

Robotic suit nothing short of a miracle

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In the December 7 episode of the TV hit Glee, the character Artie, a high school student who is confined to a wheelchair, gets up and starts walking. Was the device "just Hollywood magic or based on real science?" asks a recent Newsweek article. The good news for some 125,000 paraplegics in the U.S., is that the device, called ReWalk, got its start at the Technion incubator, and is very real.

ReWalk is a lightweight, [robotic exoskeleton](#) that allows paraplegics to stand, walk, and take stairs themselves. Worn around the legs and torso, the device works using a combination of [motion sensors](#), electric motors, and a computerized backpack - controlled by a wristband. "It shifts a person from a [wheelchair](#) user status to a crutch user status, which is a whole difference," says its designer, Technion alum Amit Goffer of Argo Medical Technologies in Haifa.

After a 1997 accident left Goffer paralyzed from the chest down, "I looked around and was wondering how come the wheelchair is the only solution," he says. Goffer, who was formerly an electrical engineer, quickly got to work on the invention. He soon made a selfless design choice that meant he personally could not use the device: if the wearer could use crutches, it would simplify balance (and conserve energy), as the device wouldn't have to keep the person upright all on its own.

ReWalk has been used in clinical trials in Israel, and at MossRehab, part of Albert Einstein Healthcare Network in Philadelphia with impressive results. Researchers there are finding that the very act of standing and walking again offers not only emotional rewards, but provides natural

exercise for the heart and bones, and lessens some of the complications associated with being wheelchair bound. The device recently received FDA approval for institutional use, and is scheduled for sale to rehab centers as early as January.

“In the near future, we are going to continue to develop the device so that a quadraplegic or tetraplegic like myself will be able to use it,” Goffer says.

Provided by American Technion Society

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