

JAMIE IZZARD & PROFESSOR CHRIS HOLLAND – DIABETES CLOSED-LOOP SYSTEM

Before the discovery of insulin in 1921, a diagnosis of diabetes was a death sentence. While insulin revolutionised treatment, the past century has seen little change in how it is administered. Now, the real innovation lies in monitoring and delivering insulin, and technologies like the ‘closed-loop system’ are transforming lives.

Jamie Izzard, Deputy CEO of Gravesham Borough Council, shared his experiences with diabetes, alongside Professor Chris Holland, Dean of Kent and Medway Medical School, who explained how new medical technologies are not only improving lives but also offering long-term benefits for the NHS.

CLOSED LOOP SYSTEM

Since 2020, advancements in data technologies have rapidly shifted from hospitals into patients’ hands. The closed-loop system, a Continuous Glucose Monitoring (CGM) device, provides glucose readings every five minutes to help manage type 1 and type 2 diabetes. This system is changing how people live with diabetes by minimising the risk of error and improving overall management.



Prior to the closed-loop system, diabetes sufferers relied on finger-prick blood tests and manually injecting insulin. Although effective, this method carried risks of miscalculating dosages. The closed-loop system significantly reduces these risks by automating insulin delivery based on real-time glucose readings.

CONTINUOUS GLUCOSE MONITORING (CGM)

The closed-loop system includes a monitor and a pump, such as the Dexcom G6 monitor and the Omnipod pump. The Dexcom device, attached to the body, sends glucose readings via Bluetooth every five minutes. The Omnipod pump responds by automatically adjusting insulin doses. These real-time updates can be viewed on a smartphone or smartwatch, giving users constant access to their glucose levels.

PATIENT STORY

At 26, just before his wedding, Jamie Izzard lost half a stone (3kg) in one week and was diagnosed with type 1 diabetes. “I felt like my life was over,” he recalls. “Everything I took for granted seemed impossible, and I was depressed for a while, unable to work.” Professor Holland explained that this reaction is common for many newly diagnosed patients.

Unlike type 2 diabetes, which is often linked to lifestyle factors, the causes of type 1 diabetes remain unclear, possibly related to stress or post-viral effects. Both types of diabetes, however, can lead to serious complications, including blindness and amputations.

Jamie adapted to his new routine of finger-prick tests, managing food choices, and regular hospital visits. The stress of dealing with high morning blood sugar, known as the



“dawn phenomenon,” was a constant challenge. “Starting the day with high blood sugar is stressful and sets the day off badly,” explains Jamie.

Since switching to the closed-loop system, Jamie’s life has transformed dramatically. With real-time updates, his lifestyle is more flexible, and the system administers insulin as needed throughout the day. In the first three months of using the device, he hasn’t experienced a single episode of dawn phenomenon.

WIDER IMPACT

Professor Holland explained that the impact of the closed-loop system extends beyond individual patients. Fewer diabetes sufferers using this system end up in intensive care, and the need for regular hospital visits has dropped as clinicians can access patient data online.

In some cases, diabetes can lead to driving licence revocations, affecting employment prospects, particularly in professions like HGV driving. The CGM system is changing that, allowing some patients to regain their licences and apply for roles previously off-limits to them.

POSTCODE LOTTERY

Despite the benefits, access to the technology remains uneven across the UK. Some health trusts provide devices for free, while others do not offer them at all. Jamie, for example, has to pay a monthly subscription for his Dexcom G6 monitor, while his health trust funds the Omnipod pump. Professor Holland notes that where these devices are available on the NHS, they are often rationed to patients who demonstrate they can use them responsibly.

THE FUTURE

Professor Holland is optimistic that the roll-out of devices like the closed-loop system will significantly reduce the need for medical procedures across various conditions, from diabetes to chronic pain and heart problems, over the next 20 years.

“I have a new lease on life... Everyone with type 1 diabetes should have access to the closed-loop system; it’s life-changing.”

— Jamie Izzard, Deputy CEO, Gravesham Borough Council

For Jamie, the future has already arrived. He is sleeping better, feels healthier, and is more relaxed. “I have a new lease on life,” he says. “Everyone with type 1 diabetes should have access to the closed-loop system; it’s life-changing.” ■

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