Could a Contact Lens Help People With Diabetes Monitor Blood Glucose?

Scientists are perfecting an alternative to needles with this new smart blood sugar measuring device.

February 1, 2018 By Alicia Green

Checking blood sugar levels can be painful for people living with diabetes, who often have to prick their fingers multiple times a day. But there may be a way to monitor blood glucose without needles, suggest new findings published in the journal Science Advances, reports LiveScience.

South Korean researchers have developed a soft, stretchable and smart contact lens that can measure glucose levels in tears. The glucose monitor relays data through an LED display embedded in the lens that can also emit a non-intrusive light if sugar levels soar. In addition, an attached miniature antenna transmits the information wirelessly to a handheld device.

So far, scientists have tested the device only on rabbits, but researchers anticipate that the gadget will be available commercially in less than five years.

Although it's been possible for years to calculate the amount of glucose present in tears, such measurements are reportedly not as accurate as blood samples. "Tear glucose levels do vary in relation to blood glucose levels, [so] much research still needs to be done to clarify the correlation and how closely tear glucose levels track with blood glucose levels," said Matt Petersen, managing director for the American Diabetes Association.

But because monitoring glucose using tears would occur frequently, this method might serve as a replacement to pricking fingers for blood sugar readings, researchers suggested.

The developers also proposed using the new technology to create both smart devices for delivering medications and biomarker monitors that could be used on smartphones.

Click here to learn about how people with diabetes can monitor their blood sugar with fewer needle pricks.

© 2026 Smart + Strong All Rights Reserved.