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ASIA EDITION

Swedish scientists create painless glucose monitoring system

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After successfully testing a prototype of a microneedle patch on a human subject, the completion of a system for clinical tests is now underway.

A more comfortable and reliable blood-sugar monitoring system is being designed at KTH Royal Institute of Technology in Stockholm for people with diabetes. After successfully testing a prototype of a microneedle patch on a human subject, the completion of a system for clinical tests is now underway.

The microneedle patch that is 50 times smaller than the needles used in today's continuous glucose monitoring systems. The combination of the patch and an extremely miniaturized three-electrode enzymatic sensor was shown in a recent study to be capable of correctly and dynamically tracking blood glucose levels over time, with a delay of about 10 minutes, when applied to a human subject's forearm.

The next steps are to develop a transferable adhesive patch, along with algorithms and embedded electronics for a fully-realized system to take to clinical trial.