The bionic walker

Therapists employ fast-evolving “exoskeletons” like this one, from Ekso Bionics, to re-train paralyzed patients in walking motions. Patients extoll the upright suits for their mobility and “hanging” body organs in a way that promotes better health in many parts of the anatomy.

Who is it for?
With medical clearance, the suit can typically facilitate walking for individuals with many forms of spinal injury.

How does it work?
The 30-lbs. suit is adjustable, portable and is comprised of aluminum and titanium braces and electric motors that wrap around the legs for walking. A computer on the wearer’s back controls the suit.

How fast can they walk?
Very slowly, when a patient first learns to walk in the suit. A therapist can set the step length, gait and speed.

Walk modes
First steps, a physical therapist actuates steps with a button push. The user progresses from sit to stand and using a walker to walking with crutches, often in the first session.

Active steps allow a user take control of actuating steps via buttons on the crutches or walker.

Pro steps help the user achieve the next step by moving the hips forward and shifting them laterally. Once the device recognizes that the user is in the correct position, it steps.

Adaptive assist
Clinicians can augment their patients’ strength and adjust to produce a smooth and consistent gait.

Fixed assist
Each leg of the suit can contribute a fixed amount of power to help patients complete steps in a specified amount of time.

Heel pegs assist the patient so they won’t stumble on irregular ground.

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