



*Accessing and Using Flash Glucose
Monitoring (Freestyle Libre) in
Ireland 2021*
Survey Report

April 2022

Diabetes Ireland (2022). Accessing and Using Flash Glucose Monitoring (Freestyle Libre) in
Ireland. Dublin, Ireland

*For any further information please contact Diabetes Ireland on 01 8428118 or wro@diabetes.ie and the author
of the report Dr Kate Gajewska*

Contents

Diabetes Ireland Position Statement	3
Report in brief	4
The Survey: Accessing and using Flash Glucose Monitoring in Ireland	7
Living with diabetes	9
Survey findings	10
Increasing importance of technology in diabetes care	16
Technology reduces the risk of diabetes complications	18
The advantages of Flash Glucose Monitoring	21
The main challenge: financial implications	28
Healthcare professionals' perspective	31
Access to technology: challenges and issues	34
The summary	40
Conclusion	41
References:	42
Appendices	43

Diabetes Ireland Position Statement

Diabetes Ireland represents the voice of people living with diabetes (patients, their carers, families), and we **VERY STRONGLY** support their call to reimburse the Flash Glucose Monitoring (FGM) technology (FreeStyle Libre) as part of the Long-Term Illness scheme in Ireland without an age restriction (currently, Freestyle Libre is reimbursed only for those under 21 years of age), but based on the clinical need.

This report brings the perspective of those who live with diabetes and others who work with people with diabetes. We very strongly agree with the voice of people living with this burdensome condition, and their diabetes specialists and we believe that the Health Service Executive and National Centre for Pharmacoeconomics (NCPE) should trust and support those who live with diabetes (very often paying out of pocket to access technology), and those who care for them.

We believe that people with diabetes – in particular those who use insulin - deserve equal access to technology that makes their lives easier, and their diabetes management better. Access to devices that protect from hyper- and hypoglycaemia (high/low blood glucose levels), allow for improved diabetes control and reactions, improve work/life balance, protects from severe and long-term diabetes complications and as a consequence improve quality of life should be provided based on need, not age. People with diabetes should have access to either Flash or Continuous Glucose Monitoring, which improve their understanding of diabetes and supports their diabetes management actions i.e. regarding insulin dosing to be taken, dietary choice, hypoglycaemia treatment etc. We strongly believe that access to diabetes technology, expert diabetes teams and the quality diabetes education are the keys to improving the health of those who live with diabetes. The information that glucose monitoring provides leads to better understanding of diabetes, making diabetes management more accurate, efficient, and safe.

Therefore, we in **Diabetes Ireland are calling for FGM (FreeStyle Libre) to be made available to all people with diabetes to manage their condition based on clinical need.** We believe that access to flash or continuous glucose monitoring will greatly improve the quality of life and care for the individual and further aid prevention of costly diabetes complications and make short and long-term savings for the health service in Ireland.

Report in brief

The context for the survey: This report is a summary of evidence gathered on the request of the HSE National Centre of Pharmacoeconomics as part of the Health Technology Assessment of Freestyle Libre Flash Glucose Monitoring (FGM) device. Diabetes Ireland conducted an online survey in November 2021 gathering responses from 754 participants: people living with type 1 and type 2 diabetes, parents of children with diabetes and healthcare professionals living and working in Ireland.

Reimbursement:

Freestyle Libre is currently reimbursed only for people with Type 1 diabetes under 21 years of age, following a decision taken by the HSE in 2016. Since then, despite petitions, reports, letters, and plenty of scientific evidence on the huge clinical benefits and improved quality of life, adults with diabetes still have to pay out-of-pocket to manage their diabetes with FGM. The Diabetes Ireland survey reveals the disappointment and frustration of the Irish diabetes community.

Technology improves lives

The outstanding response of the diabetes community with 754 survey completions in three weeks of data collection, reflects how important the topic of access to technology that improves diabetes management, and the quality of life is for those living with this burdensome condition. Libre users (397 participants) assessed on a scale from 0 to 10 that Libre is, when compared to finger-pricking, very useful in:

- ✓ adjusting insulin doses (10 out of 10);
- ✓ preventing daytime and night-time hypoglycaemia (9 out of 10);
- ✓ helping to treat low glucose levels and during exercise (9 out of 10);
- ✓ more frequent glucose monitoring (9 out of 10).

Participants also assessed their diabetes management as much better and that they test much more frequently than they did with standard finger-pricking.

The majority of respondents positively assessed the impact of Freestyle Libre use on the aspects related to the quality of life and care. Participants assessed that since using Libre their motivation to keep up their diabetes management improved (89%), and that they test their blood glucose levels more frequently (87%); they also feel less overwhelmed by the demands of living with diabetes (88%), that it takes much less mental and physical energy each day (87%), and that diabetes does not control their life as much as before (75%).

Without a doubt, this survey proved that using the FGM:

- Give people with diabetes, their carers and healthcare professionals the information, tools, and support to live safe and well with diabetes, and to understand how the condition is affected by everyday tasks that those without diabetes take for granted. People with diabetes and their carers need to know the actions to take to stay healthy and to avoid excessive high and low blood glucose levels.
- Reduce the burden of diabetes self-management and the need for painful and inconvenient finger prick glucose monitoring.
- Reduce the daily and long-term physical and mental burden of diabetes management that is usually associated with stress and anxiety in people with diabetes and their families, minimize the risk of diabetes distress, burnout, depression and eating disorders.
- Reduce the risk of short-term and severe complications, such as hypo- and hyperglycaemia, severe hypoglycaemia, diabetes ketoacidosis (DKA).
- Reduce the risk of developing devastating complications such as sight loss, amputation, renal failure, stroke, acute and chronic depression.
- Allow people with diabetes the opportunity to live as normal as possible lives, despite diabetes and empower patients in self-managing diabetes.

Using FGM also results in less sore fingers, greater security at night-time resulting in peace of mind and less anxiety, reducing the burden of living with diabetes, providing more safety and minimizing the risk of diabetes-related complications.

Self-funding, unaffordability, inequality

Regardless of the funding, Libre is being used across all age groups of the Type 1 diabetes community, and by some with Type 2 diabetes. Unfortunately, for many people with diabetes in Ireland it means that they have to choose whether they will pay bills such as TV broadband, or invest in their own health, as the majority of Libre users had to pay for it privately.

Of 292 of the Libre adult users who responded to the survey, 76% have or had to pay for Libre privately at an approximate, minimum monthly cost of €120. 131 people declared that they are not using Libre anymore, mainly due to its cost. Of 152 of those who have never tried Libre (152), the main reason why was that they could not afford it. The cost and the lack of reimbursement seem to be the greatest barrier to flash glucose monitoring use. This report aims to acknowledge that many people living with diabetes feel discriminated against and 'let down' by the Irish health service because of their age or type of diabetes, although they have hugely similar clinical needs as children and adolescents using insulin under 21. Some people are lucky enough to have the means to be able to self-fund Libre, but this means that those on lower wages are discriminated against due to their socio-economic status. For many, self-funding Libre is not affordable, and for some, it means that in some months they have to *'choose between better diabetes management or paying bills'*.

Acknowledgement of HCP expertise

Healthcare professionals who responded to our survey felt that their clinical expertise, knowledge of the patients' needs, and recent scientific knowledge is not acknowledged by the HSE, as their requests for access to life-changing technologies are often rejected. 73% of HCP respondents (almost all in adult diabetes services or general practices) declared that applications they have made for individual adult patients have been rejected by the HSE, often with no reason provided. This is discouraging for both, healthcare providers and their patients, it limits the trust in the Irish health service and does not empower healthcare professionals to work in line with their expertise.

Ensuring access to technology

On behalf of the Diabetes Community in Ireland, through this report, we would like to highlight and address the gap of not providing diabetes technology to people living with diabetes in Ireland, and that this gap is addressed urgently by making Freestyle Libre available to all people with diabetes **based on clinical need**.

Participants report FGM as being a major advancement in diabetes self-care and in their own words *'it is a gamechanger'*. It also improves the quality of care for healthcare professionals. In light of having other, more expensive CGM approved on the LTI scheme, and also newer models of Freestyle Libre that provides the same information as expensive CGMs (alerts on highs and lows), making FGM available to all people with diabetes based on their clinical need, surely improve diabetes management practices in the cohort of people living with diabetes in Ireland, and as a consequence, will save money for the Irish health service by reducing the risk of severe and long-term complications. It is proven that in the other countries which implemented the wider use and access to FGM/CGM, the last few years show significant improvement in diabetes management outcomes in whole societies (England, UK, Germany, Sweden etc.).

We in Diabetes Ireland agree with the 92% of HCPs and 98% of people with diabetes who believe that FGM should be reimbursed for all people with diabetes based on clinical need. After 40 years of finger-pricking, it is the high time to provide equal access to better devices to self-manage diabetes daily for those with clinical need and improve the quality of diabetes care and its outcomes in Ireland.

'The Freestyle Libre has changed my life, my HbA1c is the lowest it has been in 18 years because I can closely monitor changes in my sugars and identify patterns which allows me to adjust insulin dosage. Sadly, it comes with a huge cost burden, and I have to sacrifice many things in order to keep my health intact. It should be available to everyone there should not be a price tag on people's health'

(Adult, type 1 diabetes)

The Survey: Accessing and using Flash Glucose Monitoring in Ireland

In July 2021 Diabetes Ireland was asked by the HSE's National Centre for Pharmacoeconomics (NCPE) to submit a 'Patient Organisations Submission of Evidence' as part of the Health Technology Assessment for Freestyle Libre Flash Glucose Monitoring (FGM). As part of this request, in November 2021 we conducted an online survey about accessing and using FGM, targeted at people living with insulin-treated diabetes and their healthcare professionals (HCP).

The questionnaire, reviewed and piloted by healthcare professionals and members of Diabetes Ireland Advocacy Group, consisted of (see the full Survey in the **Appendix 1**):

- Demographic information
- Dedicated sections for people with diabetes completed by:
 - ✓ People who **are or were using Freestyle Libre** for a period of time: (responses from adults with type 1, type 2 diabetes, and carers of children with type 1 diabetes). This section was adapted from the Freestyle Libre Study conducted by the Scottish Edinburgh Centre for Endocrinology and Diabetes¹.
 - ✓ Those who **had no experience** with Freestyle Libre (mostly adults with type 1 and type 2 diabetes).
 - ✓ and **health-care professionals** (i.e. endocrinologists, nurses, dietitians).
- Each section included space for individual, free-text responses.

Data collection

Data collection took place online, via SurveyMonkey (<https://www.surveymonkey.com/r/9Q8CQ99>) between the 16th of November and the 5th of December 2021 (3 weeks of data collection).

Information about the survey was circulated among: members of Diabetes Ireland, our network of healthcare professionals, via Diabetes Ireland social media platforms (Facebook, Twitter, Instagram) and on social media groups dedicated to people living with diabetes.

Data analysis

Data was analysed in January 2022 with the use of statistical software (IBM SPSS Statistics ver. 28.0.0.0) and Microsoft Excel. The analysis was guided by the questions from the NCPE Patient Organisation Submission of Evidence Template and was based on participants' responses only (no other scientific evidence). The requested HSE NCPE document was submitted to the NCPE and HSE CPU (Corporate Pharmaceutical Unit) on the 3rd of February 2022.

Findings

The following findings report is divided into a few sections. It starts from the basic group characteristics, and then explains and presents different survey parts and elaborates on different topics associated with FGM use.

Living with diabetes

The dawn of technology in diabetes care

Technology to reduce the risk of diabetes complications

The advantages of Flash Glucose Monitoring over finger-pricking

Healthcare professionals' perspective

Access to technology: challenges and issues

Living with diabetes

Diabetes is a lifelong condition caused by a lack, or insufficiency of insulin. For people with type 1 diabetes diagnosis means an introduction of daily, multiple insulin injections for the rest of their lives, and frequent glucose monitoring. For people with type 2 diabetes, diagnosis means radical lifestyle modification, frequently daily medication, and sometimes intensive insulin therapy same as for people with type 1 diabetes. It is estimated that approx. 266,664 people live with diabetes in Ireland.

Diabetes changes day-to-day life in a number of ways. People dependent on insulin have to take insulin daily in order to live, and multiple times a day in order before each meal. This is done via injections and/or insulin pump, and to calculate and control insulin delivery they are required to undertake blood glucose monitoring, testing at least 6–10 times a day. They have to self-manage their condition 24 hours a day, 365 days a year. They have to check glucose before each meal, in the morning, before going to bed, at night, before during and after exercise, and anytime they feel unwell. Each of these blood glucose readings is necessary to make an accurate decision to manage diabetes and deliver insulin, however, with standard finger-pricking they provide only a ‘snapshot in time’, with no context whether the glucose is rising, falling, what happened prior to the current level. Frequent testing via finger-pricking can be painful, inconvenient and difficult to achieve due to the person’s daily routines, life, work or school.

For the last 40 years, people with diabetes have had to check glucose using a finger-pricking device, whereas in the last decade we have observed the dawn of flash or continuous glucose monitoring (FGM or CGM) that help reduce the burden of painful and inconvenient finger-prick glucose monitoring, and reduce the daily and long-term physical and mental burden of diabetes management.

FGM and CGM devices that take readings from a sensor worn for example on the arm, which is displayed on the device or a phone app. The result is presented on a graph with information about glucose levels from previous hours, and indicate whether the glucose level is rising or falling – it is much more informative than the standard finger-pricking. CGMs, same as the newer versions of Freestyle Libre FMG, not yet available in Ireland, also provide alarms that alert on increasing or decreasing glucose values. A more detailed description of a difference that glucose monitoring makes in daily diabetes management is presented in the next sections, as part of the Survey findings.

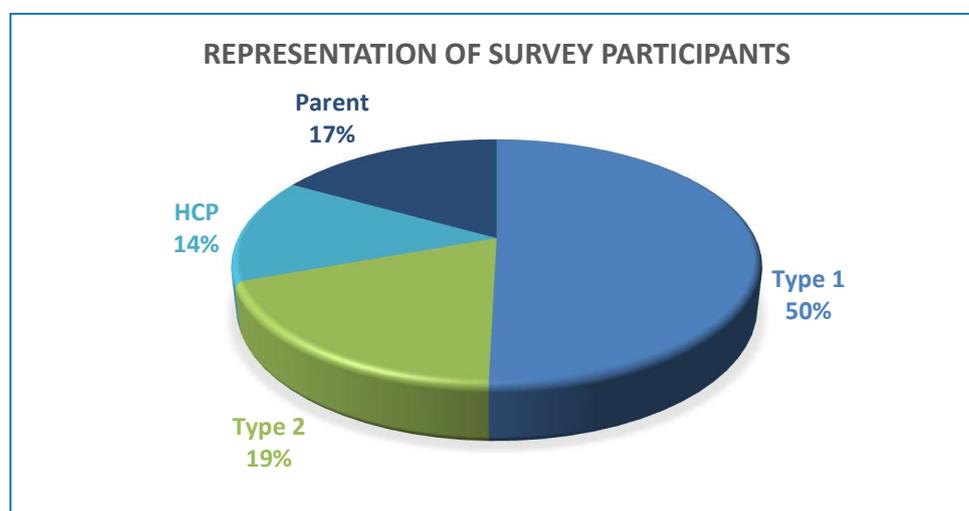
Survey findings

The participants of the survey represented all age groups, each county, types of diabetes (Type 1, Type 2) and a range of treatments (injections, insulin pumps, other hypoglycaemic agents and lifestyle modifications). It included people living with the condition, their carers and HCPs. We believe that the group of people living with diabetes is well-represented, although because it was an online survey, some perspectives from, for example, people with no access to internet (i.e. older population), those people in nursing homes, or from people with low levels of literacy or very low socio-economic backgrounds might be omitted.

Group characteristics

Overall, **754 people** took part in the survey (425 women, which accounts for 56% of the group), with:

- **Type 1:** 380 people with Type 1 diabetes (adults)
- **Type 2:** 143 people with Type 2 diabetes –
- **Parent:** 126 parents of children with diabetes, who replied on behalf of their children with type 1 diabetes
- **HCP:** 105 healthcare professionals

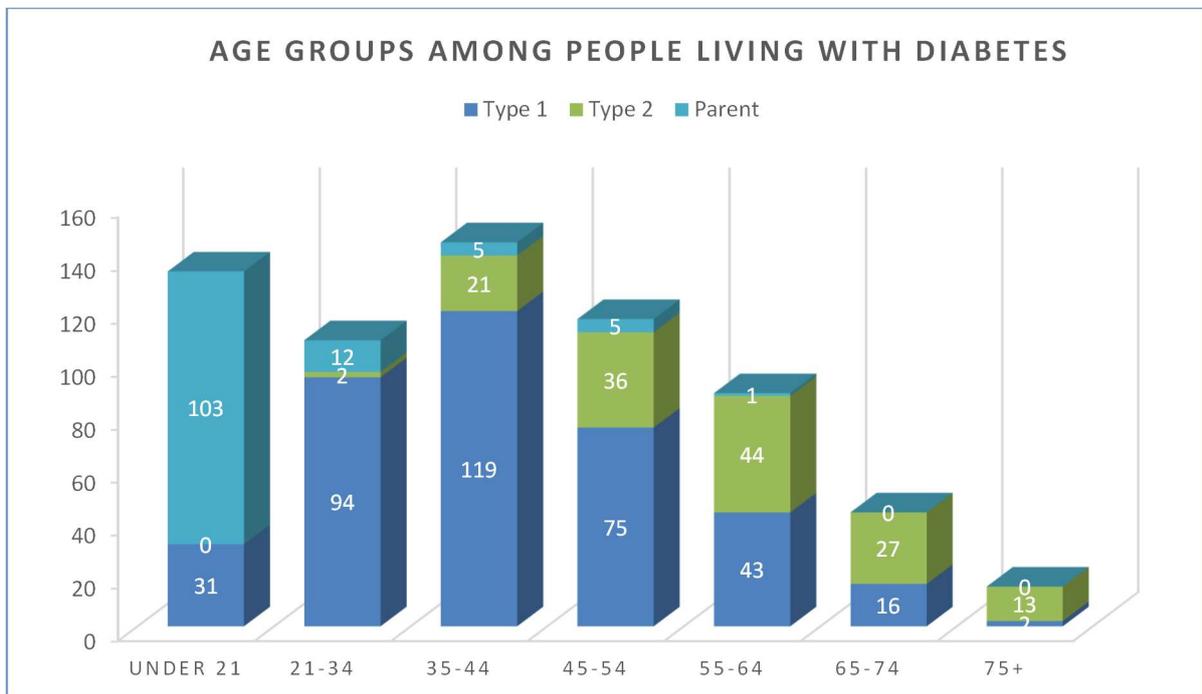


There were a few cases where respondents had more than one role (i.e. HCP and a parent, HCP and Type 2 diabetes, or a parent of a child with diabetes who also has diabetes etc.). For the purpose of analysis, one role has been selected based on the part of the questionnaire completed.

- ✓ **754 people** completed the demographic section
- ✓ The section for those with the experience of FGM was completed by **441 people**

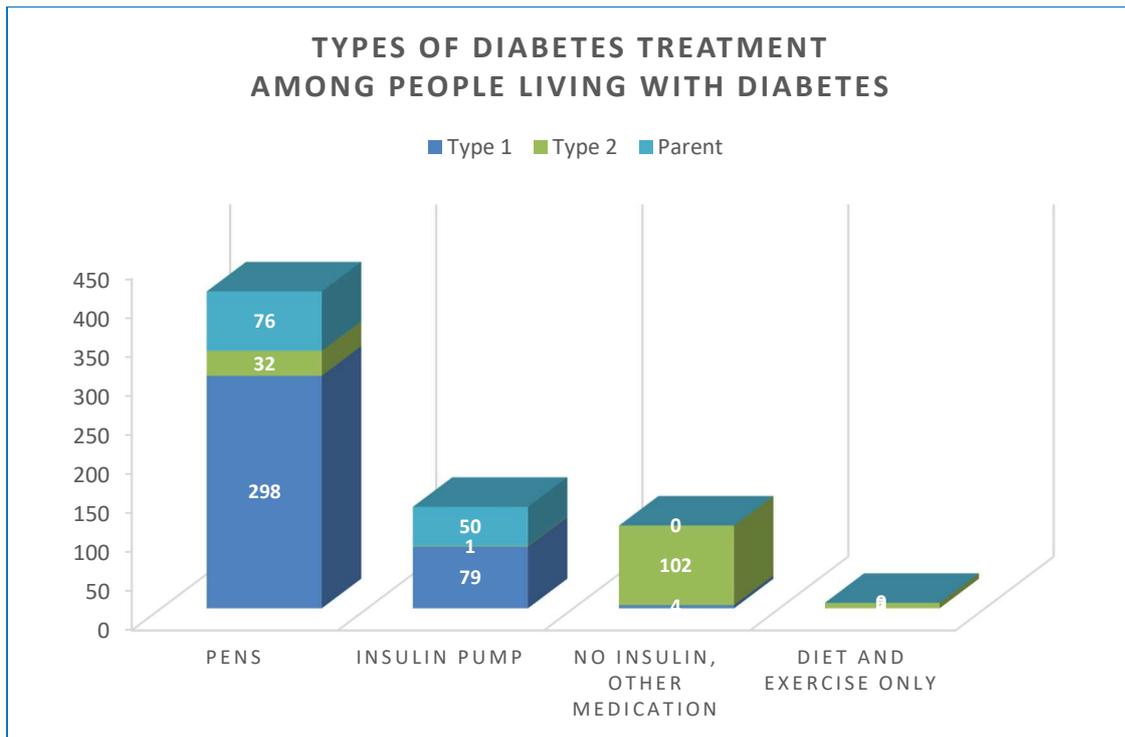
- ✓ The section for those with no experience with FGM was completed by **170 people**
- ✓ The section for healthcare professionals (HCP) was submitted by **63 HCPs**.
- ✓ Overall, the participants completed **883 free-text responses** (available on request).

All age-groups were represented, and respondents were from all Irish counties. The age groups represented the most were those aged: 35-44 years (23%), 45-54 years (21%) and under 21 (18%). All people under 21 had Type 1 diabetes, and Type 1 diabetes was also most common in those aged 21-34 (78%) and 35-44 (69%). The older the age, the greater the proportion of people with type 2 diabetes. In the oldest age group the vast majority had type 2 diabetes (77%).



Diabetes treatment of people with diabetes

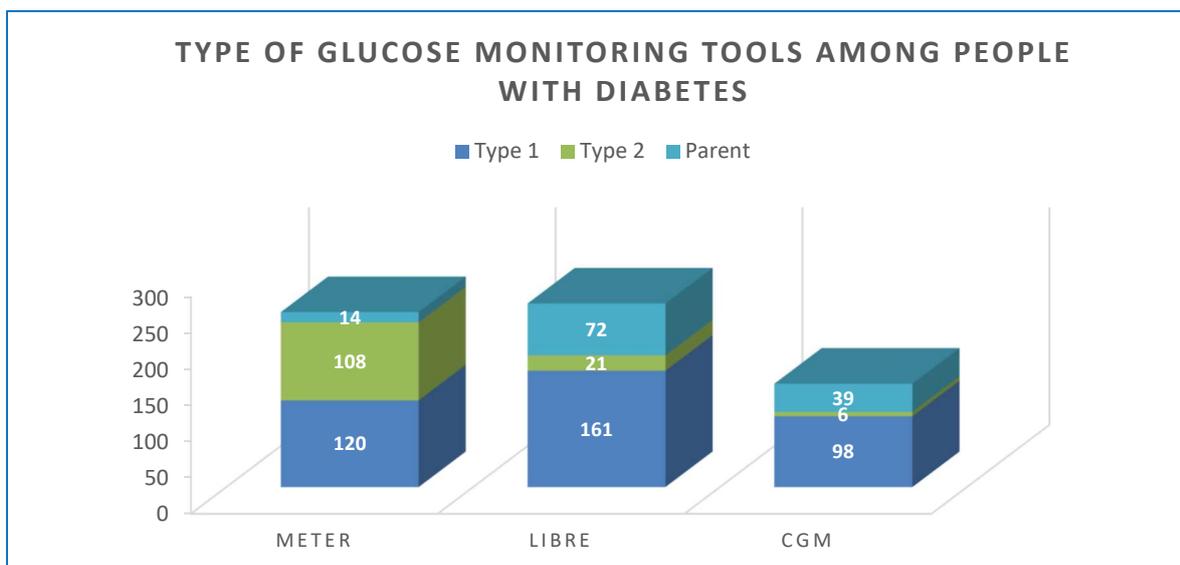
Of all 649 respondents living with diabetes (or their parents/carers) the majority were treating diabetes with insulin injections (63%). 20% were on insulin pumps (n=130), and 16% used medication other than insulin (n=106). The uptake of pumps was 40% in children, and 21% in adults with type 1 diabetes. Of those with type 2 diabetes, one was on an insulin pump, and 23% (32 people) were on insulin injections.



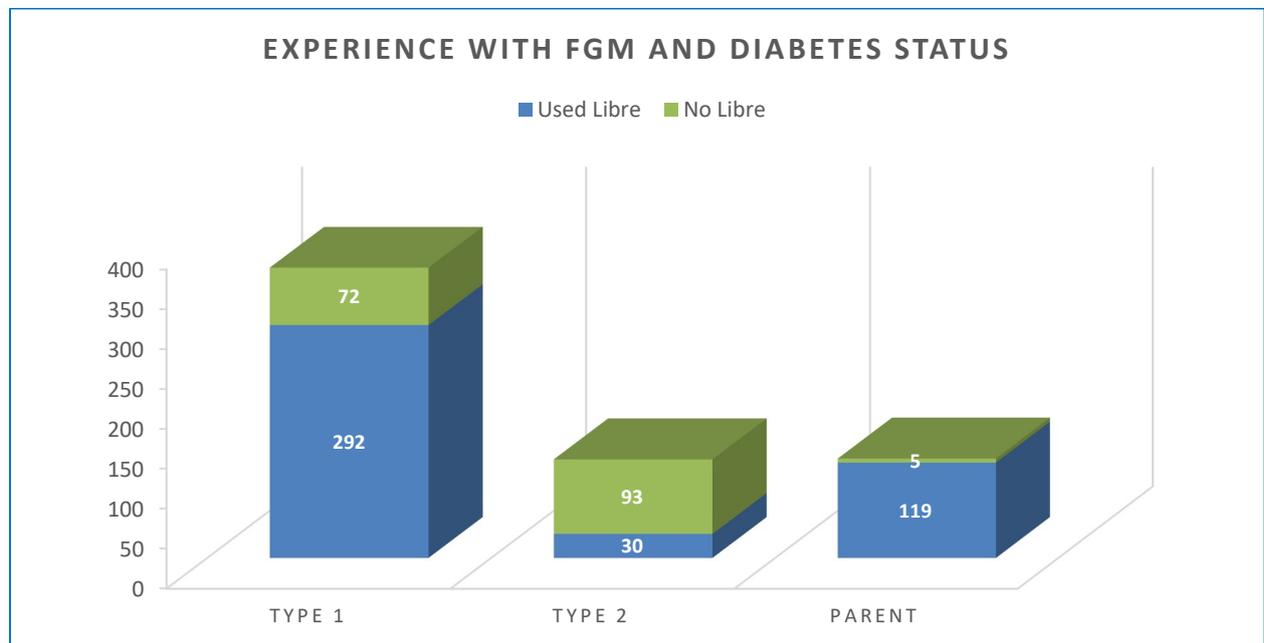
People used different types of devices to monitor their blood glucose levels. It is important to note, that glucose monitoring (either CGM or FGM) was used by 89% of children with diabetes, 69% of adults with type 1 diabetes and 18% of people with type 2 diabetes.

Regarding the types of blood glucose management:

- ✓ 37% were using only a blood glucose meter to check their glucose levels for most of the time
- ✓ 39 % of all participants were using Flash Glucose Monitoring
- ✓ 22% was using Continuous Glucose Monitoring



Finally, of the overall group of people living with diabetes 70% had experience with Libre (used before or using currently), and 27% had none. 95% of parents and 79% of people with type 1 diabetes had experience with FGM. Of those with type 2 diabetes, 30 had previous experience with FGM (23%).



The impact of living with diabetes

Diabetes and the responsibilities associated with it can affect all aspects of life – from the employment choices, impacting work, through daily exhaustion leading to irritability and poor health, to affecting family dynamic, relationships, or decision about having children.

✓ *Because of regular finger pricking I am subject to pain, similar to a paper cut at times. Forgetting to bring monitor at times.. In order to drive need to do blood sugar test. Can cause untold problem if I do not have my monitor.*

(Adult, type 2 diabetes)

✓ *As a teacher I find it absolutely essential to have my libre as otherwise, I wouldn't have the time, space or man power to use a finger pricker to check my glucose throughout the day while trying to look after a class of 28 senior infants!!*

(Adult, type 1 diabetes)

One of the most challenging aspects of living with diabetes is the continuous risk of hypoglycaemia (low glucose levels), which is a 'side effect' of insulin delivery and overdosing. Hypoglycaemia can happen anytime – the most often during and after exercise, or when the meal is smaller than expected, but also after any physical or manual work etc. Hypoglycaemia can also occur at night as an effect of all days' activities. Hypoglycaemic events are distressing not only for the person living with the condition but also for parents,

spouses and family members. Hypoglycaemia can be difficult and distressing to manage; it affects cognitive functions (memory, attention, information processing etc.), the person may become aggressive, irritable, uncooperative, unsteady and confused. If very serious, it can also lead to severe hypoglycaemia meaning that the person with diabetes loses consciousness and requires help from a third person as it is a direct danger to life. Recovery from hypoglycaemia may also take several hours especially if sleep has been disrupted, what can affect performance at work, school, and can be very dangerous while driving. Some people with diabetes develop hypo-unawareness, meaning that they do not recognize the symptoms of hypoglycaemia, which puts them at a very high risk of severe hypoglycaemia and loss of consciousness.

✓ *Before the Freestyle Libre I was always anxious of hypos. Especially since I'm hypo awareness impaired at the moment. The ease of checking my glucose levels regularly (especially when I exercise) reducing my anxiety and I feel more empowered to keep active and exercise.*

(Adult, type 1 diabetes)

✓ *I am fortunate enough to be using the (...) CGM for the last year. Before that I had severe and unpredictable hypos for months and lived in fear of dying any minute for months, and even though I knew about the freestyle libre I couldn't afford it. I am a full time working professional and I could not afford to pay the price of a device that could take away that fear. I am convinced no one should be living in fear of their everyday tasks in 2021 just because they have an autoimmune disease.*

(Adult, type 1 diabetes)

Continuous risk and never-ending requirements to self-manage diabetes can also lead to diabetes distress, burnout, depression, anxiety and eating disorders such as anorexia and diabulimia. Living with diabetes requiring insulin for many can be overwhelming.

✓ *'Diabetes is a relentless condition. It needs constant monitoring.'*

(Adult, type 1 diabetes)

✓ *'I monitor my blood using strips strictly throughout the day. As a working professional this is difficult to do as the process takes time and is not something I am comfortable with people seeing me do in public.(...). The time and effort involved with using strips adds an extra burden to my days and nights, which makes my professional worklife harder than others in my fast-paced role.*

(Adult, type 1 diabetes)

The risk of developing serious diabetes complications: retinopathy, neuropathy, nephropathy and heart disease is high in people with diabetes, and is higher in those who struggle with diabetes management. Intensive diabetes management is crucial in order to minimize the risk of severe and long-term complications of diabetes. Although clinical recommendations highlight the importance of intensification of treatment, many people do not test their glucose levels as frequently as they should, and many do develop complications. Diabetes complications have a significant adverse effect on the lives of people with diabetes - because of blindness, amputated limbs and frequent dialysis they became unfit to work, lose their earnings and often require assistance and never-ending medical appointments and hospitalizations.

✓ *Diabetes will always have control on your life because if you forget about it you will end up high/low bloods, sick or in hospital. It's for life diabetes It's a constant always demands attention.*

(Adult, type 1 diabetes)

Diabetes may affect whole families and diagnosis often require them to change their lifestyle. A parent of a small child often has to give up working to manage their child's diabetes daily often without support, as people are reluctant to care for a small child with diabetes. School-aged children and adolescents have to make many responsible medical decisions while in puberty their main need is to become independent from their parents and be similar to their peers, which is often a great challenge for parents. Diabetes affects life choices and relationships – a spouse has to be educated in diabetes management, ideally support diet modifications, and be aware what to do to maintain health and safety. Diabetes also affects sexual health (insufficient diabetes management may lead to sexual dysfunctions), a decision about having children due to its genetic risk, and is associated with extreme blood glucose changes in pregnancy that may affect the fetus and newborn.

✓ *(...). With freestyle libre, I find that childminders, relatives and families are more receptive to mind my child in their houses. Many adults, in my experience find doing finger prick stressful and nerve wrecking. Freestyle libre also gives the public a better understanding of diabetes management as they can view the graphs themselves as a visual aid in understanding what diabetes, blood glucose and insulin do to your body.*

(Parent of a child with type 1 diabetes)

✓ *(...) I recently had my first baby and thanks to using the Libre my control was brilliant prior to being pregnant, throughout pregnancy and now post pregnancy. I couldn't manage without it. It would benefit people greatly by being included in the long term illness scheme*

(Adult, type 1 diabetes)

Although controlling blood glucose levels via blood glucose meter provide limited information for a person with diabetes and their HCPs to base daily diabetes- and insulin-related decisions, the majority of people living with diabetes in Ireland use standard finger-pricking. For parents, finger-pricking means they have to frequently hurt their children, including the night-time. Parents have wake up at night and monitor glucose while children are asleep, and adults with diabetes often check their night-time glucose levels as well, making this group often sleep-deprived. On the other hand, no frequent glucose monitoring and associated risks impact the families the most, as the risk of severe and long-term complications increase.

✓ *We could not have got through the first year without it as my daughter was and is still hypo unaware and it is so useful to see how the blood glucose levels are doing all the time not just at a couple of times a day when we first got the freestyle libre we were able to see that my daughters bloods were dropping every night which we were not aware off and she had no idea as hypo unaware.*

(Parent of a child with type 1 diabetes)

Increasing importance of technology in diabetes care

Experience of available diabetes treatments differs in different types of diabetes. Those with type 2 diabetes who manage their diabetes mainly with nutrition, education and exercise, are often forced to change their lifestyles, and often employ a 'more healthy' one. People who require insulin from diagnosis, or who are on insulin, have additional challenging experience. Delivering insulin, which is a life-saving drug, means that they might experience very serious potential side effects that lead to hypoglycaemia (sometimes severe), if dose is too high. Too little insulin, on the other hand, lead to hyperglycaemia and its consequences. Living with diabetes is 365 days a year, 24/7 battle to find the balance between hypo- and hyperglycaemia and spend the 'time in range' of target blood glucose levels. This is a major daily challenge without access to technological advances such as continuous or flash glucose monitoring. For many, access to devices helping to more effectively monitor glycaemia, offers the easiness of checking glucose levels and presents patterns, and is deemed a 'game changer' in diabetes management.

✓ *CGM/FGM has been a complete eye opener for me. To have constant real-time access to this info is essential. It's like having the light always on versus stumbling about in the dark in managing my diabetes. I believe strongly that everyone should have free access to CGM FGM. It will save lives and reduce HSE costs of care.*

(Adult, type 1 diabetes)

✓ *Libre was a game changer for our family managing T1 for our young child. I cannot emphasise enough the difference it made to us. Everyone of any age who needs one should be able to get this technology funded. It was like moving from stumbling around in the dark to someone switching the light on. We moved to Dexcom because of the alarm function but I believe this is coming for Libre. Would happily move back to using it when this happens. These technologies have helped us keep my child's A1C in range for 8+ years.*

(Parent of a child with type 1 diabetes)

The more intensified diabetes management (frequent insulin dosing and monitoring), the better diabetes outcomes, decreasing the risk of developing diabetes complications. For people living with diabetes it requires: constant daily glucose monitoring (as advised by diabetes educators: in the morning, before sleep, at night, before each meal and insulin delivery, 2 hours after a meal, before, during and after exercise, anytime they feel unwell or suspect the symptoms of hypo and hyperglycaemia), and insulin delivery (before each meal, before night, in the morning, insulin corrections). It also requires carb-counting (estimating the carbohydrate content in each meal enabling accurate insulin dosing) and deep analysis of each meal content. Continuous or flash glucose monitoring provides much more information about how affects glucose levels.

✓ *I have Steroid Induced Adrenal Insufficiency and Steroid Induced Type 2 Diabetes. I found it impossible to control my Blood Glucose until I started using the Freestyle Libre, as I would get wildly different BG levels even when consuming exactly the same food at the same time of the day. Now I check my levels with the Libre about half an hour before a meal and again directly before eating and adjust my food intake accordingly, to keep my blood glucose level within range. People who are diagnosed with Pre-Diabetes or Diabetes should immediately be prescribed a Flash Glucose Monitor, as it makes making adjustments to their diet, so makes it much easier to eliminates guess work. It's also much easier to stick to a diet when you can see the results minute by minute. This is impossible to do with a finger prick test.*

(Adult, type 2 diabetes)

✓ *Guided me & diabetes team to fact I was going hypo during the night. See effect of different food on blood sugars. As a female proved the effect hormones have on my blood sugars and different insulin requirements based on female hormone cycle.*

(Adult, type 1 diabetes)

One of the main challenges associated with finger-pricking, for some, is the pain associated with pricking their fingers, and discomfort associated with the whole measurement process. People often forget to check their glucose levels, or have no possibility to do it, i.e. while at work or at school.

✓ *Because of regular finger pricking I am subject to pain, similar to a paper cut at times. Forgetting to bring monitor at times... In order to drive need to do blood sugar test. Can cause untold problem if I do not have my monitor. Freestyle could provide regular and pain free update on blood sugar which would no doubt positively impact my knowledge of my own diabetes. In doing to provide greater opportunity for positive interventions.*

(Adult, type 1 diabetes)

✓ *Better BG control means less risk of complications of diabetes, less risk of sever hypo's. Safer for patients who drive a lot.*

[Clinical Nurse Specialist (CNS) or Advanced Nurse Practitioner (ANP), general practice]

The information provided by the finger stick glucose monitor is 'one-off' and does not show any context, whether glucose levels are rising or falling, whereas CGM/FGM show the pattern of the glucose allowing for the better decisions regarding food, insulin dosing, activity etc. CGM/FGM sensors show the result on a mobile phone or computer, collate information in the cloud so other people (i.e. carers/parents could see them, as well as healthcare professionals).

✓ *I would say that with finger pricks I'm not testing frequently enough at all, and overall health suffering as a result. Libre makes it so much more convenient and accessible to check glucose meaning I'm doing it so much more.*

(Adult, type 1 diabetes)

✓ *They can see trends and have additional information on the direction in which the blood glucose is going. It also gives greater insight into patients overall control via Time in Range. It also enables more effective remote consultations as we can view all the information online.*

(Dietitian, adult diabetes clinic)

Technology reduces the risk of diabetes complications

Finger-pricking is a very basic way of controlling insulin-dependent diabetes, available since the early 80's (40 years). Continuous or flash glucose monitors have improved hugely in the last decade and are considered as a great achievement of medicine and treated similarly to the discovery of insulin. The information provided allows for the assessment of the 'time-in-range' (TIR), which is the percentage of time that a person spends with their blood glucose levels in a target range (the goal is to spend i.e. 70% of time between 3.9–10.0 mmol/L)². TIR

corresponds with HbA1C, the standard measurement of diabetes management, but provides much more information. TIR is also a better predictor of diabetes complications.

According to the International Diabetes Federation Diabetes Atlas 10th edition, diabetes is a major driver of mortality worldwide, though its impact varies by region. Excluding the mortality associated with the COVID-19 pandemic, 12.2% of global deaths in adults (20-79 years old) were caused by diabetes and its complications³. One of the major threats is cardiovascular disease – mortality is 4 times higher in people with diabetes than in those without it. It is also estimated that this is the major cause of death in people with diabetes – two thirds die of heart disease and stroke⁴. Diabetes can cause macrovascular complications (coronary heart disease, stroke, peripheral vascular disease) and microvascular complications, such as retinopathy, nephropathy, end-stage renal disease, neuropathy, foot ulcers, lower-extremity amputations. The prevalence of complications varies world-wide, but it is estimated that diabetic peripheral neuropathy may affect 30-50% individual with diabetes, diabetic foot ulcers are common and are estimated to affect about 15% of all individuals with diabetes during their lifetimes⁴. In Ireland, the prevalence of diabetes complications varied ranging from 6.5 to 25.2 % for retinopathy; 3.2–32.0 % for neuropathy; and 2.5-5.2 % for nephropathy in 2018⁵. In Ireland, the national expenditure on diabetes is estimated to be 10% of the health budget (€1.31 billion) with 60% (€800 million) spent on diabetes complications^{6,7}, many of which could be avoided with earlier detection and regular access to diabetes review appointments. The high cost of diabetes is caused by the treatment of complications as they increase cost by as much as five-fold. Uncomplicated diabetes on average increase health costs 1.5 times more than normal while the presence of microvascular (eye and kidney) complications doubles the cost, macrovascular (cardiovascular) trebles the cost and the presence of both microvascular and macrovascular disease increases costs 5-fold. The prevalence of complications is decreasing worldwide thanks to the development of early detection and treatment⁸ and mainly by better diabetes-management tools, such as FGM/CGM. In Diabetes Ireland we are confident that improvement in providing access to FGM/CGM technology will surely help reducing the economic and mental-health burden of diabetes complications in Ireland.

✓ *Because it (Libre) improves diabetes control and therefore prevents complications. Presently more money is spent on complications of diabetes. It's a reactive system rather than a proactive system. Would save money in the long term.*
(Consultant endocrinologist, adult diabetes clinic)

Time in Range is one of the tools helping to assess and minimize the risk of complications early, and fulfil, or sometimes even replace, standard haemoglobin A1C measurement. Standard glucose monitoring however, does not allow for Time in Range assessment. It is possible only with CGM/FGM devices.

✓ *It improves overall diabetes control when the patient is aware of the aim to have a larger percentage of glucose readings within the time in range. This results in a reduction in the risk of complications.*

(CNS or ANP, general practice)

✓ *Time in range is so important for people with diabetes. By utilizing the best equipment, we are empowering our patients to become self-care managers which in turn will reduce the risk of developing complications associated with Diabetes. In years to come this will benefit the HSE as there will be less foot disease/amputations, less retinal and kidney problems and possibly a reduction in cardiovascular events.*

(CNS or ANP, adult diabetes clinic)

✓ *It has enabled proactive management of BG levels resulting in good HbA1c and time in range. Requires constant monitoring to achieve these but couldn't get such control without the Libre.*

(Adult, type 1 diabetes)

✓ *Using a CGM/FGM it gives me greater insight into how my diet, activity, stress, levels affect my BGL. I can make small adjustments throughout the day easily. Leading to more time in range. Leading to feeling better. Leading to being more active. Leading to more quality time with my family. More energy at work. And less diabetes related complications.*

(Adult, type 1 diabetes)

The continuation of standard glucose monitoring will keep the levels of diabetes-related complications the same as they currently are. The problems with finger-pricking: associated pain, discomfort, difficulty in taking a test, and increased burden of diabetes management will not lead to any improvement in diabetes care and management. For people who do not use technology, diabetes distress, burnout, mental health burden, as well as the constant fear of hypoglycaemia take an additional toll.

✓ *Just I am afraid one night I won't feel my sugars drops down and I won't wake up at all. My fingers are sore from checking the sugar levels more than 10 times per day. I'm father of 3 children, smallest just one year old. I want to live a normal life.*

(Adult, type 1 diabetes)

✓ *I cannot explain to you how much of a mental burden using the freestyle Libre lifted from me. (...) I could read my glucose while out exercising, walking from room to room in work, during meetings, during tasks, while watching a film, mid-chat with friends, anything! - all without having to stop what I am doing, source my meter and*

check my sugars. I read one time (no source) that a person with diabetes makes approx. 180 medical decisions per day. Having access to your glucose readings at any time definitely reduces this burden.

(Adult, type 1 diabetes)

- ✓ *If I had access to Freestyle Libre, it would change my life. I monitor my blood using strips strictly throughout the day. As a working professional this is difficult to do as the process takes time and is not something I am comfortable with people seeing me do in public. Freestyle Libre would mean I could check my levels quickly and discreetly which would significantly help me to stay on top of changes to my blood sugar levels and would remove the embarrassment and pain of having to make myself bleed to check myself. Using strips as a testing method is archaic and degrading in this day and age. I cannot afford Freestyle Libre, and as such I am not equal to my non-diabetic peers and colleagues. The time and effort involved with using strips adds an extra burden to my days and nights, which makes my professional work life harder than others in my fast-paced role.*

(Adult, type 1 diabetes)

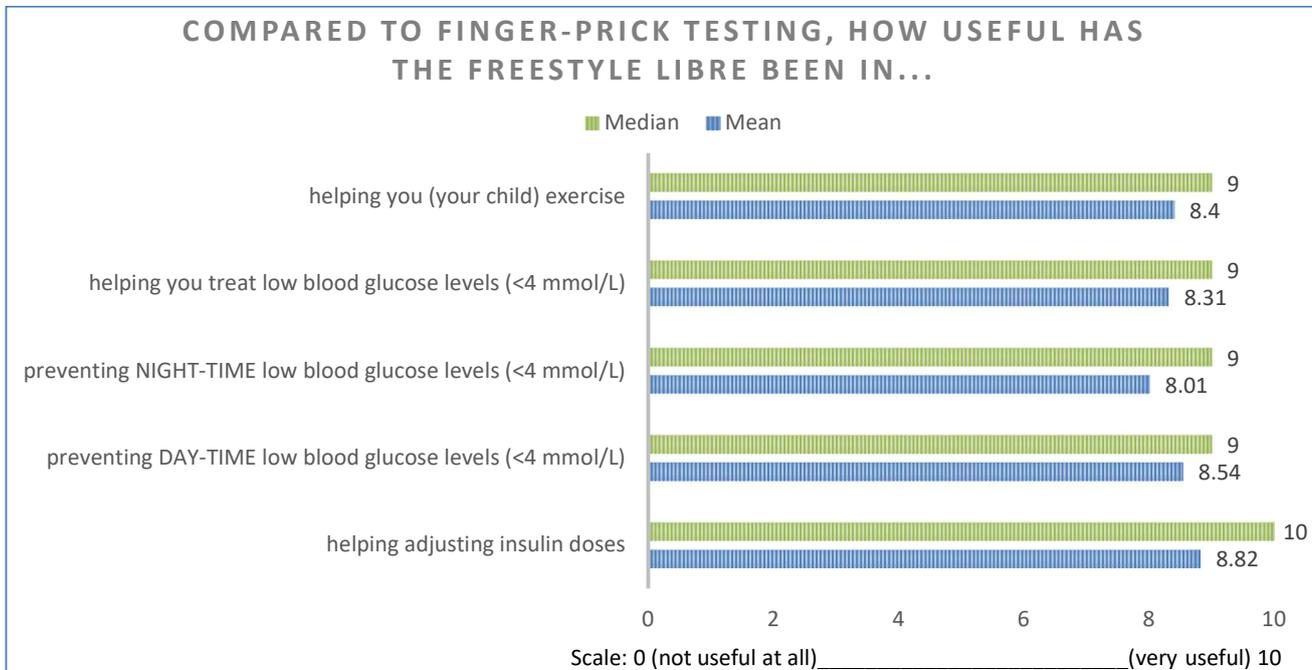
The advantages of Flash Glucose Monitoring

In the part of the survey dedicated to people who had previous experience with Libre (either used it at the time of or before the data collection), we asked how do they compare the use of Libre to finger-pricking. Overall, **397** participants completed this section (**53% of all the survey participants**). The majority of this group have or had to pay privately to use Libre (**59%, n=236**). The length of the experience with Libre varied:

- ✓ One-third of those who replied (n=133) declared using Libre for more than 2 years (mainly children and adults with type 1 diabetes)
- ✓ 24% were using Libre from one to two years (n=95),
- ✓ the rest used it for less than a year (9% for less than a month), 19% less than 6 months and 14% from 6 to 12 months.

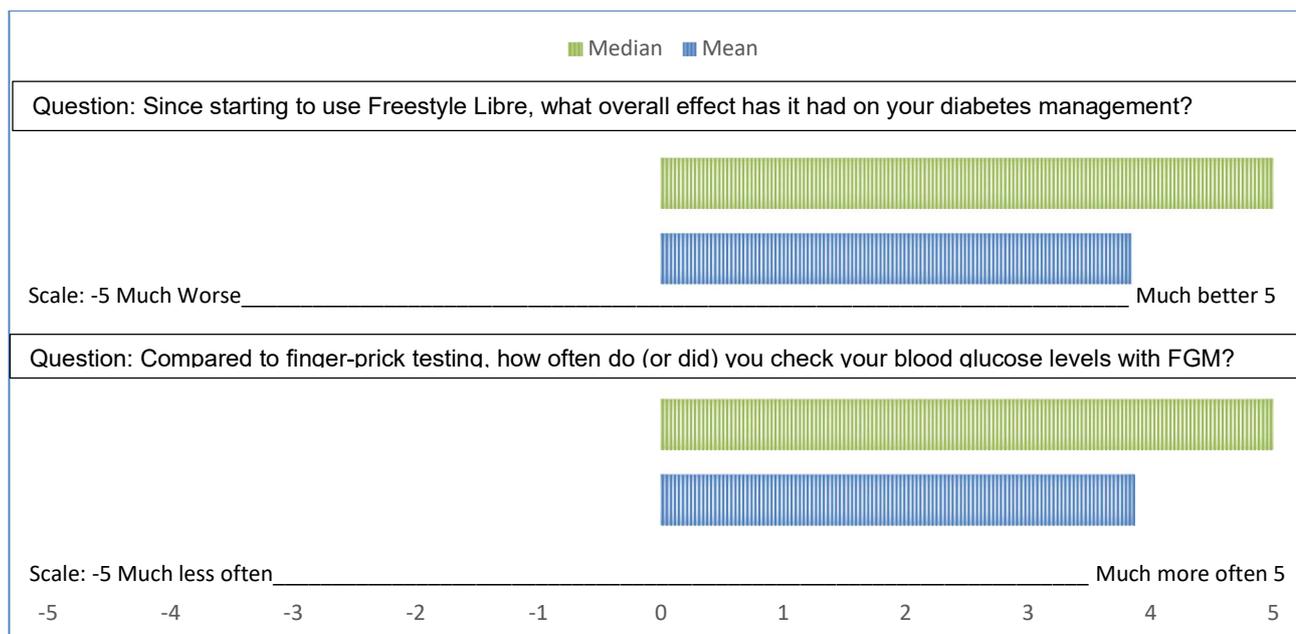
To gather a common opinion of those, who have experience with Libre, respondents were asked to assess how useful Freestyle Libre is/was when compared to standard finger-pricking. Overall, **353 people completed this section**. When answering questions about for example, adjusting insulin doses, or preventing hypoglycaemia respondents were asked to assess and choose the point on the scale where 0 meant not useful at all, and 10 meant very useful. With the maximum of 10, the average assessment was very high, meaning that compared to finger-pricking, Freestyle Libre improved:

- ✓ adjusting insulin doses (median: 10);
- ✓ preventing daytime and night-time hypoglycaemia (medians: 9 and 9);
- ✓ helping to treat low glucose levels and during exercise (medians: 9);
- ✓ more frequent glucose monitoring (median: 10).



In further two questions, the assessment was on a scale from -5 (meaning that something was much less/worse) to 5 (meaning that it was assessed as much more/better).

Overall, since starting to use Libre, participants assessed their diabetes management as **much better and that they test much more frequently than they did with standard finger-pricking.**



Below are a few examples illustrating the improvement in overall diabetes management and glucose control.

✓ *Within the first few months of using Freestyle Libre, I managed to get my HBA1c down from 69 to 54 (mmol/L) for the first time in 6 years. To be able to see what's going on 24 hours on a graph is an incredible help with diabetes management. It can't be underestimated how helpful this device can be for diabetics, but it needs to be made freely available to all to keep us healthier & out of hospital. It's a very proactive tool in diabetes management, far more beneficial than finger pricking & desperately needs to be funded.*

(Adult, type 1 diabetes)

✓ *When using Libre, I managed to get my hba1c within normal range for the first time in 20+ years of being diabetic.*

(Adult, type 1 diabetes)

✓ *I have Steroid Induced Adrenal Insufficiency and Steroid Induced Type 2 Diabetes. I found it impossible to control my Blood Glucose until I started using the Freestyle Libre, as I would get wildly different BG levels even when consuming exactly the same food at the same time of the day. Now I check my levels with the Libre about half an hour before a meal and again directly before eating and adjust my food intake accordingly, to keep my blood glucose level within range. People who are diagnosed with Pre-Diabetes or Diabetes should immediately be prescribed a Flash Glucose Monitor, as it makes making adjustments to their diet, so makes it much easier to eliminates guess work. It's also much easier to stick to a diet when you can*

see the results minute by minute. This is impossible to do with a finger prick test. Before I got the Libre, I regularly had fingers so sore that I could not do needlework, a long-standing hobby. This system allows people to have much more personal control over the management of their condition and this leads to much better health outcomes. At roughly €120 per month when paying privately, this is not a cheap option, and the cost has prevented people I know from using it. (...)

(Adult, type 2 diabetes)

✓ *The positive impact using the Freestyle Libre has had on my life has been incredible! It has helped me reduce my HbA1c from close to 80 down to 51!! I feel so much more in control of my diabetes. I really feel this should be covered under the LTI and would love to see the Freestyle Libre 2 available here asap.*

(Adult, type 1 diabetes)

✓ *Using a CGM/FGM it gives me greater insight into how my diet, activity, stress, levels affect my BGL. I can make small adjustments throughout the day easily. Leading to more time in range. Leading to feeling better. Leading to being more active. Leading to more quality time with my family. More energy at work. And less diabetes related complications.*

(Adult, type 1 diabetes)

✓ *The Libre is life changing for anyone with Diabetes, it improved my child's hba1c from in the 8's to in the 6's as we can make informed decisions about how different foods affect blood sugars and how much insulin is required. It had prevented hospitalisation due to dangerous lows that can happen at night. We can now make better, informed choices for our child as we can see the full picture of her blood sugars instead of a finger prick which only gives you a point in time reading. I really hope equal access will be given to all as it will improve health outcomes for all Type 1's. It has also allowed me to go back to work and childcare providers are happy to scan rather than finger prick. It has never let us own.*

(Parent of a child with type 1 diabetes)

✓ *My HbA1c reduced from over 14 to 7.7 in just two months of using the Freestyle Libre. It is invaluable for maintaining my hba1c at a good level as I already have a lot of complications because of my diabetes. It makes me way more motivated to look after myself better.*

(Adult, type 1 diabetes)

✓ *The Libre is great for helping people take ownership and accountability for their diabetes and make better choices re food. The insights that the graphs give motivate you to improve your Blood sugars and to keep them within range. For*

parents it is a lifesaver and a way of making managing diabetes less onerous. This is definitely the way forward for all people would diabetes and should be available to all. Thank you

(Parent of a child with type 1 diabetes)

✓ *Limited finger pricking on T2D due to prescription limit. Self-funding FSL to manage my diabetes and I am thrilled with my results so far. It is costly though. I would be great to receive subsidy for FSL, but I'm OK to continue self-funding when I got constant feedback on my glucose levels.*

(Adult, type 2 diabetes)

Another section asked whether Freestyle Libre had an impact on other aspects of life – quality of life, diabetes burden, cooperation with diabetes team. Participants were asked if the use of Freestyle Libre, compared to finger pricking, provide a change, and if so, whether the change is for better or worse.

The majority of respondents positively assessed an impact of Freestyle Libre use on the following aspects related to the quality of life and care.

- ✓ **89% (n=352)** chose that their **motivation to keep up their diabetes management improved.**
- ✓ **88% (n=345)** felt **less overwhelmed by the demands of living with diabetes.**
- ✓ **87%** of participants (n=346) admitted they felt that now they **test their blood glucose levels frequently enough.**
- ✓ **85% of respondents (n=338)** agreed that FGM use makes them feel that **diabetes takes much less mental and physical energy each day.**
- ✓ **75% (n=295)** felt that **diabetes does not control their lives anymore or much less** (less or no change: 93%)
- ✓ **57% (n=228)** of respondents agreed that their diabetes team gives them clearer directions on how to manage diabetes now, another 30% mentioned that it has not changed.

There were almost 300 free text forms, including participants' opinions and views on Freestyle Libre use. The most popular ones highlighted the improved quality of life, social and family life; the need to use available technology by more people living with diabetes; and highlighted the financial implications of self-funding, move from standard finger-pricking available for 40 years to more modern ways of managing diabetes ('technology for all!').

Improved Quality of life and empowerment

For the majority of respondents, being able to frequently check glucose levels, to see the patterns, and get insights into their diabetes, dramatically improved their day-to-day living and overall quality of life. Many highlighted that knowing what is happening with their glucose levels makes them feel more empowered in diabetes self-management.

✓ *Biggest improvement to my type 1 diabetes in 25 years. No words to compare how useful this device was. Not only did it help improve blood sugar control it helped improve health in other areas. Less fear with exercise. Reduced headaches and migraines. Gained more energy because my blood sugars were now in much better time of range*

(Adult, type 1 diabetes)

✓ *It's a game changer. Finger prick provides a point in time reading but Libre provides an insightful trend, giving you more data and predictability, and better able to manage your diabetes as a result.*

(Adult, type 1 diabetes)

✓ *Compare it to watching a live video, rather than a photo. The arrows guide direction of blood sugar invaluable. Absolutely essential.*

(Adult, type 1 diabetes)

✓ *Libre has changed my relationship with my doc/nurses and made appts more productive because I MYSELF am more informed and better equipped for appointments. It has changed ME and made my appointments more of a two-way interaction and therefore more helpful and productive.*

(Adult, type 1 diabetes)

✓ *Libre should be available to anyone who needs to frequently monitor blood glucose. Much safer especially for long term prevention of nerve damage. As a parent it gave me much more ability to be aware of BG levels especially as my child is hypo unaware. The ability to remotely monitor meant that school and other family members were more confident with his care and meant much more peace of mind for us. The ability to monitor overnight without waking him to finger-prick was so beneficial to his and our wellbeing. This should be something routinely available to all. No one should have to fight for this.*

(Parent of a child with type 1 diabetes)

✓ *I do not have the Libre and cannot afford to self-fund it but really wish I because I felt much more confident and less anxious about my diabetes management when I had the free trial and then paid for one. My blood sugar levels were their best*

ever and I felt much happier and not as controlled by diabetes. It was absolutely phenomenal!!

(Adult, type 1 diabetes)

✓ *Using a CGM/FGM it gives me greater insight into how my diet, activity, stress, levels affect my BGL. I can make small adjustments throughout the day easily. Leading to the more time in range. Leading to feeling better. Leading to being more active. Leading to more quality time with my family. More energy at work. And less diabetes related complications.*

(Adult, type 1 diabetes)

✓ *I know a few people in the same boat as myself & especially being so vulnerable during our virus outbreaks it feels so very much safer to use a sensor & scanner rather than exposing my skin to infection by finger pricking. I order my sensors online from France as it's cheaper as all the local chemists charge 10 euro dearer. I've peace of mind when out walking as the sensor arrows let me know quicker what action I need to take. I feel that the HSE/the team I'm under are totally under-funded/staffed to deal with any needs I have as a diabetic. The current system doesn't & never has for me & I feel insulted & let down.*

(Adult, type 1 diabetes)

✓ *Much more freedom. More confident. Improved control*

(Adult, type 1 diabetes)

✓ *I don't wear Libre all the time because it's so expensive, but when I do, I feel so much better because I'm informed as to my glucose trends and can take action. I also feel it's so much easier to live a normal life because glucose can be checked so discreetly and conveniently*

(Adult, type 1 diabetes)

✓ *If it was less costly, I would avail of it all year round! My bloods are never better than when I am using one. It's such a shame that life is harder without a piece that should be made available to all diabetics. It is a fantastic piece of equipment.*

(Adult, type 1 diabetes)

The main challenge: financial implications

Many of those who had used FGM highlighted, that the biggest disadvantage to them was (is) the cost associated with self-funding Freestyle Libre. The majority of respondents have been still using Freestyle Libre in daily diabetes management (**59%, n=233**), but 41% have stopped using it. Of those, **63 people (60%) could not continue to self-fund as they could not afford it**. Another 57 people (36% of those who have used Libre but stopped), received a prescription for continuous glucose monitoring that is included in the LTI scheme. Of those currently using Libre, **56% have to pay privately (n=131)**. Of those not using Libre, but with previous experience (n=164), **64% paid privately (n=105)**. For many, the cost of more than 120 euro a month is a significant burden.

✓ *It plays a huge role in how I manage my diabetes, but I have to self-fund, and some months I have to choose between better diabetes management or paying bills.*
(Adult, type 1 diabetes)

✓ *I am newly diagnosed with type 1 and have found it very difficult to adjust my whole lifestyle. Using the Freestyle Libre has made this so much easier to handle my A1c had improved drastically. Unfortunately, though, it has put me under severe financial pressure to fund this myself as I am currently studying a masters so struggle to pay college fees and this Freestyle Libre while not being able to work full time.*
(Adult, type 1 diabetes)

✓ *I have a son in college now which means I have less disposable income. It means I may have to give up Libre. It would mean so much to have some funding.*
(Adult, type 1 diabetes)

✓ *I think the Libre Freestyle is a brilliant innovation it takes the worry and mental draining out of your every day. I gave up my TV package to buy Libre Freestyle but unfortunately still could not afford it along with the monthly spend on essential medication. It brought my spending to €234.00 monthly and as I do some physical work, I found some of the arms discs would fall off due to warm conditions and the companies attitude was tuff luck and so would have to fork out a second time. I did feel more in control and on top of my condition. I would have no issue paying 150.00 euro per month for combined medication and Freestyle instead of €114.00 per month for medication, It is a real step forward in Diabetes treatment. I think long-term would reduce hospital admissions with hypos.*
(Adult, type 1 diabetes)

✓ *It's a brilliant device. I got a free sample and I bought one myself. I have asked my family to buy me Libre as Christmas presents.*

(Adult, type 1 diabetes)

The cost of Libre was also the main barrier for people with no experience of FGM.

From those who have not used Freestyle Libre and completed the form (152 responses), 36% have never heard of this device (55 responses), and the vast majority of those who have not heard of Libre were people with type 2 diabetes (46 responses). 81 people (53%) have heard of it and **would like to use Libre, but could not afford to buy the device**. 14 people were using a different CGM system (9%).

✓ *Unfortunately, I can't afford the Libre and would love it, it's a brilliant piece of equipment that needs to be readily accessible to diabetics, none of us asked for this terrible disease and should be giving the best chance to live our best lives with it.*

(Adult, type 1 diabetes)

✓ *I think it would be a great help in managing my diabetes but could not afford to buy every month.*

(Adult, type 2 diabetes)

✓ *It's very expensive if I had to pay myself. Would consider using it if it were free*

(Adult, type 1 diabetes)

✓ *18 years living with diabetes. A struggle a lot of the time it's so sad that there is something available, but a lot of people cannot afford it. It would make life a lot easier and give people more confidence.*

(Adult, type 1 diabetes)

✓ *Its makes sense to have the Libre included on the LTI. I use 350 test strips per month which probably equates to a higher cost than the Libre.*

(Adult, type 1 diabetes)

✓ *My father has the Freestyle Libre, and he pays for it privately. I have seen the huge change it has made to his diabetes control. I am a working professional with a pretty good salary for my age and I cannot afford a Freestyle Libre. I don't know how anyone in Ireland who really needs it can. And honestly, I think I really need it.*

(Adult, type 1 diabetes)

✓ *PLEASE give us the opportunity to succeed at diabetes*

(Adult, type 1 diabetes)

Asked whether the respondents would consider applying for Freestyle Libre and discuss with their HCPs a possible assessment of the clinical need, **88% of those with type 1 (n=61) and 84% of type 2 (n=74) said 'yes'**. Of those who said no, the main reason was that they already had a different CGM. Excluding those with CGMs, **97% of type 1 and 91% of those with type 2 would apply to have the FGM instead of standard blood glucose monitors**, if available, and would discuss it with their diabetes teams whether they are eligible to apply. These findings characterise patterns in diabetes care and technology: technological advances are the most popular in children and adolescents with diabetes; adults with type 1 diabetes are becoming more aware of available technologies, as more people are getting to use them; and only a few of people with type 2 diabetes can avail of technological advances as this is not a standard treatment in this cohort.

The main expectations from those who have never used Freestyle Libre are that it should allow for more frequent, convenient glucose checking, and would lead to improve their overall diabetes control and management, and – consequently – health and wellbeing, reduce the burden associated with the management and pain coming from finger-pricking, and minimize the risk hypoglycaemia and complications.

✓ *I would like to monitor my glucose levels more often in the day. My fingertips have lost any sense of feelings now.*
(Adult, type 1 diabetes)

✓ *I'd like to see if It's easier and better to use than finger prick tests 9 times a day*
(Adult, type 1 diabetes)

✓ *It would be so much easier for me as I have arthritis in both hands and it's hard to root in my bag then to press the finger-pricker.*
(Adult, type 2 diabetes)

✓ *I am a lone parent/carer for a child with disabilities. The Freestyle Libre would take the pressure off on days when it just isn't possible or when I am distracted and forget etc*
(Adult, type 1 diabetes)

✓ *I don't use insulin but have had a difficult time getting my blood sugar under control since diagnosis two years ago, so would really appreciate the insight into how my blood sugar reacts to different foods, etc, without having to continually prick my fingers to test.*
(Adult, type 2 diabetes)

✓ *My husband is T1 for only a year and he is getting depressed from the constant finger pricking. All T1s deserve to have the best care.*
(Adult, partner of a person with type 1 diabetes)

✓ *I am happy with the overall service and management of my Type 2 diabetes. However sometimes my HBA1C results over 3 months do not align with my own measurements and therefore I would like to monitor throughout the day more to improve my glucose levels.*
(Adult, type 2 diabetes)

✓ *Should be available as it would make life a lot easier for diabetics. And it would free up hospital spaces from people with diabetic comas.*
(Adult, type 1 diabetes)

✓ *Multiple studies indicate that the Freestyle Libre improves the management of this disease, thereby reducing the risk of future complications caused by diabetes (saving the HSE an enormous amount of money). I have heard from people who are currently on it that it is the best tech tool in managing their diabetes T1. I would love to be a part of that group - without having to pay a high price for it.*
(Adult, type 1 diabetes)

Healthcare professionals' perspective

105 healthcare professionals representing 22 counties took part in the study. Of those who completed the part of the survey dedicated to HCPs (60% response rate from those declaring themselves as HCPs, n=63) the majority was from nurses (Clinical Nurse Specialists - CNS, advanced nurse practitioners (ANP), and community nurses) – 67%, endocrinologists (19%) and dietitians (10%). HCPs represented mainly adult diabetes clinics (49%), general practice (25%) and paediatric diabetes clinics (22%). All except one person (98.4%) replied that Freestyle Libre use by patients provides additional benefits in the care they provide.

✓ *Time in range is so important for people with diabetes. By utilizing the best equipment, we are empowering our patients to become self-care managers which in turn will reduce the risk of developing complications associated with Diabetes. In years to come this will benefit the HSE as there will be less foot disease/amputations, less retinal and kidney problems and possibly a reduction in cardiovascular events.*
(CNS or ANP, adult diabetes clinic)

✓ *It is unfair to discriminate against a cohort of patients simply because of their age or type of diabetes. Many patients will benefit from this technology if it is opened up.*
(CNS or ANP, adult diabetes clinic)

✓ *It has demonstrated that it is beneficial for all age groups, Both in the management of blood glucose control and reducing risk of hypoglycaemia and associated unawareness of hypos. Improved QOL and allows patients to live a more fulfilled life which is less restrictive*

(CNS or ANP, adult diabetes clinic)

✓ *Understanding the patterns of glucose shifts after you eat and overnight is of enormous benefit to those managing diabetes in pregnancy. Hi everyone towards the end of pregnancy the libre readings may not be comparable to the blood glucose levels*

(Dietitian, maternity hospital)

✓ *It helps to minimise the anxiety around blood glucose testing in those that have had diabetes for a long time and have very sore fingers. It also helps with patients that are hypo unaware to monitor their blood sugars more frequently without the need for finger pricking all the time.*

(Dietitian, adult diabetes clinic)

✓ *They can see trends and have additional information on the direction in which the blood glucose is going. It also gives greater insight into patients overall control via Time in Range. It also enables more effective remote consultations as we can view all the information online.*

(Dietitian, adult diabetes clinic)

✓ *In my experience, the data generated gives a much clearer picture of the patient's glycaemic control throughout the day and night. This enhances the ability to make accurate changes to insulin dosing leading to improved time in range and HbA1c. I have a patient with T1 diabetes who has struggled for 20 years to improve his glycaemic control. He used Freestyle Libre for 2 weeks and said if it had been available when he was diagnosed, he feels he would not now have proliferative retinopathy and he felt much more in control and learnt so much about his diabetes in this short time. Unfortunately, he cannot afford it.*

(CNS or ANP, general practice)

✓ *Some are having problems with finger pricking and all in my experience have less hypos and better control with freestyle libre.*

(CNS or ANP, general practice)

✓ *It is a valuable tool for clients in assisting their food choices, effects of exercise and illness at a glance. They can quickly identify a possible hypo and treat/prevent. They don't have the bother of taking out their machine, allowing them more time to focus on the results and the approach of action to take. They can track the*

effects of their action. They have less damage to their fingertips. The Freestyle Libre is of extreme value for the HCP if someone cannot monitor for various reasons. e.g. dementia. The most appropriate treatment for these people can be safely recommended and monitored. The use of Libre reduces the calls required from District nursing teams.

(CNS or ANP, general practice)

✓ *Using Libreview system is great as we can see patients' data in real-time and make changes accordingly. We introduce Libre at diagnosis at the bedside, all apps are downloaded before and connected into Libreview before they leave the hospital. It has helped facilitate earlier discharge.* (CNS or ANP, paediatric diabetes clinic)

✓ *It is life-changing, a game-changer. In the world of digital age, the diabetes burden needs to be reduced. Without doubt it should be available for all.*

(CNS or ANP, paediatric diabetes clinic)

✓ *Cloud based data v advantageous to patient education and utilisation of more intricate technology abilities such as dual wave bolusing for certain meals, nocturnal control and mitigation of hypoglycaemia.*

(Consultant endocrinologist, paediatric diabetes clinic)

✓ *I think Libreview allows both patients and professionals make more informed decisions about insulin dose adjustments and provides significant confidence to the wearer*

(Consultant endocrinologist, adult diabetes clinic)

✓ *Allows better self management for patients, provides tools to eliminate nocturnal hypoglycaemia, and convenience factor for patients, and better visibility for clinicians to objectively give advice if troubleshooting required*

(Consultant endocrinologist, adult diabetes clinic)

✓ *Having the potential to have 24 hour profiles of blood sugar levels rather than a small number of time points tested by glucometer provides more useful information for patients to enable them to manage their condition*

(Consultant endocrinologist, adult diabetes clinic)

✓ *I do not think that patients with type 2 diabetes on multiple daily injections especially for years should be excluded from access to Freestyle Libre, as they still face the same issues as people with type 1 diabetes on insulin therapy. Patients who are well controlled on basal-bolus should also have access. They are discriminated against when other patients with poor glycaemic control can get access because they*

show an improvement in blood sugars. The patient with good glycaemic control who checks readings regularly anyway can't show this improvement so can't access it then. It hardly seems fair to me.

(Consultant endocrinologist, adult diabetes clinic)

✓ *It essential that we reduce the burden on those people living with diabetes. Freestyle libre gives people a chance to become educated and empowered on their own condition and therefore manage it much better. It gives constant results so we can all share knowledge and help each other learn what works for that person. Less invasive than messing around with finger pricking on a continuous basis. less waste. obvious makes more financial sense as better managed people cost the health system way less overall despite an initial cost increase. It is a great product and people with diabetes deserve the choice. I think it is awful that it is so expensive when people are trying to engage with their health.*

(Pharmacist, community care)

The vast majority of the respondents (92.1%) believe that Flash Glucose Monitoring (FGM) should be reimbursed for all people with diabetes in Ireland based on clinical need (i.e. insulin use), no matter what age or type of diabetes. However, to avoid the 'money waste' there should be standard criteria allowing to monitor whether a patient is using Libre as prescribed.

✓ *I think funding should be made available to all those with diabetes on insulin. There should be clear access criteria, along with clear criteria for user responsibility e.g. minimum number of scans per day, & usage etc, with the clear expectation that withdrawal of funding be a consequence should the healthcare investment not be utilised appropriately. HbA1c should NOT be among these criteria - they should be behaviour-based.*

(Consultant endocrinologist, paediatric diabetes clinic)

Access to technology: challenges and issues

This survey highlighted some gaps and issues seen by the wider diabetes community in Ireland, which are specific to Ireland and reimbursement provided based on the age-restriction.

Rejections of HCPs' applications, despite well described clinical need

Healthcare professionals highlight one of the very important gaps in Irish diabetes care, as they frequently feel their medical expertise and recommendations rejected by the final HSE decision-makers and funding bodies (HSE/NCPE/PCRS/MMP/LHO etc.). Some respondents

felt demotivating and may be considered 'disrespectful' to HCPs expertise. 73% of HCPs who have prescribed FGM to their patients declared that their applications and prescriptions have been rejected by the HSE reimbursement bodies, often with no reason provided. This happened to the majority of the HCPs from adult clinics (88%) or general practices (100%) who prescribe Libre. This problem has been recognized in the Dáil Éireann. One of the Parliamentary Questions submitted to the Minister of Health asked about the acceptance of funding applications for Libre. The Oireachtas were upset to see that the approval of Libre applications requests, based on the clinical need, is decreasing in years. In 2018 30% of applications from diabetes teams have been rejected, and in 2020 – more than 50%. The quotes below illustrate the problem.

✓ *I only apply for patient who I feel really need it for specific reason however despite my clinical expertise it is often not accepted.*

(CNS or ANP, adult diabetes clinic)

✓ *I have submitted several applications for Libre but all except one was rejected... & no reason given.*

(CNS or ANP, adult diabetes clinic)

✓ *Very difficult to get approval for Libre for over 21 patients. Very disheartening and upsetting.*

(CNS or ANP, adult diabetes clinic)

✓ *Patients with type 2 diabetes on basal-bolus for many years, patients with type 1 diabetes well controlled, maybe looking for greater insight into patterns like in sport are denied because they are well controlled. They test frequently and probably cost the HSE the same amount as a Freestyle Libre would.*

(CNS or ANP, adult diabetes clinic)

✓ *Requests on compassionate grounds: amputated limbs, connective tissue diseases making finger-sticks impossible, nursing home resident with very erratic BSL not allowing carers to perform finger-sticks were rejected.*

(Consultant endocrinologist, adult diabetes clinic)

FGM vs. CGM

Another finding not described elsewhere was associated with the increased prescription of Continuous Glucose Monitoring devices other than Freestyle Libre, which is more expensive. A few respondents highlighted that they find the CGM system more accurate and helpful than FGM because of high/low alarms feature when glucose is rising or falling, a few also

highlighted their perceived inaccuracy of FGM compared to results from finger-pricking. But even those who moved to the more advanced monitoring technology would consider going back to FGM if it is reimbursed.

Participants highlighted their knowledge about the newer versions of Libre (Libre 2 and 3), already available and reimbursed by many Western countries, that have the same function as CGM – so they do provide alarms when glucose levels are rising or dropping. The overall theme that was loud and clear across the majority of the responses was **that any type of technology allowing more efficient glucose control and management, should be available to those who need it, and that there should be better choice provided.**

✓ *Libre was a game changer for our family managing T1 for our young child. I cannot emphasise enough the difference it made to us. Everyone of any age who needs one should be able to get this technology funded. It was like moving from stumbling around in the dark to someone switching the light on. We moved to Dexcom because of the alarm function but I believe this is coming for Libre. Would happily move back to using it when this happens. These technologies have helped us keep my child's A1C in range for 8+ years. Please allow others this opportunity.*

(Parent of a child with type 1 diabetes)

✓ *It's a no brainer as so much waste on blood glucose strips and diabetes is not as well controlled. Could be helpful to prevent the development of hypo unawareness where patients are then needed a more expensive device as a CGM which alarms. When Freestyle Libre is rejected HCP are forced to apply for CGM (Dexcom) and approval for these is never refused by LTI system. Far more expensive! If Libre given first day then no need for CGM*

(CNS or ANP, adult diabetes clinic)

✓ *Using the Freestyle Libre improved my Type One diabetes management. My HbA1c results show it. It upsets me deeply that the LTI Scheme covers the Dexcom product but not the Abbott product. As you know, the two products take different approaches to reading and communicating blood glucose levels. However, they have in common that they use an app to present the information. The Dexcom app is like something out of the last century compared to the Abbott app. So, I want to use the Abbott app. Dexcom's customer service is poor compared to Abbott's. Abbott keeps me informed of what's happening if there is a problem with a sensor. Dexcom does not. The Dexcom sensor continually loses contact with the reader, so I'm all too frequently left waiting a half-hour before it can tell me what my sugar level is. I have dozens of screenshots to back up this assertion. It is ridiculous that there are dozens of finger-prick options on the LTI Scheme but only the one CGM option. If I had my way, we would reduce the finger-prick options to one or two at the most and transfer the budget to the Abbott product. I am pretty sure that the CGM products produce a better result in terms of population health amongst people with diabetes. It has for*

me. It is not only the statistics that count. It is also a question of treating patients with respect. I do not feel that I'm being treated with respect when I am forced to use the Dexcom product and not the Abbott product. It is ironic that the Irish system does not support the Abbott product despite the fact that Abbott has such a large presence in Ireland (...)

(Adult, type 1 diabetes)

✓ *I think it should be funded for all patients with Type 1, however we really need to move on to libre 2 with the alarms and alerts. A lot of Parents are self funding attachments to provide these alerts which are not licensed.*

(CSN or ANP, paediatric diabetes clinic)

Ethical challenges: discrimination

For HCPs, rejection of their applications and medical expertise and knowledge about the patients' needs might be considered disrespectful to their work. Knowing what can help, but also being told, that they could not offer the best possible care could be demoralizing.

✓ *If doctor or nurse requests funding it should be funded from HSE. Medical person knows best what will help person with diabetes that is on insulin. Money from this budget will be saved off the cost of complications and hospital visits in the future.*

(CNS or ANP, adult diabetes clinic)

For people living with diabetes, not providing the funding for a device that can make their life with diabetes much easier, might be additionally demotivating. Moreover, often the 'clinical need' is associated with poor diabetes management (higher A1C levels), what is demoralizing for those who do their best, and control diabetes efficiently via finger-pricking - their needs are not acknowledged. Overall, many opinions highlighted that providing the best care for the youngest only is ethically questionable, demoralizing and is called by many discrimination.

✓ *By not providing funding for those over 21 is essentially telling this cohort of patients that their diabetes management is not as important and they do not deserve to move with the times. It is demoralising for them.*

(Dietitian, adult diabetes clinic)

✓ *Patients who are well controlled on basal bolus should also have access. They are discriminated against when other patients with poor glycaemic control can get access because they show an improvement in blood sugars. The patient with good*

glycaemic control who checks readings regularly anyway can't show this improvement so can't access it then. It hardly seems fair to me.

(CNS or ANP, adult diabetes clinics)

✓ *It is unfair to discriminate against a cohort of patients simply because of their age or type of diabetes. Many patients will benefit from this technology if it is opened up.*

(CNS or ANP, adult diabetes clinics)

✓ *Diabetes means monitoring and managing blood sugar constantly. Finger pricking alone is like working in the dark-walking down a dark corridor filled with tripping obstacles. Finger pricking brightens the corridor briefly for one instant at a time showing what hazard might be there right now in that instant. And then it goes dark again.... Freestyle Libre turns the lights on!!!! You can see where you're going, what's behind you and ahead of you and you can travel more safely. The information the Libre provides should be available to anyone who needs it with no discrimination. Access to anything that makes good management and therefore good outcomes more achievable is surely beneficial for EVERYONE.*

(Adult, type 1 diabetes)

✓ *My diabetes control has improved so much using the Freestyle Libre sensor & I am very comfortable using it. However, I feel I am discriminated against based on my age as I currently cannot get the Freestyle Libre sensors on my Long Term Illness scheme as I am over the age of 21. I have been on the Long Term Illness scheme since the age of 18. I am not working outside the home therefore it is very expensive for me to fund the cost of my diabetes management myself. Even at that as my own research shows this is a fairly basic product as newer versions Freestyle Libre Sensors 2 & 3 have already been launched in Europe. Therefore I don't think it is too much to expect that the Freestyle Libre Sensor be available to all Diabetics irrespective of age. It has been invaluable for my diabetes management especially during Covid 19 as all my Endocrinologist appointments were virtual & my consultant had immediate access to my daily/weekly/monthly diabetes management via the Freestyle Libreview.*

(Adult, type 1 diabetes)

Of those participants who have not used FGM, had no experience with this device, and were not on any other CGM (n=149), 94% would consider applying to have FGM (97% of adults with Type 1 diabetes and 91% of those with Type 2) if it was available at no cost for those meeting the clinical criteria. Bearing in mind that the vast majority of the HCPs who took part in our study (92.1%) believe that Flash Glucose Monitoring (FGM) should be reimbursed

for all people with diabetes in Ireland based on clinical need (i.e. insulin use), the need of the diabetes community is clear.

After six years of fighting for better access for Freestyle Libre, we believe it is a high time to reduce the discrimination, improve the equity and equality in access to the best available care, and trust the researchers, diabetes experts, and – the most important – people living with this burdensome condition day by day.

The summary

On behalf of the Diabetes Community in Ireland, through this report, we would like to highlight and address the gap of not providing diabetes technology to people living with diabetes in Ireland, and that this gap is addressed urgently by making Freestyle Libre **available to all people with diabetes based on clinical need.**

We foresee that addressing our request and provide easy access to FGM/CGM to those with clinical need will:

- provide better insights in the analysis of the glucose values and provide a context for a practical glucose level (whether glucose is stable, rising or falling), allowing for more accurate medical decisions regarding insulin delivery, food choices, minimizing the risk of hypoglycaemia and severe complications;
- offer discrete and comfortable way of diabetes management and control;
- increase the frequency of glucose monitoring;
- help to reduce the daily and long-term physical and mental burden of diabetes management (stress, burnout, anxiety);
- reduce the burden associated with hypo-unawareness and fear of hypoglycaemia;
- enable better assessment of the risk of complications development (Time-in-Range shows much more than 3-monthly haemoglobin A1C test);
- improve diabetes management and reduce the risk of progression of diabetes complications;
- provide tools for effective diabetes management for those who are not able to self-manage diabetes, including children with diabetes, elderly, people with disabilities etc.;
- offer and support remote consultations and accurate insights and medical advice from diabetes teams, which is extremely important in the COVID-19 pandemic era;
- increase empowerment in diabetes self-management;
- ensure improvements in equity and equality of care for all those living with diabetes and using insulin.

Conclusion

The outstanding response of the diabetes community – people living with type 1 and type 2 diabetes, parents and carers, healthcare professionals – with 754 survey completions in three weeks of data collection, reflects how important the topic of access to technology that improves diabetes management and the quality of life is for those living with this burdensome condition.

Without a doubt, this survey proved that using the FGM results in increased frequency of monitoring glucose levels which people report decrease acute highs and lows, improve proactive diabetes management and results in improved glucose control and other side effects of fluctuating glucose levels. Using FGM also results in less sore fingers, greater security at night time resulting in peace of mind and less anxiety, reduce the burden of living with diabetes, provides more safety and minimize the risk of diabetes-related complications.

Regardless of the funding, Libre is being used across all age groups of the Type 1 diabetes community, and by some with Type 2 diabetes. Unfortunately, for many people with diabetes in Ireland it means that they have to choose whether they will pay bills such as TV broadband, or invest in their own health, as the majority of Libre users had to pay for it privately.

Participants report FGM as being a major advancement in diabetes self-care and in their own words *'it is a gamechanger'*. It also improves the quality of care for health-care professionals. In light of having other, more expensive CGM approved on the LTI scheme, and also newer models of Freestyle Libre that provides the same information as expensive CGMs (alerts on highs and lows), making FGM available to all people with diabetes based on their clinical need, surely improve diabetes management practices in the cohort of people living with diabetes in Ireland, and as a consequence, will save money for the Irish health service by reducing the risk of severe and long-term complications. It is proven that in the other countries which implemented the wider use and access to FGM/CGM, the last few years show significant improvement in diabetes management outcomes in whole societies (England, UK, Germany, Sweden etc.). After 40 years of finger-pricking, we in Diabetes Ireland believe it is the high time to provide equal access to better devices to self-manage diabetes daily for those with clinical need, and improve the quality of diabetes care and its outcomes in Ireland.

References:

- 1) Tyndall, V., Stimson, R. H., Zammitt, N. N., Ritchie, S. A., McKnight, J. A., Dover, A. R., & Gibb, F. W. (2019). Marked improvement in HbA_{1c} following commencement of flash glucose monitoring in people with type 1 diabetes. *Diabetologia*, *62*(8), 1349–1356. <https://doi.org/10.1007/s00125-019-4894-1>
- 2) Battelino T, Danne T, Bergenstal RM, Amiel SA, Beck R, Biester T, Bosi E, Buckingham BA, Cefalu WT, Close KL, Cobelli C, Dassau E, DeVries JH, Donaghue KC, Dovc K, Doyle FJ 3rd, Garg S, Grunberger G, Heller S, Heinemann L, Hirsch IB, Hovorka R, Jia W, Kordonouri O, Kovatchev B, Kowalski A, Laffel L, Levine B, Mayorov A, Mathieu C, Murphy HR, Nimri R, Nørgaard K, Parkin CG, Renard E, Rodbard D, Saboo B, Schatz D, Stoner K, Urakami T, Weinzimer SA, Phillip M. Clinical Targets for Continuous Glucose Monitoring Data Interpretation: Recommendations From the International Consensus on Time in Range. *Diabetes Care*. 2019 Aug;*42*(8):1593-1603. doi: 10.2337/dci19-0028. Epub 2019 Jun 8. PMID: 31177185; PMCID: PMC6973648.
- 3) International Diabetes Federation. IDF Diabetes Atlas, 10th edn. Brussels, Belgium: 2021. Available at: <https://www.diabetesatlas.org>
- 4) Deshpande, A. D., Harris-Hayes, M., & Schootman, M. (2008). Epidemiology of diabetes and diabetes-related complications. *Physical therapy*, *88*(11), 1254–1264. <https://doi.org/10.2522/ptj.20080020>
- 5) O’Neill K., McHugh S. M. & Tracey et al (2018). Health service utilization and related costs attributable to Diabetes. *Diabet. Med.* *35*, 1727– 1734 (2018) <https://doi.org/10.1111/dme.13806>
- 6) Diabetes Ireland. Prevalence of Diabetes in Ireland. Available at: <https://www.diabetes.ie/about-us/diabetes-in-ireland/>
- 7) Nolan J., O’Halloran D, McKenna TJ et al (2006). The Cost of Treating Type 2 Diabetes (CODEIRE). <http://archive.imj.ie//ViewArticleDetails.aspx?ArticleID=1508>
- 8) Harding, J.L., Pavkov, M.E., Magliano, D.J. *et al*. Global trends in diabetes complications: a review of current evidence. *Diabetologia* **62**, 3–16 (2019). <https://doi.org/10.1007/s00125-018-4711-2>

Appendices

Appendix 1

Freestyle Libre Survey 2021

Accessing and using Freestyle Libre in Ireland

Thank you very much for taking part in the survey about accessing and using the Flash Glucose Monitoring (Freestyle Libre) by people living with insulin treated diabetes and their health-care professionals.

This survey aims to get as many insights from different people with diabetes using insulin. **We are looking for people who:**

- **Are using Freestyle Libre daily;**
- **Used Freestyle Libre daily for a period of time, but stopped;**
- **Are a parent/carer of a child who is using Freestyle Libre daily or used it in the past;**
- **Have never used Freestyle Libre, but would be interested in doing so if clinically approved.**

We are also looking for insights from **health-care professionals (HCP) working with people with diabetes.**

This **anonymous survey should not take more than 5-10 minutes to complete.** Your individual replies will be **confidential – we do not ask for any information that may identify you.** We will analyse all the responses and present the results of the whole group of participants to have an overview of the situation in Ireland. If you are a parent of a child with diabetes, please answer on their behalf.

By taking part in this survey, you agree for us to share the group findings with a wider audience.

If you have any questions related to this survey e-mail our Helpline: info@diabetes.ie, or call 01 8428118. Thank you.

1) What is your diabetes-related status?

- a) I have type 1 diabetes
- b) I have type 2 diabetes
- c) I am a parent/carer of a person with diabetes
- d) I am a healthcare professional working with people with diabetes
- e) Other (if other, please explain)

2) How old are you (or how old is your child)?

- a) Under 21
- b) 21-30
- c) 31-40
- d) 41-50
- e) 51-60
- f) 61-70
- g) 71 and older

3) What is your (or your child's) gender

- a) Female
- b) Male
- c) I would rather not say

4) In what county do you live?

Co... (26)

5) How do you (or your child) manage diabetes?

- a) With insulin – injections
- b) With insulin – insulin pump
- c) No insulin (but with tablets or injections other than insulin and/or other type 2 diabetes specific treatments, and healthy nutrition/exercise)
- d) I don't take any medication for diabetes, just exercise and healthy nutrition
- e) Other (if other, please specify)
- f) Not applicable, I am a healthcare professional, and I don't have diabetes

6) What device do you (or your child) use for most of the time to check blood glucose levels?

- a) Blood glucose meter only
- b) Flash glucose monitor (Freestyle Libre)
- c) Continuous glucose monitoring
- d) Not applicable, I do not have to check blood glucose levels daily

7) What is your experience with Freestyle Libre?

- a) I do not use Freestyle Libre, but some of my patients are using it (→ brings section for HCP)
- b) I have no experience with Freestyle Libre – I (my child) have never used it (→ brings section for those who have no experience with Libre)
- c) I have experience with Freestyle Libre. I (or my child) use it daily or have used it daily in the past (→ Brings the section about Libre use)
- d) Not applicable

SECTION FOR HCP

Freestyle Libre Survey 2021 - for Healthcare professionals

Below are a few questions for healthcare professionals (HCP) working with people with diabetes in their clinical practice.

1) Where do you work?

- a) In diabetes clinic for adults
- b) In diabetes clinic for children
- c) In General Practice / community care
- d) Other (if other, please explain)

2) What is your role when working with people with diabetes?

- a) Specialist Consultant Endocrinologist / Diabetologist
- b) Doctor in training
- c) General Practitioner
- d) Clinical Nurse Specialist/Advanced Nurse Practitioner
- e) Dietitian
- f) Psychologist
- g) Other health-care professional (If other, please explain)

3) Have you ever advised Freestyle Libre to your patients?

- a) Yes
- b) No
- c) Other (if other, please explain) → If no, it moves to the end of the survey

4) What percentage (approximately) of your patients with diabetes use Freestyle Libre?

- a) None
- b) 1-10%
- c) 11-25%
- d) 26-50%
- e) 51-75%
- f) More than 75%
- g) I don't know

5) Have you ever prescribed your patient Freestyle Libre and your application was rejected by the HSE (or any other governance body)?

- a) Yes
- b) No, all my applications were accepted

- c) No, I have never prescribed Freestyle Libre to anyone.

If you chose 'Yes', please explain

6) Do you think that Freestyle Libre should be reimbursed for all people with diabetes in Ireland based on clinical need (i.e. insulin use) no matter what age or type of diabetes?

- a) Yes
- b) No

Please explain why you chose this answer

7) Does Freestyle Libre use by your patients provide any additional benefits in the care you provide?

- a) Yes
- b) No

Please explain why you chose this answer

8) This is a space for you to share with us any additional thoughts that you have about Freestyle Libre funding, access and use in Ireland. (open question, not compulsory)

9) This is the last question of this survey. Please choose 'Approve' to move to the closing page where you will be able to submit your responses. (had to add it so other sections of the survey are not visible)

SECTION FOR PEOPLE WHO NEVER USED LIBRE

Freestyle Libre Survey 2021 - for those who never used it

Below are a few questions for those participants of the survey, who have never used Flash Glucose Monitoring (Freestyle Libre).

1) What are your reasons for not using Flash Glucose Monitoring (Freestyle Libre)?

- a) I have never heard of it, even from my GP/diabetes team.
- b) I have heard of it (from my GP/diabetes team etc), but I am not interested in technology
- c) I have requested it and my GP/diabetes team have applied for Flash Glucose Monitoring (Freestyle Libre), but my application was rejected
- d) I was considering having Freestyle Libre, but I would have to pay privately and I can't afford it
- e) I am using (other) continuous glucose monitoring, so I don't have to use Libre

2) Would you consider applying to get Freestyle Libre, if it was available at no cost for all people using insulin in Ireland?

- a) Yes
- b) No
- c) No, I am already using continuous glucose monitoring

Please explain why you chose this answer

- 3) **This is a space for you to share with us any additional thoughts that you have about Freestyle Libre funding, access and use in Ireland.** (open question, not compulsory)
- 4) This is the last question of this survey. Please choose 'Approve' to move to the closing page where you will be able to submit your responses. (had to add it so other sections of the survey are not visible)

SECTION FOR THOSE WHO HAVE USED LIBRE

Below are a few questions for those who have used or are still using Freestyle Libre as their main device for glucose control and monitoring. It specifically asks for a comparison with traditional blood glucose checks by finger pricking.

8) How long have you (your child) been using Freestyle Libre?

- a) Less than a month
- b) Up to 6 months
- c) From 6 to 12 months
- d) More than a year, but less than 2 years
- e) More than 2 years

9) Do you still use Freestyle Libre in your daily diabetes management?

- a) Yes
- b) No
If you chose 'No', please explain

10) Do (did) you have to pay privately for Freestyle Libre sensors?

- a) No, it is (was) funded by the HSE
- b) Yes, I have (had) to pay privately
- c) Other (if other, please explain)

11) Compared to finger-prick testing, how useful has the Freestyle Libre been in helping adjust insulin doses?

0 (not very useful) to 10 (very useful)

12) Compared to finger-prick testing, how useful has the Freestyle Libre been in preventing DAY-TIME low blood glucose levels (i.e. less than 4)?

0 (not very useful) to 10 (very useful)

13) Compared to finger-prick testing, how useful has the Freestyle Libre been in preventing NIGHT-TIME low blood glucose levels (i.e. less than 4)?

0 (not very useful) to 10 (very useful)

14) Compared to finger-prick testing, how useful has the Freestyle Libre been in helping you treat low blood glucose levels (i.e. less than 4)?

0 (not very useful) to 10 (very useful)

15) Compared to finger-prick testing, how helpful has the Freestyle Libre been in helping you exercise?

0 (not very useful) to 10 (very useful)

16) Compared to finger-prick testing, how often do (or did) you check your blood glucose levels with Freestyle Libre?

-5 (Much less often) 0 (no change) 5 (Much more often)

17) Since starting to use Freestyle Libre, what overall effect has it had on your diabetes management?

-5 (Poorer management) 0 (no change) 5 (better management)

Please, finish the statements below with the response that is the most applicable to your experience:

18) Comparing diabetes management with Freestyle Libre to daily finger-prick testing you feel...

- a) That diabetes is taking much less of your mental and physical energy each day
- b) No difference between using Libre and finger pricking in taking mental and physical energy by diabetes each day
- c) That diabetes is taking up too much of your mental and physical energy each day
- d) Other (please specify)

19) Comparing diabetes management with Freestyle Libre to daily finger-prick testing you feel...

- a) Less overwhelmed by the demands of living with diabetes
- b) No difference between using Libre and finger pricking in feeling overwhelmed by the demands of living with diabetes
- c) More overwhelmed by the demands of living with diabetes
- d) Other (please specify)

20) Comparing diabetes management with Freestyle Libre to daily finger-prick testing you feel...

- a) That your doctor gives you more clear directions on how to manage your diabetes
- b) No difference between using Libre and finger pricking in the clarity of directions on how to manage diabetes
- c) That your doctor does not give you clear enough directions on how to manage your diabetes
- d) Other (please specify)

21) Comparing diabetes management with Freestyle Libre to daily finger-prick testing, you feel...

- a) That you are testing your blood glucose levels frequently enough
- b) That you are not testing your blood glucose levels frequently enough
- c) No difference between using Libre and finger-pricking in the frequency of blood glucose testing
- d) Other (please specify)

22) Comparing diabetes management with Freestyle Libre to daily finger-prick testing, you feel...

- a) That diabetes is not controlling your life anymore or much less
- b) That diabetes controls your life even more
- c) No difference between using Libre and finger-pricking in the feeling that diabetes controls your life
- d) Other (please specify)

23) Comparing diabetes management with Freestyle Libre to daily finger-prick testing you feel...

- a) More motivated to keep up your diabetes self-management
- b) Less motivated to keep up your diabetes self-management
- a) No difference between using Libre and finger-pricking in motivation to keep up diabetes self-management,

24) This is a space for you to share with us any additional thoughts that you have about Freestyle Libre funding, access and use in Ireland (open question, not compulsory)

LAST PAGE – THE SAME FOR ALL

Thank you very much for completing this survey, dedicating your time and effort.

TOGETHER WE CAN MAKE THE CHANGE in fighting for access to better diabetes care in Ireland.

If you have any questions or comments, visit our website If you have any questions related to this survey, see www.diabetes.ie, e-mail info@diabetes.ie, or call our Helpline at 01 8428118.

THANK YOU, DIABETES IRELAND



DiabetesTM Ireland



CHY 6906

Head Office, Dublin

19 Northwood House,
Northwood Business Campus,
Santry,
Dublin 9, DO9 DH30
Phone: 01 842 8118
Email: info@diabetes.ie

Southern Regional Office, Cork

Enterprise House,
36 Mary Street,
Cork,
T12 H6NH
Phone: 021 4274229
Email: corkcarecentre@diabetes.ie

Western Regional Office, Sligo

1 Wine Street,
Sligo,
F91 RFK1
Phone: 071 9146001
Email: wro@diabetes.ie