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Nike's High-Tech Wristband Fuels Your Workout

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Ask anyone about the activities they perform each a day and they'll rattle off a litany of actions. Running for the train. Walking up three flights. Shooting hoops after work, then navigating supermarket aisles grabbing stuff for dinner. Ask them how many calories they burned doing all of that, however, and they'll have no clue.

Nike's got a new gadget that tracks all that exertion and motivates you to get more active by turning your workout, and everyday activities, into a game with a reward called NikeFuel. FuelBand is a wristband that records data collected by an accelerometer. It tracks calories expended, steps taken and the time of day as well as your NikeFuel score and presents it on an LED display. Your score is based on an algorithm that assigns points to various movements. The more active you are, the more NikeFuel you earn. You can earn it doing just about anything, track your progress with your iPhone or iPad and eventually share it with others via social media platforms.

"[FuelBand] is a common measurement across a wide spectrum of activity," says Trevor Edwards, a Nike VP.



FuelBand is the latest addition to the Nike+ line of data-trackers launched in 2006, and it joins gadgets like the [Jawbone Up](#) and [Fitbit](#) in the growing number of wearable fitness trackers available to everyday athletes. It is remarkably compact and elegant, a simple flexible circuit board with two integrated curved batteries in a polymer casing. Its lone button toggles through the four metrics displayed with 100 white LEDs. Twenty other LEDs, which transition from red to yellow to green, indicate the progress you've made toward your daily NikeFuel goal. The band resets at midnight each day.

The band is water resistant, so you're all set if you want to see how many calories you burn in the shower, but Nike recommends taking it off before getting in the pool, sauna or hot tub. Bluetooth lets you sync it to your Apple iDevice through a free Nike+ FuelBand app. A built-in USB connects you to computers running Mac OS version 10.4 or later and Windows 7, Vista or XP. Squeezing all that tech into something not much larger than a rubber band was not easy.

"We had to make the circuit board flexible in order to get all the components on it to move inside the shape of the band," says Stefan Olander, Nike's VP of digital sport.

Although the device itself appears to work by monitoring the movement of your arm, Olander says NikeFuel is based on oxygen kinetics.

"The intensity of the activity can be measured by quantifying the change in oxygen uptake between rest and being active," he says.

Activities are measured the same way for everyone, regardless of how many calories are burned, says Glen Gaesser, an exercise and wellness professor at Arizona State University who worked with Nike to develop FuelBand. He says 30 college-aged men and women performed various everyday movements in his lab. Each activity took eight minutes, followed by a brief rest, during a 90-minute workout. Participants wore a FuelBand along with a portable metabolic measurement system that tracked their oxygen uptake breath-by-breath. Nike engineers used the data to develop the proprietary algorithms that track accelerometer data accompanying each uptake of oxygen. That forged a relationship between physical movements and oxygen data in which each activity has a recognized accelerometry pattern. Unlike calories, which vary depending upon gender and weight, NikeFuel holds a common score for each type of activity. Algorithms for some movements aren't always 100 percent accurate, but Gaesser says it shouldn't affect the FuelBand's overall effectiveness. "If you look at this from the standpoint of a 24-hour day, some of the underestimation will be balanced by some of the overestimation," Gaesser says.



Everything about FuelBand was designed to be dead simple to use. LEDs are faster and easier to read than numbers, Olander says, and a single button — which also lets you sync with your iGadget — requires no thought. Just push it and go. Nike let us spend the better part of a day playing with FuelBand, and we came away impressed. It is so comfortable that we barely noticed it during drumming and double-dutch drills, and we all but forgot about it while playing basketball. Syncing with an iPod Touch was a breeze, and the app is intuitive. Once you've synced, you can view your NikeFuel score (as shown to the right) and chart your progress through the day and over time.

Frankly, the charts and graphs didn't impress us, and we didn't get much from "Fuelee," the animated character who appears when you've hit your daily NikeFuel goal. But those are nitpicks. The great thing about FuelBand is how it opens your eyes to how active you are during the day. We picked up a surprising amount of "NikeFuel" from routine, even mundane, activities like walking down the street or climbing a flight of stairs, and we ended up with a higher NikeFuel score than expected. And that, ultimately, could be the real value in FuelBand: Helping you manage and track your activity over time to achieve fitness and

weight-loss goals.

If FuelBand has a drawback, it's price. At \$150, this probably isn't something a couch potato is going to spring for, and anyone on a tight budget will probably pass. And then there's the fact it only syncs with gadgets from that company in Cupertino. If you're an Android user, you're outta luck until springtime, when the Android app is expected.

Look for FuelBand in the United States late next month, in the United Kingdom in May and everywhere else later this year.



Photos, video: Nike. Main photo: Stefan Olander, Nike VP of digital sport, presenting the NIKE+ FuelBand at its launch in New York on Wednesday.

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