

AMAZING INVENTION

HELPING PARALYZED PEOPLE WALK AGAIN

Army veteran Gary Linfoot is back on his feet with robotic help

BY EILEEN FINAN

The moment Gary Linfoot stood up from his wheelchair, he looked his wife, Mari, in the eyes and gave her the best hug they'd had in years. "We've always had to hug around the waist," Gary says of their wheelchair embraces. "This was how it was meant to be." Then he took his first steps aided by a full-body robotic suit. But Mari didn't focus on the Iron Man-like contraption. "My first thought was, 'He's so handsome!'"

Those shaky steps began a journey of hope that seemed unimaginable in May 2008, when Linfoot's helicopter crashed in the Iraqi desert due to a mechanical failure. Still paralyzed from the waist down, Linfoot, 45, has not been cured but is learning to use an Ekso exoskeleton suit, a new device to help those who've been told they'd never walk again. Part



"Maybe one day I'll put on a device and people won't even realize I'm a paraplegic," says Linfoot (at home Nov. 13) of the robotic suit's possibilities.

of a trial that aims to make the Ekso more widely available soon, Linfoot is the first U.S. veteran to take one home and one of only six people in this country to have one for personal use.

At the time of his accident, Linfoot, an Army chief warrant officer, was on his 19th tour of duty in Iraq as a lead pilot with the Night Stalkers, an elite special-ops unit. Learning that his paralysis would be permanent was a crushing blow. "I went from alpha male to being like an infant again," he says.

At their Clarksville, Tenn., home, Mari, 50, a real estate agent, made accommodations for his wheelchair. It was hard, say the couple's three children, to see their father home but struggling with



How It Works



The Mechanics

With commands coming from the suit's backpack computer, motorized legs stand Linfoot up. By shifting the weight in his torso, he triggers sensors, allowing walking. At first an aide (above, Ekso physical therapist Darrell Musick) uses a remote to control step length and speed. Linfoot's wife and son are learning to be his aides, and eventually the goal is to have him use the exoskeleton independently.

The Benefits

"Getting people upright helps bones, digestion and bowel issues," says Dr. Donald Leslie. "The psychological benefit of being able to look people in the eye is huge."

losing his independence. "He had to come to us for things like 'Will you help me get this box on the top shelf?'" says daughter Kylie, 21. "I had always depended on him. Now he depended on me."

But soon Linfoot went back to work, running an aquatic-training facility in Fort Campbell (Ky.). His story came to the attention of Jim Palmersheim, director of veterans programs at American Airlines. "It's unbelievable when you think what Gary has done for our country," he says. In September 2012 Palmersheim introduced Linfoot to Ekso Bionics in Richmond, Calif., and he tried out the suit. Seeing her dad stand for the first time in four years, a tearful Kylie hugged Palmersheim and told him, "I forgot how tall my dad was." Recalls son Hayden, 19: "I had thought, 'Why can't God heal my dad?' But God works in strange ways. It's definitely a miracle."

The new device "was exciting," Linfoot allows. But not immediately practical. At the moment exoskeletons like the Ekso (other companies are developing similar devices) are meant as exercise tools, not replacements for wheelchairs, and, with a price tag starting at \$100,000, are used almost exclusively in rehab facilities like the Shepherd Center in Atlanta, which is testing a suit called the Indego. Still, Palmersheim was determined to help: "I thought, 'We've got to get him one of these.'"

This Veteran's Day, with a \$100,000 grant from the Infinite Hero Founda-

'Bam! Like that, I was looking at the world from six feet again. It's an incredible feeling'

tion, Linfoot's own Ekso was delivered to his home. Mari and Hayden are training to be his aides, but the technology is still in its infancy. "It's like when the Wright Brothers flew 100 yards; it's the first steps to something better," says Linfoot. Adds the Shepherd Center's Dr. Donald Leslie: "This technology is the future. I hope we'll see it in daily life in less than five years."

For Linfoot, now retired from the military and training Army pilots as a civilian contractor, the future is today. On a recent afternoon, he straps on the device at his home with the help of a physical therapist, stands up using two canes for balance and looks down his street with a determined gaze. It will be some time before he can take a stroll—the suit can't handle inclines or steps, and turning is complicated. But, he says, "I do think about what can be. I'd like to take a walk with Mari, shoulder to shoulder." He realizes he will never look quite the same with his exoskeleton apparatus: "People will be like, 'What is that?' but I'm cool with answering questions. Eventually, maybe, we'll reach the point where it's, 'Ah, it's just another guy wearing a robot.'"