Author Year Country Score Research Design Sample Size	Methods	Outcome
Berlowitz et al. 2019 Australia RCT PEDro = 8 Level 1b N = 149	**Population:** 149 Patients with traumatic quadriplegia and SDB - OSA; 134 males and 15 females; mean (SD) age 47 (± 15); injury level C2-C4 (n = 74) and C5-T1 (n = 75); AIS A (n = 55); and mean time since injury 73 days. **Treatment:** All participants with an apnea hypopnea index (AHI) >10 events per hour were trialed on an auto titrating CPAP for up to 3 nights and if tolerated the treatment for at least 4 hours on one of three nights were randomized to: • CPAP + usual care (n = 73), received auto titrating CPAP immediately during 3 months. • Usual care only (n = 76), wait for 3 months. **Outcome Measures:** Neurocognitive test battery (attention and information processing as measure with the Paced Auditory Serial Addition TASK (PASAT), the Rey Auditory Verbal Learning Test (RAVLT), the Digit Span subtest of the Wechsler Adult Intelligence Scale IV, Symbol Digit Modalities Test and North American Adult Reading Test (NAART)); sleep disorder symptoms and state sleepiness (the Basic Nordic Sleep Questionnaire (BNSQ) and the Karolinska Sleepiness	1. Study participants improved on the PASAT by an average (SD) of 17.0 (± 28.1) over the 3 months; however, no significant difference was observed between groups. 2. Sleepiness measured by the KSS was significantly improved by auto titrating CPAP on intention- to-treat analysis ($p < 0.01$, mean difference in improvement of −1.26, 95% CI −2.2 to –0.32), after controlling for baseline predictors (−0.65, 95% CI −1.3 to –0.01) and in each week in which participants were classified as adherent ($p = 0.004$, −0.45, 95% CI −0.77 to –0.14). The BNSQ measure of sleepiness was non-significantly improved by CPAP on intention to treat ($p = 0.16$; −2.86, 95% CI −0.11 to 6.84) but significantly improved after controlling for baseline predictors (−3.42, 95% CI −6.67 to –0.16) and on *per protocol* ($p=0.003$; −9.09, 95% CI −3.2 to –15). The POMS Fatigue score improved overall (−1.37, 95% CI −2.2 to –0.44) but was not different between groups ($p = 0.57$). 3. 10 of the 27 outcome measures significantly improved within group

	Scale (KSS)); health-related quality of life (the Assessment of Quality of Life Scale); mental health and mood (the Hospital Anxiety and Depression Scale and the Profile of Mood States (POMS); non-blinded measures of sleepiness (KSS); autonomic dysfunction; CPAP adherence; medication; troubleshooting of any mask or device issues; and spirometry (FVC and FEV_1) were administered at baseline and at study completion. **Chronicity:** Mean time since injury was 73 days.	over time. The intention-to-treat, linear regression models and the per protocol comparisons, found no between-group differences in any of the outcome measures other than sleepiness (KSS). 4. Baclofen prescription increased at study conclusion but proportionally less in the CPAP group (52% vs. 75%, p = 0.03). 5. No differences were observed between groups in the frequency of autonomic dysreflexia events per week (p = 0.37; −0.17, 95% CI −0.55 to –0.21), serious adverse events or measures of heart rate variability.
Graco et al. 2019 Australia Secondary analysis of CPAP data from RCT Level 3 N = 79	**Population:** 79 patients with traumatic tetraplegia and OSA; 72 males and 67 females; mean (SD) age 46.2 (± 15.9) years; injury level C2-C4 (n = 43) and C5-T1 (n = 36); AIS A (n = 33); and mean (SD) time since injury 77.7 (± 64.3) days. **Intervention:** Secondary analysis of the 79 patients who were enrolled in a previous study (Berlowitz et al. 2019; see above). **Outcome Measures:** Adherence within (mean nightly hours of use), adherent (recorded device use of at least 4 hours average per night throughout the study), baseline factors (age, sex, injury severity, time since injury, OSA severity (AHI,	1. Mean daily CPAP use was low (2.9 ± 2.3 hours). 2. 33% of the participants receiving CPAP (n = 26) were adherent over the 3-month study with mean daily use of >4 hours; about 43% (n = 34) used CPAP for <2 hours per night; and 24% (n =19) used CPAP for between 2 and 4 hours per night on average. 3. Greater CPAP use over the 13-week trial was associated (P < 0.01) with CPAP use in the first week, higher premorbid intelligence, higher abdominal girth, increasing age, and more severe OSA.

	Arousal Index, number of awakenings, and 4% oxygen desaturation), quality of life, premorbid intelligence (the North American Adult Reading Test [NAART]), anxiety and depression, mood, daytime sleepiness, waist circumference, neck circumference, BMI, and CPAP use in the first week), CPAP device pressure and leak. **Chronicity:** Mean (SD) time since injury was 77.7 (± 64.3) days.	4. Higher 95th percentile pressure (cmH_2O) was significantly associated with greater daily hours of CPAP use (coefficient = 0.20; 95% confidence interval, 0.16 - 0.25; P < 0.001). Baseline AHI (coefficient = 0.01; P = 0.08) and 95th percentile leak (coefficient = 0.001; P = 0.68) were not associated with daily usage.
Proserpio et al. 2015 Italy Prospective observational study Level 5 N = 35	**Population:** Thirty-five (15 tetraplegic and 20 paraplegic) patients were enrolled. Nine patients (25.7%) had an obstructive sleep-disordered breathing (SDB) and 10 (28.6%) had periodic leg movements during sleep (PLMS). **Treatment:** Each patient underwent a clinical assessment, full polysomnography, and arterial blood gas analysis before and immediately after sleep. **Outcome Measures:** Multiple logistic regressions were applied to evaluate factors associated with SDB and PLMS. **Chronicity:** Mean (SD) time since injury was 77 (± 68) days.	1. The frequency of SDB in the first year following injury was higher in tetraplegic than in paraplegic participants whereas PLMs were significantly more frequent in participants with an incomplete motor lesion than in participants with a complete motor lesion. 2. Multiple regression shows that the level and the completeness of the spinal cord lesion are the main factors associated with an early development of SDB and PLMS.