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Health Exams Alter With New Device

A new smartphone-based device known as HeartBuds is just as effective as traditional stethoscopes and better than a disposable model in identifying heart murmurs and other vital sounds during patient exams, according to new research from Orlando Health. The findings were presented at The American Heart Association's 2015 Scientific Sessions held in Orlando, Florida.

As the device uses smartphone technology, "we can now record, store and share those sounds as well," says David Bello, MD, department chief of cardiology at Orlando Health, and developer of HeartBuds. "This could change the way we approach patient exams in the future."

With HeartBuds, doctors use a small, portable plastic listening device shaped much like the head of a traditional stethoscope. Instead of being attached to a Y-shaped tube that feeds into the doctor's ears, however, this device is plugged into a smartphone.

When the app is activated, sounds from the handheld device can be played through the smartphone speaker and images appear on the screen showing rhythmic blips that correspond with each sound. Doctors are able to control the volume, listen to and discuss sounds with patients in real time, and record various sounds for future reference.

"The technology is great, but we wanted to see how our device actually fared against more traditional stethoscopes," says Julio Schwarz, a cardiologist at University of Florida Health who co-authored a recent clinical trial conducted at Orlando Health. "So we put them to the test."

For the study, doctors examined 50 patients and compared the performance of HeartBuds to two FDA-approved class I and class II stethoscopes, as well as a commonly used disposable model. The results showed that HeartBuds performed just as well as the more expensive and more commonly used class I and class II stethoscopes in detecting heart murmurs and carotid bruits, which are sounds in the neck that indicate moderate to severe blockage of the carotid artery.

Interestingly, experts found the disposable stethoscope model they tested missed the presence of heart murmurs 43 percent of the time, and missed carotid bruits up to 75 percent of the time.

Use of disposable models has increased after several studies have indicated there can be a 30 to 40 percent potential risk for transmitting harmful bacteria through stethoscopes, according to Valerie Danesh, RN, PhD, the research and clinical grants manager at Orlando Health and study author.

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Healthcare providers do their best to keep the head of the stethoscope clean. However, it's in the stethoscope's earpieces that bacteria often gathers and has the potential to be transmitted to patients.

HeartBuds does not have earpieces, so clinicians need not worry about issues related to sanitation. As Arnold Einhorn, MD, cardiologist and co-medical director of Orlando Health Heart Institute and HeartBuds developer, explains: "This device is much less expensive to produce and offers a safer alternative to both traditional and disposable models without sacrificing sound quality."

The device has many other uses. Athletes use HeartBuds to track their condition and performance. In addition, pregnant women have recorded sounds of their babies from inside the womb and shared them with friends and family all over the world. Dr. Bello notes, however, that only trained healthcare providers can use HeartBuds as a diagnostic tool.

Source and image credit: Orlando Health

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