Backpack harnesses pedestrian power

(CNN) -- Mobile phone users or iPod addicts could soon be spared the hassle of having to recharge batteries by a backpack that converts energy from walking into electricity.

By harnessing the backpack's up-and-down motion, researchers say the device is capable of generating more than seven watts -- more than enough energy to power several portable devices at once.

Scientists at the University of Pennsylvania devised the technology after being asked by the U.S. military to come up with a light rechargeable battery that could be used by troops on the battlefield.

Soldiers currently carry up to 20 lbs in spare batteries to power high-tech equipment such as global positioning systems and night vision goggles.

But Professor Larry Rome, who led the research, said the technology could benefit anyone who needed "power on the go."

Details of the "Suspended-load Backpack" are revealed in the latest edition of the journal Science.

"As efficient as batteries have gotten, they still tend to be heavy. Field researchers, for example, have to carry many replacement batteries to power their equipment, which take up a lot of weight and space in the pack," said Rome.

"The Suspended-load Backpack could help anyone with a need for power on the go, including researchers, soldiers, disaster relief-workers or someone just looking to keep a mobile phone charged during a long trek."

The backpack consists of bag suspended from a fixed frame by vertical springs. As
the bag is moved up and down by the wearer's walking motion it creates enough mechanical energy to drive a generator mounted on the frame.

Portable devices such as mobile phones typically require less than one watt, but by carrying loads of 40-80 lbs, the research team were able to generate more than seven times as much power.

Instead of carrying extra batteries, Rome said wearers could compensate for carrying a heavier load by packing high-energy snacks.

"Metabolically speaking, we've found this to be much cheaper than we anticipated. The energy you exert could be offset by carrying an extra snack, which is nothing compared to weight of extra batteries," said Rome said.

"Pound for pound, food contains about 100-fold more energy than batteries."

Find this article at:

© 2008 Cable News Network