

# The influence of continuous glucose monitoring on food relationships in adults living with type 1 diabetes mellitus

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## BACKGROUND

Our first study (Wallace et al., 2023) found that flash glucose monitoring (FGM) influences users with type 1 diabetes' (T1DM) eating habits, including when, why, what and how much they eat. Participants described both positive and negative impact of these changes on their emotional wellbeing and relationship with diabetes, arguing for a need to address patients' relationship with food in routine clinical care. Reflexive thematic analysis constructed four themes: (1) Personal Food Story (what food represented before and after diabetes diagnosis), (2) New Opportunities (FGM offered novel discoveries and increased self-confidence regarding food choices), (3) Body as a Machine (participants viewed their bodies as a collection of complex processes requiring continuous maintenance), and (4) Re-Evaluating Diabetes (participants expressed a shift in their expectations of themselves and their diabetes management). Although FGM offered participants more freedom and flexibility with their eating, this was constrained by feeling forever under scrutiny from the data. Recommendations were made for clinical practice as well as future research. This led to the current investigation of the impact of continuous glucose monitoring (CGM) following advances in diabetes technology for self-management.

## AIM

To understand how people recently diagnosed with T1DM experience CGM and to examine the impact of CGM on users' relationships with food and their eating behaviours.

## METHOD

Criterion-based purposive sampling recruited participants, who were diagnosed with T1DM in the past five years and using CGM as part of their diabetes self-managmeent, via social media, charities and online forums. Data from semi-structured interviews was analysed using reflexive thematic analysis (Braun & Clarke, 2022).

## RESULTS

Ten participants were interviewed via MS Teams (mean age=39.4years, 9 White British, 1 African Indian). Unlike the participants in Wallace et al. (2023), these participants' experiences were not based on historic, rigid self-management practices spanning previous decades that likely impacted their relationship with food and their point of comparison for CGM. Four themes were constructed from analysis: (1) Empowerment and Autonomy (CGM clearly illustrated nutritional needs supporting a proactive approach to self-management, providing new food opportunities, and the opportunity to feel safe when exercising), (2) Data-Driven Diets (data caused participants to question whether certain foods were 'worth' the effort, the silencing of interoceptive hunger cues, and suppressed satisfaction from food), (3) The Burden of Control (participants were chasing numbers, getting obsessed by data, and experiencing a disconnect of worlds between healthcare professionals and themselves), and (4) Re-Evaluating Diabetes (where participants protected food relationships, took a compassionate approach to CGM data and T1DM control, focused on living beyond diabetes, discussed the value of peer support, and resisted stigma).

## CONCLUSIONS

Clinicians should adopt more person-centred, psychologically informed, approaches in patient consultations - to this end, training is necessary for staff. Practice guidelines should incorporate identification of patients' emotional and psychological support needs. Patient education should include psychological aspects of care to minimise the impact of burnout. CGM may contribute to development of disordered eating behaviours in some individuals. To support early identification of this, and initiation of discussions around eating habits, clinicians should consider the use of routine screening measures. Peer support may also be a valuable addition to the care provision for T1DM.

## PATIENT AND PUBLIC INVOLVEMENT AND ENGAGEMENT

An Expert by Experience was consulted throughout the research process. They co-developed the interview schedule, reviewed participant information, and participated in a pilot interview to provide feedback on the process of engagement. They supported dissemination of the research output, ensuring this was done in an accessible format, using appropriate platforms.

## REFERENCES

- Braun, V., & Clarke, V. (2022). *Thematic Analysis: A Practical Guide*. Sage.
- Wallace, T., Heath, J., & Koebbel, C. (2023). The impact of flash glucose monitoring on adults with type 1 diabetes' eating habits and relationship with food. *Diabetes Research & Clinical Practice*, 196, 110230.

