Reviewer ID: Christie Chan, John Zhu, Jeremy Mak, Kyle Diab, Joanne Chi			
Type of Outcome Measure: 6 Minute Walk Test			**Total articles: 16**
Author ID and Year	**Study Design**	**Setting**	**Population (sample size, age) and Group**
Perez-Sanpablo et al. 2017	Observational, descriptive, transversal	National Institute of Rehabilitation, Mexico City	N=23 (15M/8F) Mean Age: 45.6 ± 12.6 years Mean Time since injury: 42 ± 117 months AIS D, motor subacute and chronic incomplete
Amatachaya et al. 2014	Cross-sectional	A major tertiary referral hospital in Thailand	N=94, 65 male Age (FIM7): 49.2 ±10.0 Age (FIM6): 51.9 ±13.2 Age (FIM5): 45.2 ±13.2 Independent ambulatory individuals with SCI. FIM-Locomotor 7: 33; Time since Injury (months): 34.6 ± 26.56 FIM-L 6: 31; Time since injury (months): 44.3 ± 43.2 FIM-L 5: 30; Time Since Injury (months): 36.7 ± 30.6 AIS-D=52 Incomplete tetraplegia = 28
Barbeau et al. 2007	Longitudinal study comparing walking speed for 6MWT and the 15.2m walk test at 3, 6 and 12 months after entry into initial rehab	Spinal Cord Injury Locomotor Trial (SCILT)	SCILT: multi-center RCT N=107 AIS C and D N=38 ASIA B All had lesions b/w C5 and L3 Group 1: N=66 individuals with SCI who completed both assessments 3 months after entry to rehab Group 2: N=69 individuals with SCI who completed both assessments 6 months after entry to rehab Group 3: N=70 individuals with SCI who completed both assessments 12 months after entry to rehab All patients underwent either 12 weeks of step training with body weight support on a treadmill combined with overground practice OR a defined overground mobility intervention (CONT).
Datta et al. 2009	Cohort	The NeuroRecovery Network (NRN), a specialized network of treatment enters providing standardized, activity-based therapy for patients with SCI.	N=97 (71M, 26F) Mean Age: 38±17y Mean time since SCI = 11.9 months Incomplete SCI AIS C or D Mechanism of Injury: Motor Vehicle Accident = 34 Fall = 29 Sporting Accident = 16 Other nontrauma = 8 Medical/surgical = 6 Violence = 4
Ditunno et al. 2007	Single-blinded, paralled-group, multicenter randomized clinical trial	6 regional SCI inpatient rehab. centres	N=146 (114M, 32F) Mean age = 32 years (range 16 – 69 years) Incomplete spinal cord injury patients who had a Functional Independence Measure locomotor score for walking of < 4 on entry.

Duffell et al. 2015		Outpatient service at the Rehabilitation Institute of Chicago	N=83 (26F, 57M) Age: 18 – 50 Mean age = 47.28 Incomplete SCI patients (AIS-C/D, SCI lvl above T10, 12month+ post injury, able to ambulate) treated with either Lokomat, tizanidine, or no intervention
Forrest et al. 2014	Prospective observational cohort	7 out-patient clinical sites in the Christopher and Dana Reeve Foundation NeuroRecovery Network (NRN) (Feb 2008-Apr 2011)	N=249, 190 male Mean age=42, SD=16 Median time since SCI=0.7 yrs, range=0.1-21.6 AIS-C = 20, D=179; 50 not evaluated Etiology: 15 non-trauma, 83 MVA, 54 fall, 45 sporting, 25 medicine/surgery, 10 other causes Median treatment sessions: 40; range=2-353
Harkema et al 2016	Prospective multicenter observational; NRS 13-item version	6 outpatient rehabilitation centers in the Christopher and Dana Reeve Foundation NRN	N=152 (123M, 29F) Mean (SD) age: 36 (15) Median (range) time since SCI: 0.9 (0.1-45.2) years 110 cervical, 42 thoracic AIS-A/B/C/D: 43/21/39/49 Physician-referred outpatients without progressive lesions above T11, capable of stepping using body weight support, with ability to wean off anti-spasticity medication Median (range) number of sessions of NRN-standardized locomotor training: 70 (23-520)
Jackson et al. 2008	A subcommittee of international experts evaluated locomotion measures	N/A	N = 54 expert raters
Musselman and Yang 2013	Crossover trial		N=20 (14M, 6F) Age: 46.0 ± 13.6 Time since SCI (years): 5.4 ± 8.8 Fast walkers (>0.5 m/s): N=9 Self-selected walkers: N=11
Olmos et al. 2008	Cross-sectional study		N=18 (12M, 6F) age range: 19-72 years old All community-ambulating AIS D SCI patients, > 6 months post-injury, walking at a speed of at least 0.25 m/s
Pithon et al. 2015		Ambulatory clinic of Hospital Universitário da Universidade Estadual de Campinas	N=9, all male Mean age = 32.78±11.58 Time since SCI = 4~13yrs All AIS-A Lvl of injury T4~T12
Scivoletto et al. 2011	Methodological	SCI unit of a rehabilitation hospital.	N= 37 (28M, 9F) median age: 58.5 yrs (range: 19-77) 20 of 37 patients had a non-traumatic lesion injury level: 12 cervical, 14 thoracic, 11 lumbar

Tester et al 2016	Prospective; testing the Neuromuscular Recovery Scale 14-item version	6 outpatient sites in the Christopher and Dana Reeve Foundation NeuroRecovery Network	N=72 (57M, 15F) completing 20 sessions of standardized locomotor training Mean (SD) age: 36 (15) Median (range) time since SCI: 0.7 (0.1-14.7) years N=45 longer than 6 months 44 cervical, 28 thoracic AIS-A/B/C/D: 17/10/20/25
van Hedel et al. 2006	Longitudinal study	European Multicenter Study of Human Spinal Cord Injury	N= 22 (18M, 4F) Mean age = 45.5 years (range 17 – 78 years) All subjects have incomplete injuries and have achieved walking capacity in early stages after injury. Cervical =13 Thoracic = 1 Lumbar = 7 Sacral = 1
van Hedel et al. 2005	Cross sectional study with repeated assessments	The SCI centre of a university hospital in Switzlerland.	Validity: N = 75 (45M, 30F) Mean age = 54±20 years Cervical = 25 Thoracic = 21 Lumbar = 21 Sacral = 8 Reliability N = 22 (14M, 8F) Mean age = 52±20 years Cervical = 7 Thoracic = 7 Lumbar = 7 Sacral = 1

1. RELIABILITY

Author ID	**Internal Consistency**	**Test-retest, Inter-rater, Intra-rater**
Perez-Sanpablo et al. 2017		
van Hedel et al. 2005	No data available	Intrarater = 0.981 (P<.001) Interrater = 0.970 (P<.001) Bland-Altman plot: Significant difference in intra-rater assessment (-20.5±27m) using paired t-test at p=0.002. No significant differences with inter-rater assessment (-14.8±33.6m).
Scivoletto et al. 2011	No data available	The 6-MWT was tested on a longer track (50m) vs. on a short track (10m): The correlation between the results of the two methods was between 0.91 and 0.93

		The inter-rater reliability was between 0.99 and 1 for the two methods. The intra-rater reliability was between 0.98 and 0.99 for the two methods.
Pithon et al. 2015		Intra-rater reliability: $r^2 = 0.96$
Musselman and Yang 2013		Test-retest ICC: 0.989

2. VALIDITY

Author ID	**Validity**
Perez-Sanpablo et al. 2017	**Spearman correlation with WISCI-II** r=0.36-0.69 **Spearman correlation with LEMS** r=0.49-0.55
Ditunno et al. 2007	**Spearman correlation w/Walking Index for SCI (all P<.001)** At 3 months: r = 0.76 At 6 months: r = 0.68 At 12 months: r = 0.69 **Spearman correlation w/50-foot Walking Speed (50-foot Walking Speed is very similar to 10-meter walk test) (all P<.001)** At 3 months: r = 0.95 At 6 months: r > 0.80 At 12 months: r = 0.92 **Spearman correlation w/Functional Independence Measure- Locomotor Score (all P<.001)** At 3 months: r = 0.78 At 6 months: r =0.69 At 12 months: r = 0.62 **Spearman correlation w/Berg Balance Scale (P<.001)** At 3 months: r = 0.79 The correlations with the Lower Extremity Motor Score at each of the time periods were 0.56 < r < 0.63.
van Hedel et al. 2005	Correlations (Spearman rank): 6 Minute Walk Test (6MWT) and 10 Meter Walk Test (10MWT): ρ = -0.95, n=62 6MWT and Timed Up and Go (TUG): ρ = -0.88, n=62 Subgroups: WISCI II scores of 0 to 10: • 6MWT and TUG: r=-0.70, n=15 • 6MWT and 10MWT: r=-0.96, n=15 WISCI scores of 11 to 20 • 6MWT and TUG: r=-0.78, n=47 • 6MWT and 10MWT: r=-0.93, n=47 Dependent walking group: • 6MWT and TUG: ρ=-0.74, n=18 • 6MWT and 10MWT: ρ=-0.92, n=19

	Independent walking group: • 6MWT and TUG: ρ =-0.88, n=44 • 6MWT and 10MWT: ρ=-0.94, n=43 <u>Correlation of 6MWT with Walking Index for Spinal Cord Injury (WISCI) II:</u> Overall: ρ = 0.60, n=60 Subgroups: • WISCI II scores of 0 to 10: ρ = -0.22, n=13 • WISCI II scores of 11 to 20: ρ = 0.64, n=47 • WISCI II dependent walking group: ρ = -0.21, n=15 • WISCI II independent walking group: ρ = 0.65, n=45
van Hedel et al. 2006	**Spearman correlation w/Lower Extremity Motor Score** Within 1 month: r = 0.54 [P=.01] After 3 months: r = 0.34 [P=.12] After 6 months: r = 0.49 [P=.02] After 12 months: r = 0.55 [P<.01] **Spearman correlation w/Walking Index for SCI II** Within 1 month: r = 0.78 [P <.001] After 3 months: r = 0.28 [P=.20] After 6 months: r = 0.36 [P=.10] After 12 months: r = 0.36 [P=.10] **Spearman correlation w/10-Meter Walk Test** Within 1 month: r = -0.91 [P <.001] After 3 months: r = -0.90 [P<.001] After 6 months: r = -0.87 [P<.001] After 12 months: r = -0.86 [P<.001]
Datta et al. 2009	Correlation between the first principle component of change in Berg Balance Scale items and changes in six-minute walk distance: Kendall τ =0.34 Spearman p = 0.48 P<0.01 for all
Forrest et al. 2014	“Significantly higher speeds occurred with higher classifications [SCI-FAI] for both the 6MWT and 10MWT” Pearson’s r with 10MWT: At enrollment in the NRN: r=0.93 At discharge: r=0.94 Overall: r=0.94 Regression analysis with 10MWT shows regression differing significantly with line of agreement – 6MWT & 10MWT not redundant (p<0.001)
Amatachaya et al. 2014	Pearson’s correlation with 10MWT: In FIM-L=6 patients, r = 0.74, p<0.001 In FIM-L=7 patients, r = 0.83, p<0.001 In FIM-L=5 patients, r = 0.31, p=0.113
Jackson et al. 2008	Content Validity: Expert Evaluations (52 votes): Valid or Useful: 19 (37%) Useful but requires validation: 30 (58%) Not useful or valid for research: 3 (6%)
Harkem	Pearson’s r (95%CI) with ASIA Motor Scales:

a et al 2016	UEMS: 0.24 (0.15-0.34) LEMS: 0.70 (0.64-0.76) ASIA Motor Score: 0.64 (0.58-0.71)

3. RESPONSIVENESS

Author ID	Responsiveness
van Hedel et al. 2006	The 6MWT differed between 1 month and 3 months (mean score increased from 314 to 473 metres, P<.001) and between 3 months and 6 months (mean score increased from 473 to 502 metres, P=.01) but not between 6 months and 12 months (mean score decreased from 502 to 495 metres, P=.76) Friedman's test (α = 0.05) between 4 intervals: DF = 3 F_r = 38.9 P < 0.001 Pair-wise comparisons via Wilcoxon's signed rank test: Between intervals 1 and 2: P<.001 Between intervals 2 and 3: P=.01 Between intervals 3 and 4: P=.76
Mussel man and Yang 2013	With 2 month endurance training: SRM: 0.88
Harkem a et al 2016	Standardized Response Means after Locomotor Training: All individuals: 0.48 AIS-A/B: non-ambulatory AIS-C: 0.50 AIS-D: 0.83 Median (range) number of sessions of NRN-standardized locomotor training: 70 (23-520)

4. FLOOR/CEILING EFFECT – no data available

5. INTERPRETABILITY

Author ID	Interpretability
Lam et al. 2007	SEM = 16.5 meters MDC = 45.8 meters
van Hedel et al. 2006	6 MWT scores in metres: Mean (SD), Median Within 1st month: 314 (137.0), 323 After 3 months: 473 (110.1), 465 After 6 months: 502 (132.6), 505 After 12 months: 495 (125.1), 285
Olmos et al. 2008	All participants were tested 3 times in both environments (Experimental – indoor gym and Natural – community setting) on the same time with an interval of 60 min between each test.

	Experimental environment	Natural environment
Mean	382.39 m	401.44 m
Median	371.75 m	367.80 m
SD	120.988 m	130.276 m
Min	151 m	151 m
Max	560 m	584 m

Barbeau et al. 2007 — Comparison of walking speed within subjects with upper motor neuron lesions during the SCILT:

Months after entry to trial:	n	Walking speed (m/s) over 6 minutes	Walking speed (m/s) over 15.2 m	P value
3	66	0.64 (0.06)	0.72 (0.05)	.14
6	69	0.79 (0.05)	0.92 (0.06)	.29
12	70	0.88 (0.06)	1.08 (0.06)	.001

Gait speed was very similar at 3 and 6 month testing b/w 15.2m and 6 minute walking tests; however, gait speed was significantly faster during the 12 month follow up for the 15.2 m test.

Walking Speeds (Mean, Standard Error) Used for the 15.2-m Versus 6-Minute Walk by the Slowest, Middle (25%-75%), and Fastest Patients at Each Data Collection

Time:	Variable:	Quartile:	# of patients:	Mean (m/s) (Standard error)	P value
3 months	15.2-m 6-minute	Lower	14	0.20 (0.06) 0.16 (0.06)	.15
	15.2-m 6-minute	Middle	33	0.74 (0.05) 0.62 (0.29)	.07
	15.2-m 6-minute	Upper	19	1.55 (0.06) 1.33 (0.41)	.01
6 months	15.2-m 6-minute	Lower	10	0.18 (0.06) 0.16 (0.09)	.84
	15.2-m 6-minute	Middle	39	0.86 (0.04) 0.82 (0.04)	.53
12 months	15.2-m 6-minute	Lower	16	0.32 (0.07) 0.27 (0.08)	.56
	15.2-m 6-minute	Middle	34	1.01 (0.06) 0.87 (0.05)	.03
	15.2-m 6-minute	Upper	20	1.88 (0.06) 1.46 (0,07)	<.001

Forrest et al. 2014	SRD = 0.08m/s (Nearly no diff. btwn fast (>=0.44m/s) & slow walkers (<0.44m/s)) MCID (for SCI-FAI < 5 at enrollment patients) = 0.11m/s (for slow walkers (<0.44m/s) = 0.1-0.15m/s)
Musselman and Yang 2013	MDC: 34.4 m (0.0956 m/s) SEM: 12.3 m (0.0342 m/s)
Duffell et al. 2015	MDC: 37.1 m (0.103 m/s)
Tester et al 2016	Smallest Real Difference* (SRD): 0.086m/s *Analogous to Minimal Detectable Change
Harkema et al 2016	Median (Range) 6MWT Distances: All individuals: Enrollment: 0 (0-549) Discharge: 0 (0-700) AIS-A/B: Non-ambulatory AIS-C: Enrollment: 0 (0-114) Discharge: 0 (0-534) AIS-D: Enrollment: 57 (0-549) Discharge: 264 (0-700) * Enrollment = pre-intervention; discharge = post-intervention; median (range) number of sessions of NRN-standardized locomotor training: 70 (23-520)