**Parkinson’s Annual Exam**

**Population:** Older adults diagnosed with Parkinson’s disease

**Why:** Parkinson’s disease is a neurodegenerative disorder that is characterized by tremor, rigidity, bradykinesia, postural instability, and a progressive decline in functional mobility.1 Prevalence of Parkinson’s in individuals over the age of 65 is 1-3%.2 Individuals with Parkinson’s disease (PD) experience a variety of motor and non-motor impairments including slow and rigid movements, impaired reflexes, freezing of gait, balance impairments, fatigue, depression, anxiety, sleep disturbances, cognitive impairment, dysarthria, difficulty swallowing, and bowel and bladder problems.1,3 Autonomic dysfunction puts individual’s with Parkinson’s at increased risk of developing cardiovascular and gastrointestinal diseases, as well as bowel and bladder dysfunction.2,4 Additionally, individuals with Parkinson’s are at increased risk of depression and anxiety as they cope with the stresses of changes in cognition and function.5,6 Due to the chronic and progressive nature of the disease, individuals with Parkinson’s will require intermittent physical therapy services to manage symptoms and changes in mobility at different points in time during the course of their life.3 An annual PT exam would be beneficial in this population to monitor progression of motor symptoms over time and evaluate if physical therapy is indicated given the patient’s current functional status. Annual wellness visits would also allow physical therapists to track changes in other realms of the patient’s health, such as physical activity, mental health, nutrition, and cognitive status.7 Physical therapists can provide patients with health and wellness resources or recommend referrals to other health care providers if they identify a need based on the patient’s co-morbidities, risk factors, or changes in health.7 Patient’s with Parkinson’s will benefit from annual physical therapy exams, as it will ensure that all aspects of their physical, mental, and social health are being acknowledged and addressed appropriately across difference stages of life.

**Annual Exam:**

**Self-Report Outcome Measures:** Patients will be asked to complete the following subjective questionnaires at home or in the waiting room prior to their visit. The therapist can score the outcome measures at the beginning of the visit and use the results to guide their subjective and objective exam, as well as make referrals to appropriate providers.

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|  | **Test of:**  | **Positive finding:**  | **Clinical reasoning:**  |
| **Parkinson’s Disease Questionnaire-39** **(PDQ-39)**(Appendix A) | Health-related quality of life (HRQoL) in individuals with Parkinson’s disease  | Total scores for each dimension range from 0-100, where lower scores indicate greater QoL.8 | This is a comprehensive questionnaire that assesses various aspects of individuals’ quality of life that can be affected by their Parkinson’s.9 HRQoL is measured across 8-scales: mobility, ADLs, emotional well-being, stigma, social support, communication, cognition, and bodily discomfort.9 The PDQ-39 has excellent psychometric properties and is valid and reliable for use with patients in all five Hoehn & Yahr (H&Y) stages of PD.9,10  |
| **Parkinson’s Fatigue Scale (PFS-16)**(Appendix B) | Physical fatigue | >8: indicates significant fatigue11 | Fatigue is one of the most common non-motor Parkinson’s symptoms, affecting 58% of individuals diagnosed with PD.12 This short screen identifies the impact of physical fatigue on functional mobility and can be used to help guide clinical intervention.13 |
| **Geriatric Depression Scale Short Form** **(GDS-15)**(Appendix C) | Depression | > 5: indicates depression6 | It is important to screen patients for depressive symptoms. Depression is prevalent in 17% of individuals with PD, negatively impacts quality of life, fatigue, and function, and increases caregiver burden and mortality rate.12,6 The GDS serves as a valid and reliable tool to allow physical therapists to screen for depressive symptoms in older adults with Parkinson’s and provide referrals as needed.5,6  |
| **Freezing of Gait Questionnaire (FOGQ)** | Freezing of gait  | Total calculated on a 25-point scale (0-24), where a higher score indicates more severe freezing of gait.14,15 | This is a quick, valid, and reliable tool to assess the extent to which freezing of gait impacts functional mobility in individuals with more advanced stages of PD.10,14,16 |
| **Mini-Nutritional Assessment (MNA)**(Appendix D) | Nutritional status  | > 24: adequate nutrition17-23.5: at risk for malnutrition<17: protein-calorie undernutrition  | Both geriatric and Parkinson’s populations are at increased risk of malnutrition, which is associated with negative health outcomes including hospitalization, osteoporosis, falls, decreased quality of life, and poor outcomes.17–19 This quick nutritional screening tool evaluates the risk of malnutrition in older adults and identifies when a referral to a registered dietician is indicated.20  |

**Subjective:** The subjective history portion of the annual exam allows the physical therapist, patient, and caregiver(s) to engage in a dialogue about changes in the patient’s health over the course of the last year and determine what services are appropriate for the patient at this time. *(20-25 minutes)*

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|  | **Test of:**  | **Positive finding:**  | **Clinical reasoning:**  |
| PMH  | Review and revise the medical record to reflect changes in health status in the past year | N/A | It is important to verify the patient’s past medical history and update the medical record to reflect any changes in health status in the past year. As part of the PMH review, the PT should screen for red and yellow flags. Incidence of new symptoms/events may indicate a need for PT services or referral to other providers.  |
| Review of Medications  | Confirm and update medication list to ensure accuracy and assess patient compliance. Review timing of medications | >5 drugs = polypharmacy5 | Medication reconciliation is important to verify that all orders are up to date, identify potential side-effects, assess risk of polypharmacy, and ensure the patient is able to manage their medication list. Polypharmacy increases risk of adverse drug reaction, inappropriate drug use, falls, and hospitalization in older adults.21,22 Levodopa is a dopamine precursor used to manage bradykinesia in individual’s with Parkinson’s that has an on-off phenomenon.23 It is important to know where patients are in their cycle when treating them and identify how off-cycling may be impacting functional mobility.23 PTs should consult the patient’s physician or pharmacist about any concerns with the medication list or patient’s ability to manage their medications. |
| 1. Have you had any changes in your bowel or bladder function in the past year?
 | Bowel/Bladder function | Reported changes in bowel/bladder function (i.e. urinary urgency/ frequency, constipation)4,24 | This short screen identifies bowel or bladder dysfunction such as urinary urgency/frequency, stress incontinence, and constipation.4 Recent changes in bowel/bladder function warrant specialist referral, while onset of immediate bowel/bladder incontinence or saddle anesthesia warrants immediate MD referral.4,24 |
| In the past year, 1. Have you had any difficulty with swallowing?
2. Have you had any changes in speech?
 | Speech/Swallowing function | Reported changes in speech or swallowing | Speech impairments occur as a result of both cognitive and motor changes due to PD and can influence social interaction and quality of life.25 Additionally, difficulty swallowing due to motor changes negatively impacts nutritional and hydrational status, respiratory function, and quality of life.26 These quick screen determines need for a referral to a speech language pathologist. |
| 1. Have you experienced any changes in your vision in the past year?
2. Do you experience blurred or double vision?
 | Visual function | Report of changes in or difficulty with vision | Visual disturbances, such as difficulty reading and navigating, double vision, and depth perception, are prevalent in 78% of individuals with Parkinson’s disease.27 Impaired visual acuity and perception poses a safety risk with ADLs and mobility.27 This quick and important screen determines the need for referral to a primary care physician or optometrist.  |
| Physical activity1. What activities do you enjoy?
2. What activities are you able to do?
3. How many days a week do you engage in physical activity?
4. How many minutes a day do you engage in physical activity?
 | Compliance with the ACSM’s Guideline’s for Physical Activity for Adults, as well as identification of barriers to participation in physical activity. | 150 min moderate intensity or 75 min vigorous aerobic activity a week.28Strength training at least 2x/week.28   | Participation in regular physical activity has numerous health benefits including decreased risk of cardiovascular disease, stroke, cancer, hypertension, obesity, osteoporosis, diabetes, metabolic syndrome, and all-cause mortality.29 In individual’s with Parkinson’s, physical activity improves balance, gait, functional mobility, fear of falling, executive function, depressive symptoms, and fatigue.30 This screen can help identify patients who would benefit from physical activity resources and information about community exercise programs.  |
| 1. Do you have any pain? If so, where?
2. When did it begin? What makes your pain better/worse? How would you rank it on a scale of 0-10?
 | Pain (Onset, location, nature, severity, and irritability) | 0: no pain31 10: severe pain31 | It is important to screen for pain to identify neuromusculoskeletal injuries and determine how pain is impacting functional mobility. Pain that is not neuromusculoskeletal in nature indicates need for physician or emergent referral.  |
| 1. How many hours sleep do you get a night?
2. Do you have trouble falling/staying asleep?
3. How would you rate your sleep quality? Do you feel rested when you wake up?
4. Is your Parkinson’s affecting your sleep? If so, how?
 | Sleep quantity and quality; insomnia; restless leg syndrome | Patient reports of <7 hours/night, difficulty falling or staying asleep, not feeling rested after sleeping, and/or poor-quality sleep32 | Sleep disturbances, including insomnia, sleep fragmentation, restless leg syndrome, and excessive daytime sleepiness, affect 64% of individuals with PD and can negatively impact short-term memory, mental health, physical functioning and quality of life.33–35 This brief screen can help identify presence of sleep disturbances that warrant referral to a specialist.  |
| 1. Have you fallen in the past year?
2. If so, how many times? Can you describe the nature of those falls? Did they result in injury?
3. Do you limit your activities due to a fear of falling?
 | Incidence of falls and fear of falling | One or more falls in the past year, patient reported unsteadiness with mobility, and/or fear of falling  | These questions are a quick screen to assess falls risk. 70% of individuals with PD report at least one fall annually, with 25-50% experiencing multiple falls.36 In older adults, falls can result in injury, hospitalization, and mortality; therefore, it is important to determine falls risk and provide appropriate interventions.17,36–38 |
| 1. Have you noticed any changes in your concentration or memory in the past year?
2. Do you feel motivated to participate in activities you enjoy?
3. Does managing your Parkinson’s overwhelm you?
 | Mental function  | Patient or caregiver reported changes in mental health or cognitive function  | Cognitive dysfunction, depression, and anxiety are prevalent non-motor symptoms that impact quality of life and functioning in individuals with Parkinson’s.1,3 The results of the PDQ-39 and GDS above can be used to guide a conversation with patients about mental health and provide them with appropriate resources and referrals. It is important to discuss changes in cognitive functioning with patients and caregivers that may be impacting safety and independence with ADLs and functional mobility.39 |

**Objective:** Throughout the session, the physical therapist should observe the patient’s quality of movement and balance with sitting, standing, transitional movements, and ambulation. *(40-45 minutes)*

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|  | **Test of:**  | **Positive finding:**  | **Clinical reasoning:**  |
| Vitals *(5 minutes)* | Heart rate | 60-100 bpm: normal40 | Parkinson’s increases risk of developing cardiovascular disease (CVD).2 Screening HR helps identify abnormalities, assess CVD risk, and indicate need for cardiology referral.40  |
| Blood pressure | <120/<80 mmHg: normal41120-139/80-89 mm/Hg: pre-hypertension41>140/>90 mmHg: hypertension41 | This is a quick measure that can screen for risk of HTN and CVD, as well as monitor postural hypotension.41,42  |
| BMI | <18.5: underweight,18.5-24.9: normal, 25.0-29.9: overweight,>30.0: obese43 | The prevalence of unintentional weight loss is 27% among the geriatric population and up to 73% in the Parkinson’s population.44 BMI is useful tool to identify nutritional deficiencies and risk of all-cause mortality in older adults.17  |
| Goniometry and MMT *(5 minutes)* | Range of motion, strength, fragility  | Impaired relative to norms, decrease from last exam | Secondary strength and range of motion deficits can impact safety and independence with functional mobility and ADLs.23 |
| **10-meter walk test (10MWT)***(>5 minutes)* | Gait Speed | 0.8 m/s: community ambulator45 0.4-0.8 m/s: limited community ambulator45 <0.4 m/s: household ambulator/severe walking disability45MDC: 0.22 m/s46 | The 10-meter walk test is a valid and reliable measure of gait speed with clearly-defined cut-offs that is feasible and appropriate to use with individuals with H&Y Stages I-IV PD.10,45,46 Monitoring changes in gait speed over time can help clinicians track the impact of changes in motor symptoms on functional mobility and patient safety. A decrease of 0.22 m/s is considered a significant change in comfortable gait speed and can indicate need for PT services.46 |
| **Five Time Sit-to-Stand (5xSTS)** *(>5 minutes)* | Muscle strength, balance, and falls risk | >15 sec: falls risk in community dwelling older adults47 | The ability to repeatedly rise from a chair is a predictor of lower extremity strength and falls risk.48 This measure is validated, reliable, and feasible for use individual’s with H&Y Stages I-IV Parkinson’s disease.10,48  |
| **Timed-Up-and-Go Test (TUG)** *(2 minutes)* | Mobility and falls risk  | >12.0 sec: falls risk23  | The timed-up-and-go test is a reliable, valid, and appropriate measure with clearly-defined cut-offs for assessing falls risk in the Parkinson’s population.10,49,50 |
| **TUG-Cognitive***(2 minutes)* | The effect of dual task on fall’s risk  | >14.7 sec: falls risk23,51 | The addition of dual tasks to ambulation in individuals with PD results in changes in gait quality, such as decreased step length and gait speed, which can increase likelihood of falling.51,52 The TUG-cognitive is a reliable and sensitive predictor of falls risk with dual-task activities and is appropriate for use in individuals with PD.51 Using both the TUG and cognitive TUG can provide clinicians with further insight into the influence of cognitive impairments on functional mobility; however, if there is only time to perform one measure, the cognitive TUG is a better indicator of falls risk in individuals with PD.23 |
| **Mini-BESTest** *(10-15 minutes)* | Balance, postural control, gait, sensory integration, and falls risk  | <20: indicates falls risk53 <19: indicates risk of recurrent falls10,36 | This a valid and reliable measure to identify balance impairments and predict falls risk in individual’s with Parkinson’s disease.10,36,53 It is appropriate for use with individuals classified as H&Y Stages I-IV.10,36  |
| **9-Hole Peg Test** *(1-3 minutes)* | Coordination and Dexterity | MDC: 2.6 sec dominant hand, 1.3 sec non-dominate hand54 | This measure of dexterity that is appropriate, feasible, and reliable for use with a Parkinson’s population.10,54 An increase in time of >2.6 sec for the dominant hand and/or >1.3 sec for the non-dominant hand signifies a clinically significant change in dexterity and indicates the patient would benefit from an occupational therapy referral.54 |
| **Montreal Cognitive Assessment (MoCA)***(10 minutes)* | Cognitive function | <26: mild cognitive impairment55 | The MoCA is a sensitive tool to help clinicians screen for mild cognitive impairment in individuals with Parkinson’s, observe changes in cognitive function overtime, and refer patients to appropriate specialists.10,55  |

**Resources/Referrals:**

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| **Test item:** | **Resource/referral:** | **Reasoning:** |
| MoCA | Contact primary care physician and request referral for speech therapy, occupational therapy, or social work | Cognitive dysfunction is a symptom of Parkinson’s that is characterized by a progressive decline in executive function, episodic memory, complex attention, visuospatial function, and verbal fluency, which can impact an individual’s independence and safety with ADLs, medication management, and mobility.39 It is important that physicians are aware of cognitive changes so they can test for dementia. Speech therapy, OT, and social work are all services that can help manage cognitive dysfunction by providing patients and caregivers with memory strategies, medication management techniques, and community resources.  |
| Physical activity  | Provide patient with the national physical activity guidelines and information on community fitness classes such as Rock Steady and PWR! Moves. | Individuals with Parkinson’s experience motor impairments, such as slow and rigid movements, shuffled gait, postural instability, and freezing of gait, which puts them at increased risk of falls.1,3,49,56 Participation in regular physical activity helps manage Parkinson’s symptoms including balance, gait and functional mobility impairments, executive function, depressive symptoms, and fatigue.30,57 Additionally, it decreases falls risk, and slow disease progression.30,57 Balash et al. found that participation in community exercise programs increased compliance with regular physical activity in individuals with Parkinson’s, in addition to providing them social support.55 Numerous Parkinson’s group exercise programs exist including PWR! Moves and Rock Steady Boxing.58,59 The website below can be used to provide patients with information about classes available to them in their area. * <https://www.pwr4life.org/moves/>
* <https://www.rocksteadyboxing.org/>
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| GDS  | Contact primary care physician, request referral to mental health professional, and provide resources for a Parkinson’s support group  | Depression is highly prevalent in individuals with Parkinson’s and is associated with increased fatigue, impaired function, decreased quality of life, and higher mortality rate.12,6 Evidence supports the use of pharmaceutical interventions, mental health counseling, cognitive behavioral therapy, and support groups to help individuals with Parkinson’s manage their depression.60–62 The goal of physical therapists is to make sure that the patient’s doctor is aware of their depressive symptoms in order to provide appropriate interventions. Additionally, PTs can connect patients with others in the community who have Parkinson’s in order to increase their social support. Simpson et al. found that higher satisfaction with social support systems is associated with lower depression scores in individuals with Parkinson’s disease.60 National and local Parkinson’s organizations such as the Parkinson’s Foundation, American Parkinson’s Disease Association, and the Parkinson Association of the Carolinas are great resources to help individuals connect with Parkinson’s support groups in their area.63–65 * <https://www.parkinson.org/search>
* <https://www.apdaparkinson.org/community/>
* <https://www.parkinsonassociation.org/support-groups/>
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