Author Year Country Date included in the review Number of articles Level of Evidence Type of Study AMSTAR Score	Method Databases Outcome measures	Conclusions
Moriarty et al. 2024 USA Reviewed published articles up to December 2023 N = 11 **Level of evidence:** Rob2 and ROBINS criteria to determine relative risk of bias **Type of study:** RCT **AMSTAR:** 7	**Methods:** The study aims to characterize the potential improvements of mobility and function with the use of exoskeletons in patients with SCI. **Databases:** Embase, Cochrane, and PubMed. **Outcome Measures:** WISCI II, SCIM-III, 6MWT.	1. Eleven RCTs involving 552 total participants were included in the meta-analysis. 2. The results of the meta-analysis indicated statistically significant improvement in SCIM III [MD 5.14, 95 % CI = (4.47, 5.810), P < 0.00001], WISCII [MD 2.31, 95 % CI = (2.13, 2.49), P < 0.00001] and 6MWT [MD 37.04, 95 % CI = (32.35, 41.74), P < 0.00001] in patients with SCI as compared to conventional gait training therapy.
Wan et al. 2024 China Reviewed published articles up to December 2022 N = 11 **Level of evidence:** The PEDro scale and Begg's test (for detecting publication bias) **Type of study:** RCTs **AMSTAR:** 8	**Methods:** The aim of this meta-analysis is to examine the effectiveness of RAGT in improving cardiopulmonary function and lower extremity strength among individuals with SCI. **Databases:** PubMed/Medline, Embase, Web of Science, PEDro, China National Knowledge Internet, China Science and Technology Journal Database, Wanfang Data. **Outcome Measures:** Cardiopulmonary function and lower extremity strength (LEMS).	1. LEMS: The pooled analysis (n = 408 patients) demonstrated significant effect of RAGT on LEMS increasing after treatment in individuals with SCI (SMD = 0.81; 95% CI = 0.14–1.48). a. In lower-limb robots, ten studies used Lokomat and only one used exoskeleton-assisted walking (EAW). The results of subgroup analysis favored Lokomat over controls for LEMS increasing (SMD = 0.88; 95% CI = 0.16–1.60). No significant effect was immediately detected on the effect of EAW versus control group on LEMS after treatment (SMD = 0.07; 95% CI = −0.85–0.99). b. Eight studies performed RAGT sessions over 6 weeks where

		results showed significant effect (SMD = 1.07; 95% CI = 0.23–1.91). Three studies performed RAGT sessions for less than six weeks, with results showing no significant effect (SMD = 0.08; 95% CI = −0.51–0.68). c. Four, six, and one study, compared the effects of RAGT with overground gait training (OGT), conventional physical therapy, and aquatic therapy (AT) on LEMS, respectively. Subgroup analysis shows that RAGT was more effective in improving LEMS than conventional physical therapy (SMD = 1.21; 95% CI = 0.09– 2.33). However, it was not better than OGT and AT (SMD = 0.46; 95% CI = −0.43– 1.35) / (SMD = 0.04; 95% CI = −0.65–0.72). d. No significant effects were immediately detected for Paraplegia nor Tetraplegia effects versus the control group on LEMS after treatment (SMD = 1.37; 95% CI = −0.11–2.84) and (SMD = 0.52; 95% CI = −0.19–1.23).
Liu & Chen 2024 China Reviewed published articles up to April 2022 N = 11 **Level of evidence:** the Cochrane Collaboration's risk of bias (RoB) 1.0 evaluation **Type of study:** RCTs **AMSTAR:** 7	**Methods:** The study aimed to explore the effect of exoskeleton robotic training on the recovery of ambulation in patients with SCI. **Databases:** PubMed, Embase, and CENTRAL. **Outcome Measures:** LEMS, WISCI II, 6MWT, and 10MWT, among other non-walking related outcome measures.	1. Eleven RCTs involving 456 participants were included in the meta-analysis. 2. Seven studies reported LEMS, involving 293 participants. The analysis results [MD = 4.64, 95%CI = (3.58, 5.70), P<0.05] indicated that exoskeleton robotic training significantly improved LEMS in patients with SCI compared with conventional gait training, with a statistical difference. 3. Six studies discussed WISCI II, involving 366 participants. The analysis results [MD = 1.76, 95%CI = (−0.32, 3.85), P = 0.1] showed that exoskeleton robotic training had no significant effect on improving WISCI II in patients with SCI

		compared with conventional gait training. 4. Six studies described the 10MWT, with 195 participants. The analysis results [MD = −0.03, 95%CI = (−0.18, 0.11), P = 0.68] showed no significant difference in improving the walking speed of patients with SCI between the exoskeleton robotic training and conventional gait training groups. 5. Seven studies reported the 6MWT indicator, involving 191 participants. According to the analysis results [MD = 18.43, 95%CI = (−14.69, 51.56), P=0.28], no significant difference was observed in improving walking endurance between exoskeleton robotic training and conventional gait training.
Rodriguez-Tapia et al. 2022 Belgium Reviewed published articles up to February 2022 N = 41 **Level of evidence:** The Downs and Black checklist (D&B) **Type of study:** 6 RCTs 23 cohort studies 12 cases series **AMSTAR:** 8	**Methods:** The primary objective of this systematic review was to study whether gait training using wearable powered exoskeleton (WPE) is feasible and safe after tetraplegia due to SCI. A secondary objective was to assess if walking ability improved after gait training using WPE and whether this treatment leads to additional health benefits regarding gastrointestinal, urological, or musculoskeletal systems. **Database:** Scopus, PubMed and Embase. **Outcome Measures:** Walking parameters and walking functional tests (e.g., walking speed, walking distance, walking time, 6MWT, 10MWT).	1. A total of 570 patients with SCI were included (n = 166 [29%] patients with tetraplegia). 2. Eight types of WPE used for gait training were identified. 3. Rehabilitation protocols presented considerable heterogeneity among included studies. In most programs, session duration was set between 60 and 90 min at a frequency of 2–3 sessions per week. In 73% of studies, the training protocol included OGT without body weight support (BWS) systems. 4. A total of 174 adverse events (AEs) were retrieved. a. Occurrence of AEs (both minor and major) was significantly higher (p = 0.001) in patients with paraplegia (n = 157, 90%) compared to patient with tetraplegia (n = 17, 10%). b. 32 cases of mechanical and/or software issue or a manipulation error were reported, without any

		consequences for the participant. 5. In total, 20 studies reported walking parameters (n = 12) and walking functional tests (n = 13) separately for patients with tetraplegia: a. Among them, 4 studies focusing on walking parameters showed statistically significant improvements regarding walking speed, walking distance, walking time, 6MWT, and 10MWT b. One patient with tetraplegia improved his ASIA score and another one become a walker without the exoskeleton after the WPE rehabilitation program in two studies. c. One RCT showed similar improvements in walking functional tests between patients with incomplete tetraplegia and patients with paraplegia after a gait training program using two types of exoskeletons: and greater improvements in patients with paraplegia than in patients with tetraplegia with complete lesions.
Zhang et al. 2022 China Reviewed published articles up to August 2021 N = 12 **Level of evidence:** Cochrane collaboration's tool **Type of study:** N/A **AMSTAR:** 7	**Method:** A network meta-analysis of RCTs and non-RCTs to assess the clinical effects of two different types of RAGT (Lokomat and wearable EAW) in patients with SCI. **Database:** PubMed, Embase, and the Cochrane Library. **Outcome Measures:** 6MWT, 10MWT.	1. Effects of receiving wearable EAW (with sensitivity analysis to eliminate heterogeneity): a. 10MWT time was significantly improved relative to that of the baseline [0.65 (95% CI = 0.32, 0.99)]; heterogeneity was observed among these groups (I^2 = 0%). b. 10MWT speed significantly improved relative to that of the baseline [−0.82 (95% CI = −1.23, −0.40)]. Heterogeneity was observed among these groups (I^2 = 17%). c. 6MWT distance significantly improved relative to that of the

		baseline [−0.87 (95% CI = −1.16, −0.58)] and heterogeneity was observed among these groups (I^2 = 0%). 2. Effects of Lokomat: a. A meta-analysis of 3 studies (n = 91) showed that the 10MWT score was significantly improved [−0.08 (95% CI = 0.14, −0.03)] and the I^2 test for inconsistency was 0%. b. Three studies were included (n = 82), showing a significant increase in the WISCI II score [1.77 (95% CI = 0.23, 3.31)]. Heterogeneity was observed among these groups (I^2 = 3%). 3. Network meta-analysis: a. For the 10MWT speed showed that the probability of wearable EAW to ranking first was 89% and that of wearable EAW ranking second was 47%. b. For the WISCI II scores showed that the probability of Lokomat to rank first was 73% and that of wearable EAW to rank second was 63%. 4. After a meta-regression analysis for comparing baseline demographic and clinical characteristics, the results indicated that age, time after injury, and the AIS score had no impact on the outcomes of patients undergoing wearable EAW and Lokomat training ($P > 0.05$).
Tamburella et al. 2022 Italy Reviewed published articles up to December 2020 N = 41 **Level of evidence:**	**Method:** The aim of this systematic review was to explore the current state of the art of the overground powered lower limb exoskeletons and its effects on walking and on secondary health conditions in people with SCI. **Database:** MED-LINE, Embase, Scopus, Web of Science and Cochrane Library (CENTRAL).	1. Methodological quality was reflected as “poor” or “moderate”. 2. A total sample of 566 participants was analyzed. 3. Different overground powered lower limb exoskeletons devices were analyzed. 4. Thirteen studies reported different AEs during training, showing the

Downns and Black (D&B) tool **Type of study:** RCTs of parallel-group or cross-over design and n-RCTs (such as cohort studies, case–control, case series and pilot studies) **AMSTAR:** 8	**Outcome Measures:** Walking domain (N = 27) (e.g., 10MWT, 2MWT, 6MWT, kinematics, WISCI II); muscle strength (N = 6) (e.g., LEMS); ADL (N = 5) (e.g., FIM, SCIM, Barthel Index).	skin lesions as the most frequent AEs. 5. The average total number of sessions across the studies ranged from 1 to 55; and for session frequency, 3 sessions per week were performed in 42% of the studies included. 6. Effects on walking domain (n = 27): a. The pattern of outcome measures employed in the enrolled studies was extremely different, thus making comparisons unreliable. b. Different group comparisons showed a positive trend in 10MWT and a positive effect in 2MWT and 6MWT. c. Group comparison through instrumental walking analysis varied according to the different characteristics employed. i. Overall Ekso training allowed walking speed improvement (significance was present only in 2 studies). ii. All studies assessing cadence parameters (n = 7) reported an improvement trend, and showed a significance reach after Ekso training in two studies with non-ambulatory persons and after HAL training in one study with ambulatory persons with SCI. iii. A trend of stride length improvement was observed after Ekso training (reaching significance only in 2 studies). iv. Overall, training allowed persons to walk with a longer step (reaching significance only for one study after Ekso training and for one study with HAL training). v. Only a single Ekso study addressed step width and showed that non-ambulatory persons with chronic SCI

		walked with a significantly larger step width after training. vi. Swing phase duration was evaluated only in one study, showing a trend of reduction after ReWalk training. vii. Significant positive effects in the reduction of trunk swing oscillation while wearing EXO were reported after ReWalk and HAL training in two studies. viii. The only study with GARS-M reported a significant improvement after HAL training in ambulatory persons with subacute SCI and the studies using WISCI II reported no significant improvements after HAL or Ekso. ix. Stance and double-time support phases duration alone or in combination were analyzed in 4 Ekso studies and showed ambiguous results. x. Kinematics of the lower limb range of motion (ROM) were analyzed in studies employing Ekso (N = 3), ReWalk (N = 2) or HAL devices (N = 1) and showed extremely heterogeneous results. 7. Effects on strength domain (n = 6): Only significant improvements were present for LEMS in persons with subacute lesion in three studies either with Ekso or HAL devices.
Yang et al. 2022 Taiwan Reviewed published articles up to August 2020 N = 15	**Method:** This network meta-analysis approached for comparing the effectiveness of three strategies (BWSTT, RAGT and body-weight supported overground training [BWSOGT]) for ambulatory improvements in patients with SCI. Also, a comprehensive literature review	1. The overall risk of bias was uncertain for all studies. 2. The network meta-analysis included 497 participants. 3. The investigated interventions were relatively safe and well tolerated by participants as six studies reported on AEs, four of

Level of evidence: Cochrane risk of bias 2 tool **Type of study:** RCTs **AMSTAR:** 8	was conducted to identify RCTs focusing on gait training for SCI. **Database:** PubMed, Cochrane Library, Scopus, and Embase. **Outcome Measures:** Walking ability, 6MWT, 10MWT, LEMS, and WISCI. *Control intervention: Conventional gait training, such as sit to stand, weight shifting, walking, turning, and stand to sit.	them did not observe AEs, and two reported that some participants experienced pain. 4. The pooled standard mean differences (SMDs) (95% CIs) of functional scores revealed that RAGT (0.30 [0.11, 0.50]) was significantly more favorable than the control intervention, whereas BWSTT (0.09 [-0.40, 0.58]) and body-weight supported overground training (0.09 [-0.55, 0.73]) did not result in significant differences compared with the control intervention. 5. The ranking probabilities indicated that RAGT was the most effective, followed by BWSOGT, BWSTT, and the control intervention. 6. There was no significant inconsistency between the results of direct and indirect comparisons. Furthermore, the differences between the traditional pairwise meta-analyses and network meta-analyses were determined and none of the differences were significant.
Alashram et al. 2021 Italy Reviewed published articles up to January 2021 N = 16 **Level of evidence:** PEDro scale **Type of study:** 13 RCTs 2 clinical controlled trials 1 pilot study **AMSTAR:** 6	**Method:** The present systematic review aimed to provide an overview of the immediate and long-term effects of the Lokomat on various impairments following SCI, to determine the optimal treatment dosage, and to define who most likely would benefit from the intervention. **Database:** PubMed, SCOPUS, PEDro, REHABDATA, MEDLINE, EMBASE, and web of science. **Outcome Measures:** Walking speed (10MWT), walking distance (6MWT, 2MWT, SCI-Functional Ambulation Profile [SCI-FAP]), walking capacity (SCI-FAP, 6MWT), Falls Efficacy Scale-International Version I [FES-I]), functional level (WISCI II, FIM-L, SCIM, SCIM-III – mobility section [SCIM-III-M],	1. Quality of the included studies: a. The median score on the PEDro scale was 6 (ranged from 2 to 8). b. Overall, 6 studies met 8 criteria, 7 criteria (n = 1), 6 criteria (n = 3), 5 criteria (n = 2), 4 criteria (n = 2), 3 criteria (n = 1), and 2 criteria (n = 1) for low risk of bias. 2. A total of 658 patients with incomplete SCI were included. 3. The included studies did not demonstrate any AEs or uncomfortable issues following the Lokomat intervention. 4. Effects on walking speed (10MWT): 2 studies showed that the patients in the experimental groups improved significantly compared with the control groups; however, the remaining 8 studies did not

	Ambulatory Motor Index), leg strength (LEMS), strength (maximum voluntary contraction [MVC]), and agility (Probe Reaction Time).	show significant differences between groups. 5. Effects on walking distance: 4 studies reported significant improvements after the RAGT compared with the control groups at the end of intervention and follow-up; however, 4 studies did not show significant differences between groups. 6. Effects on strength: 3 studies showed significant improvements in the LEMS scores or MVC of dorsiflexors and plantar flexors after the RAGT 'Lokomat' compared with the control group; however, 2 studies did not show significance improvements in the LEMS scores in the experimental group. 7. Effects on agility: One study reported significant improvements in Probe Reaction Time after RAGT. 8. Effects on functional level and functional ambulation: a. WISCI II: One study reported significant improvements after the RAGT, compared with the control group. Two studies showed improvements in both groups; however, only in one study the experimental group showed greater and significant improvements. b. FIM-L scores: One study reported an improvement after RAGT. c. Functional ambulation category (FAC): One study reported significant improvements after the RAGT but in other study both groups showed improvements with no significant difference between groups.
Fang et al. 2020 Ireland	**Method:** The purpose of this meta-analysis was to compare the effects of RAGT on spasticity, pain, LEMS and walking ability with	1. Risk of bias: In all included RCTs, only one study had high risk of bias

Reviewed published articles up to November 2019 N = 18 (12 in the qualitative synthesis and 6 in quantitative synthesis) **Level of evidence:** The Cochrane risk of bias assessment tool for RCTs and the Newcastle Ottawa Scale for the cohort studies and clinical trials **Type of study:** 6 RCTs 1 RCT crossover 6 case reports 1 pre-post 3 single group **AMSTAR:** 6	those of other treatments after SCI. **Database:** PubMed, Scopus, Medline (Proquest), and Cochrane CENTRAL. **Outcome measures**: LEMS and walking ability (i.e., 6MWT, 10MWT).	level; and all non-RCTs had general to good quality. 2. The apparatus used for RAGT in the studies included were Lokomat, HAL, Indego Exoskeleton, ReWalk, ARKE 2.0, and Ekso GT. 3. A total of 301 participants were included. 4. Walking distance (6MWT) increased significantly in favor of robotic group (RCTs: 95%CI = 4.394 to 106.628, p = 0.033; non-RCTs: 95%CI = 7.218 to 52.586, p = 0.010). The pooled MD (random effects model) of RCTs and non-RCTs were 55.511 m and 29.902 m, respectively. 5. Walking speed (10MWT) significantly improved in robotic group of non-RCTs (95%CI = 0.032 to 0.213, p = 0.008) but not of RCTs (p = 0.597). The pooled MD (random effects model) for non-RCTs was 0.123 m/s. 6. The results on WISCI II showed no significant difference (p = 0.265 for RCTs; p = 0.228 for non-RCTs).
Shackleton et al. 2019 South Africa Reviewed published articles up to April 2018 N = 27 **Level of evidence:** GRADE system **Type of study:** Prospective non-randomized, uncontrolled trials **AMSTAR:** 7	**Method:** This review aimed to examine the effectiveness of overground powered exoskeletons as a tool for SCI rehabilitation by investigating gait parameters, cardiovascular demands, secondary health outcomes, including spasticity, pain and user-satisfaction. **Database:** PubMed, Cochrane Library, Web of Science, Scopus, EBSCOhost (CINAHL and Health Source Nursing/Academic) and EI Compedex Engineering Village. **Outcome Measures:** Walking performance (6MWT, 10MWT)	1. The overall quality of evidence was judged to be very low. 2. 308 participants were included in the analysis. Most participants presented with complete SCI between T1 and T12. 3. The ReWalk™ powered exoskeleton was evaluated in 11 studies, Ekso® in 10 studies, Indego™ in 3 studies, WPAL in 2 studies and REX in one study. 4. The most common intervention length was 8 weeks and typically, training was conducted 3 times per week for 60 min per session. 5. Meta-analyses were performed on the 7 studies that assessed walking performance tests: a. Five studies reported a positive pooled effect of –0.94 (95% CI –

		1.53, –0.36) with moderate heterogeneity (I^2 = 27%, p = 0.002) for the distance achieved during the 6MWT. b. Six studies reported a positive pooled effect of –1.22 (95% CI –1.87, –0.57) with high heterogeneity (I^2 = 60%, p = 0.0002) for the speed achieved during the 10MWT. 6. Effects on walking velocity and distance: a. Six studies considered the mean distance and velocity achieved during a 6MWT showing a range from 47 to 129 m and 0.22 to 0.36 m/s, respectively. b. Six studies considered the velocity required to complete a 10MWT, ranging from 0.25 to 0.38 m/s across 4 studies. The remaining 2 studies indicated that different injury levels can affect walking velocity, as can the level of assistance provided while walking.
Aguirre-Güemez et al. 2019 México Reviewed published articles up to December 2016 N = 20 included in qualitative synthesis and 6 included in quantitative synthesis (meta-analysis) **Level of evidence:** Cochrane Handbook for Systematic Reviews of Interventions	**Method:** The aim was to contribute to the available evidence on the use of RAGT in people with SCI by incorporating the latest evidence from clinical trials as well as by widening the scope with the inclusion of additional indicators of effectiveness (improve gait, strength and functioning in people with SCI in comparison to other modalities of training). **Database:** Cochrane Injuries Group Specialized Register, Cochrane CENTRAL, MEDLINE (Ovid), EMBASE (Ovid), CINAHL and ISIWeb of Science: Science Citation Index Expanded (SCIEXPANDED). **Outcome Measures:** The analysis focused on speed (m/s), WISCI, strength (LEMS) and FIM-L.	1. From the 15 included RCTs, a total of 499 participants were registered and from the 5 included systematic reviews, a total of 1,227 participants were included. 2. Dose of intervention: a. The period of treatment was one day; three weeks; four weeks; eight weeks; and 12 weeks. b. The frequency was reported from three times per week for four weeks, up to five times per week for 12 weeks. c. The RAGT setup was initially prescribed for the amount of BWS at 60% and never less than 25%. d. The guidance force was set from 100% to 20%.

Type of study: 15 RCTs 5 systematic reviews **AMSTAR:** 10		e. The lowest initial speed was reported at 1.0 Km/h and in one trial the participants accomplished 3.4 Km/h. f. The length of the RAGT therapy varied from 20 min to 45 min. 3. Effects of interventions based on meta-analysis (n = 6): a. Five studies (n = 169 patients) of RAGT compared with control groups showed no effect in speed gait, with a MD of -0.00 (95% CI -0.05 to 0.04, P = 0.95). b. Four studies (n = 188 participants) showed a MD of 3.01 (95% CI -0.54 to 6.55, P = 0.10) for WISCI in favor of the RAGT.
Mehrholz et al. 2017 Germany Reviewed published articles up to September 2016 N = 13 **Level of evidence:** Cochrane Risk of Bias Tool **Type of study:** RCTs of parallel-groups or cross-over trials **AMSTAR:** 9	**Method:** A systematic review and meta-analysis were performed to update the Mehrholz et al. (2012) review. Specifically, the aim was to compare the effectiveness of BWSTT and RAGT with OGT and other forms of physiotherapy on walking speed and walking distance in people with traumatic SCI: • Comparison no. 1: BWSTT vs. OGT and other forms of physiotherapy (not including RAGT). • Comparison no. 2: RAGT vs. OGT and other forms of physiotherapy (not including BWSTT). **Database:** Cochrane Injuries Group's Specialised Register; Cochrane CENTRAL; MEDLINE; EMBASE; CINAHL; Allied and Complementary Medicine Database; SPORTDiscus; PEDro; COMPENDEX; INSPEC. Online trials databases Current Controlled Trials (www.controlled-trials.com/isrctn) and Clinical Trials (www.clinicaltrials.gov) was searched.	1. Thirteen RCTs involving 586 patients were included in the analysis. 2. Risk of bias: a. Six trials were rated as low risk of bias for random sequence generation, five trials were rated as low risk of bias for concealed allocation and eight trials were rated as low risk of bias for blinding of assessors. b. Two and five trials were rated as high risk of bias for concealed allocation and blinding of assessors, respectively. 3. Comparison no. 1: a. Walking speed: The pooled MD was − 0.03 $m \cdot s^{-1}$ favoring OGT (95% CI, − 0.10 to 0.04; P = 0.37; I^2 = 0%). Few clinicians or patients would consider a possible increase of 0.04 $m \cdot s^{-1}$ as clinically meaningful. Therefore, these results indicate that BWSTT does not have clinically important effects on walking speed when compared to OGT. b. Walking distance: The pooled MD was − 7 m favoring OGT

	Outcome Measures: Walking speed, walking distance and AEs.	(95% CI − 45 to 31; P = 0.73; I2 = 71%). Most would consider a possible increase of 31 m as clinically meaningful. Therefore, these results indicate that BWSTT may have clinically important effects on walking distance when compared to OGT, but these results are not certain because the 95% CI spans down to − 45 m, favoring overground training. c. AEs (Five trials involving a total of 309 participants): The rates of AEs were between 0 (n = 3) and 4% (n = 2). The risk difference (95% CI) of an AE was 0.03 (−0.01 to 0.07; P = 0.21; I^2 = 0%). 4. Comparison no. 2: a. Walking speed: The pooled MD was − 0.04 $m \cdot s^{-1}$ favoring OGT (95% CI − 0.21 to 0.13; P = 0.66; I^2 = 57%). Few would consider a possible increase of 0.13 $m \cdot s^{-1}$ as clinically meaningful. Therefore, these results indicate that RAGT does not have clinically important effects on walking speed when compared to OGT. b. Walking distance: The pooled MD was − 6 m favoring OGT (95% CI − 86 to 74; P = 0.88; I^2 = 68%). Most would consider a possible increase of 74 m as clinically meaningful. Therefore, these results indicate that RAGT may have clinically important effects on walking distance when compared to OGT, but these results are not certain because the 95% CI spans down to − 86 m, favoring overground training. c. AEs (four trials involving a total of 136 participants): The risk difference (95% CI) of an AE was 0.01 (−0.06 to 0.08; P = 0.79; I^2 = 0%).

Nam et al. 2017 South Korea Reviewed published articles up to January 2016 N = 10 **Level of evidence:** PEDro score **Type of study:** RCTs of parallel-groups or cross-over trials **AMSTAR:** 8	**Method:** A systematic review and meta-analysis were performed to assess the effects of RAGT (using Lokomat) on improving walking-related functional outcomes according to time since injury in patients with incomplete SCI. **Database:** MEDLINE, EMBASE, SCOPUS, Web of Science, Cochrane CENTRAL, the World Health Organization International Clinical Trials Registry Platform, and the clinical trials registry and database of the U.S. National Institutes of Health (ClinicalTrials.gov) were searched. **Outcome measures:** Walking speed (10MWT), walking distance (6MWT), leg strength (LEMS), level of functional mobility and independence (WISCI II), independence of gait (FIM-L), and spasticity (Modified Ashworth Score).	1. Of the 502 participants, 263 in four studies were assessed at < 6 months post-injury and 209 in five studies were assessed at > 12 months post-injury, and the remaining 30 participants in one study (mean 6.3 months post-injury) did not belong to any group. 2. The mean PEDro score of the studies was 5.7. 3. Among 10 comparisons, 3 investigated RAGT vs. conventional OGT, 2 investigated RAGT vs. BWS gait training, 2 investigated RAGT vs. non-gait-specific training (strength or bike), and finally, three trials compared RAGT with no intervention. 4. Effects on gait velocity: a. Gait velocity tended to be higher in the acute RAGT groups than in the OGT groups, albeit not significantly so (pooled MD = 0.08 m/s, 95% CI -0.00 to 0.15; P = 0.05; I^2 = 0%, two trials, 130 participants). b. In the chronic RAGT groups, significantly greater improvements were observed than in the no intervention groups (pooled MD = 0.07 m/s, 95% CI 0.01 to 0.12, P = 0.01, I^2 = 0%; three trials, 124 participants). 5. Effects on gait distance: a. Significantly greater improvements were observed in the acute RAGT groups than in the OGT groups (pooled MD = 45.05 m, 95% CI 13.81 to 76.29; P = 0.005; I^2 = 0%, two trials, 122 participants). b. However, there were no significant improvements in the chronic RAGT groups compared to the BWS or no- intervention groups (pooled MD = -4.92 m, 95% CI -11.96 to 2.11; P = 0.17; I^2 = 0%, two trials, 114 participants).

		6. Effects on functional level of mobility and independence: a. Significantly greater improvements on the WISCI II and FIM-L were observed in the acute RAGT groups compared to the OGT groups (pooled MD = 0.5, 95% CI 0.02 to 0.98; P = 0.04; I^2 = 67%, three trials, 211 participants). b. There was no significant improvement in the chronic RAGT groups compared to the strength group (MD = 0.16, 95% CI -1.15 to 1.48, P = 0.81; one trial, 9 participants).
Louie et al. 2015 Canada Systematic Review AMSTAR = 8/11 N = 15	**Methods:** A systematic search in computerized databases was conducted to identify articles that reported on walking outcomes when using a powered exoskeleton. Individual gait speed data from each study was extracted. Pearson correlations were performed between gait speed and 1) age, 2) years post-injury, 3) injury level, and 4) number of training sessions. **Databases:** MEDLINE (1946 to May 6, 2015), EMBASE (1980 to May 6, 2015), Cochrane CENTRAL (1991 to May 6, 2015), and CINAHL (1982 to May 6, 2015).	1. Gait speed, ranged from 0.031m/s to 0.71m/s. The mean gait speed attained by the 84 participants in these 12 studies was 0.26m/s (SD: 0.15m/s) 2. An aggregate mean of 19.8 (SD= 18.6, n= 79) training sessions was calculated across all studies; training sessions were 60 to 120min in duration. 3. Participants ambulated on a body weight-supported treadmill while wearing the HAL. At the end of the intervention period, the participants improved their mean gait speed without the exoskeleton from 0.28m/s to 0.50m/s (p< 0.05, n= 8, effect size= 0.71). They also demonstrated an improvement in mean 6MWT distance from 70.1 m to 163.3 m (p< 0.05, n= 8, effect size= 0.64). 4. A significant correlation was found between increasing age and faster gait speed (r= 0.27, 95% CI 0.02–0.48, p= 0.03, n= 63). However, no relationship was found between injury duration and gait speed (r= 0.19, 95% CI−0.09–0.44, p= 0.18, n= 53) from 10 studies. From the 12 studies, we found a significant correlation between injury level

		and gait speed (r= 0.27, 95% CI 0.02–0.48, p = 0.03, n = 63). 5. Those who were able to practice longer with the powered exoskeleton achieved faster gait speeds (r= 0.27, 95% CI 0.003–0.49, p= 0.048, n= 56).