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A little more than two months after beginning VitalStim Therapy, Walter Salyer regained his swallow function. The therapy was administered by HealthSouth Rehabilitation Hospital in Kingsport by Janice Osborne, (left) and Shauna Collett.

New therapy helps people swallow again

By JESSICA FISCHER

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Dysphagia affects victims of stroke, neurological disorders

Walter Salyer isn't much of a drinker and never has been. But he longed for a good cold beer after suffering a massive head injury from a fall at his home in Hiltons, Va., last December that left him dependent on a tracheostomy and a percutaneous endoscopic gastrostomy, or PEG tube, to survive.

The 77-year-old retired postmaster was barely able to swallow his own saliva, much less anything else.

Salyer spent 110 days at Bristol Regional Medical Center before being transferred in April to HealthSouth Rehabilitation Hospital in Kingsport.

That's when he began daily VitalStim Therapy with speech-language pathologist Janice Osborne to help treat his dysphagia, a painful, often debilitating condition that makes swallowing difficult for some, impossible for others.

One in 17 people will develop some form of dysphagia in their lifetime, including 50 to 75 percent of stroke patients and 60 to 70 percent of patients who undergo radiation therapy for head and neck cancer. Estimates of dysphagia's prevalence in patients with neurological diseases such as Parkinson's disease and amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig's disease, run as high as 90 percent.

The condition is especially prevalent among the

elderly. Studies suggest that up to 75 percent of nursing home residents experience some degree of dysphagia.

According to the Agency for Health Care Policy and Research, more than 60,000 Americans die each year from complications associated with swallowing dysfunctions, most commonly aspiration

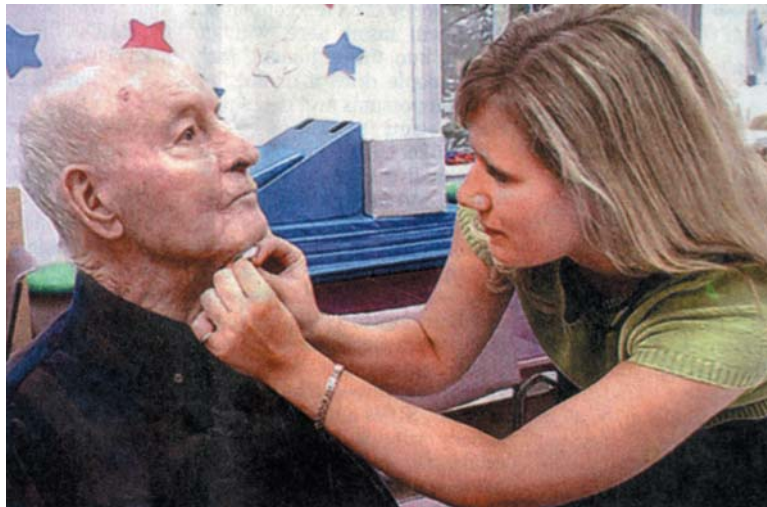
pneumonia, caused by food or saliva going down the windpipe and into the lungs. Based on CDC mortality data, that's more than the total number of people dying from all forms of liver disease, kidney disease and HIV-AIDS combined.

But VitalStim is offering new hope to patients like Salyer.

The painless, non-invasive new form of treatment uses a small electrical current delivered through specially designed electrodes placed on the neck to stimulate the muscles responsible for swallowing.

Combined with swallowing exercises and other traditional treatment methods, the therapy basically re-educates the atrophied or inactive muscles.

"If you lift a pencil, that's really easy, and it only triggers your Type 1 muscle fibers," Osborne said. "If you lift something really heavy, you have to recruit all of your muscles, and that's what VitalStim does. It causes such an evoked contraction that it gets all of the muscle fibers working so it basically is doing biceps curls on your larynx. Over time,



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your muscles rebuild themselves."

Treatment sessions, which must be ordered by a physician, last about an hour. Patients in a hospital usually undergo treatment every day, while those receiving therapy on an outpatient basis are "e-stimmed" two or three times a week. An X-ray study is performed on patients once a month or so to gauge the treatment's effectiveness.

"It's not just like we come in and hook you up and set a plate of food in front of you, and voilà, you're better. It's a very active process," Osborne said. "The best practice for swallowing is to swallow because you work on the timing. Sometimes you swallow and you cough and choke because your timing was off. It's like learning a dance routine. The next time you do it you get the steps down a little better."

So far, the only reported side effect of VitalStim is occasional skin irritation caused by the adhesive used on the electrodes to make them stick.

VitalStim is not recommended for use on patients with advanced dementia, significant reflux due to use of a PEG tube or dysphagia due to drug toxicity. Patients with cardiac demand pacemakers should also be cleared before beginning therapy.

Marcy Freed, a speech-language pathologist, began developing VitalStim more than 30 years ago after undergoing neuromuscular electrical stimulation to treat a running injury.

If the treatment could help restore muscle function in her leg, she reasoned, why wouldn't it work on the muscles that control a person's swallow?

Before VitalStim Therapy was approved by the U.S. Food and Drug Administration in 2001, speech-language pathologists like Freed were limited in the treatment methods they had to offer dysphagia sufferers: conventional speech therapy, oral exercises, swallowing maneuvers such as tucking the chin and thermal-tactile stimulation (application of cold to the throat area) were among the most common.

"To keep people from aspirating you would

puree their food and thicken their liquids, and that was kind of what you were left with," Osborne said. "That's what a lot of people remember from their grandparents. People remember when grandma had to eat that mashed-up food."

Those who couldn't even swallow modified foods were left with no alternative but to rely on a PEG tube for their nutritional needs.

And in such a food-driven society as ours, that can deal a major blow to a person's quality of life. "It's very isolating," Osborne said.

That's why VitalStim holds such promise.

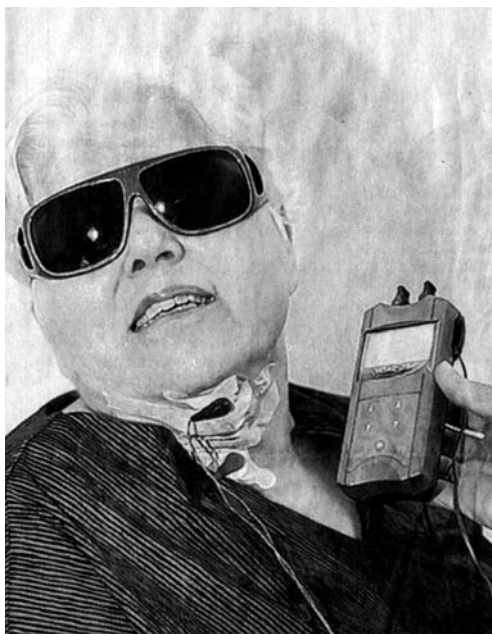
Based on the results of a five-year clinical trial comparing the effectiveness of electrical stimulation treatment with thermal-tactile stimulation in 892 dysphagia patients, VitalStim appears to produce quicker, more effective results.

Of the patients who received VitalStim Therapy, 98.4 percent improved their swallow function score; 97.5 percent with severe dysphagia regained swallow function past the point of PEG tube dependency; and 38.3 percent with severe dysphagia regained full normal swallow function. At their three-year follow-up, more than 76 percent had retained their swallow function and only 3 percent reported aspiration.

Of those who were treated with thermal-tactile stimulation, only 32.7 percent improved their swallow function score; 38.9 percent with severe dysphagia regained swallow function past the point of PEG tube dependency; and none with severe dysphagia regained full normal swallow function. At their three-year follow-up, only 43 percent had retained their swallow function and 45 percent reported aspiration.

Osborne said she's seen similar results with her patients at HealthSouth, which began offering VitalStim in December 2003 after Osborne received her VitalStim certification.

"Barring one or two folks that really have very complicated cases, like head and neck cancer and neurodegenerative diseases, over 90 percent of our patients have improved, and a significant amount of



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Helen Kendrick began VitalStim in April and has been making steady progress.

them from ... not eating by mouth, all the way back to a regular diet," she said. "The time frame for that varies. I think the shortest amount of time I saw a patient was a week, and the longest was a head and neck cancer patient that I saw for eight months."

Osborne said VitalStim can also help patients whose dysphagia resulted from a stroke suffered, two, eight, even 10 years ago.

VitalStim isn't without its critics, though. Some argue that research on the technique is inconclusive and insufficient. Large scale studies on VitalStim's effectiveness haven't yet been completed, and existing marketing of the therapy is based primarily on findings from its inventor.

But Salyer has no doubt he'd still be eating soft foods and drinking thickened liquids if it weren't for VitalStim.

After he was discharged from HealthSouth on April 16, Salyer continued his VitalStim therapy there on an outpatient basis three times a week.

"I'd take little sips," he said. "I had to swallow with my head down a lot of times to keep it out of my airways, but I could tell it was helping me."

Earlier this month, an X-ray study revealed that his swallow function had returned to normal.

Now he can have all the beer he wants.

"I still ain't had that beer yet, but I can if I want to," Salyer said, grinning.

Speech pathologist Jane Burdine, who received her VitalStim certification in February, also has high hopes for her patients at Mountain Region Speech and Hearing Center in Kingsport.

Funds raised from the Sertoma Club of Kingsport's 2005 golf tournament allowed Mountain Region to purchase VitalStim equipment, which Burdine said the center plans to use on both its adult and pediatric patients.

Helen Kendrick, Burdine's first and only VitalStim patient so far, has been making slow but steady progress since beginning the therapy in April.

Kendrick, whom her family says is a wonderful cook, suffered two strokes last summer and has been unable to eat or even swallow since.

Locally, VitalStim is also offered by a growing number of nursing homes and home health agencies. And Osborne expects that number will continue to climb.

"Probably within the next year or two, I think it will become the standard way that people address dysphagia," she said.

About Dysphagia

- Term comes from the Greek word phagein, meaning "to eat."
- Occurs when there is a problem with any part of the swallowing process. The problem can arise anywhere from the mouth to the stomach.
- Affects as many as 15 million Americans, with approximately 1 million new cases diagnosed each year.
- Causes include stroke, radiation therapy for head and neck cancer, Parkinson's disease, amyotrophic lateral sclerosis (ALS), traumatic head or spinal cord injuries, meningitis, multiple sclerosis, cerebral palsy, chronic obstructive pulmonary disease, burns and tracheotomies.
- Especially prevalent among the elderly, with studies suggesting that as many as 75 percent of nursing home residents affected, and as many as half of all Americans older 60 affected during their lifetime.
- Leads to the deaths of more than 60,000 Americans annually, most commonly from aspiration pneumonia, according to the Agency for Health Care Policy and Research.
- Predisposes patients to choking, bronchospasm, increased infection rate, chronic malnutrition, life-threatening dehydration, significant weight loss, muscle wasting, physical debilitation and death from asphyxia.
- Increases health-care costs through resulting hospital re-admissions, emergency room visits, extended hospital stays, long-term institutional care and expensive respiratory and nutritional support.
- Costs national health-care system more than \$1 billion dollars annually.

Source: VitalStim