

CLINICAL PRACTICE GUIDELINE

TO IMPROVE LOCOMOTOR FUNCTION FOLLOWING CHRONIC STROKE, INCOMPLETE SPINAL CORD INJURY AND BRAIN INJURY



SUMMARY OF ACTION STATEMENTS

Action Statement 1:

Clinicians **should use** moderate to high intensity walking training to improve walking speed and distance in individuals greater than 6 months following acute-onset CNS injury as compared with alternative interventions.

- **Level of evidence:** I-II*
- **Recommendation strength:** strong for individuals with stroke (limited evidence in individuals with iSCI, no evidence in individuals with TBI)

Action Statement 2:

Clinicians **should use** virtual reality training interventions coupled with walking practice to improve walking speed and distance in individuals greater than 6 months following acute-onset CNS injury as compared with alternative interventions.

- **Level of evidence:** I-II*
- **Recommendation strength:** strong for individuals with stroke (no evidence in individuals with iSCI or TBI)

Action Statement 3:

Clinicians **may consider** providing strength training to improve walking speed and distance in individuals greater than 6 months following acute-onset CNS injury as compared with alternative interventions.

- **Level of evidence:** I-II*
- **Recommendation strength:** weak for individuals with stroke and iSCI (no evidence for individuals with TBI)

Action Statement 4:

Clinicians **may consider** use of cycling or recumbent stepping interventions at higher aerobic intensities instead of alternative interventions to improve walking speed and distance in individuals greater than 6 months following acute-onset CNS injury as compared with alternative interventions

- **Level of evidence quality:** I-II*
- **Recommendation strength:** weak for individuals with stroke (no evidence for individuals with iSCI or TBI)

Action Statement 5:

Clinicians **may consider** use of circuit training or combined strategies providing balance, strength, and aerobic exercises to improve walking speed and distance in individuals greater than 6 months following acute-onset CNS injury as compared with alternative interventions

- **Level of evidence quality:** I-II*
- **Recommendation strength:** weak for individuals with stroke (no evidence in individuals with iSCI or TBI)

Action Statement 6a:

Clinicians **should not** perform sitting or standing balance training directed toward improving postural stability and weight-bearing symmetry between limbs to improve walking speed and distance in individuals greater than 6 months following acute-onset CNS injury as compared with alternative interventions.

- **Level of evidence:** I-II*
- **Recommendation strength:** strong for individuals with stroke (no evidence in individuals with iSCI or TBI)

CLINICAL PRACTICE GUIDELINE

TO IMPROVE LOCOMOTOR FUNCTION FOLLOWING CHRONIC STROKE, INCOMPLETE SPINAL CORD INJURY AND BRAIN INJURY



Action Statement 6b:

Clinicians **should not** use sitting or standing balance training with additional vibratory stimuli to improve walking speed and distance in individuals greater than 6 months following acute-onset CNS injury as compared with alternative interventions.

- **Level of evidence:** I-II*
- **Recommendation strength:** strong for individuals with stroke (no evidence in individuals with iSCI or TBI)

Action Statement 6c:

Clinicians **may consider** use of static and dynamic (non-walking) balance strategies when coupled with virtual reality or augmented visual feedback to improve walking speed and distance in individuals greater than 6 months following acute-onset CNS injury as compared with alternative interventions

- **Level of evidence:** I-II*
- **Recommendation strength:** strong for individuals with stroke (no evidence in individuals with iSCI or TBI)

Action Statement 7:

Clinicians **should not** perform body weight-supported treadmill training for improving walking speed and distance in individuals greater than 6 months following acute-onset CNS injury as compared with alternative interventions

- **Level of evidence:** I-II*
- **Recommendation strength:** strong for stroke (limited evidence in individuals with iSCI or TBI)

Action Statement 8:

Clinicians **should not** perform walking interventions with exoskeletal robotics on a treadmill or elliptical devices to improve walking speed and distance in individuals greater than 6 months following acute-onset CNS injury as compared with alternative interventions

- **Level of evidence quality:** I-II*
- **Recommendation strength:** strong for stroke and iSCI (limited evidence in individuals with TBI)

Level	Standard Definitions
I	Evidence obtained from high-quality diagnostic studies, prognostic or prospective studies, cohort studies or randomized controlled trials, meta-analyses, or systematic reviews (critical appraisal score of $\geq 50\%$ of criteria).
II	Evidence obtained from lesser-quality diagnostic studies, prognostic or prospective studies, cohort studies or randomized controlled trials, meta-analyses, or systematic reviews (eg, weaker diagnostic criteria and reference standards, improper randomization, no blinding, $< 80\%$ follow-up) (critical appraisal score of $< 50\%$ of criteria)
III	Case-controlled studies or retrospective studies.
IV	Case studies and case series.
V	Expert opinion

For more detailed information, please refer to the original document:

https://journals.lww.com/jnpt/fulltext/2020/01000/clinical_practice_guideline_to_improve_locomotor.8.aspx

Academy of Neurologic Physical Therapy

www.neuropt.org info@neuropt.org