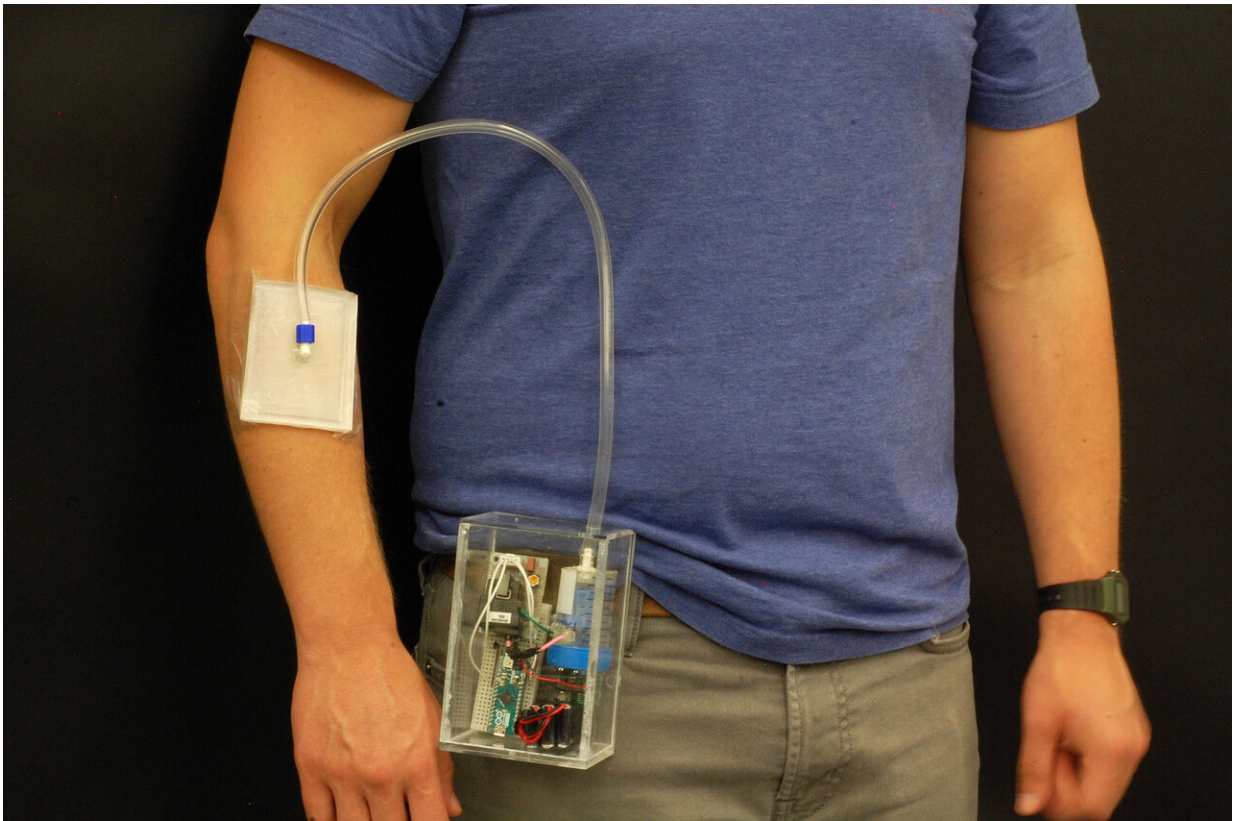


Wearable, portable invention offers options for treating antibiotic-resistant infections

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Purdue University innovators created a wearable invention that offers options for treating antibiotic-resistant infections and wounds. Credit: Purdue University/Rahim Rahimi

The rapid increase of life-threatening antibiotic-resistant infections has resulted in challenging wound complications with limited choices of

effective treatments. About 6 million people in the United States are affected by chronic wounds.

Now, a team of innovators from Purdue University has developed a wearable solution that allows a patient to receive treatment without leaving home. The Purdue team's work is published in the journal *Frontiers in Bioengineering and Biotechnology*.

"We created a revolutionary type of treatment to kill the bacteria on the surface of the wound or diabetic ulcer and accelerate the [healing process](#)," said Rahim Rahimi, an assistant professor of materials engineering at Purdue. "We created a low-cost wearable patch and accompanying components to deliver [ozone therapy](#)."

Ozone therapy is a gas phase antimicrobial treatment option that is being used by a growing number of patients in the U.S. In most cases, the ozone treatments require patients to travel to a [clinical setting](#) for treatment by trained technicians.

"Our breathable patch is applied to the wound and then connected to a small, battery powered ozone-generating device," Rahimi said. "The ozone gas is transported to the skin surface at the wound site and provides a targeted approach for wound healing. Our innovation is small and simple to use for patients at home."

More information: Alexander Roth et al, Wearable and Flexible Ozone Generating System for Treatment of Infected Dermal Wounds, *Frontiers in Bioengineering and Biotechnology* (2020). [DOI: 10.3389/fbioe.2020.00458](#)

Provided by Purdue University

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