

New pill sensor helps keep patients on track

By ACSH Staff — August 27, 2012

Imagine a sensor about the size of a grain of salt that, once swallowed, can transmit details about your heart rate and physical activity levels and track your adherence to a drug regimen. This technology, imagined by Proteus Digital Health, Inc., is [now a reality](#) ^[1] that was approved just last month by the FDA.

And it's a rather ingenious imagining, at that. The sensor does not contain any battery or antenna. Instead, it is coated with layers of copper and magnesium, which react with gastric juices in the stomach to produce a tiny electric voltage lasting a few minutes. A skin patch, worn on the patient's abdomen, records this electrical stimulus while also monitoring important vital signs. All of this information is then wirelessly sent to any Bluetooth enabled device, such as a phone or computer, where it can be reviewed by physicians, patients, and caregivers.

Rather handily, patients can set up alarms reminding them to take their medication or alerting them if they are inactive for prolonged periods of time. The sensor is especially useful for patients who must stick to a strict drug regimen or who are taking multiple medications daily. For instance, Novartis is already testing the technology among renal transplant patients: Their preliminary findings reveal that, when used properly, the system monitors patients medication-taking behavior with very high accuracy.

Proteus is also working to include the sensor in generic drugs for chronic diseases, including type 2 diabetes, congestive heart failure, and high blood pressure. Currently, the company has partnered with the Bill and Melinda Gates Foundation to test the sensor among Chinese tuberculosis patients.

This is a great idea, says ACSH's Dr. Ruth Kava. It's well known that patients often fail to adhere to their medication regimens, and compliance only gets worse when a person has a complicated schedule due to multiple treatments for multiple conditions.

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