

New technology puts health care in palm of your hand

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Managing your health care is moving increasingly to the palm of your hand—with new smartphone-enabled technology and wearable sensors that examine, diagnose and even treat many conditions and ailments.

The Consumer Electronics Show in Las Vegas saw the debut of new applications for "virtual checkups" and ways to treat pain, manage stress and monitor conditions such as diabetes.

French-based health group VisioMed introduced its Bewell Connect health management suite, which includes a smartphone app that communicates with its connected [blood pressure](#) and glucose monitor, thermometer and blood oxygen sensor.

"If I have all these indicators I can get a pretty good assessment of your health," said Benjamin Pennequin, research director for the group.

"This is like a personal virtual checkup."

But the app goes further: If you have symptoms such as chest pain or shortness of breath, it poses a series of questions and delivers potential diagnoses, and allows the user to share the data with a physician.

And a simple button on the app can connect you to a doctor: In France the app locates nearby providers in the national medical service, and Bewell is working to establish a network of connected physicians in the United States.

A hand-held connected device unveiled by Las Vegas-based startup MedWand allows consumers to measure temperature, heart rate, oxygen levels and includes a camera to examine the throat and inner ear to enable doctors to perform an exam online.

Lead engineer Terry MacNeish said the data from the \$250 gadget allows for a more thorough exam than most other kinds of telemedicine.

"If you're just Skyping your doctor, it's just medical chat," MacNeish said. "With this we can get a picture of your tonsils, we can take your

temperature. It's much more precise."

MedWand is working with existing telemedicine doctors and plans to start selling the device in June in the United States and globally.

MedWand is currently in the pre-FDA approval phase, and is expected to go through that process during 2016. He said insurance companies are generally positive because a telemedicine exam costs less than one in a doctor's office.

"The patient saves a lot of time and so does the doctor," he said.

Continuous monitoring

Putting more health data in consumers' hands is a big theme at CES.

US-based medical device maker Omron unveiled its wrist-worn blood pressure sensor which delivers information to a smartphone.

"Most people only get their blood pressure checked at the doctor's office once or twice a year," said chief operating officer Randy Kellogg.

"This is continuous monitoring. If there is something wrong with your heart, you really want to listen."

Tech-savvy startups and others are introducing new ways to treat pain, in some cases taking techniques which have been around for decades and adapting them for smartphones and connected wearables.

NeuroMetrix debuted its Quell leg band, which blocks pain signals to the brain, and is an alternative to drugs for people suffering from debilitating pain related to diabetes or other ailments.

It recently received approval from the Food and Drug Administration.

NeuroMetrix founder Shai Gozani, a medical doctor who also has a PhD in neurobiology, said the device "triggers your brain to upgrade its pain modulation" by acting on the opioid receptors in the same manner as opiates—but without drugs.

Hacking pain

While Quell is a device which treats pain anywhere in the body from a single band, iTens offers a smartphone-controlled patch which attaches to specific muscles to treat pain, using technology known as TENS, or transcutaneous electrical neuromuscular stimulation.

The technology has been around for decades in hospital settings but is only now hitting the consumer market with smartphone technology and sensor-embedded devices.

"The electrical impulse intercepts the pain signal before it reaches the brain," said iTens spokesman Scott Overton, showing the device on the CES floor.

Tech innovators have found other paths to effectively hack into the body's neural pathways for therapy.

Biotrak Health showcased a headband to help users control muscle tension that often leads to migraines and other kinds of [pain](#).

The Halo headband "alerts you when you are tense and allows you to control your own tension," said spokesman Adam Kirell.

A wrist-worn device meanwhile from ReliefBand technologies takes aim at nausea associated with motion and morning sickness.

The device, which looks like a wristwatch, acts on the P6 or median nerve—the same technique used in centuries-old treatment from acupuncture.

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