

## Clinical Trial Overview

### High-Frequency Chest Compression: Chronic Lung Disease

A one-year evaluation of high-frequency chest compression (HFCC) therapy in patients with familial dysautonomia showed statistically significant reductions in healthcare utilization including hospitalizations, clinic visits and antibiotic use. Mean SaO<sub>2</sub> values improved markedly. Pneumonia episodes decreased just short of statistical significance. Healthcare cost reductions may be inferred.

<b>Title</b>	Giarraffa P, Berger KI, Chaikin AA, Axelrod FB, et al. Assessing efficacy of high-frequency chest wall oscillation in patients with familial dysautonomia. <i>Chest</i> 2005; 128:3377- 3381.
<b>Design</b>	Twelve month retrospective - twelve month prospective medical chart review
<b>Method</b>	<p>Fifteen subjects (7 females, 8 males; 11-33 years of age) with a familial dysautonomia (FD), a genetic disorder associated with impaired airway clearance and chronic lung disease, participated in a one-year clinical trial of HFCC. Subjects served as their own controls.</p> <ul style="list-style-type: none"> <li>• Baseline pulmonary function tests, chest radiograph and blood tests</li> <li>• Retrospective chart review (12 months): Data for respiratory illnesses, medications, doctor visits, hospitalizations, and absenteeism</li> <li>• Daily log recording (12 month prospective) for same parameters as above</li> <li>• Daily recording of HFCC therapy sessions/minutes</li> <li>• Evaluations at 1, 3, 6, 9, and 12 months for pulse oximetry, spirometry and log review</li> <li>• Exit blood tests and chest radiographs</li> </ul>
<b>Results</b>	<p>A twelve month retrospective/prospective medical chart data comparison showed improvements in all measured outcomes including:</p> <ul style="list-style-type: none"> <li>• Hospitalizations (p = 0.0156)</li> <li>• Pneumonias (p = 0.056)</li> <li>• Antibiotic courses (p = 0.0005)</li> <li>• Antibiotic days (p = 0.0002)</li> <li>• Doctor/clinic visits (p = 0.0005)</li> <li>• Absenteeism (p = 0.0002)</li> <li>• Treatment adherence at one month: 85%</li> <li>• Treatment adherence at exit: &gt; 50%</li> <li>• Mean SaO<sub>2</sub> increase at one month (96.8 ± 1.6% vs 93.5± 3.3%)</li> <li>• SaO<sub>2</sub> improvement sustained at exit (97.9±0.7%)</li> <li>• FVC improvement sustained from 3 months to exit (p &lt;0.05)</li> </ul>