# AI advancements in diabetes diagnosis promise better healthcare



Researchers at Stanford University are exploring the potential of artificial intelligence (AI) in the diagnosis of diabetes, leading to advancements that could provide better and more accessible healthcare for patients. This research delves into the complexities of Type 2 diabetes, which constitutes approximately 95% of diabetes diagnoses, unveiling important subtypes that may predict associated risks for conditions such as kidney, heart, or liver diseases.

Dr. Tracey McLaughlin, an endocrinology professor at Stanford, pointed out the limitations of traditional metabolic testing, stating, "Understanding the physiology behind [diabetes] requires metabolic tests done in a research setting, but the tests are cumbersome and expensive and not practical for use in the clinic." In light of this, the research team employed data from glucose monitors to develop an innovative algorithm capable of identifying three of the four most prevalent subtypes of Type 2 diabetes.

The algorithm demonstrated a significant advantage over conventional clinical data, as it "predicted metabolic subtypes, such as insulin resistance and beta-cell deficiency, with greater accuracy than the traditional metabolic tests"—achieving this with an impressive 90% accuracy rate. Identifying a patient's specific subtype of diabetes holds critical implications for tailoring treatments. Through this categorisation, healthcare providers can design personalised medicine plans, optimising resource allocation and potentially lowering expenses.

According to McLaughlin, "This matters, because depending on what type you have, some drugs will work better than others." The research aims to facilitate a more convenient and immediate means for individuals to gain insights into their health, particularly those who might lack access to conventional healthcare resources due to geographic, economic, or other barriers.

With around 13% of the population in the United States diagnosed with diabetes, recognising these treatment nuances could greatly influence the effectiveness of various therapeutic approaches. The ability of AI to extract deeper insights from data sourced from devices that patients already utilise, such as glucose monitors, underscores the technology's potential to enhance healthcare delivery.

This breakthrough comes on the heels of significant recognition at CES 2025, where two over-the-counter glucose monitors received accolades in the Digital Health category. As research continues to evolve, leading to greater capabilities in AI-driven healthcare, the hope is to increase the availability and precision of health information for individuals across diverse circumstances, contributing to overall better health outcomes.

Source: [Noah Wire Services](https://www.noahwire.com)

## Bibliography

1. <https://med.stanford.edu/news/all-news/2025/01/type-2-diabetes.html> - This article supports the claim that Stanford Medicine researchers are using AI to identify subtypes of Type 2 diabetes and that the algorithm can predict metabolic subtypes with greater accuracy than traditional metabolic tests.
2. <https://med.stanford.edu/news/all-news/2025/01/type-2-diabetes.html> - It corroborates Dr. Tracey McLaughlin's statement on the limitations of traditional metabolic testing and the development of an algorithm using data from glucose monitors.
3. <https://med.stanford.edu/news/all-news/2025/01/type-2-diabetes.html> - This source confirms the 90% accuracy rate of the algorithm in identifying Type 2 diabetes subtypes and its implications for tailored treatments.
4. <https://pubmed.ncbi.nlm.nih.gov/38834334/> - This study supports the identification of distinct subtypes of Type 2 diabetes using machine learning and their prognostic validity, including differences in mortality, hospitalization, and chronic disease incidence.
5. <https://pubmed.ncbi.nlm.nih.gov/39168869/?fc=None&ff=20240822014738&v=2.18.0.post9+e462414> - This research validates the use of machine learning models to classify individuals with Type 2 diabetes into subtypes consistently over time, aligning with the concept of personalized therapeutic strategies.
6. <https://med.stanford.edu/news/all-news/2025/01/type-2-diabetes.html> - It highlights the importance of identifying a patient's specific subtype for designing personalized medicine plans and optimizing resource allocation.
7. <https://med.stanford.edu/news/all-news/2025/01/type-2-diabetes.html> - This article explains how the research aims to facilitate more convenient and immediate health insights, especially for those with limited access to conventional healthcare resources.
8. <https://stanmed.stanford.edu/ai-tool-manage-diabetes-smart-speaker/> - This source illustrates another example of AI in diabetes management, using a voice-activated app on smart speakers to help patients manage their blood-glucose levels, underscoring AI's potential in healthcare delivery.
9. <https://pubmed.ncbi.nlm.nih.gov/38834334/> - This study supports the recognition of treatment nuances based on diabetes subtypes, which could greatly influence the effectiveness of various therapeutic approaches.
10. <https://med.stanford.edu/news/all-news/2025/01/type-2-diabetes.html> - It discusses the broader implications of AI-driven healthcare, including increasing the availability and precision of health information for diverse populations.
11. <https://med.stanford.edu/news/all-news/2025/01/type-2-diabetes.html> - This article mentions the potential of AI to enhance healthcare delivery, particularly for those facing geographic, economic, or other barriers to healthcare access.
12. <https://www.zdnet.com/article/how-ai-could-supercharge-your-glucose-monitor-and-catch-other-health-issues/> - Please view link - unable to able to access data