

SecondWave Systems, Inc.
(Subsidiary of The Ultran Group)



Minneapolis-St. Paul, MN

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**SINCE ITS FOUNDING IN
2018 (SecondWave)**

3 SBIR Awards

14 Employees

SB Socioeconomic Category

3 Patents from SBIRs

MINI device administered for COVID-19 and production of clinical devices



A Wearable and Cost-Effective Medical Device to treat Chronic and Hyper-Inflammation

Warfighters and civilians have a high prevalence of chronic inflammation disorders, such as rheumatoid arthritis. However the current standard of care consists of expensive biologics with significant side effects and 30%+ of patients that do not respond to available therapies. It is estimated that military veterans suffer from the onset of inflammatory diseases at twice the rate of the civilian population.

The SecondWave MINI™ is a noninvasive device that can reduce chronic and acute inflammation using focused ultrasound energy. The MINI device is a phased array ultrasonic system with advanced steering and focusing and smart, adaptive targeting. Worn on the torso of a patient, it delivers targeted ultrasound that modulates the spleen, causing an anti-inflammatory effect to treat rheumatoid arthritis (RA). In addition, this therapy can be administered to patients suffering from hyperinflammation, such as that caused by extreme cases of COVID-19 through the onset of a “cytokine storm.” SecondWave is currently conducting clinical trials for COVID-19 to achieve Emergency Use Authorization from FDA, alongside clinical partners at University of Minnesota and University of California San Diego.

IMPACT TO THE MISSION

The MINI system will provide a cost-effective device for the warfighter or veteran to treat rheumatoid arthritis (RA). The device can be deployed in the battlefield or at hospitals. This can potentially reduce the need for debilitating steroids and biologics that are routinely prescribed and used by RA patients. In addition, it may provide relief from the cytokine storm caused by extreme cases of pathogen-induced diseases (e.g., COVID-19). This has the potential to save lives in the current as well as future pandemics.

BEYOND PHASE II

The Ultran Group and SecondWave Systems have received \$4.33M from MCDC (Medical CBRN Defense Consortium) to perform clinical trials for COVID-19 and achieve FDA approval. In addition, DARPA has provided \$3M in additional funding (beyond Phase II) to accelerate device development, treat COVID-19, followed by trials for chronic inflammation (RA). SecondWave will apply for FDA approval to treat chronic and acute inflammation. Following approval, SecondWave will launch its MINI device commercially for civilian and military use.

Solicitation:

Wearable Ultrasound for Imaging and Modulation

DARPA SBIR Sponsor

SB173-001 Topic Number

Human Impact Primary Innovation

Adoptability Secondary Innovation

This research was developed with funding from the Defense Advanced Research Projects Agency (DARPA). The views, opinions and/or findings expressed are those of the author(s) and should not be interpreted as representing the official views or policies of the Department of Defense or the U.S. Government.” (Approved for Public Release. Distribution Unlimited 11/15/21)