

Overview

Guideline Objective

To help improve the physical therapist management of individuals with Parkinson disease (PD) based on the current best evidence

Patient Population

Adults with idiopathic, typical PD

Note: The guideline is not intended to address management of individuals with atypical Parkinsonism disorders or other neurodegenerative conditions.

Recommendations

Recommendation Statements

Aerobic Exercise

Physical therapists should implement moderate- to high-intensity aerobic exercise to improve oxygen consumption (VO~2), reduce motor disease severity, and improve functional outcomes in individuals with Parkinson disease (PD). (**Evidence Quality: High; Recommendation Strength: Strong ♦♦♦♦**)

Resistance Training

Physical therapists should implement resistance training to reduce motor disease severity and improve strength, power, nonmotor symptoms, functional outcomes, and quality of life in individuals with PD. (**Evidence Quality: High; Recommendation Strength: Strong ♦♦♦♦**)

Balance Training

Physical therapists should implement balance training intervention programs to reduce postural control impairments and improve balance and gait outcomes, mobility, balance confidence, and quality of life in individuals with PD. (**Evidence Quality: High; Recommendation Strength: Strong ♦♦♦♦**)

Flexibility Exercises

Physical therapists may implement flexibility exercises to improve range of motion (ROM) in individuals with PD. (**Evidence Quality: Low; Recommendation Strength: Weak ♦♦**)

External Cueing

Physical therapists should implement external cueing to reduce motor disease severity and freezing of gait (FOG) and to improve gait outcomes in individuals with PD. (**Evidence Quality: High; Recommendation Strength: Strong ♦♦♦♦**)

Community-Based Exercise

Physical therapists should recommend community-based exercise to reduce motor disease severity and improve nonmotor symptoms, functional outcomes, and quality of life in individuals with PD. (**Evidence Quality: High; Recommendation Strength: Strong ♦♦♦♦**)

Gait Training

Physical therapists should implement gait training to reduce motor disease severity and improve stride length, gait speed, mobility, and balance in individuals with PD. (**Evidence Quality: High; Recommendation Strength: Strong ♦♦♦♦**)

Task-Specific Training

Physical therapists should implement task-specific training to improve task-specific impairment level and functional outcomes for individuals with PD. (**Evidence Quality: High; Recommendation Strength: Strong ♦♦♦♦**)

Behavior-Change Approach

Physical therapists should implement behavior-change approaches to improve physical activity and quality of life in individuals with PD. (**Evidence Quality: High; Recommendation Strength: Moderate ♦♦♦ – Downgraded**)

Integrated Care

Physical therapist services should be delivered within an integrated care approach to reduce motor disease severity and improve quality of life in individuals with PD. (**Evidence Quality: High; Recommendation Strength: Strong ♦♦♦♦**)

Telerehabilitation

Physical therapist services may be delivered via telerehabilitation to improve balance in individuals with PD. (**Evidence Quality: Moderate; Recommendation Strength: Weak ♦♦ – Downgraded**)

Evidence Rating Scheme

Rating Quality of Evidence

Rating of Overall Quality of Evidence	Definition
High	Preponderance of Level I or II evidence with at least 1 Level I study. Indicates a high level of certainty that further research is not likely to change outcomes of the combined evidence.
Moderate	Preponderance of Level II evidence. Indicates a moderate level of certainty that further research is not likely to change the outcomes direction of the combined evidence; however, further evidence may impact the magnitude of the outcome.
Low	A moderate level of certainty of slight benefit, harm, or cost, or a low level of certainty for moderate-to-substantial benefit, harm, or cost. Based on Level II thru V evidence. Indicates that there is some but not enough evidence to be confident of the true outcomes of the study and that future research may

Rating of Overall Quality of Evidence	Definition
	change the direction of the outcome and/or impact magnitude of the outcome.
Insufficient	Based on Level II thru V evidence. Indicates minimal or conflicting evidence to support the true direction and/or magnitude of the outcome. Future research may inform the recommendation.

Level of Evidence Definitions

Level of Evidence	Types of Studies				
	Intervention/ Prevention	**Pathoanatomic/ Risk/ Clinical Course/ Prognosis/ Differential Diagnosis**	**Diagnosis/ Diagnostic Accuracy**	**Prevalence of Condition/ Disorder**	**Exam/ Outcomes**
I. Evidence obtained from high-quality systematic reviews, diagnostic studies, prospective studies, or randomized controlled trials (RCTs)	Systematic review of high-quality RCTs[a] High-quality RCT[a]	Systematic review of prospective cohort studies High-quality prospective cohort study[b]	Systematic review of high-quality diagnostic studies High-quality diagnostic study with validation[c]	Systematic review of high quality cross-sectional studies High-quality cross-sectional study[d]	Systematic review of prospective cohort studies High-quality prospective cohort study
II. Evidence obtained from lesser-quality diagnostic studies, prospective	Systematic review of high-quality cohort studies	Systematic review of retrospective cohort studies Lower-quality	Systematic review of exploratory diagnostic studies or consecutive	Systematic review of studies that allows relevant estimate	Systematic review of lower-quality prospective cohort

studies, or RCTs (e.g., weaker diagnostic criteria and reference standards, improper randomization, no blinding, less than 80% follow-up)	High-quality cohort study[b] High-quality outcomes research High-quality quasi-experimental study[g] High-quality single subject design[h] Lower-quality RCT[e]	prospective cohort study High-quality retrospective cohort study Consecutive cohort study Outcomes study or ecological study[f]	cohort studies High-quality exploratory diagnostic study Consecutive retrospective cohort study	Lower-quality cross-sectional study	studies Lower-quality prospective cohort study
III. Case-controlled studies or retrospective studies	Systematic review of case-controlled studies High-quality case-controlled study Outcomes study or ecological study[f] Lower-quality cohort study	Lower-quality retrospective cohort study High-quality cross sectional study Case-controlled study	Lower-quality exploratory diagnostic study Nonconsecutive retrospective cohort study	Local nonrandom study	High-quality cross-sectional study
IV. Case series	Case series	Case series	Case-controlled study		Lower-quality cross-

					sectional study
V. Expert opinion	Expert opinion	Expert opinion	Expert opinion	Expert opinion	Expert opinion

a High quality includes RCT>80% follow-up; blinding; appropriate randomization procedures.

b High-quality or dramatic effect cohort study includes >80% follow-up.

c High-quality diagnostic study includes consistently applied reference standard and blinding.

d High-quality prevalence study is a cross-sectional study that uses a local and current random sample or censuses.

e Weaker diagnostic criteria and reference standards, improper randomization, no blinding, <80% follow-up may add threats to bias and validity.

f High-quality outcome or ecological studies use instrumental variable(s) or other control for confounding factors.

g High-quality comparative study without random assignment to groups.

h Must have a minimum of 'a' and 'b' phase.

Recommendation Rating Scheme

Strength of Recommendations

Strength	Strength Visual	Definition
Strong	♦♦♦♦	A high level of certainty of moderate-to-substantial benefit, harm, or cost, or a moderate level of certainty for substantial benefit, harm, or cost (based on a preponderance of Level I or II evidence with at least 1 Level I study).
Moderate	♦♦♦	A high level of certainty of slight-to-moderate benefit, harm, or cost, or a moderate level of certainty for a moderate level of benefit, harm, or cost (based on a preponderance of Level II evidence, or a single high-quality RCT).
Weak	♦♦	A moderate level of certainty of slight benefit, harm, or cost, or a low level of certainty for moderate-to-substantial benefit, harm, or cost (based on Level II through V evidence).

Strength	Strength Visual	Definition
Theoretical/Foundational	♦	A preponderance of evidence from animal or cadaver studies, from conceptual/theoretical models/principles, or from basic science/bench research; or published expert opinion in peer-reviewed journals that supports the recommendation.
Best Practice	♦	Recommended practice based on current clinical practice norms; exceptional situations in which validating studies have not or cannot be performed yet there is a clear benefit, harm, or cost; or expert opinion.

Note: Refer to 'Table 5. Linking the Strength of Recommendation, Quality of Evidence, Rating of Magnitude, and Preponderance of Risk Versus Harm to the Language of Obligation' in the original guideline for additional information.

Magnitude of Benefit, Risk, Harms, or Cost

Rating of Magnitude	Definition
Substantial	The balance of the benefits vs risk, harms, or cost overwhelmingly supports a specified direction.
Moderate	The balance of the benefits vs risk, harms, or cost supports a specified direction.
Slight	The balance of the benefits vs risk, harms, or cost demonstrates a small support in a specified direction.

Related Content

Supporting Documents

- The Original Guideline is also available in Spanish.
- Appendix 2: PICO Questions Used to Define Literature Search.
- Appendix 3: Excluded Literature.

- Appendix 4: References for Included Literature.
- Appendix 5: Summary of Data Findings.
- Appendix 6: Quality Assessments.
- Correction; 2022 Aug 27.
- APTA Clinical Practice Guidelines Development Manual.

Implementation Tools

No implementation tools available.

Patient Education

No patient education materials available.

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TRUST Scorecard

Composition of Guideline Development Group (GDG)

Multidisciplinary GDG Members	Yes
Methodologist Involvement	Yes
Incorporation of Patient and Public Perspective	★★★★☆

Systematic Review of Evidence

Literature Search	★★★★★
Study Selection	★★★★★
Evidence Synthesis	★★★★★

Foundations for Recommendations

Strength of Evidence Grade	★★★★★
Description of Benefits and Harms of Recommendations	★★★★☆
Summary of Evidence Supporting Recommendations	★★★★☆
Strength of Recommendations Rating	★★★★★
Clear Articulation of Recommendations	★★★★★

Funding Source — Yes

Disclosure and Management of Financial Conflicts of Interests — ★★★★★

External Review — ★★★★☆

Updating — ★★★★★

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