BioSpectrum
the business of Bio & Health Sciences
ASIA EDITION

Australia designs model to link heart disease with T2D

November 4, 2020 | News

University of Sydney engineers have developed a model aimed to predict the risk of people living with type 2 diabetes developing cardiovascular disease.



Researchers from Australia's University of Sydney's School of Project Management within the Faculty of Engineering have developed a model which aims to predict the risk of people living with type 2 diabetes (T2D) developing cardiovascular disease.

The model has been found to have a high prediction accuracy with a range from 79 to 88 percent.

The study showcases the potential of machine learning in medicine, by using complex patient datasets and compiling them to find risk factors that contribute to a higher likelihood for a disease.

"According to our study, people living with type 2 diabetes have a higher chance of developing cardiovascular disease. However, it's not always clear who will develop it, and testing and monitoring can be time consuming and expensive," said the study's lead researcher, Dr Shahadat Uddin.

In collaboration with University of Sydney researchers, Dr Arif Khan and Mr Md Ekramul Hossain, Dr Uddin developed the model using administrative data provided by private health fund, CBHS.

The administrative datasets were gathered from private hospitals in Australia, which contained patient admission information and discharge summaries.

"Our study found that the prevalence of renal failure, fluid and electrolyte disorders, hypertension and obesity was significantly higher in patients with both cardiovascular disease and type 2 diabetes than patients with only type 2 diabetes," said Dr Uddin.

What this study has revealed is that machine learning and network analysis of health data can be used to better understand disease progression. The team has developed a software tool, now in a beta version, to implement the model.