



The wearable sits on the shoulder blades | Photo source [Start Now](#)

Innovation > Health & Wellbeing > Wearable uses the human body to power medical equipment

## WEARABLE USES THE HUMAN BODY TO POWER MEDICAL EQUIPMENT

 HEALTH & WELLBEING

### **The thermoelectric power generation product converts the heat energy into electric energy, solving a multitude of environmental and economic issues**

**Spotted:** The team behind the wearable were inspired to use the human body to power medical equipment, in an attempt to improve on other medical devices which use disposable batteries that consume power quickly, cost a lot, and have high pollution rates.

The wearable, which sits on the shoulder blades, is powered by a flexible thermoelectric battery, which uses the difference in temperature between the body and outside world to generate a continuous power supply. As the human body is constantly generating heat, this temperature difference is constant, and the wearable works by absorbing the human heat and converting it into electricity through the Seebeck effect, which is where a voltage difference is created due to a temperature difference. The excess heat then supplies power to the medical equipment.

The process ensures that the battery can be used for a long time, without risk of damage by external forces, whereas existing zinc-air batteries on the market “can be used for only 2-7 days, with unstable electricity, serious environmental pollution and inconvenient operation for the elderly”, [according to the team](#).

Moreover, not only is the power generator process made much more efficient and environmentally friendly, but the generator reduces the unit power cost by 51 per cent. The range of external temperatures in which the generator works is high, with the output power almost unchanged under the environment of  $26\text{ }^{\circ}\text{C} \pm 3\text{ }^{\circ}\text{C}$ , making the thermoelectric generation equipment accessible around the world.

The preliminary technical preparation and experimental test of the project have already been carried out, and several patents have been applied for.

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### **Takeaway:**

The idea of using the human body as an alternative power generator has come into general scientific thinking over the last decade. The team behind Start Now plans to build on their research on wearable medical equipment systems, extending it to other devices such as a charging belt and charging bracelet, and even to those that could be implanted into the human body. With the large amount of power consumed in electricity generation placed as one of the highest causes of global warming, solutions such as this could become more commonplace.