Randy gets back to work after a stroke

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When Randy Borders experienced a stroke, it had a devastating impact on his mental capacities and career as a customer service engineer with a major corporation, where he worked with computers and networks. Immediately after the stroke, Borders didn’t know how much function he’d regain.

Fast-forward six months, and Borders’ physician and co-workers describe his rehabilitation progress as “amazing.” Borders successfully completed Baylor Institute for Rehabilitation’s (BIR) Day Neuro Rehabilitation Program after returning to work following a three-month stay at the facility as an inpatient. “Whenever I meet people and tell them that I’ve had a stroke, they can’t believe it,” Borders says. “Many of my co-workers tell me, ‘Randy, you haven’t skipped a beat.’”

The fight to regain function

A week after his stroke, Borders began inpatient rehabilitation at a non-Baylor facility. But three weeks into it, he didn’t believe he was receiving the level of care necessary to achieve his recovery goals. That’s when Borders’ brother, who’d also had a stroke, told him about BIR. Afterward, Borders transferred to BIR as an inpatient at the rehabilitation facility, where he received intensive physical, speech and occupational therapy.

After the inpatient program, Borders eased back into his job, working six hours each day while continuing his recovery with BIR’s Day Neuro Rehabilitation Program, which provides comprehensive outpatient therapy to patients with acquired brain injuries, such as stroke or traumatic brain injury. Patients work with a multidisciplinary team, including a physiatrist, neuropsychologist, speech-language pathologist, occupational therapist, physical therapist, therapeutic recreation specialist and other rehabilitation experts.

The Day Neuro Program showed me exactly what I needed to do when I was returning to work,” Borders says. “And if there was anything I was having a problem with at work, I’d be able to talk to a therapist about it, which really helps out. It made me much more successful reentering the work world. The different therapies, the different programs offered at BIR—like the Day Neuro Rehab Program—is what got me back to where I am today.”

How Can We Help You?

For more information on Baylor Institute for Rehabilitation, call 1-800-4BAYLOR or visit BaylorHealth.com/Stroke.
treadmill training for stroke patients

Baylor Institute for Rehabilitation’s (BIR) therapists are exploring the effects of body-weight-supported locomotor treadmill training in stroke patients.

“Traditionally, we’d have stroke patients walk around a parallel bar in a circle, holding on with their strong side while a therapist supported the weak side. It’s better than nothing, but the speed is really slow, nowhere near walking speed,” says Shawn Baker, P.T., DPT, with the BIR physical therapy department. There is also a lot of compensatory movement, such as hyperextension of the knee on the weak side, and patients tend to develop asymmetrical gait patterns.

Locomotor treadmill training is different. Patients walk on a treadmill hooked up to a device that resembles a parachute harness. Using the device, therapists are able to take off as much body weight—usually starting with 30 percent—as necessary to allow patients to walk.

Patients start by walking at 0.7 mph for two sets of three minutes each. “They’re kind of suspended over the treadmill, in part by the machine, but they are having to hold up the remaining two-thirds of their weight. We show them this is safe. Patients can’t fall because the harness is holding them up,” Baker says.

One of the advantages of this system, according to Baker, is it frees the therapist’s hands to better and more comfortably work with patients on gait quality, posture and stance. BIR researchers have already discovered that stroke patients who use locomotor treadmill training with partial body weight support have a better gait and can walk farther and faster than if they had undergone traditional rehabilitation. Studies of the use of locomotor treadmill training following stroke are ongoing at BIR.

Baylor Institute for Rehabilitation’s (BIR) physical therapists are using high-tech devices to help stroke, spinal cord and traumatic brain injury patients regain function in their arms and legs. For patients who haven’t regained sensation in their limbs, BIR therapists teach them to use the NESS system, a functional neuromuscular education device, to restore use of their limbs.

The NESS system comprises the NESS H200™ and NESS L300™. Each device is designed to fit accurately over target muscles and allow independent application and removal by patients.

HOW IT WORKS

BIR’s physical therapists use the devices to work with patients to retrain muscles through exercise to regain strength and motor function, according to Julia Marton, OTL, rehab supervisor at BIR. For example, using the NESS H200™, therapists work with patients to keep their hand open or closed for an extended period. Therapists at BIR also help patients use their entire body plus hands to regain functionality, including the ability to reach and grab a cup out of the cabinet or load a dishwasher, Marton says. The NESS H200™ is also useful for patients lacking feeling in their hands, she says, noting that it can act as a functional thumb controlled by a trigger button that stroke patients can manipulate easily with their functional hand. (No fine motor skills are required.)

The NESS L300™ leg device is similar; it is easy for patients to put on and take off, and is designed to use mild stimulation to help patients lift their foot to walk more safely and easily, possibly eliminating the need for heavy orthotics.

The majority of BIR therapists are trained on the NESS system, which is used for inpatients, outpatients and Day Neuro patients, as appropriate.

Get Better, Faster

To learn more about Baylor Institute for Rehabilitation or to make a referral, call 1-800-4BAYLOR or visit BaylorHealth.com/BIR.
Stroke is commonly thought of as a condition that affects the elderly and retired. Therefore, many rehab continuums focus on the patient who returns home and is largely homebound following a stroke. The reality, though, is that stroke can also occur in middle adulthood, from age 30 to 55.

When you factor in the large number of strokes that occur each year (it causes about one in 17 deaths, making it the third leading cause of death after heart disease and cancer, and is also the leading cause of serious long-term disability in the U.S.), clearly a large number of strokes occur in this younger age range.

“These tend to be patients with jobs and young families, in full career mode,” says Mark Barisa, Ph.D., ABBP, a clinical neuropsychologist at Baylor Institute for Rehabilitation (BIR). With younger patients in mind, BIR is developing continuum-of-care models that reflect younger patients’ realities, which may include a job and the care of young children. “We want to follow stroke patients from the acute phase to the transition back to home, then back to work,” Barisa says.

**COMPREHENSIVE CARE**

Baylor is equipped to handle acute strokes. Medical care for acute strokes begins with stabilizing the patient’s condition and efforts to stop or reverse the effects of stroke. Inpatient rehab is a key part of this early acute medical stage, with early intervention—physical therapy, occupational therapy and speech therapy—being key to successful recovery, Barisa says. After patients are discharged from the hospital, many enter acute rehab centers, where they receive daily interventions, including physical, occupational and speech therapy services with additional interventions provided by neuropsychology, social work and therapeutic recreation professionals. Afterward, the next step depends on the patient’s needs, Barisa says. One option is the Day Neuro Rehab Program, which Barisa describes as an “intense” day, during which patients are involved in therapeutic interventions from about 9 a.m. to 3 p.m. An advantage is that these patients receive rigorous therapy but still live at home. “Patients can try something out [at home], then come back to a safe place at Day Neuro, where therapy can be tailored to meet each patient’s individual needs.” Some patients do therapy two or three days per week, while others do four or even five days per week.

**A TEAM APPROACH**

Day Neuro and outpatient rehab usually involve strengthening muscle, sensory or high-level cognitive function in the wake of medical recovery and increasing day-to-day functioning. “In rehabilitation, we look at various functions of the brain, including physical and cognitive abilities, and compare to pre-stroke levels,” Barisa says. Where possible, a rehabilitation team works to remediate or eliminate the deficit. When that’s not possible, some patients receive training to compensate for deficits in their daily lives. For example, someone with a vision impairment may use glasses to “compensate” for their acuity deficits. Others may receive LASIK surgery to eliminate or remediate the vision problem.

Younger patients in their 40s or 50s differ from older patients in their key roles and responsibilities, such as going to work or getting kids off to school each day. “We help patients develop the skills to be successful performing these tasks,” Barisa says, emphasizing the team approach. As part of the continuum of care, each patient at BIR has access to physical therapists, occupational therapists, speech therapists, therapeutic recreation therapists, physical medicine providers, optometrists and neuropsychologists from the hospital to the home. This team approach allows the patient to receive the right care at the right time with the right professional.