

Prosthetic wizardry restores man's life

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By Christopher Snowbeck

When Matt Razink's left hand got caught in a piece of construction equipment nearly six years ago, he feared his life was over.

After pulling himself from the machine and getting the attention of a co-worker, Razink struggled to staunch the flow of blood from his arm while making his way to a nearby hospital.

Razink survived the accident, but doctors had to amputate his arm just below the elbow. The surgery launched a health care journey for the 36-year-old Wisconsin man that took him this week to Maple Grove, where he became the first U.S. civilian to receive a new type of prosthetic hand with an electric opposable thumb.

"It's so much like a human hand," Razink said Thursday.

The latest technology in hand prosthetics doesn't come cheap.

The new device - called the Michelangelo Hand and made by a German company called Otto Bock - sells for about \$100,000, said Pat Prigge, a prosthetist with Advanced Arm Dynamics in Maple Grove. Older electric hand prosthetics sell from about \$60,000 to \$80,000, depending on features.

Even so, the Michelangelo Hand is commanding attention in the small world of upper-extremity prosthetics.

"It's a pretty significant advance," said Cate Braun, a prosthetist at Winkley Orthotics & Prosthetics in Golden Valley.

Braun and her colleagues have talked about making the Michelangelo Hand available to patients, because the technology offers some clear advantages. But patients might find their health plans slow to cover the costs, Braun said, because many insurers initially consider new technologies to be experimental.

Advanced Arm Dynamics still is working with insurers to cover the cost of Razink's prosthetic. The Wisconsin man has not been asked to pay out-of-pocket for his device until the reimbursement issue is worked out.

"It's all based on justifications, and that's our job," Prigge said. "(We) work with physicians to educate them and the insurance company to make sure that they understand it's medically necessary."

Advanced Arm Dynamics is based in California. Since 2008, the company has worked with Otto Bock and the U.S. military to make the technology available to 10 soldiers who lost one or both hands in the wars in Iraq and Afghanistan.



36-year-old Matt Razink of Medford, Wis., shows his new Michelangelo hand, the only prosthetic hand that includes an electric opposable thumb, at Advanced Arm Dynamics in Maple Grove on Thursday January 12, 2012. (Pioneer Press: Richard Marshall)



"That's 20 pounds of pinch force," said Pat Prigge, left, North Central Clinical Director at Advanced Arm Dynamics, shaking hands with Matt Razink's Michelangelo prosthetic hand. Prigge helped with the adaption of the device on Razink's amputated left arm. (Pioneer Press: Richard Marshall)

Patients who use the new prosthetic still can't swing a baseball bat or do every possible thing they did with their old hands, Prigge said, but he added: "This hand is a step closer."

Razink lives in Medford - about 2-1/2 hours east of the Twin Cities - and works as a heavy equipment operator on road construction projects. When the accident happened in May 2006, he grabbed to pull a piece of rebar from crushed concrete.

"I remember grabbing onto the piece of rebar, giving it a tug and then I was in the machine - it was lightning fast," he said.

Razink said he knew that his arm was "somewhat" intact and that "pieces" of his left hand remained. But his focus was on stopping the blood, exclaiming to co-workers: "I'm going to bleed out!"

After surgery, Razink was happy just to be alive. Doctors reassured him that after his upper arm healed, he would be fitted with prosthetics that would allow him to resume his life. Razink hunts and fishes for recreation; his career is all about working with his hands, whether it's operating equipment or repairing machinery.

But when he was fitted with a mechanical prosthetic three months later, Razink faced some painful truths.

"It took all of about two hours to realize that life wasn't going to be the same," he said. "I tried to keep a good attitude through the whole thing, but it was hard. It was very hard.

"You wake up in the morning and everything you do - from grabbing your glasses off the nightstand to getting dressed, tying your shoes, zipping your jacket - everything becomes a task," he said.

At the time of the accident, Razink's children were ages 11, 2 and 6 months. He went from being a caregiver to needing his children's help in some instances.



Matt Razink of Medford, Wis., delicately grasps a tomato with his new Michelangelo hand. (Pioneer Press: Richard Marshall)

In 2007, Razink sought help from Advanced Arm Dynamics and credits the prosthetics practice with fitting him for electric devices. The devices feature electrodes that attach to Razink's arm and detect muscle movements that are interpreted by a microprocessor, which activates the hand.

"It opened up a whole new world for me of things I could do," Razink said.

He went back to his old construction job. In his spare time, Razink fashioned a machine shop in his basement and garage, where he's crafted a mechanical wrist for use with some of his prosthetics.

After just 24 hours with the new prosthetic, Razink said Thursday that he's amazed at how much it feels like his old hand - in the sense that it's easier for his brain to learn how to use the device.