Author Year Country Research Design Score Sample Size	Methods	Outcome
[Cornwell et al. 2014](#) Australia Cohort Level 2 N = 13	**Population:** 13 patients with acute traumatic motor-complete SCI from ICU (12M 1F) Mean age (SD): 36.9(21.8), lesion levels C3-T1. **Treatment:** AB, measurements taken while AB-on & AB-off for each patient. **Outcome Measures:** VC, FVC, FEV_1, PEFR, MEP, and various speech measures.	1. Significant increase in VC, FCV, & FEV_1 when AB is on, compared to when AB is off.
[Wadsworth et al. 2012](#) Australia RCT (crossover) PEDro = 5 Level 2 N = 14	**Population:** 14 (13M; 1F) people with motor complete, C4-T1 SCI; mean (SD) age: 32(16)yrs. **Treatment:** AB on/off with participant seated in upright wheelchair, with 3 repeated measures at 6 weeks, 3 months, and 6 months after commencing daily use of an upright wheelchair. **Outcome measures:** FVC, FEV_1, PEFR, MIP, MEP, MAP, maximum sustained vowel time, sound pressure level.	1. AB significantly improved FVC (weighted mean difference .34L [95% confidence interval (CI) .10 –.58], $P<.005$), FEV_1 (.25L [.01-.51], $P<05$), PEFR (.81L/s [.13–1.48], $P<.02$), MIP (7.40cmH_2O [1.64 – 13.14], $P<.01$). 2. Participants stopped wearing an AB daily; reasons included "I think the AB will stop my abs from working" (n=2) and "the AB keeps riding up my ribs when I'm exercising" (n=1).
[West et al. 2012](#) UK Pre-post Level 4 N = 21 (13 SCI)	**Population:** 13 participants with SCI and 8 non-SCI matched-controls. *SCI group*: 12M 1F; mean(SD) age: 32(8). *Control group*: 6M 2F; mean(SD) age: 32(8) yrs. **Treatment:** Participants underwent three trials for assessment of: 1) diaphragm and ventilator function, 2) pulmonary	1. In SCI, tight-bound increased VC (14%), expiratory flow throughout VC (15%), IC (21%), and MEP (25%). In contrast, tight-bound reduced RV (-34%) and FRC (-23%).

		2. Tight-bound increased tidal and twitch transdiaphragmatic pressures (~45%). Tight-bound increased cardiac output (28%), systolic mitral annular velocity (22%), and late-diastolic mitral annular velocity (50%).
	function, and 3) cardiovascular function. For each trial, participants were exposed to 3 conditions: 1) unbound, 2) loose-bound and 3) tight-bound. **Outcome measures:** VC, expiratory flow, IC, maximal expiratory mouth pressure, RV, FRC, tidal and twitch transdiaphragmatic pressures, cardiac output, systolic mitral annular velocity, late-diastolic mitral annular velocity.	
Julia et al. 2011 Malaysia Pre-post Level 4 N = 21	**Population:** 18M, 3F; 17 tetraplegia, 4 paraplegia; 13 complete, 8 incomplete. **Treatment:** Single-strap abdominal binder and triple-strap abdominal binder. **Outcome Measures:** Voluntary cough PEFR.	1. Both binders improved PEFR, but triple-strap abdominal binder improved to a greater extent. The difference in binder effects was significant for the tetraplegic group but not for the paraplegic group. 2. In participants with incomplete injury, PEFR increased from 290.0(105.8) L/min at baseline to 332.5(110.5) and 366.3(101.5) L/min with single-strap abdominal binder and with triple-strap abdominal binder, respectively.
Prigent et al. 2010 France Prospective observational Level 4 N = 72	**Population:** Regular corset users: 28 males, 8 females, mean age 37, mean YPI 7 Controls (no longer used corset): matched for sex and injury level; 28M, 8F, mean age 39, mean YPT 16. **Treatment:** use of corset. **Outcome measures:** VC, IC, Expiratory RV.	1. In supine, VC did not differ between users and nonusers, but in sitting, VC was less for the users without the corset than nonusers. Corset use increased VC in sitting. 2. 19 corset users compared at least 1 day with and without

		the corset during their usual activities and wearing the corset was associated with a significant drop in the severity of dyspnea.
[Hart et al. 2005](#) France Pre-post Level 4 N = 10	**Population:** 7 tetraplegia, 3 paraplegia, mean age: 35.8 yrs, age range:18-56 yrs, 3-27 months post-injury, post-traumatic SCI levels: C5-T6, ASIA A. **Treatment:** Custom girdle, designed to provide truncal stability and abdominal support. **Outcome measures**: Spirometry.	AB resulted in: 1. Decrease in respiratory effort measured by Borg scale (4.3(1.8) to 2.3(1.8)). 2. Increase in IC and FVC, 3. Decrease in FRC; 4. Increase in diaphragm pressure-time product - a measure of diaphragm work; 5. Increases in twitch and maximal transdiaphragmatic pressure – measures of diaphragm force.
[Estenne et al. 1998](#) USA Pre-post Level 4 N = 8	**Population:** 8 participants with SCI; Age range: 21-41 years; level of injury C5-C8; length of injury: 6-200 months **Treatment:** Abdominal strapping **Outcome measures**: Spirometry.	Strapping the abdomen in SCI resulted in: 1. Increase in VC; 2. Decrease in FRC and RV. 3. Small but inconsistent increases in maximal esophageal pressure (Pes) and expiratory flow rate that might not improve cough.
[McCool et al. 1986](#) USA Prospective controlled trial Level 2 N = 13	**Population:** 13 tetraplegia (C4-C7), 9 non-SCI controls, all male, mean(SD) age: 29.9(11.4) yrs. **Treatment:** 3 Body Positions: supine, head-up tilted (37°) and seated – with and without abdominal binders.	AB in SCI resulted in: 1. Increase IC in all positions, and TLC in the tilted and sitting positions. 2. Decrease in FRC in all positions.

	Outcome measures: Spirometry.	3. An increase in rib cage dimensions at TLC.