

Researchers are making every bite count

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Two Clemson University researchers seek to make diners mindful of mindless eating.

Psychology professor Eric Muth and electrical and computer engineering professor Adam Hoover have created the Bite Counter, a measurement device that will make it easier for people to monitor how much they eat. Worn like a watch, the Bite Counter device tracks a pattern of wrist-roll motion to identify when the wearer has taken a bite of food. Think of it as a pedometer for eating.

"At the societal level, current [weight-loss](#) and maintenance programs are failing to make a significant impact. Studies have shown that people tend to underestimate what they eat by large margins, mostly because traditional methods rely upon self-observation and reporting," said Muth. "Our preliminary data suggest that bite count can be used as a proxy for caloric count."

The advantage of the Bite Counter is that it is automated so that user bias is removed. The device can be used anywhere, such as at restaurants or while working, where people find it difficult to manually track and remember calories.

The device is not based on what happens in a single bite (i.e. exact grams or specific food nutrients), but in how it simplifies long-term monitoring. For commercialization, Bite Counters eventually will be sold as simple consumer electronics alongside such familiar devices as activity monitors, heart-rate monitors, GPS watches and pedometers. A

device is available from Bite Technologies now for professional and research use at www.icountbites.com.

"The device only requires that the user press a button to turn it on before eating and press the button again after the meal or snack is done. In between, the device automatically counts how many bites have been eaten," Hoover said.

In laboratory studies, the device has been shown to be more than 90 percent accurate in counting bites, regardless of the user, food, utensil or container, according to Hoover. However, there are few existing data on how bite count relates to calorie count or how a bite-counting device could be used for weight loss. The device will allow for such data to be more easily collected.

With prototypes completed and manufacturing under way, devices are being tested in 20 subjects for one month. The devices will store logs of bite-count activities, which will provide researchers baseline data for developing guidelines for completely new and innovative weight-loss studies.

Provided by Clemson University

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