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Gadgets Count Calories As You Burn Them

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BodyBugg, BioTrainer Measure Movement, Track Results

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UPDATED: 9:28 am PDT October 21, 2008



If you're trying to lose weight, there's one easy equation that works: Eat fewer calories than you burn, and your waistline will shrink.

That concept fuels a new generation of weight-loss tools for Blackberry and iPod addicts. If you love a good gadget, there are several out there to help with the waistline math and satisfy your technology cravings, too.

Which device is for you depends on your budget and your preferred workouts.

BodyBugg

If you watch NBC's "The Biggest Loser," you see a device getting nearly as much camera time as trainer Jillian Michaels. It's the BodyBugg, and it's made by Apex Fitness, a division of 24 Hour Fitness.

The device and its online software tools promise to show just how many calories you consume and how many you burn.

Apex sent me the device last month to try. The BodyBugg is about the size of an old-school iPod and must be worn around the right triceps to work correctly. Apex also sent a monitor, which can be worn as a watch or on the waistband. The monitor shows calorie burn, daily steps and minutes of activity. It will also track individual trips, show yesterday's calorie burn and display targets. When daily goals are met, it beeps and then scrolls a congratulatory message. You can also program it to remind you to do things such as drink water.



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When you log onto [the site](#), you see the real customization that's possible with BodyBugg. You tell it some personal information, then set fitness goals. All of that information helps BodyBugg's algorithm properly track calories.

Joseph Manussier, the research and development and technical support manager for BodyBugg, said the device measures four factors to calculate calories at an accuracy rate above 90 percent. BodyBugg measures heat flux -- or the temperature the body's emitting -- then it measures air temperature to compare to the user's body temperature. When you're working up a sweat, BodyBugg measures galvanic skin response, or the way the pores open up to sweat. Finally, it has a two-axis accelerometer that measures movement.

The combination makes it hard to fool the BodyBugg. I tried chopping onions, thinking the movement would show a heavy calorie burn. Manussier said some people will try to throw it off by sitting in a sauna to raise skin temperature, but the BodyBugg knows that the wearer's temperature rose right along with the air temp.

Each day, I synched the Bugg with my computer using the included USB cable. The online tool let me see minute-by-minute burn or calories burned over the day or the week.

I also entered my food intake.

The online tool has a built-in digital coach that offers suggestions to hit your goals, or you can talk on the phone to a live coach such as Kimberly Slover.

"BodyBugg phone coaching staff's No. 1 job is teaching you to use the Web site optimally," Slover said. She said most people underestimate their calorie intake by 20 to 40 percent, so helping them report what they eat more completely will help the BodyBugg online tool show truer data.

"I don't care how much you move, if you sit in the chair all day or run a marathon, every single day you've got the ability to track real-time movement and decide what you eat. The whole point of this program is to give you information to get your results. The whole process of BodyBugg is awareness," Slover said.

Testing BioTrainer

[BioTrainer](#) beat BodyBugg to market by about four years. The device reads caloric burn for different activities outside of the clinical setting. It claims a 97 percent accuracy rate for what it does, which is measure up-and-down, side-to-side and diagonal motion.

BioTrainer also let me test its device. Compared to the BodyBugg, BioTrainer is less of a fashion don't. You just clip it on your waistband and it senses your motion. It's a three-way accelerometer

(the same technology in Nintendo's Wii), but doesn't include any of the skin or sweat measurements.

Patrick Cioffi Jr., the CEO of Premier Partners, which markets BioTrainer, said it provides constant feedback about exactly how active you are. With that data, you can decide how much to eat to hit health goals.

"If you know you're supposed to burn 1,500 calories a day to maintain your weight, you wear it all day to clean, walk the dog, wash the car, take a walk -- at end of day you look at your caloric burn and show you've burned 1,350. Then you can go on a walk to get rid of other 150," Cioffi said.

He noted a possible drawback of his device.

"BioTrainer will measure the overall activity, but if the treadmill is placed on an incline, BioTrainer will not measure the caloric burn of this resistance adjustment," Cioffi said.

Comparing Performance

If you're considering a fitness device, the decision between BodyBugg and BioTrainer will have a lot to do with what kind of workout you do and how much you're willing to spend.

I wore BioTrainer and BodyBugg through a series of workouts, then compared those caloric burns with the numbers on the gym machines and to government charts listed at MyPyramidTracker.gov. The most stunning difference was between the personalized devices and the gym-machine read-outs. The gym machines roughly doubled what the devices read.

Trainer Bianca Stone at [Power Shack Gym](#) in Hilliard, Ohio, wasn't surprised.

"(BodyBugg and BioTrainer) aren't trying to sell treadmills," Stone said. "If I'm a treadmill maker, of course I want it to look like my product burns calories fast."

The inability to measure exertion limits BioTrainer. For instance, I did 10 minutes on a step mill. BioTrainer said I burned 32 calories because it doesn't know I'm going uphill. BodyBugg said I burned 48 calories. The machine read 113 calories burned.

Next, I did 10 minutes on an elliptical machine that includes arm action. The machine thought I burned 129 calories, BioTrainer said 109 and BodyBugg said 72. On a treadmill, I set a 14.5-minute-per-mile walking pace but ramped the incline up to a 10 percent grade. The machine said that burned 106 calories, BodyBugg said 64 and BioTrainer 92.

In the weight room, BioTrainer doesn't provide much feedback. For a 34-minute session, BioTrainer said I burned 13 calories. BodyBugg said 173. The government estimates 240 calories

burned.

Stone, who is a top-10 in the nation power lifter, said she likes the BodyBugg application in the weight room because it's verification of her mantra to clients.

"I tell them they can burn calories and fat by lifting weights. The device gives you a check to see improvements over time. It's validation," Stone said.

Out of the gym, I walked, ran and cycled. Because cycling is resistance and BioTrainer doesn't measure resistance, it told me my 50-minute moderate exertion cycling session burned 70 calories. BodyBugg said 300. MyPyramid.gov said 484 calories.

A 40-minute walk registered 270 calories on the BioTrainer, 250 on the BodyBugg and MyPyramid.gov said 226 calories. For a 50-minute run at about a 9-minute mile pace, BioTrainer read 300 calories, BodyBugg read 500 calories and government says 706 calories would be the average burn.

Comparing Costs

BodyBugg sells on the 24-Hour Fitness site for \$200. It's \$350 to get the armband and digital display with a three-month online subscription and one phone session with a BodyBugg coach.

BioTrainer is \$50 plus \$10 a month for its online access.

[Miami-area fitness expert Sharyn Lustre](#) said you can instead buy a heart-rate monitor for about \$80 and log calorie consumption in a simple notebook to get the same tracking results.

"Economics play a big part in this industry now as clients still want to reach their goals but also want to pay their rent," Lustre said. "Both machines help encourage people to get started with their weight-loss goals, and that is the key. But people want to see results and the price tag of the BodyBugg may distract from the intended purpose, which is to get up, get out and get moving."

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