

Wearable, Drug-Free Treatment Provides Safe Access to Pain Management for Rural Populations

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Pain is among the top reasons that people go to a doctor. It affects quality of life and can lead to depression, anxiety, and poor sleep. Medications including narcotics are often the first-line treatment for pain, but they can cause serious side effects and addiction liability. Alternative treatments for pain management do exist but are not accessible by all populations, especially rural and socioeconomically disadvantaged people.

"It's a significant challenge for rural patients to have access to health care," says George K. Lewis, Ph.D., president and chief executive officer of ZetrOZ Systems, LLC in Trumbull, Connecticut. Instead of engaging in physical therapy multiple days a week, rural patients with joint pain may find it easier to take narcotics or receive injections every few months.

To combat these challenges, Dr. Lewis envisioned a wearable, drug-free, device that delivers low-intensity ultrasound waves for pain management that can be used safely at home. The National Institute on Minority Health and Health Disparities has helped make this vision a reality – providing Small Business Innovative Research (SBIR) grants for the development and testing of wearable ultrasound devices for pain.

In 2014, the U.S. Food and Drug Administration approved the ZetrOZ wearable ultrasound device making it the first and only multi-hour ultrasound wearable device approved to increase circulation, reduce joint stiffening, and accelerate healing and reduce pain. The device, called SAM® (Sustained Acoustic Medicine), has already helped tens of thousands of people. "It's game changing and engaging patients so that they're actively involved in their care," says Dr. Lewis. He adds, "With improved range of motion, controlled pain, no drugs, and no injections, patients love the device, and it has been a commercial success."

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ZetrOZ

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Technology
Medical Device

Primary Institute
Aging (**NIA**)

Secondary Institute
Minority Health (**NIMHD**)

Project Details
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ZetrOZ

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This breakthrough in pain management is not only portable and convenient but lacks the dangerous side effects that accompany other pain management strategies. Physicians are still able to manage the device and track patients' use through a log and patient diary, but patients can conveniently use the device in their homes and do not need to see a clinician every week. Importantly, by having the option to use the device while at work, people may be able to return to their jobs much more quickly than they would using other pain therapies.

ZetrOZ Systems aims "to make SAM® devices affordable and acceptable so that they have a long-lasting impact and can help as many people as possible," says Dr. Lewis. Injured professional and college athletes are using the device, a nationwide network of SAM® device and insurance providers are in place for the treatment of work-related injuries, and the U.S. Department of Veterans Affairs has approved its use for veterans who have not experienced joint pain relief from other medical therapies. Thirty Veterans Affairs medical centers and 6 military installations currently prescribe SAM®, and more than half of their patients are members of minority groups in rural communities.

