

Latest technology aids physician following stroke

It must have been the strawberries. That was Dr. Mark Carlson's initial thought as his speech faltered on a Friday afternoon while he met with patients in his clinic. He'd eaten a few strawberries at lunch, even though he's slightly allergic to them. By 5 p.m. on April 4, the Lincoln, Neb. oncologist was feeling weak, but decided to drive to BryanLGH West to check on his patients. Behind the wheel, Dr. Carlson noticed his steering was off track, but he made it to the hospital safely. He remembers feeling self-conscious chatting with hospital staff. "I was slurring my words and afraid the nurses would think I was drunk," he said. Despite his weakening condition, the 43-year old physician completed patient rounds before heading home.

Upon returning home, Dr. Carlson made his way to the kitchen, reached into the refrigerator and noticed he couldn't grasp a can of soda with his left hand. He then attempted going upstairs and discovered "toe drop"—a drooping of the toes and front part of his left foot.

Dr. Carlson realized he was experiencing classic stroke symptoms. Scouring the cabinets for an aspirin, he came up empty-handed. He phoned his nurse who lives in the neighborhood, and she ran to his home with aspirin. Shortly afterward, Dr. Carlson's wife, Gwen, arrived and immediately took him to the emergency room at BryanLGH West. "My blood pressure was sky high, 250/150, but my hand grip and CT scan were normal. It was the MRI that revealed I'd suffered a stroke," Dr. Carlson said.

"In retrospect, I was the classic textbook case of a doctor thinking a stroke would never happen to me," he recalled. A diabetic, Dr. Carlson knew that he was at increased risk for stroke, but said he was "in denial" about the symptoms.

The stroke attacked the left side of his body, leaving his arm flaccid and causing a noticeable limp in his leg, including the toe drop. Dr. Carlson also experienced some mild aphasia. After a brief stay in intensive care, his primary care physician, Dr. Mike Pace and neurologist, Dr. John Puente, recommended he come to Madonna Rehabilitation Hospital, where

he was admitted April 8.

Dr. Carlson said he'd referred patients from his practice to Madonna, but admitted he knew little about the extent of the specialty programs. "My knowledge of stroke therapy has greatly expanded in the last few months," he said. Dr. Carlson spent two weeks as an inpatient at Madonna where he established goals with his therapy team.

"I'm so grateful that we have a rehabilitation facility like Madonna in Lincoln," Dr. Carlson said.

Together with his therapy team, he addressed the physical challenges.

When asked about the role reversal from doctor to patient, Dr. Carlson explained that he was a willing patient. "The Madonna therapists are true scientists in dissecting your motor function and devising exercises to get you back to normal," Dr. Carlson commented. A high point in

his therapy was actually seeing his progress.

"Attempting an exercise that I couldn't do two days ago and completing it—that was motivating," Dr. Carlson shared.

However, he was

skeptical when his therapy team proposed using the Bioness H200 and L300. "Courtney Kossow (Madonna occupational therapist) provided me with the published reports, and I was impressed with what I read," said Dr. Carlson. These devices are on the leading edge of the functional electrical stimulation (FES) technology. The H200 helps treat stroke patients with upper limb paralysis. It uses a remote microprocessor to pre-program the level and cycle of stimulation in hand movements. The L300 helps decrease foot drop, again, using electrical stimulation to facilitate the muscle that lifts the foot. Dr. Carlson said he's now an advocate. "It's important for people in stroke situations to take advantage of this technology," he stated. He has purchased his own Bioness system to wear at home.

Dr. Carlson shares this advice with anyone suffering a stroke: "Get help immediately; don't be afraid to ask, and be aggressive!" he stressed. The trauma of the stroke made Dr. Carlson reevaluate priorities. "It's given me a new perspective on what's important in my life," said Dr. Carlson, an active father of four. "I've established an entirely new lifestyle from here on out," he added.



Dr. Mark Carlson visits with occupational therapist Addie Vance as she straps the Bioness L300 on his leg before a therapy session. The innovative technology helps decrease drop foot using electrical stimulation to facilitate the muscle that lifts the foot