

**Technology**

Computer system used in pulmonary rehabilitation for patients with COPD

Inventor

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Key Features

- Improved exertional endurance and perceived breathlessness in patients with COPD
- Provides results in real-time for corrective actions by patients
- Comprised of readily available and cost-competitive components
- Allows clinicians to analyze patient's breathing pattern

Stage of Development

Reduced to practice with prototype system developed

Keywords

Rehab/Assistive Device
- COPD
- Pulmonary rehabilitation
- Ventilation feedback
- Exertional endurance
- Software

Patent Status

None

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Ventilation Feedback System (VA Reference No. 01-082)

Novel computer system used in rehabilitation therapy of chronic lung disease for providing patients more efficient breathing patterns

Technology

The Department of Veterans Affairs has developed a computer system to be used in the therapy of chronic lung disease and can teach patients with chronic obstructive pulmonary disease (COPD) to adopt more efficient breathing patterns while exercising.

Description

The Ventilation Feedback System developed by the VA measures the patient's breathing pattern by means of an airflow sensor attached to a mask or mouthpiece. With feedback and guidance from the system, the patient is taught to breathe during exertion in a way that helps to minimize some of the effects of the chronic lung disease. It is some patients' natural inclination to develop a breathing pattern characterized by a tendency to continuously over inflate their lungs with short and rapid breaths near the top of their lung capacity, particularly during exercise. The developed technology helps the patient to learn a more useful pattern of breathing during exertion, by visually illustrating to the patient the time they spend in the inhaling and exhaling phases of their breathing cycle. The visual display graphically shows the "target" amount of exhalation time along with the actual measured times and helps the patient keep score of their success in reaching specific targets.

Competitive Advantage

The developed technology can provide an effective tool to teach patients more efficient breathing patterns for improved exertional endurance and an enhanced quality of life.

This invention:

- Is comprised of components that are readily available, well understood, and relatively inexpensive.
- Results in improvement of pulmonary rehabilitation demonstrated by substantial improvements in maximal and constant work rates tests and perceived breathlessness.
- Allows clinician to analyze the patient's breathing pattern after rehabilitation sessions.

Status

The Department of Veterans Affairs is looking for a partner for further development and commercialization of this technology through a license, and the VA inventors are available to collaborate with interested companies through a Cooperative Research and Development Agreement (CRADA).