



**GARMIN®**  
HEALTH

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# DIABETES INSIGHT REPORT

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# TABLE OF CONTENTS

- About Garmin Health ..... 4
- Letter from Joern Watzke, Senior Director Garmin Health Global Sales & Scott Burgett, Senior Director  
Garmin Health Engineering ..... 5
- Topic overview:
  - An Introduction: Type 2 Diabetes ..... 6
  - A Growing Global Crisis..... 6
  - The Evolution of Preventive Care and Treatment ..... 6
  - Ecosystem Integration from Garmin Health..... 7
- Innovation In Action: Twin Health ..... 8
- Additional Use Cases ..... 9
- The Future of Diabetes Care: A Digital Health Perspective ..... 11
- Endnotes ..... 12

## ABOUT GARMIN HEALTH

[Garmin Health](#) empowers innovative third-party digital health solutions with the Garmin Health Ecosystem, comprised of the Garmin product portfolio<sup>A</sup> and its data integration services. By leveraging the Garmin Health API and SDKs, organizations can receive real-time or existing biometric data – with customizable levels of granularity – in accordance with their specific privacy policies. Garmin Health is a globally focused division of technology leader Garmin, collaborating with entities in areas like healthcare, research, employee benefits, insurance, fitness and defense. For more information, connect with us on [LinkedIn](#), sign up for our [newsletter](#) or visit us online at [garmin.com/health](https://garmin.com/health).

## JOERN WATZKE

### Senior Director Garmin Health Global Sales

For over a decade, the Garmin Health division has seen thousands of use cases for Garmin products and data integration. It is part of what makes this work so gratifying – to be a part of innovative solutions for problems old and new.

As you will read in this report, the rise of type 2 diabetes is a global concern. However, the good news is that prevention and treatment programs are slowly evolving from reactive to proactive. Coupled with new pharmaceutical options, such as GLP-1 drugs and the application of artificial intelligence condition management therapies, these emerging digital health solutions are making a positive impact.

On behalf of our entire global team, I hope this insight report provides you with a new understanding of how something as seemingly simple as the data from a Garmin smartwatch<sup>A</sup> can be utilized by organizations to develop third-party solutions that may help reduce the risk of developing or even possibly improve living well with type 2 diabetes.

Thank you for reading,

Joern Watzke



## SCOTT BURGETT

### Senior Director Garmin Health Engineering

When I think about where we started at Garmin – pioneering the first running smartwatch in 2003 – and how far we have come, I am continually impressed by our data granularity, capabilities of the Garmin Health API and SDKs, and sensor accuracy we bring to fields with rigorous standards, such as research. Time and time again, we have proven consumer-grade wearables have a role to play in digital health solutions that are empowering patients, providers and scientists in new and exciting ways. Diabetes may be one of the greatest public health issues in modern history, but we are seeing strong evidence that scalable preventive care, powered by data, can help change its trajectory.

Sincerely,

Scott Burgett



## AN INTRODUCTION: TYPE 2 DIABETES

The most prevalent form of diabetes – accounting for 95% of global cases – type 2 diabetes is one of the leading causes of mortality, ranking ninth<sup>1</sup>. As a metabolic disorder, it is primarily identified by abnormal hyperglycemia (elevated blood glucose), the result of insulin resistance and a reduced ability to secrete insulin<sup>2</sup>. When the body's cells – notably in muscle, liver and adipose tissue – become less responsive to insulin, the pancreas cannot compensate by producing enough of the hormone. This ultimately leads to chronically high levels of blood glucose.

Initially, hyperglycemia can cause minor symptoms like increased thirst, frequent urination, fatigue, and blurry vision<sup>3</sup>. However, if the situation is not addressed and continues for years, it can damage nerves and blood vessels due to oxidative stress, inflammation, and Advanced Glycation End Products (AGEs). Because of the vascular damage, untreated type 2 diabetes may lead to serious complications such as cardiovascular disease, stroke, chronic kidney disease, peripheral neuropathy, and retinopathy. Cardiovascular disease is the primary cause of morbidity and mortality for people with type 2 diabetes<sup>4</sup>.

## A GROWING GLOBAL CRISIS

In 2024, approximately 589 million adults (20 – 79 years) were estimated to have diabetes worldwide. That number is hypothesized to grow to over 852 million in 2050. As things stand today, one in every eleven adults is impacted by diabetes. And while that number is alarming, it becomes even more troubling when paired with the following statistic: In 2023, approximately 44% of individuals with diabetes (15 years and older) were not aware of their condition, meaning they did not receive treatment<sup>5</sup>.

While rates of type 2 diabetes are increasing across all regions, low and middle-income countries are particularly challenged due to aging populations, rapid changes in urbanization, dietary sources, and limited access to diagnostic and treatment programs. For example, Africa currently has the lowest prevalence of diabetes of any region – an estimated 5.0% - but is expected to see the highest increase (142%) by 2050, reaching 60 million people. Undiagnosed diabetes is also the highest in Africa at 72.6%<sup>5</sup>.

In 2024, diabetes was responsible for 3.4 million deaths and caused an estimated USD 1 trillion dollars in healthcare costs, a 338% increase over the last 17 years. In Europe alone, the average annual cost of treatment for diabetes was USD 2,951 dollars per person, making it the second most expensive region in the world. And in North America and the Caribbean, the average expenditure was USD 7,811, making it the costliest region surveyed by the International Diabetes Federation<sup>5</sup>.

## THE EVOLUTION OF PREVENTIVE CARE AND TREATMENT

Historically, type 2 diabetes was treated reactively when the disease began manifesting more serious symptoms, such as chronic heart disease and neuropathy. It was not until the late 20th century when researchers identified impaired glucose tolerance, now known as prediabetes, and began conducting large longitudinal studies demonstrating the efficacy of lifestyle changes to delay or prevent the disease. Diet and exercise interventions were shown to have a significant impact on whether prediabetes progressed to type 2 diabetes<sup>6</sup>.

The advent of glucose-lowering drugs, notably metformin, resulted in a foundational change in diabetes care. However, the National Institute of Health's landmark Diabetes Prevention Program (DPP) and research trial reinforced the fact that weight loss and physical activity could be even more effective than metformin, solidifying lifestyle changes as an enduring component of disease management<sup>7</sup>.

Today, technological and pharmaceutical advances are enabling proactive, individualized care in a way never seen before. Continuous glucose monitors (CGMs), GLP-1 receptor agonists (GLP-1s), and digital health applications feeding biometric data into AI models are all gaining popularity as patients look for new ways to maintain or improve their health. As the prevalence of type 2 diabetes continues to grow, these new tactics provide a degree of self-empowerment needed in the modern era of culture-driven health challenges resulting in chronic disease.

## ECOSYSTEM INTEGRATION FROM GARMIN HEALTH

Garmin Health provides two critical components that enable innovative digital health solutions: wearable devices and flexible options for data integration into third-party solutions. Garmin wearables<sup>A</sup> feature long battery life and can capture biometric data related to physical activity, stress, and sleep. Lifestyle factors, such as a healthy diet and consistent exercise, have been shown to positively impact insulin sensitivity and lower the risk of developing type 2 diabetes<sup>8</sup>. While wearable data is valuable for users on its own, when it is incorporated into a third-party solution via Garmin's connected ecosystem it can help power next-generation digital therapies<sup>A</sup>. Garmin Health offers a free webservice API, ideal for solutions requiring data similar to that available to users in Garmin Connect. Garmin Health also offers mobile app SDK integration options, capable of providing high granularity data, such as beat-to-beat intervals and enhanced actigraphy, enabling the level of customization needed by scientific researchers. Third-party solutions that combine data from Garmin wearables<sup>A</sup> via a flexible integration method with their own clinically validated platform will empower the next generation of chronic condition prevention, allowing users to make informed, data-driven decisions about their healthcare.

## INNOVATION IN ACTION: TWIN HEALTH

[Twin Health](#), a U.S.-based technology company, invented the world's first AI Digital Twin for metabolic disease reversal, prevention, and optimal metabolic health. By learning how a person's biology responds to daily life, the AI Digital Twin delivers personalized advice on medications, nutrition, activity, sleep, and stress. It also helps clinical care teams deliver the right guidance at the right moments and when members want it most.

Biometric data is an essential part of the program, feeding the AI Digital Twin with insights from wearable sensors. Garmin smartwatches<sup>A</sup> provide the clinically validated Twin Health platform with general wellness metrics, such as stress, physical activity, and sleep. Twin Health leverages this data, along with data from CGMs and other smart devices, to identify a collection of biomarkers that drive metabolic health. By focusing on the biological processes underlying chronic metabolic conditions like type 2 diabetes, Twin Health creates a plan to address the root causes.

In 2025, results from a landmark Twin Health study conducted by the Cleveland Clinic were published in the *New England Journal of Medicine Catalyst*. The randomized controlled trial focused on treating type 2 diabetes while reducing reliance on prescription medication.

Key findings:

- 71% of Twin participants reduced A1C below the diabetes range (compared to just 2.4% in the control group)
- 92% of Twin participants eliminated at least one diabetes medication
- 85% reduction in GLP-1 use (while continuing to lose weight)
- 27 pounds of weight loss (on average)

People using Twin Health see measurable improvements, and organizations that offer Twin experience significant cost savings. A claims analysis shows an annualized savings of \$9,047 per member. By decreasing the need for high-cost medications like GLP-1s, the AI Digital Twin platform stands out as a scalable and cost-effective solution within the U.S. healthcare system.<sup>9</sup>

## ADDITIONAL USE CASES

### Diabetes2CARE

Netherlands

DiavantisWijze® (known as Diabetes2CARE) is a new digital care app, currently in development and testing, initiated by Diavantis BV and formed by a consortium made up of Diavantis, Elastique Health and the University of Groningen. Using gen-AI and biometric data from glucose sensors and Garmin smartwatches<sup>A</sup>, the app assesses lifestyle factors and provides validated, hyper-personalized feedback to keep glucose levels in balance, with the ultimate goal of reducing or eliminating the need for medication. As the research partner, the University of Groningen is charged with ensuring participant safety and analyzing the gen-AI recommendations to ensure consistency with established lifestyle and behavioral guidelines. Through the [Garmin Connect Developer Program](#), Garmin smartwatch users can sync activity, sleep and stress data to the app.

### Hello Inside

Austria

Focused on women's metabolic health, Hello Inside is addressing a critical gap in healthcare through its AI-powered platform. By integrating CGMs, Garmin smartwatch<sup>A</sup> data - covering activity, women's health, stress, sleep and temperature - and AI-powered meal logging, the platform delivers personalized monitoring and measurable health outcomes, including 80% of users achieving weight reduction and 76% reporting symptom improvement. Given the close correlation between metabolic dysfunction, obesity and hormonal health, Hello Inside offers women a unique option for diabetes prevention as part of a holistic health system designed for their physiology.

### ON LiMiT

Denmark

A randomized controlled intervention, ON LiMiT (Optimal Non-pharmacological LifeStyle Modifications Among Patients with T2DM (Type 2 Diabetes Mellitus)) aims to investigate whether it is possible to achieve and maintain remission of type 2 diabetes through weight loss and lifestyle changes. A collaboration between the Steno Diabetes Centres in Aarhus, Odense, and Copenhagen, as well as the University of Copenhagen and Bispebjerg Hospital, the project runs from 2025 to 2030 and involves approximately 1,500 participants with type 2 diabetes. Liva Healthcare, the platform provider, is integrating with the Garmin Health Standard SDK and will use Garmin smartwatches<sup>A</sup> and smart scales<sup>A</sup> to help evaluate biometric changes in the research participants.

### Project Embrace

United Kingdom

One of the largest academic studies in the world, Enhanced Maternal and Baby Results with AI-supported Care and Empowerment (EMBRACE) is expected to evaluate 60,000 individuals made up of pregnant women, their partners, and newborns. The project, led by King's College London, hopes to address significant challenges associated with pregnancy, notably, gestational diabetes. Garmin smartwatches<sup>A</sup> will be used by adult participants to track key biometric variables like heart rate, heart rate variability, sleep patterns, physical activity, energy expenditure, Body Battery™ and beat-to-beat intervals.

## SENTI-H

Switzerland

SENTI-H, a study from the University of Bern, seeks to identify psychological, social, behavioral, and contextual factors associated with dietary deviations in individuals who were previously overweight and have successfully lost weight. Those variables are then examined in relation to eating behavior and weight trajectories over time. Physical activity is passively assessed using a Garmin smartwatch<sup>A</sup>, while weight is recorded by a Garmin smart scale<sup>A</sup>. The insights gained from this work are intended to inform future interventions and prevention programs, with the goal of supporting sustainable weight-loss maintenance and reducing the long-term risk of non-communicable diseases such as diabetes.

## THE FUTURE OF DIABETES CARE: A DIGITAL HEALTH PERSPECTIVE

As shown in the preceding sections, type 2 diabetes represents a serious public health emergency on a global scale. Its prevalence across different regions reflects the lasting ramifications of largescale cultural shifts to highly processed foods, sedentary lifestyles and other maladaptive factors.

Pharmaceutical innovations, notably the extremely popular GLP-1s, offer new treatment options at a moment when demand is at an all-time high. However, the cost, potential side effects and ongoing reliance mean these new drugs may not be sustainable solutions for preventive care or disease management. Longterm longitudinal studies will be needed to understand the full impact of these medications.

Lifestyle modification remains one of the safest ways to prevent type 2 diabetes. Thanks to the incorporation of biometric data from smartwatches<sup>A</sup> and other devices paired with AI-driven insights, third-party solutions are able to provide individualized recommendations that can transform static exercise and nutrition guidelines into personalized, real-time feedback. As Twin Health demonstrated, this newer model of care provides an innovative option that may result in improved health outcomes and financial savings.

Pharmaceuticals and lifestyle factors – like diet, activity, sleep and stress – will undoubtedly continue playing a role in diabetes preventive care and management, as they have for decades. But there is a clear shift to empowering people to make decisions based on biometric data that goes beyond body mass index (BMI) and weight. It is a future where healthcare is not one-size-fits-all but uniquely adapted to each person's individual daily habits and healthcare history.

And, at the heart of these forward-thinking, AI-powered solutions, is data. This is the critical intersection at which Garmin Health sits, unlocking opportunities with Garmin smartwatches<sup>A</sup> and data integration one collaboration at a time.

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<sup>A</sup> Garmin wearable devices are consumer wellness devices and are not medical devices under the regulation of any jurisdiction, including Regulation (EU) 2017/745. They are not intended for the diagnosis, prevention, monitoring, or treatment of any disease. Any medical or clinical functionality described is provided by a third-party solution and is solely based on their interpretation of data gathered from various data sources.

## ENDNOTES

- 1 World Health Organization, *Diabetes*, 2023, <https://www.who.int/news-room/fact-sheets/detail/diabetes>.
- 2 DeFronzo RA, Ferrannini E, Groop L, et al. "Type 2 Diabetes Mellitus." *Nature Reviews Disease Primers*. 2015;1:15019. <https://doi.org/10.1038/nrdp.2015.19>.
- 3 American Diabetes Association Professional Practice Committee. (2024). Standards of care in diabetes—2024. *Diabetes Care*, 47(Suppl. 1), S1–S350. <https://doi.org/10.2337/dc24-SINT>.
- 4 Low Wang CC, Hess CN, Hiatt WR, Goldfine AB. "Clinical Update: Cardiovascular Disease in Diabetes Mellitus." *Circulation*. 2016;133(24):2459–2502. <https://doi.org/10.1161/CIRCULATIONAHA.116.022194>.
- 5 International Diabetes Federation. *IDF Diabetes Atlas*, 11th ed. Brussels: International Diabetes Federation; 2024. <https://diabetesatlas.org>.
- 6 Davidson, M. B. (2022). Historical review of the diagnosis of prediabetes/intermediate hyperglycemia: Case for the international criteria. *Diabetes Research and Clinical Practice*, 185, 109219. <https://doi.org/10.1016/j.diabres.2022.109219>.
- 7 Knowler WC, Barrett-Connor E, Fowler SE, et al. "Reduction in the Incidence of Type 2 Diabetes with Lifestyle Intervention or Metformin." *New England Journal of Medicine*. 2002;346(6):393–403. <https://doi.org/10.1056/NEJMoa012512>.
- 8 Knutson, K. L., & Van Cauter, E. (2018). Sleep influences on obesity, insulin resistance, and risk of type 2 diabetes. *Metabolism*, 84, 56–66. <https://doi.org/10.1016/j.metabol.2018.02.010>.
- 9 Pantalone, K. M., Shah, L., & Cleveland Clinic Diabetes Initiative investigators. (2025). AI-supported precision health and lifestyle coaching program for type 2 diabetes management. *NEJM Catalyst Innovations in Care Delivery*. <https://newsroom.clevelandclinic.org/2025/08/20/cleveland-clinic-led-research-shows-how-ai-supported-precision-health-and-lifestyle-coaching-program-can-improve-outcomes-in-patients-with-type-2-diabetes>.