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Diseases are most commonly diagnosed by doing a series of medical procedures, one of which is blood extraction. Testing a patient’s blood can provide initial information about an individual’s health and help assess the next necessary procedures. However, blood extraction is an invasive process, not to mention that it takes time to get the results. To provide a faster and easier way to measure glucose levels, researchers from Singapore’s Nanyang Technological University (NTU) introduced a **smart band-aid to aid patients**.

Biomarkers measured by plaster

To understand how this works, it’s important to note that human sweat contains biomarkers like glucose. Glucose measures the level of sugar within an individual’s blood. Most individuals with diabetes prick their fingers to extract blood and determine their glucose level.

With this, NTU developed a plaster product that can measure an individual’s glucose level by sweat. This is a non-invasive procedure compared to the usual method we are familiar with. According to NTU, “By encapsulating a microlaser in liquid crystal droplets and embedding the liquid within a soft hydrogel film, the NTU team created a compact and flexible light-based sensing device—like a plaster—which can provide highly accurate biomarker readings within minutes.”

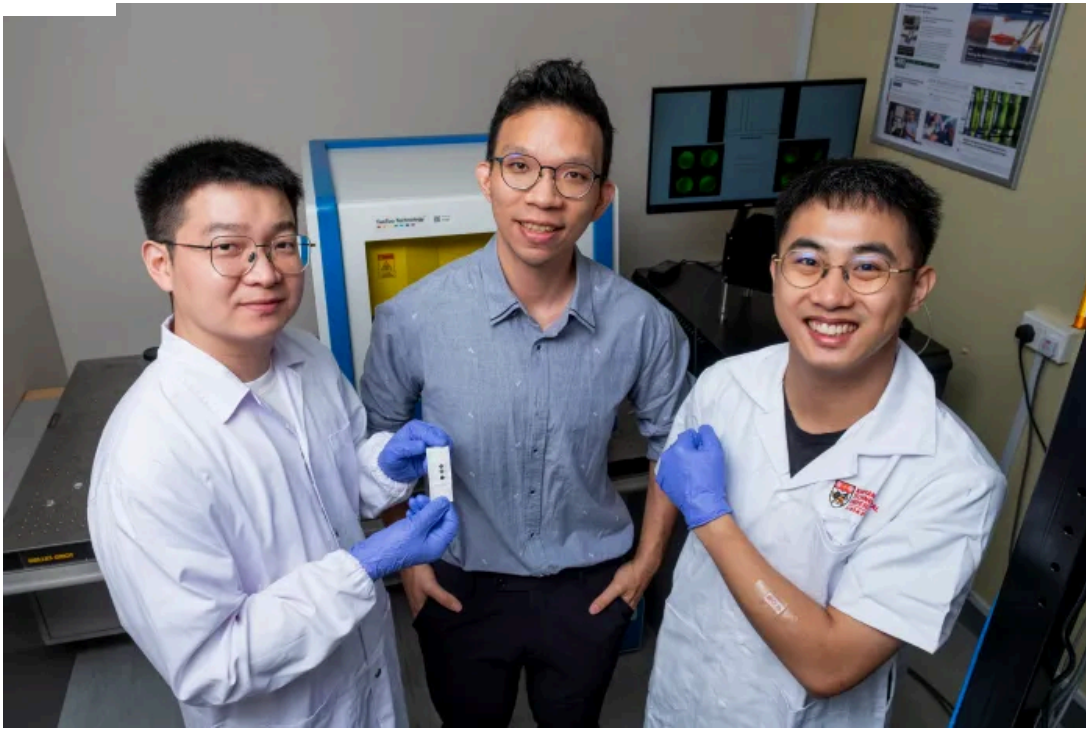


Image: NTU Singapore

NTU Singapore's innovative product can also detect lactate and urea. A urea test can help a healthcare provider determine if a patient's kidney is working properly. High urea test levels may indicate a kidney problem, while a high level of lactate may be a sign of an underlying medical condition. Both require further testing and diagnosis.

The three biomarkers measured by the plaster are assigned different colors. When sweat comes into contact with the plaster, an individual can shine a light source on it to read the biomarkers. The light emitted by the laser sensors will show the level of biomarkers and can be analyzed using a mobile app. The change in light intensity indicates the concentration of each biomarker.

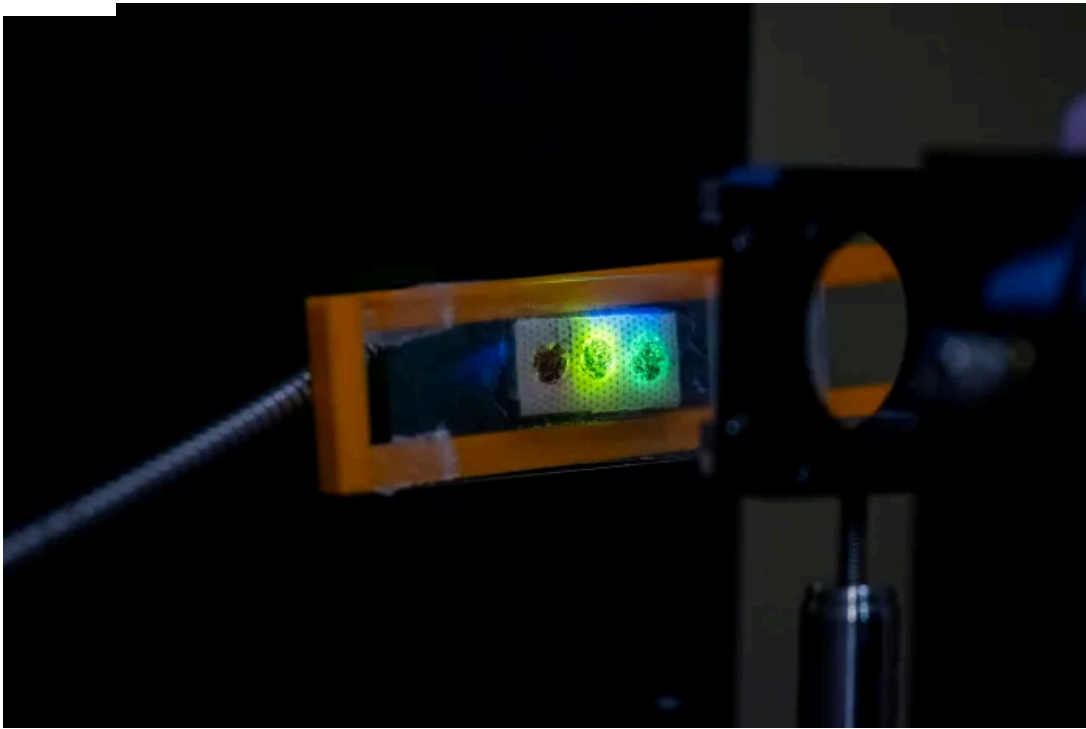


Image: NTU Singapore

The future of initial medical assessment

This wearable laser will make it easier for patients to monitor their health condition, resulting in faster solutions if deviations are discovered early. In Singapore, where **one in nine residents** aged 18 to 69 years are affected by diabetes, this smart band-aid can be a helpful partner in monitoring their glucose level.

NTU believes that this patch is the first of its kind in the industry. If this project proves to be successful in future application and implementation, it can become a staple in the **medical field**. The wearable plaster is less time-consuming and offers a more comfortable way for patients. Individuals who have lost motor skills like walking, as well as aging patients, can benefit from this innovation. Even without going to a clinic or hospital, they can be aware of their health condition.

YouTube: This smart 'band-aid' could help monitor your health without pricking your fingers

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Source: [Diabetes Singapore](#) / [NTU press release](#)

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