

Artificial intelligence could help predict future diabetes cases

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A type of artificial intelligence called machine learning can help predict which patients will develop diabetes, according to an ENDO 2020 abstract that will be published in a special supplemental section of the

Journal of the Endocrine Society.

Diabetes is linked to increased risks of severe health problems, including heart disease and cancer. Preventing [diabetes](#) is essential to reduce the risk of illness and death. "Currently we do not have sufficient methods for predicting which generally healthy individuals will develop diabetes," said lead author Akihiro Nomura, M.D., Ph.D., of the Kanazawa University Graduate School of Medical Sciences in Kanazawa, Japan.

The researchers investigated the use of a type of [artificial intelligence](#) called [machine learning](#) in diagnosing diabetes. Artificial intelligence (AI) is the development of computer systems able to perform tasks that normally require human intelligence. Machine learning is a type of AI that enables computers to learn without being explicitly programmed. With each exposure to new data, a machine-learning algorithm grows increasingly better at recognizing patterns over time.

"Using machine learning, it could be possible to precisely identify high-risk groups of future diabetes patients better than using existing risk scores," Nomura said. "In addition, the rate of visits to [healthcare providers](#) might be improved to prevent future onset of diabetes."

Nomura and colleagues analyzed 509,153 nationwide annual health checkup records from 139,225 participants from 2008 to 2018 in the city of Kanazawa. Among them, 65,505 participants without diabetes were included.

The data included physical exams, blood and urine tests and participant questionnaires. Patients without diabetes at the beginning of the study who underwent more than two annual health checkups during this period were included. New cases of diabetes were recorded during patients' checkups.

The researchers identified a total of 4,696 new diabetes patients (7.2%) in the study period. Their trained computer model predicted the future incidence of diabetes with an overall accuracy of 94.9%.

Nomura says he next plans to perform [clinical trials](#) to assess the effectiveness of using statins to treat groups of patients identified by the machine learning model as being at high risk of developing diabetes.

Provided by The Endocrine Society

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