News Archives

Device helps Parkinson’s patients improve use of swallowing muscles

Parkinson's disease steals control of legs, arms, and fingers, but it can also affect control over speech and breathing.

WNDU.com - Parkinson's disease steals control of legs, arms, and fingers, but it can also affect control over speech and breathing. It is the common, but rarely talked about side of Parkinson's that affects hundreds of thousands of people.

Simple sipping and everyday eating were both too tough for John Schmidt, 76, whose ability to use his mouth or jaw was stolen by Parkinson's disease.

"Everybody who has Parkinson's is affected in a little bit of a different way," said Schmidt.

According the Parkinson’s Disease Foundation, 50-percent of Parkinson’s patients, or about 250,000 people, lose control of the 50 pairs of muscles used to swallow. Schmidt was one of them, losing the ability to swallow his medications -- all 44 pills per day.

"For me to be left out, yeah, I don't like it,” said Schmidt.

“There’s no machine you can go to at a gym to strengthen the muscles of breathing,” said Christine Sapienza, a doctor at the University of Florida.

So Sapienza, with the help of two other University of Florida professors, invented one.

The Expiratory Muscle Strength Training Device (EMST150™) was designed to build and boost lung pressure. Inside the EMST 150™ is a calibrated valve that will not open until the user generates enough lung pressure, working much like a pin in a weight machine.

In a recent study, 33-percent of people who tested the device improved their ability to swallow. The device is the only one in the United States proven to reduce airway invasion in Parkinson's patients during swallowing.

"What we have found is that those muscles in those diseased states respond to strengthening," said Sapienza.

Schmidt’s body responded quickly and pills no longer pose problems for him.

"Forty-four pills,” said Schmidt. “I take, two, three at a time. A little water and they go right down, no problem whatsoever."

In a test group, the device also helped reduce the amount of food that should not be in airways during eating. Such issues can cause choking, which can be deadly for those without the ability to cough or swallow.

Simple sipping and everyday eating were both too tough for John Schmidt, 76, whose ability to use his mouth or jaw was stolen by Parkinson's disease.

"Everybody who has Parkinson's is affected in a little bit of a different way," said Schmidt.

According the Parkinson's Disease Foundation, 50-percent of Parkinson's patients, or about 250,000 people, lose control of the 50 pairs of muscles used to swallow. Schmidt was one of them, losing the ability to swallow his medications -- all 44 pills per day.

"For me to be left out, yeah, I don't like it," said Schmidt.

"There's no machine you can go to at a gym to strengthen the muscles of breathing," said Christine Sapienza, a doctor at the University of Florida.

So Sapienza, with the help of two other University of Florida professors, invented one.

The Expiratory Muscle Strength Training Device (EMST) was designed to build and boost lung pressure. Inside the EMST150™ is a calibrated valve that will not open until the user generates enough lung pressure, working much like a pin in a weight machine.

In a recent study, 33-percent of people who tested the device improved their ability to swallow. The device is the only one in the United States proven to reduce airway invasion in Parkinson's patients during swallowing.

"What we have found is that those muscles in those diseased states respond to strengthening," said Sapienza.

Schmidt's body responded quickly and pills no longer pose problems for him.

"Forty-four pills," said Schmidt. "I take, two, three at a time. A little water and they go right down, no problem whatsoever."

In a test group, the device also helped reduce the amount of food that should not be in airways during eating. Such issues can cause choking, which can be deadly for those without the ability to cough or swallow.

Research Summary:
Parkinson's Patients Swallow Easier

BACKGROUND: According to the National Institute of Neurological Disorders and Stroke, Parkinson's disease (PD) falls under a classification of conditions called motor system disorders, which occur due to a dwindling of the brain cells responsible for yielding dopamine. PD usually strikes people aged 50 or above, beginning with slighter symptoms which become more severe over time. The progression of the disease varies from person to person, as some develop more pronounced symptoms quicker than others. For this reason diagnosis can be tricky, often requiring a series of tests such as brain scans to first rule out other conditions. Since there are currently no blood or lab tests in existence capable of screening individuals for PD, diagnosis is usually based on both medical history and neurological analysis. The disease is characterized by four main symptoms:
* Tremors, or trembling of the hands, limbs, face and jaw
* Rigidity and stiffness in the legs, arms and trunk
* Slowed movement (Bradykinesia)
* Impaired posture, balance and coordination

TREATMENT: Unfortunately, there is no cure for PD at present. However, there are many medications that largely reduce the painful symptoms. Patients usually receive a combination of levodopa and carbidopa, which work with nerve cells to create much-needed dopamine for the brain. Anticholinergics help to lessen

rigidity and control tremors. Dopamine-mimicking drugs such as pramipexole, ropinirole and bromocriptine help neurons to function as they normally would when stimulated by dopamine. Not all symptoms are satisfied by drug treatments, but Bradykinesia often responds best. (SOURCE: NIH)

EXPIRATORY MUSCLE STRENGTH TRAINING (EMST150™) DEVICE: Developed University of Florida lecturer and researcher Christine Sapienza Ph.D. and a team of her colleagues, the EMST device is designed to treat PD patients suffering from a decline in the functionality of their mouth and throat. This condition occurs due to a weakening of all the muscles involved in swallowing. The EMST150™ uses a fixed pressure-release valve that won't open unless the patient's lungs generate enough pressure. The device forces the patient's affected muscles to work hard to achieve that level of pressure, thus strengthening them with every use. (SOURCE: University of Florida Health Science Center)

* For More Information, Contact:

Gail Wiley
Aspire Products, LLC
(800) 596-7220
info@emst150.com