



Silk sensors | Photo source [AI Silk](#)

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JAPANESE COMPANY TURNS RAW SILK INTO A HIGHLY CONDUCTIVE WEARABLE

● SCIENCE

A new method turns natural silk fibres into a comfortable conductive material

Spotted: Japanese company [AI Silk](#) has turned raw silk into an electricity-conducting wearable fabric. The material, which is primarily for the health and medical fields, can act as an electrode to collect medical information or to help people recover from injury or illness.

Made by a [special dyeing technique](#), the fabric is durable and non-irritating, according to the company. [AI Silk](#) says the fabric doesn't deteriorate with washing. It is also comfortable because it reduces the tingling sensation often caused by electrical stimulation of the muscles in medical treatments. The silk fibre is highly absorbent, which means it is less affected by sweat, which can lower conductivity.

Using a separate technique, the company is also able to create textiles that are only conductive in some areas, by printing electricity-conducting polymers onto fabric. The techniques are not limited to silk, but can be applied to other natural fibres, according to the company.

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Takeaway:

The wearable industry has been hyped for years. But one area showing genuine momentum is in the **high tech medical arena** with wearables in clothing, skin patches and electronic skins. The **wearable medical devices market** is expected to hit \$14 billion by 2024. AI Silk is one to watch, as it solves some problems typically associated with electrodes, such as irritation to the skin. Conductive textiles like these also have potential uses outside of health and medicine. They could be used for any application that would benefit from flexible and lightweight sensor-embedded fabrics. And because they do not degrade when washed, they can be used, for example, to **embed sensors** in everyday clothing to collect information about health and fitness, or to create more **responsive clothing**.