

Balance Rehabilitation for Peripheral Neuropathy

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Fact Sheet

Peripheral Neuropathy (PN) is a condition that damages the nerves outside the brain and spinal cord, often starting in the hands and feet. It can be caused by diabetes, chemotherapy, metabolic disorders, or unknown factors. Symptoms typically include numbness, tingling, and pain, which may worsen over time. Diagnosis involves evaluating symptoms, physical exams, and sometimes lab tests or imaging. PN can significantly impact balance due to its effects on the nerves that carry sensory information from the limbs to the brain.

Assessments with research specific to PN:^{3,6}

- Modified Total Neuropathy Score (mTNS)*
- FACT/GOG-Ntx**
- Berg Balance Scale (BBS)
- Five Times Sit to Stand Test (5TSTS)
- Gait Speed
- Timed Up and Go (TUG)
- 6 Minute Walk Test (6MWT)

Looking for more balance assessments? Check out Table 3 of the APTA Oncology's EDGE task force and ANPT's core outcome measures CPG

Interventions:

- Balance training:
 - Tai-Chi^{1,2,5,7}, yoga^{1,2}, Pilates²
 - Sensorimotor training^{7,9}, static and dynamic focus⁹
- Strengthening^{5,7}
 - Knee extension and dorsiflexion focus⁵
- Neuromobilization techniques^{2,7}
 - Tibial nerve
- Aerobic exercise^{7,9}
- Orthotics fitting⁵
 - Ankle foot orthoses (AFOs) if needed for weakness

Exercise parameters:²

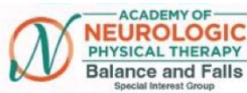
- 30-60 minutes, 2-5 times per week, 6-12 weeks

Technology

- Walkasins: a prosthetic device that gives sensory signals to body just above level of neuropathy. A study showed 43% decrease in falls over a 6-month period⁴
- Scrambler therapy: e-stim provided to areas of body above and below pain. A study showed a decrease in pain for 80-90% of patients with chronic pain. May be more effective than TENS⁸

*See back page for assessment details. **Chemo-induced peripheral neuropathy (CIPN) only

Produced by



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Results specific to types of PN:

- Metabolic peripheral neuropathy⁷: exercise shown to increase quality of life and decrease pain
- Chemo-induced peripheral neuropathy (CIPN)^{2,9}: exercise shown to reduce numbness and pain, improve balance and quality of life

Assessment details

- Modified Total Neuropathy Score (mTNS)
 - A 6-item tool that combines patient report and quantitative vibration thresholds using a Biothesiometer®
 - 0-24 points, higher score indicates worse neuropathy
- FACT/GOG-Ntx
 - An 11-item patient self-report tool that describes CIPN symptom severity and functional consequences
 - 0-44 points, a lower score indicates better quality of life

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