

## Device gives stroke patients a hand

Posted Monday, February 28, 2005 - 4:05 pm

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With a determined look bordering on a grimace, Ricky Deatherage moves his hand toward the ball resting on his kitchen table.

Jerking and unsteady, he lunges his hand at the Nerf-like ball. On his second try, he grasps it and with every bit of effort he can muster, lifts it. He swings his body to the left and places the ball in a bin filled with similar multicolored balls.

And before he can pause for breath, physical therapist Amy Brockwell puts another ball on the table.

The simple motion would be easy for the vast majority of people. Deatherage, however, had a stroke in 1999, and the left side of the 52-year-old's body has not regained full function.

His left hand and arm are especially troublesome. Last week that began to change. Deatherage was fitted with a SaeboFlex. The device — Brockwell calls it a "robot arm" — is a specially fitted apparatus that puts Deatherage's hand in the proper position and aids his weak movements with a series of spring-loaded levers.

"It places his hand in a functional position," Brockwell said. "It stretches his hand and fingers. Without it, his hand curls under," she said, demonstrating by cupping her hand in a semi-fist, and then curling her wrist inward.

This is Deatherage's third day of therapy with the SaeboFlex. Before this week, his left thumb curled under to his palm. He couldn't move it independently.

But with the SaeboFlex, he can flex his entire hand and thumb, and grasp objects. The best thing about the device, and the reason it's therapeutic, is that by repositioning his hand and exercising it in an almost-normal fashion, SaeboFlex creates a carry-over effect.

"Monday when we put it on, it took a lot of thought to look at the ball, bend over and pick it up," Brockwell said. "Tuesday it came quickly."

And Thursday, though Deatherage was far from being back to normal, he had regained some flexion in his hand, arm and shoulder.

For nearly six years, Deatherage's hand has been all but useless. He's adapted and learned to perform most everyday tasks with one hand. But just loosening the fingers and gaining some control of his left hand has improved his outlook.

"It doesn't hurt," Deatherage said as he concentrated on picking up another ball. "It actually makes it feel better."



Ricky Deatherage uses a SaeboFlex device on his left hand during a physical therapy session with therapist Amy Brockwell.  
George Gardner/Staff

Too many stroke patients like Deatherage end up losing quality of life since their therapists can't help them return to normal, Brockwell said. Hands are extremely difficult to return to normal so a patient can resume fine motor skills such as writing, she said.

"Most of the time with hands, you get to the point where there isn't much else you can do," Brockwell said.

That's where Deatherage was until his physician, Dr. David Shallcross of Upstate Medical Rehabilitation, suggested that he'd be a good candidate for the device. Dipika Patel, a physician assistant, at Upstate Medical, said she'd just learned about the device shortly after Christmas and has several patients using it, but not enough evidence yet to endorse it wholeheartedly.

"We have a lot of patients who have been through all the traditional therapies and nothing else worked," she said, "so we're happy to try this and see what happens."

Hand function is hard to restore, and if this works it will be a huge improvement for a lot of stroke patients, she said.

So far, in clinical studies, it has not been unusual for patients to see quick results, said John Farrell, who along with his half-brother, Henry Hoffman, invented the SaeboFlex and brought it to market in 2002.

"Something goes on in the brain that the hand is back in the game," Farrell said about patient successes. "And next thing you know, they're regaining function."

Now based in Charlotte, the occupational therapists — Farrell was working in Morehead City, N.C., and Hoffman in Charleston — started a company called Saebo Inc. after they shared feelings of being "frustrated" with the lack of progress their patients were making.

After several prototypes, they developed the SaeboFlex and began using it on stroke patients. Progress, depending on the patient, has been amazing, Farrell said.

"(In) a lot of our studies with acute patients, those are seeing the fine-motor skills come back," he said. "The longer they're out from their stroke — the more chronic it is — the longer it takes because there's a lot of soft-tissue shortening of the finger flexors. We have to stretch those out."

Farrell said there are 5 million stroke survivors right now, and the National Stroke Association reports an additional 750,000 strokes occur each year. Strokes are the single biggest cause of disability in adults.

But Farrell said SaeboFlex can help stroke patients, especially if they use the therapy quickly. For example, if a patient has a stroke today and begins rehab within four weeks, "There's a good chance you'll get your hand function back," Farrell said.

"It's truly amazing," he said. "It's a very exciting time for stroke rehab in general for the upper extremities. I think for a long time, patients have been told they've plateaued, that if they didn't get gains in six months, that's as good as it's going to get."

"But that's wrong. We've had patients with strokes up to 21 years ago making great gains."

Brockwell said Medicare and an increasing number of private insurance companies cover the cost of a SaeboFlex, each of which is custom-fitted to contour to a patient's hand and arm. The Medicare co-pay is \$119, Brockwell said.

Farrell said people who don't have insurance pay a discount price of \$765, while insurance is charged \$850 for one.

"I can see from where he was then, to where he is now," she said last week about his progression in gaining range of motion in just four days of use. "It's all the difference in the world."