Cystic Fibrosis and The Vest

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Clinical Question
Is the high frequency chest vest an effective treatment intervention for mobilizing secretions in patients with Cystic Fibrosis?

What is Cystic Fibrosis?
- Multisystem genetic disorder affecting children and young adults
- Mucus collects in airways preventing pulmonary and pancreatic organs from functioning properly
- Symptoms: persistent cough, difficulty clearing lungs of secretions, increased breathing rate, decreased appetite, and malabsorption of nutrients

What is Vest Therapy?
- AKA high frequency chest wall oscillations (HFCWO) (1)
- Involves wearing an inflatable vest connected to a machine that vibrates (1)
- Commonly used in the treatment of CF to loosen and thin mucus (3)
- Every 5 minutes, the patient stops the machine and coughs or huffs (5)

Effects of High Frequency Chest Wall Oscillation
- Provides lasting effects of increased pulmonary function (2)
- Decreases oxygen saturation when worn during acute bouts of exercises (2)
- Increases frequency of effective suctioning of pulmonary secretions (1)
- Improves FEV1 and FVC values (5)
- Increases independence in children and young adults diagnosed with cystic fibrosis (4)
- Decreases progression of lung disease (5)

Conclusion
- Vest therapy is an appropriate intervention for children and young adult CF patients with difficulty mobilizing secretions
- Clinical application of vest therapy should be based on pt preference
- The vest is equally as effective in mobilizing secretions as other standard methods of mobilization
- Patients demonstrate greater adherence to vest therapy compared to other treatment techniques due to flexibility in administration
- Settings of the vest will vary based on severity of disease and tolerance of treatment, between 5 and 22 Hz and 10-30 minute sessions
- The vest is most effective when used long term for 7-26 months

Need for Continued Research
- Lack of high level evidence to support use of vest therapy
- Need to compare each type of secretion mobilization technique to determine which is the most effective (3)

References