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Article location: <http://www.fastcompany.com/1719322/up-close-with-berkeley-bionics-elegs-for-paraplegics>

January 21, 2011

Tags: [Innovation](#), [Technology](#), [Ethnomics](#), [elegs](#)

Up Close With Berkeley Bionics' eLEGS: An Exoskeleton That Allows Paraplegics to Walk [VIDEO]

By [Ariel Schwartz](#)



When Berkeley Bionics [1] first unveiled eLEGS, an artificially-intelligent bionic exoskeleton that helps paraplegics to walk, it created a stir throughout the tech community. Everyone wondered: Could this be the big breakthrough that gets wheelchair users back onto their feet? After witnessing the eLEGS in action this week at Kaiser Permanente's Garfield Innovation Center, we're hopeful

that the answer is yes.

eLEGS was revealed to the public last October, but Berkeley Bionics has been working on exoskeletons for the past five years. Originally, the company was focused on military uses, but now Berkeley has ambitions to bring eLEGS into the homes of paraplegics everywhere.

The lithium-ion battery-powered device is fairly simple to use--wearers can secure the eLEGS' Velcro straps and clips to themselves in a matter of minutes once they have had a little practice. The device's gesture-powered interface senses where users intend to go and acts accordingly.

Practiced users can walk as fast as two miles per hour, and eLEGS pack enough battery power for four hours of use before recharging--much longer than average users would need. In any case, says Berkeley Bionics VP of engineering John Fogelin, adding more battery cells is easy. The eLEGS take approximately an hour and a half to charge from a standard outlet.

Next up: bringing eLEGS to five to 10 rehab clinics across the U.S. by the end of 2011. After that, Berkeley will make the 45-pound device even lighter and bring it into homes by 2013. At that point, Fogelin estimates that it cost between \$30,000 and \$50,000, or approximately the same price as a high-end wheelchair.

And as for the users? Berkeley Bionics brought along Ted, a paraplegic who has spent upwards of 40 hours at a time testing eLEGS, to show off the technology. Ted walked around with relative ease (as you can see in the video below), and can go from his wheelchair into the walking position in under two minutes. He tells *FastCompany* that he can even walk in zigzags and circles using the eLEGS. "It responds to what you command it to do," he says. "It's exactly what I wanted to feel--tall, and like I can walk a normal walk."

That's the highest praise Berkeley Bionics could hope for.

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Ariel Schwartz can be reached on [Twitter](#) [2] or by [email](#) [3].

Links:

[1] <http://berkeleybionics.com>

[2] <http://twitter.com/arielhs>

[3] <mailto:ariel@fastcompany.com>