

# Sponsored article: Innovating Type 1 diabetes monitoring: How Time in Range can improve patient care

This is sponsored content developed and funded by Sanofi.

## Glycaemic variability is a common challenge for people with Type 1 diabetes

In Type 1 diabetes, regular finger prick blood glucose monitoring has been the mainstay of management for many years.<sup>i</sup> This method provided a reasonable way for people with diabetes to manage their condition and share any notable changes with their healthcare professional; but meant we had to try and visualise what was happening around the 'point in time' when the monitoring was done.

This has its limitations as it does not provide clinicians and patients with user friendly methods for in depth/regular monitoring. As the technological landscape has advanced over the last couple of years, it has become evident how important it is to have access to more regular readings, in order to create a clearer picture of what is happening for that person's diabetes. It is clear that two people with identical HbA1c levels can have markedly different degrees of glycaemic variability and glucose levels.<sup>ii</sup> High glycaemic variability means that a patient is having marked fluctuations in their blood glucose levels, which has been associated with a detrimental impact on quality of life as well as risk of complications if left unchecked.<sup>iii</sup> Glucose monitoring systems provide us with a person-specific way of looking at blood sugars in depth, over a period of time, that is more relevant to people with diabetes and their daily lives.

## Time-in-Range (TiR) as a key metric for glycaemic control

Time in Range (TiR) is a relatively recent measure of glycaemic control, which shows

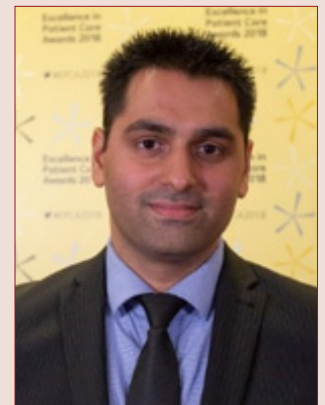
the percentage of time that a person's blood glucose remains within a target range.<sup>iv</sup> It has gained more importance and interest due to the increased availability of newer technologies in glucose monitoring such as continuous glucose monitoring devices and the flash glucose systems. This allows us to build more of a picture around a person's lifestyle and analyse how their daily activities affect their levels of glycaemia, for example different foods and eating patterns, plus activity levels throughout the day.<sup>v</sup> Having a wider picture of these glycaemic parameters in a patient also helps to review their treatment if needed and to make more informed clinical decisions.

TiR and glucose variability are now recognised as key metrics to support effective diabetes management by national and international guidelines including those by an international consensus of experts, the American Diabetes Association (ADA), the European Association for the Study of Diabetes (EASD)<sup>vi</sup> and the Association of British Clinical Diabetologists (ABCD).<sup>vii</sup>

Until recently, TiR had not been widely investigated as a primary outcome in clinical trials. It's always been HbA1c as the main outcome, with secondary outcomes and subsequent data analyses being about the TiR components. It was never put front and centre and more than that, it had not been done before in a large randomised controlled trial. I hope to see more trials that utilise TiR as a primary outcome in the future.

## Individualising Type 1 diabetes care

TiR has the potential to be an important measure of diabetes management when used alongside HbA1c, with specialists already utilising this measurement in directing their management.



**Amar Puttanna**

Dr Amar Puttanna is a Consultant Diabetologist in the West Midlands who has recently joined Sanofi UK as a National Medical Advisor for NHS Engagement. His role is centred around working collaboratively with the NHS, Clinicians, and services to try and help support and improve patient care in diabetes and cardiovascular health.

**Citation:** Puttanna A (2022) Sponsored article: Innovating Type 1 diabetes monitoring: How Time in Range can improve patient care. *Diabetes & Primary Care* **24**: 133–4



TiR provides a better understanding of our patients' lives and therefore could help us to better individualise care, as we know no two people are the same and no two persons' diabetes is the same. For people with diabetes, it gives them a better understanding of their glycaemia and can empower them to have greater involvement in managing their diabetes. Increased access

to technology, together with HbA1c and TiR could lead to a very positive change in care and management of Type 1 diabetes. I look forward to seeing this implemented and the positive impact it could have for the diabetes community at large. ■

This is sponsored content developed and funded by Sanofi MAT-GB-2200893 (v1.0) July 2022

<sup>1</sup>Sherwood J, et al. New and Emerging Technologies in Type 1 Diabetes. *Endocrinol Metab Clin North Am.* 2020 Dec; **49**(4): 667–678

<sup>2</sup>Kovatchev B & Cobelli C. Glucose variability: timing, risk analysis, and relationship to hypoglycemia in diabetes. *Diabetes Care.* 2016;**39**(4):502–510

<sup>3</sup>Ceriello A & Ihnat MA. 'Glycaemic variability': a new therapeutic challenge in diabetes and critical care setting. *Diabetic Medicine.* 2010; **27**: 862–867

<sup>4</sup>Battelino T, Danne T, Bergenstal RM, et al. Clinical targets for continuous glucose monitoring data interpretation: recommendations from the International Consensus on Time in Range. *Diabetes Care.* 2019;**42**(8):1593–1603

<sup>5</sup>Danne T, Nimri R, Battelino T, et al. International consensus on use of continuous glucose monitoring. *Diabetes Care.* 2017;**40**(12):1631–1640

<sup>6</sup>Holt R, et al. The management of type 1 diabetes in adults. A consensus report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD). *Diabetologia.* 2021;**64**:2609–2652

<sup>7</sup>Wilmot, E. *ABCD DTN-UK endorses the International Consensus on Time in Range.* Available online at: <https://abcd.care/announcement/abcd-dtn-uk-endorses-international-consensus-time-range> [last accessed July 2022]