

<b>Author Year</b> <b>Country</b> <b>Research Design</b> <b>Score</b> <b>Total Sample Size</b>	<b>Methods</b>	<b>Outcome</b>
<p><a href="#">Shin et al. 2023</a></p> <p>South Korea</p> <p>RCT</p> <p><a href="#">PEDro = 4</a></p> <p>Level 2</p> <p>N = 29</p>	<p><b>Population:</b> 29 patients with incomplete SCI:</p> <ul style="list-style-type: none"> <li>• RAGT group (n = 16):            Median (IQR) age: 52 (32, 65) years            9 male, 7 female            Traumatic (n = 14), non-traumatic (n = 2)            Level: Tetraplegia (n = 14), paraplegia (n = 2)            AIS C (n = 2), AIS D (n = 14)            Median (IQR) time since injury: 54 (37, 92.2) days</li> <li>• Conventional therapy group (n = 13):            Median (IQR) age: 60 (55, 64) years            12 male, 1 female            Traumatic (n = 11), non-traumatic (n = 2)            Level: Tetraplegia (n = 10), paraplegia (n = 2)            AIS C (n = 4), AIS D (n = 9)            Median (IQR) time since injury: 44 (33, 94) days</li> </ul> <p><b>Treatment:</b> Participants were randomly assigned to either the RAGT or the conventional therapy group:</p> <ul style="list-style-type: none"> <li>• The RAGT group underwent 30 minutes of RAGT with the Morning Walk® and 1 hour of conventional therapy five times per week for 4 weeks (20 sessions in total). Cadence, step length and BWS were adjusted according to the individual's performance during RAGT sessions. Participants received also conventional therapy, which consisted of 30 minutes of ergometer training and 30 minutes of sitting and standing balance training, sit-to-stand training, OGT if possible, and strengthening exercises.</li> </ul>	<ol style="list-style-type: none"> <li>1. Within-group comparison after the intervention: After 20 sessions of the intervention, all clinical outcome measures significantly improved in both groups.</li> <li>2. Between-group comparison after the intervention: Only WISCI II improved significantly in the RAGT group compared to the CT group (p = 0.028).</li> </ol>

	<ul style="list-style-type: none"> <li>The conventional therapy group received 1.5 hours of conventional therapy (30 minutes of ergometer training and 1 hour of sitting and standing balance training, sit-to-stand training, OGT if possible, and strengthening exercises) five times per week for 4 weeks (20 sessions in total).</li> </ul> <p><b>Outcome Measures:</b> 10MWT, 6MWT, WISCI II, LEMS, BBS, and SCIM-III mobility category were assessed within 48 hours before the initial intervention session and after the final intervention session.</p>	
<p><a href="#">Shin et al. 2021</a> Korea Prospective controlled trial Level 2 N = 13</p>	<p><b>Population:</b> 13 participants with SCI; 8 males and 5 females; median (range) age 52 (19-85) years; tetraplegia (n = 11) and paraplegia (n = 2); AIS C (n = 1) and AIS D (n = 12); and median (range) time since injury 48 (19-139) days.</p> <p>Participants were sub-grouped according to the initial proprioception status:</p> <ul style="list-style-type: none"> <li>Normal group (n = 6): Participants with grade 2 of proprioception of the ankle and knee.</li> <li>Abnormal group (n = 7): Participants with grade 0 or 1 of proprioception of the ankle and knee.</li> </ul> <p><b>Treatment:</b> Participants received RAGT with Morning Walk® with visual feedback (through a VR screen), so the participants could have the experience of walking through a park or the forest according to the gait speed.</p> <p>RAGT were performed for 30 min in the ground-level (starting with a cadence of 30 steps/min, a step length of 30 cm, and 20% BWS; and an estimated progression for each participant). In addition, one hour of conventional physiotherapy (consisting of strengthening exercises) were performed 5 times per week for 4 weeks.</p>	<ol style="list-style-type: none"> <li>After the intervention, the patient with paraplegia AIS C improved to AIS D, and the proprioception of the ankle and knee and BBS had significantly improved (<math>p = 0.027</math> and <math>0.001</math>, respectively).</li> <li>After the intervention 10MWT, 6MWT, LEMS, and WISCI II significantly improved (<math>p &lt; 0.003</math>).</li> <li>Based on the subgroup analysis of the initial proprioception status: <ol style="list-style-type: none"> <li>The normal group showed a significant improvement on the 10MWT, 6MWT and WISCI II (<math>p \leq 0.028</math>); however, LEMS did not show a significant improvement (<math>p = 0.068</math>).</li> <li>In the abnormal group 10MWT, 6MWT, LEMS, and WISCI II, were significantly improved (<math>p \leq 0.028</math>).</li> <li>In the between-group comparisons, only the WISCI II showed a statistically significant difference (<math>p = 0.037</math>); with an improvement favoring the normal group.</li> </ol> </li> </ol>

	<p><b>Outcomes measures:</b> 10MWT, 6MWT, LEMS, proprioception (proprioception of the ISNCSCI at the ankle and knee), BBS, and WISCI II were assessed within 48 h before and after the intervention.</p>	
<p><a href="#">Calabrò et al. 2021</a> Italy Pre – post Level 4 N = 15</p>	<p><b>Population:</b> 15 patients with subacute (i.e., up to 18 months) SCI; 9 males and 6 females: mean (<math>\pm</math> SD) age <math>42 \pm 14</math> years; level of injury C5 (n = 2), C6 (n = 3), C7 (n = 1), T1 (n = 1), T4 (n = 1), T6 (n = 1), T7 (n = 3), and T10 (n = 3); AIS C (n = 8) and AIS D (n = 7); and mean (<math>\pm</math> SD) time from injury <math>7 \pm 4</math> months.</p> <p><b>Treatment:</b> All participants continued all other rehab activities regularly during the study participation. Patients were given a daily session of the end-effector G-EO System device (an [non-treadmill] end-effector made of two footplates with three degrees of freedom on which the harness secured patient stand), 6 days per week, for two months. The RAGT consisted of a block of floor walking in a passive and active assisted mode for 30 min, 5 min of rest, and 20 min of going up/downstairs in a passive and active assisted mode. Participants performed the training at their maximum tolerable velocity and the BWS was set initially at 80% and was progressively reduced by 10% every week, down to 10% or the maximum tolerable BWS.</p> <p><b>Outcome Measures:</b> Motor scores of the AIS; WISCI II; 10MWT; and gait analysis during an active-assisted gait training session once the patient became confident with the device were assessed at baseline, right after (<math>T_0</math>), and 3 (<math>T_3</math>) and 6 (<math>T_6</math>) months after the end of the rehabilitation training.</p>	<ol style="list-style-type: none"> <li>1. None of the enrolled patients reported any side effects.</li> <li>2. None of the patients achieved a complete recovery of walking function at <math>T_0</math>, but they showed a significant improvement in the walking outcome measures up to <math>T_3</math>: <ol style="list-style-type: none"> <li>a. 10MWT (<math>p = 0.004</math>; 80% of patients achieved the MCID, <math>p = 0.01</math>).</li> <li>b. Motor AIS (<math>p &lt; 0.001</math>; 93% of patients achieved the MCID, <math>p = 0.004</math>).</li> <li>c. WISCI II (<math>p = 0.004</math>; all patients achieved the MCID, <math>p = 0.009</math>).</li> </ol> </li> <li>3. All patients retained some improvements up to <math>T_6</math> limited to WISCI II, and Beck Depression Inventory.</li> </ol>
<p><a href="#">Choi et al. 2019</a> Korea Pre-post Level 4 N = 189 (40 SCI)</p>	<p><b>Population:</b> 189 patients with various neurologic disorders (mean age: 53.2 years; 123 males, 66 females):</p> <ul style="list-style-type: none"> <li>• SCI (n = 40): 23 male, 27 female Mean (SD) age: 61.8 (16.5) years Tetraplegia (n = 18), paraplegia (n =</li> </ul>	<ol style="list-style-type: none"> <li>1. Of the 189 patients, 22 (11.6%) failed to complete the RAGT, and the remaining 167 (88.4%) completed the training.</li> <li>2. No serious events, such as episodes of neurological deterioration, falling,</li> </ol>

	<p>22) AIS C-D</p> <ul style="list-style-type: none"> <li>• Brain lesions (n = 110)</li> <li>• Parkinson's disease (n = 8)</li> <li>• Peripheral neuropathies (n = 9)</li> <li>• Pediatric patients (n = 22)</li> </ul> <p><b>Treatment:</b> Each participant performed 30 minutes of RAGT, with the end-effector device Morning Walk®, five times a week, for a total of 24 sessions.</p> <p><b>Outcome Measures:</b> Medical Research Council scales of the lower extremities and FAC were recorded pre- and post-RAGT. Feasibility measures were also assessed.</p>	<p>fractures, or skin lesions, occurred during any session in patients that either completed or failed to complete the training.</p> <p>3. In the comparison between the pre- and post-training motor and ambulatory functions, patients with brain lesions, spinal cord injuries, and peripheral neuropathies showed statistically significant improvement in both the Medical Research Council scales and FAC.</p>
<p><a href="#">Hesse et al. 2004</a></p> <p>Germany Pre-post N = 4</p>	<p><b>Population:</b> 4 patients with SCI: 3 male, 1 female AIS C (n = 1), AIS D (n = 3) Tetraplegia (n = 1), paraplegia (n = 2), cauda syndrome (n = 1) Time since injury: More than 3 months post-injury</p> <p><b>Treatment:</b> Participants performed 25 min of LT with an end-effector device (electromechanical gait trainer plus FES) daily for five weeks in addition to regular therapy.</p> <p><b>Outcome Measures:</b> Gait analysis, 6MWT, and 10MWT</p>	<p>1. The patients tolerated the program well, and therapists rated the program less strenuous compared to manually assisted treadmill training.</p> <p>2. Gait ability improved in all four patients; three patients could walk independently on the floor with the help of technical aids, and one required the help of one therapist after therapy; gait speed and endurance more than doubled, and the gastrocnemius activity increased in the patients with a central paresis.</p>