

Author Year Country Research Design Score Sample Size	Methods	Outcome
<p>Kluayhomthong et al. 2019</p> <p>Thailand</p> <p>RCT (crossover)</p> <p><u>PEDro = 5</u></p> <p><u>Level 2</u></p> <p>N = 13</p>	<p>Population: 13 intubated patients with cervical SCI referred to physical therapy for secretion clearance, 12 males and one female, mean age 51 (28 – 70) years, and AIS C.</p> <p>Treatment: Patients received 3 interventions carried out on consecutive days, devices used for breathing exercise were based on the threshold incentive spirometry device:</p> <ul style="list-style-type: none"> • Oscillated positive expiratory pressure breathing (OPEP) intervention. • Oscillated incentive spirometry (OIS) + OPEP. • Sham intervention: Patient undertook the intervention as for OIS+OPEP but with no oscillation or humidification of the air flow because there was no water in either bottle. <p>The patient was disconnected from the ventilator and the tracheostomy or endotracheal tube was connected to the device and performed 10 sets of active breathing with 10 breaths/set and one minute of rest (patient reconnected to the ventilator) between sets.</p> <p>Outcomes Measures: Airway secretions; spontaneous VE; VT; slow vital capacity (SVC); physical effort (RPE) and sensation of dyspnea (RPB) during breathing exercises; adverse events; oxygen saturation; heart rate; and spontaneous breathing frequency</p>	<ol style="list-style-type: none"> 1. Patients had no difficulties with the interventions and there were no adverse events. 2. The median interquartile range (IQR) secretion wet weight in the 3 h before the interventions was 2.61 g (2.21, 3.85) and this increased following each of the interventions; showing OPEP+OIS was more effective than OPEP (p = 0.006) and Sham (p = 0.006), while OPEP was more effective than Sham (p = 0.019). 3. RPE and RPB during intervention were not statistically significant between groups.

	<p>were collected before and after each treatment session (day).</p> <p>Chronicity: 23 days since injury.</p>	
<p>Torres-Castro et al. 2014</p> <p>Chile</p> <p>Pre-post</p> <p>Level 4</p> <p>N = 15</p>	<p>Population: 15 in-patients with complete tetraplegia (C4–C6, AIS A) were included. Median age was 33 years (16–56).</p> <p>Treatment: PCF was measured during four different interventions: spontaneous maximal expiratory effort (MEE); MEE while receiving Assisted Cough (MEE-AC); MEE after Air Stacking with a manual resuscitation bag (AS-MEE); and MEE with AS and AC (AS-MEE-AC).</p> <p>Outcome Measures: PCF.</p> <p>Chronicity: The inclusion criteria was SCI within 1 year of injury. Patients included had an average of 3 months since injury.</p>	<ol style="list-style-type: none"> 1. We observed significant differences in PCF while applying MEE-AC and AS-MEE compared with MEE. 2. The difference in PCF value was greatest using the AS-MEE-AC techniques combined. 3. Application of combined techniques (AS-MEE-AC) can reach near normal PCF values and be a low-cost and easily applied intervention for people with tetraplegia.