

# Living with Type 2 Diabetes: Patient Commentary in Response to the Paper ‘SGLT2 Inhibitors in Type 2 Diabetes Management: Key Evidence and Implications for Clinical Practice’

A Patient from Diabetes UK · Marc Evans

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## ABSTRACT

**Abstract:** This article, co-authored by a patient living with type 2 diabetes and a diabetes specialist physician, discusses the patient’s experience of living with type 2 diabetes, including their experience of diagnosis and self-management, education and adoption of SGLT2 inhibitors to treat the disease. The physician discusses the therapeutic challenges of SGLT2 inhibitors and the importance of education.

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This article is related to a previously published review paper. Please use this link to access the full paper ‘SGLT2 inhibitors in type 2 diabetes management: key evidence and implications for clinical practice’: <https://link.springer.com/article/10.1007/s13300-018-0471-8>.

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A Patient from Diabetes UK who wishes to remain anonymous.

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## PATIENT’S EXPERIENCE

Living with type 2 diabetes for 20 years has taught me more than a thing or two about treating and managing the condition. Both my parents and two of my grandparents lived with diabetes so I was always aware of the symptoms. When I started to experience these symptoms and went to my former general practitioner (GP), I was initially told to go home. However, since I recognised the symptoms, when I returned to the GP surgery some months later and said “I think I’ve got diabetes”, I was taken seriously.

I suppose I’m not your ‘typical’ type 2 diabetes candidate: I’ve never been overweight, I do some form of exercise on a regular basis and, because of my parents’ experiences of diabetes, have always eaten healthily. Since diagnosis, medication and diet with exercise have become the methods I’ve used to manage my diabetes. Doctors increased my medications as and when they felt necessary and I’ve been careful about what I eat—even when going out or on holiday—because I know the risks of not managing my diabetes.

As a patient, it’s not one size fits all for diabetes and I don’t think patients—and sometimes doctors—know enough about the available treatments. Diabetes UK was my first port of call following my diagnosis. I used their helpline a lot, as I felt I wasn’t getting the information I needed from my doctor at that

time. Some NHS practices now offer diabetes education and self-management for ongoing and newly diagnosed (DESMOND) courses, but these are optional and not all patients take up this offer. When I lived in Toronto, Canada, it was mandatory for me to take a diabetes education course and my GP surgery sent me to one. It was the best thing I ever did. Over the years, I have been involved in a variety of activities to support people living with diabetes: I work with Diabetes UK, I chair and helped start the Enfield Diabetes Support Group, and I offer peer support to diabetes patients at a local GP surgery.

All of this has been to support others and to ensure people living with diabetes don't experience the same lack of information at diagnosis and while living with their diabetes as I did. I also continue to find additional information for myself in order to help with my own diabetes management.

I was chosen by Diabetes UK to be their expert patient for NICE when the sodium-glucose co-transporter-2 inhibitor (SGLT2i) medications were being discussed for a multiple technology appraisal. This gave me an opportunity to discuss type 2 diabetes, share my own experiences and frustrations, and give my opinion on this type of medication. I was put on an SGLT2i by a fantastic diabetes consultant nurse and I find this type of medication has had a positive effect on my health. I am less stressed and more able to manage my diabetes. My blood glucose levels are much improved, I cope better, feel better and am more confident knowing I can control my blood glucose levels more efficiently. The medication has lowered my blood pressure level too, which has taken away the worry of going on blood pressure medication, which was always under discussion with my GP prior to taking this medication. Anything that is better for the heart is good! The fear of having to inject myself with insulin has also disappeared.

When reading the journal paper "SGLT2i inhibitors in type 2 diabetes management: key evidence and implications for clinical practice", I found it useful to read about the weight loss outcomes and to learn that this is due to the reduction in visceral fat and is not attributed to

the more frequent urination. When I was first given the SGLT2i medication, I was advised to drink plenty of water and did not get any adverse side effects (apart from needing the toilet more often because of the extra water I was drinking). However, I know patients who haven't been told this and have had urinary infections and other complications as a result. I don't think patients know enough about SGLT2i medications or have enough information about their treatments in general. In my opinion, some healthcare professionals don't either. For instance, metformin, a common medication for type 2 diabetes, must be taken with food. However, I have met patients through the peer support programme who have not been told this and subsequently have experienced unpleasant side effects.

I find the SGLT2i medication easy to swallow with no unpleasant aftertaste. Some medications leave a bitter taste in the mouth. This medication can be taken any time of day, with or without food, which makes it very convenient. With improved blood glucose levels, I hope to be able to avoid the complications of diabetes. I currently have a more positive outlook, which enables me to lead a healthier lifestyle and have a better quality of life.

## PHYSICIAN PERSPECTIVE

Type 2 diabetes is complex, and its optimal management can be challenging, particularly in primary care where a large proportion of the care of people with type 2 diabetes takes place, in the context of an ever-increasing work load. This patient's experience is typical of many, where the initial diagnosis and management of their type 2 diabetes took place under the supervision of their GP.

A very important point made by this patient illustrates the therapeutic challenge of the condition in that "no size fits all", which reflects the complex pathophysiology of hyperglycaemia in type 2 diabetes [1]. In addition, this patient narrative also identifies the challenge that healthcare professionals, particularly in primary care, face with respect to keeping abreast of the latest information in the rapidly

changing field of blood glucose-lowering therapies. Nowhere is this more pertinent than with respect to the SGLT-2 inhibitor class of drugs, where recently published randomised clinical trials and real-world observational studies further fuelled debate around the risk-benefit profile of these agents [2–5]. These agents have a simple mechanism of action, namely inducing glycosuria [6], with the main associated adverse event of urogenital mycosis [2, 3], and have been seen to produce significant reductions in blood glucose, blood pressure and body weight, all of which were reported in this case. It is, however, noteworthy that from this narrative the patient concerned knew of others who had not been counselled with respect to the adverse events potentially associated with these agents and as such may have discontinued therapy early and not achieved the potential health benefits that these agents can undoubtedly deliver, as experienced by this patient.

The consensus document by Wilding et al. [7] on the role of “SGLT-2 inhibitors in type 2 diabetes management, key evidence and implications for clinical practice”, provides a concise and exhaustive synthesis of all the relevant evidence pertinent to the role of SGLT-2 inhibitors, with a focus on the efficacy, adverse event and risk-benefit profile of these agents. In addition, this article also provides clinicians with some simple guidance in terms of both sick day rules and a ‘traffic-light’ system with respect to which patients would be appropriate for these drugs, all of which will go a long way to help busy healthcare professionals to optimally prescribe SGLT-2 inhibitors, ultimately translating into improved health outcomes for more patients as experienced by this particular patient.

A very important aspect of this patient’s story is the role and importance of education in terms of diagnosis and management of type 2 diabetes. Education is the cornerstone of any type 2 diabetes management strategy and should focus not only on lifestyle but also on an understanding of pharmacotherapy. Structured education programmes in people with both type 1 and type 2 diabetes are cost and clinically effective [8]. Structured education programmes should ideally be offered to all patients on

diagnosis as this patient experienced whilst living in Toronto, with availability of such programmes at regular intervals thereafter. Furthermore, such education strategies should include families or carers, would minimize the need for patients to search for their own information, potentially reduce the stress associated with managing a complex long-term condition such as type 2 diabetes, and potentially translate into improved health outcomes.

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## REFERENCES

- DeFronzo RA, Ferrannini E, Groop L, Henry RR, Herman WH, Holst JJ, Hu FB, Kahn CR, Raz I, Shulman GI, Simonson DC, Testa MA, Weiss R. Type 2 diabetes. *Nat Rev Dis Primers*. 2015;23(1):15019. <https://doi.org/10.1038/nrdp.2015.19>.
- Zinman B, Wanner C, Lachin JM, et al. Empagliflozin, cardiovascular outcomes, and mortality in type 2 diabetes. *N Engl J Med*. 2015;373:2117–28.
- Neal B, Perkovic V, Mahaffey KW, et al. Canagliflozin and cardiovascular and renal events in type 2 diabetes. *N Engl J Med*. 2017;377(7):644–57.
- Neal B, Perkovic V, Mahaffey KW, et al. Canagliflozin and cardiovascular and renal events in type 2 diabetes. *N Engl J Med*. 2017;377(7):644–57.
- Udell JA, Yuan Z, Rush T, Sicignano NM, Galitz M, Rosenthal N. Cardiovascular outcomes and risks after initiation of a sodium glucose co-transporter 2 inhibitor: results from the EASEL population-based cohort study. *Circulation*. 2018;137(14):1450–9.
- Kalra S. Sodium glucose co-transporter-2 (SGLT2) inhibitors: a review of their basic and clinical pharmacology. *Diabetes Ther*. 2014;5(2):355–66.
- Wilding J, Fernando K, Milne N, et al. SGLT2 Inhibitors in Type 2 Diabetes Management: Key Evidence and Implications for Clinical Practice. *Diabetes Ther*. 2018. <https://doi.org/10.1007/s13300-018-0471-8>.
- Chatterjee S, Davies MJ, Heller S, Speight J, Snoek FJ, Khunti K. Diabetes structured self-management education programmes: a narrative review and current innovations. *Lancet Diabetes Endocrinol*. 2018;6(2):130–42. [https://doi.org/10.1016/s2213-8587\(17\)30239-5](https://doi.org/10.1016/s2213-8587(17)30239-5).