INDEPENDENT DIABETES TRUST
Type 2 and you
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Welcome

Welcome to the fifty-seventh issue of Type 2 and You and the final issue for 2023. In this issue we have articles on blood testing, the various types of fats as well as a round-up of the positive and negative side effects of the much-hyped GLP-1 inhibitor, semaglutide.

We have a look at the sensitive issue of diabetes, intimacy and the emotional impact that diabetes can have on peoples love-lives. We have a report on "Vera", our largest and furthest-reaching promotional awareness campaign ever. On a lighter note, we have a reminder to request your FREE copy of our booklet "Diabetes at Christmas", packed full of tips about enjoying Christmas while staying safe and well. While thinking about Christmas we also have a short article on the benefits of the staple Christmas nibble – nuts.

We have our usual round up of bits and pieces and the results of our latest lottery draws. However, first of all we have a report on our annual get together and our Annual General Meeting.

IDDT 2023 Get Together

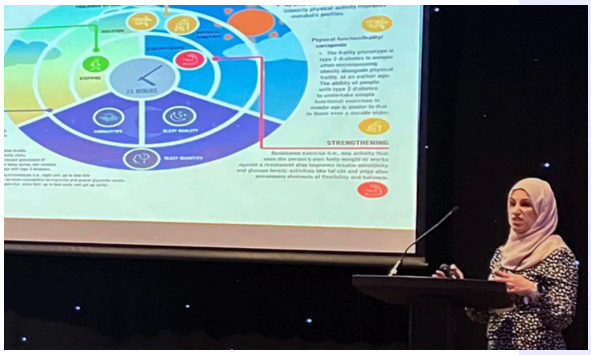
Tips, Techniques, and Trials

Kettering Park Spa Hotel – Saturday 30 September 2023

The staff and trustees were delighted to welcome old friends and new, to our get together. Slightly lower attendance than in previous years (the train strike had an impact) led to longer conversations and new connections – this is an event well worth attending!

We started with IDDT's **Annual General Meeting.** Full minutes are available to any member who requests them.

Notable points were the huge increase in healthcare professionals requesting FREE leaflets, the success of the Ukraine appeal, and the generous increase in donations and legacy bequests from members.



Newer Treatments in Diabetes and the Role of the Diabetes Specialist Pharmacist

A warm welcome was given to **Samina Ali**, especially as she came all the way from Glasgow! Samina is the lead pharmacist with a special interest in diabetes in general practice – an initiative for improving the care of people with diabetes in that area.

Samina reminded us of the huge and increasing number of people living with diabetes in the UK (4.3 million, with 850,000 probably undiagnosed).

Her talk covered topics as varied as optimum physical exercise for those living with Type 2 diabetes, shortages of certain drugs used to reduce HbA1c and cause weight loss and new developments, such as once-weekly dosing of insulin (which could optimise control in those who cannot self-manage their diabetes). Samina also spoke about trials into reduced calorie diets, and the difficulties transposing research results from clinical trials to real life. for example, on an 800 calorie diet, 36% of participants were still in remission at 2 years.

It is now possible to purchase a kit privately to test HbA1c, a few pharmacies offer this as a service too.

There were lots of questions from the floor, including impact of low calorie diets on hypoglycaemic risk and danger for drivers, and poor support from many NHS sectors- New insulin delivery devices were also discussed – wider availability will help more insulin users, and the potential improvements in blood glucose levels are impressive.

Samina also led a discussion group where individual issues to do with medication and lack of access to primary care services were discussed.

Primary Care Guidelines of Diabetes Care for Older Adults

Professor **Alan Sinclair** again delivered the keynote address at our event and this is a brief summary. Up to 40% of adults aged 70-80 will have Type 2 diabetes. Clinical manifestations of diabetes can be vague and non-specific in older adults and the diagnosis may be missed. Type 1 diabetes is also much commoner in older adults than previously thought.

Management of diabetes in older adults can be problematic as there is a higher rate of co-morbidity and higher sensitivity to drug side effects. It is not uncommon for older adults to be on 6 or more drugs – and not all of them may be necessary.

Professor Sinclair stressed the importance of "small gains", even minor improvements in day-to-day functioning can make a big difference. Frailty can be reversed by use of resistance training, such as using weights. People with diabetes have a higher risk of needing care home treatment in later life, so any small improvement in cognitive or physical function can reduce this risk. In older life, aiming for "tight control" and reduced HbA1c may not be ideal if there is no gain in quality of life.

National guidelines for managing diabetes in care homes advise reducing medications or their doses if risk outweighs benefit.Primary care guidelines focus on safety and early detection of risk for dependence, considering de-escalation of drug treatments as well as assessing frailty and preventive measures such as exercise, nutrition, oral health care and immunisations.

A new frailty test involves a list of simple questions and no equipment. If a person answers 'Yes' to three or more they are likely to have frailty.

- Are you fatigued?
- Are you able to walk 1 block (200 m)?
- Do you have five or more illnesses?
- Can you walk up one flight of stairs?
- Have you lost more than 5% of your weight in less than six months

Professor Sinclair's take-home message was to ask questions of your prescriber or pharmacist if you are unsure why you are taking a drug.

- Why am I on this drug?
- How will I benefit?
- What are the potential risks?

The Latest on the Freestyle Libre

Jane Cheetham and a colleague from Abbott Laboratories again joined us at our event. The Libre is a sensor which is worn for two weeks then replaced and reduces finger prick tests markedly. It can be read by a smartphone app, and ***importantly a handheld scanner is available for the Libre 2 which means a smartphone is unnecessary.***

Libre users can share data with a healthcare professional or carer. There is access to monthly webinars and the Abbot helpline. Since April 2022 anyone with Type 1 can request a Libre on the NHS. The new Libre 2 is very small and has connectivity to the Ypso pump and an algorithm meaning micro-adjustments in insulin are automatic, leading to better control. Connectivity will soon be available with the Omnipod pump. Those with Type 2 diabetes controlled by multiple daily doses of insulin who have recurrent or severe hypoglycaemia or reduced hypoglycaemic awareness, are also eligible for a Libre 2.

Workshop 1 – Coping with diabetes-related stress

John Birbeck and Anne Aubin facilitated this discussion group, which was attended by people with Type 1 and Type 2 diabetes and carers. The stresses which were identified by participants included having multiple health problems, being unable to reach targets, being unable to focus on self-care because of external stresses, like someone else's illness, lack of support/the wrong kind of support, sudden increases in workload, worry about a person with diabetes eg night hypos, being unable to stick to routine, frustration – at lack of control or with other people, lack of routine checks, hypos and loss of warnings, the relentlessness of diabetes and lack of possible spontaneity, and finally the impact of the menopause.

The group then looked at the body's reaction to stress – we release adrenaline, which can lead to us feeling panic, over-thinking, becoming irritable, or freezing and being unable to act. Adrenaline is also released as we go hypo. Cortisol is another stress chemical which is released in the early hours of the morning and is one of the chemicals that can cause insulin resistance leading to higher blood glucose.

Many women going through the menopause also have insulin resistance. When our body can no longer pump out helpful stress chemicals, we can become fatigued, ill, depressed or burned out. Some people find themselves eating too much when stressed – this is because "something to settle my stomach" does alter the body's chemical system and reduces adrenaline. Obviously, this can only be a short-term solution for those of us with diabetes.

The group looked at coping strategies such as deep breathing exercises, walking in nature, talking to others (like attending this event!), and prioritising feel-good activities like hobbies. For more information on this topic, ask for your copy of the FREE updated booklet "Stress, Anxiety and Depression" from IDDT.

Workshop 2 – Neuropathy, Not to be Ignored

Professor Alan Sinclair and John Simpson of Neuropad led this workshop. Neuropathy is damage to nerves – microvascular (eg eyes, kidneys) or macrovascular (eg heart, brain). The resulting effects are sensory or motor problems. Patients experience pain, sleep disturbance and mood disorders. The longest nerves travel to the hands and feet which is why neuropathy affects the extremities most commonly.

Neuropathy was described as one of the most important complications of diabetes. All too often it is allowed to progress until a major symptom occurs. The only treatment for the symptoms is drug treatment, but lifestyle changes can help. Prevention is the key way forward with improved screening and treatment.

Neuropathy is growing in prevalence because of multiple factors including inactivity and food, especially in less-developed countries. The impact of sedentary behaviour was discussed. People should get up and move about at least every hour, not only to keep mobile but also glucose metabolism changes when sedentary.

- Assessment - The most simple assessment is "Can you feel this?"
- Palpation and observation – will pick up ulcers, infection oedema, swelling and check the arch of the foot. A tuning fork will check by using vibration. Neuropad tests are subjective and can be used at home to pick up problems early so that treatment or
- lifestyle change can take place.
  Costs - £1 billion is spent on foot ulcers per year in this country. There are 90,000 foot ulcers at any one time in the UK.

IDDT initiatives, concerns, and work in progress

• Jenny reported on the huge response to our Ukraine appeal – financial donations used to help to pay transportation costs and donations of unwanted, in-date insulin, meters, test strips, pens, toys and even sleeping bags. There was some concern expressed at this amount of this NHS waste.

• IDDT has had a stand at several professional conferences and will be the charity sponsor at the Diabetes Professional Care (DPC) conference at Olympia in November.

• Huge numbers of free leaflets are being sent out to healthcare professionals. Over 5,000 copies of the latest publication "Diet and Diabetes" were requested in the first month of issue. 6000 GP practices now stock our leaflets (one sixth of total). 32,000 free booklets were sent out to healthcare professionals in the last three months.

• IDDT recently partnered with TMH, a media purchasing company and Orange Juice, a PR company, on a publicity campaign to raise public awareness of IDDT and what we offer with the slogan 'Diabetes? We're here to help.'

This came about as a result of feedback from last year's conference, and from frequent calls to the helpline, that people are getting a diagnosis and then not being given information or support.

The aim of the campaign is to increase membership and already there has been a marked increase in social media interactions, with over a 1000 new members signed up at the time of writing.

More Type 1 and Type 2 insulin users have approached us than anticipated. Looking ahead the Trust will continue to provide quality publications to healthcare providers in the hope that fewer people will leave their surgery without information on diabetes and how to manage it, and we will continue to offer direct support.

Other conference highlights included:
*** a fabulous lunch * great conversations * like-minded people * sharing tips * meeting the staff and trustees * Christmas cards at only £1 for 10* nice hotel * goody bags * hope and optimism***

Pillow Talk: Diabetes and Intimacy

Let's be honest – nobody likes having diabetes. To a greater or lesser degree, it intrudes into so many aspects of daily life and sadly this is also true of our intimate and personal relationships. Although it is not frequently talked about openly, diabetes can cause sexual problems for a surprising number of people; up to 75% of men and 50% of women can experience problems.

Although it may not be life threatening like heart or kidney disease, it can cause emotional distress, damage quality of life and cause relationship difficulties.

Very often it is the psychological and emotion impact that causes as much distress as any physical problem and often it is as important to address these issues as to treat any physical issues. Just as diabetes may require you to learn new skills, such as checking blood sugar levels or carb counting, it may also require you to learn new ways to be intimate. When it comes to a couples' sex life, therapists often refer to them as having "scripts" – "Who initiates? What do we do? How do we know when we're done?" It may be that these scripts need to change.

People can maintain sex and intimacy with diabetes and even improve relationships, if they are willing to make some changes. Problems often arise because, after an experience of sexual dysfunction, people often feel that their sex life is not normal or simply over, so they don't feel it is worth doing anything about it.It doesn't have to or need to be that way because keeping intimacy alive is important – it creates a bond that allows couples to get through hard times (and diabetes itself is one of those). Sex and the pleasure bond it creates, helps people to stay together.

Sex and Intimacy

Sex and intimacy are not the same thing but they are related. A working definition of sex might be:

Any physical contact that brings pleasure, excitement and connection. It doesn't have to mean intercourse. If it creates the feeling of desire, it's sex.

A working definition of intimacy is any contact (not necessarily physical) that brings feelings of closeness, safety and love. Intimacy can involve sexual feelings and actions, but also loving feelings, cuddling, holding hands, honest communication, commitment and acceptance.

How does diabetes affect sex and intimacy?

The causes of the negative impact that diabetes can have on sex and intimacy can be broadly categorised into two groups; physical and psychological. These two groups are not necessarily mutually exclusive and may be intrinsically linked in some cases.

Vascular disease and neuropathy can prevent or weaken erections and ejaculation for men. For women, vascular disease and neuropathy can cause loss of sensation as well as dry up lubrication, cause painful intercourse or prevent orgasm. In addition, for women, high blood sugars increase the risk of urinary tract infections (UTIs) or candidiasis (thrush). Diabetes-related hormonal changes such as low testosterone levels can take away sexual desire. You are capable of sex, but you have no interest in it. Other symptoms of diabetes, such as fatigue, numbness or pain may make sex difficult or less pleasurable. The side effects of some medications, such as those for high blood pressure or depression, are known to interfere with sex.

The psychological and emotional effects of having a chronic condition, such as diabetes, can negatively impact on people's sexuality. Diabetes can leave people feeling unattractive and depression may damage both sexual desire and function. Stress over health, money problems and family issues can lead to lowered sexual desire and lack of intimacy.

It should also be pointed out that sexual activity uses up a lot of energy and can lead to hypoglycaemia for both men and women. In turn this may lead to increased anxiety about having sex.

It is recommended to test blood sugar levels both before and after sex and while this may reduce spontaneity it does reduce the risk of a hypo.

Medical treatments and management options

The good news is that most of the sex and intimacy problems of diabetes can be treated. Those that can't be fixed can be worked around.

- Getting exercise and controlling blood pressure and blood glucose levels can preserve and even improve sexual function in both men and women.
- Tablets called PDE-5 inhibitors are available for erectile dysfunction (ED). These pills include Viagra (sildenafil), Cialis (tadalafil), Stendra (avanafil) and Levitra (vardenafil) and work for over half of men with diabetes.
- If a man can achieve an erection but can't keep it (the most common form of ED), a penis ring can be wrapped around the base to keep blood from flowing out of the penis while still allowing blood to flow in.
- If a man is not able to achieve an erection, hand-operated pumps can create a vacuum around the penis, drawing blood in. Then a penis ring can be wrapped around it.
- Oestrogen rings or suppositories for painful intercourse and lack of orgasm are available for women. Vaginal dryness can be managed with over-the-counter personal lubricants.

Remember that sex isn't just about intercourse. Many couples still enjoy a fulfilling sex life by expanding their range of sexual activities.

For women, most pleasure nerves are located outside the vaginal opening or just inside, not deep inside. Best known of these is the clitoris, which starts just above the vagina and runs around it in a horseshoe shape, under the surface. You can stimulate these nerves in various manners, depending on what you both find pleasurable.

You can use lubricant if vaginal dryness is an issue.

Men can be stimulated manually, orally and in other ways. Again, use lubricants, try different strokes, and pay attention to your partner's response. Explore different areas. Most women and men have pleasures zones they have never explored or even realized. Men can enjoy sex and even have orgasms without an erection.

Improving sexual relations and intimacy

As we have already said, intimacy is more than just sex – it's also about relationships. Anything that helps partners feel closer and more connected builds intimacy, whether it leads to sex or not. There are different ways to try to build and maintain connections, intimacy and love.

Here are some suggestions:

- Touch. This includes sex, but also anything from a handhold to a shoulder rub to a kiss, hug or cuddle. Any loving contact is good.
- Gifts. Bring your partner something, even just a piece of fruit or handmade note.
- Acts of service. Do something for your partner, such as sweeping the floor or cooking a favorite food.
- Quality time. Listen to your partner without interrupting. Do something together without checking your phone, l aptop or other electronic device.
- Supportive words. Little compliments and words of appreciation can go a long way.

Finally, remember to communicate. Many couples don't communicate well about things, especially sex.

A doctor can prescribe medicine like Viagra or Cialis, but a couple may still need to work on the relationship before the medicine will help.

Talking about sex can be embarrassing or painful but very often it is a useful place to start improving communication in all areas of a relationship.

If we can learn to share our feelings without attacking the other person, or feeling attacked, and being open and honest then we can build intimacy into our relationships.

Nuts about Christmas

Christmas is a time when there are a lot of snacks and treats around and if you are looking around for a diabetes-friendly nibble then you can do a lot worse than reaching for the bowl of nuts on the coffee table. Nuts have several health benefits for people with diabetes.

They are low in carbohydrate, high in protein, healthy fats and create a feeling of fullness. They are good for heart-health, helping to lower LDL (bad) cholesterol while raising HDL (good) cholesterol. Finally, being low in carbohydrate they play a role in helping to regulate blood sugar levels.

While these benefits would seem enough to secure superfood status for the humble nut, there are, as always, a couple of caveats. Nuts are high in calories, so overeating them can cause weight gain. To try and avoid this, experts recommend measuring out an approximately 1oz portion (28-29g) rather than just digging into an open bag.

Also bear in mind how they are prepared – try to avoid nuts that are coated in salt, honey-roasted or chocolate-coated. Instead try to stick to raw nuts or dry-roasted, which are flavourful but still healthy. As for the best nut to choose when you have diabetes, here are four options, roughly ranked in order of healthiness:

1. Walnuts
(Serving size: about 14 shelled halves) .

Several studies have reported various benefits of eating walnuts. Walnuts can promote feelings of fullness thus preventing unhealthy food cravings and potentially aiding weight loss.

In addition, they may also have a preventative role in developing diabetes. They contain protein, fibre and good fats that help manage hunger and regulate blood sugar. They are also a rich source of alpha-lipoic acid (ALA) which may help reduce inflammation. Inflammation plays a role in the development of diabetes.

2. Almonds
(Serving size: about 23 nuts).

Studies have shown that almonds help control glucose levels, reduce the risk of cardiovascular disease and may decrease body fat mass. Their high fibre content also helps with blood sugar levels and is good for digestion.

Many people with diabetes are deficient in magnesium and almonds are a good source of this mineral. Magnesium is important to promote healthy bones, normal blood pressure, blood glucose control, and good muscle and nerve function.

3. Pistachios
(Serving size: about 45 nuts)

As with walnuts and almonds, the pistachios' trio of fibre, protein, and good fats help you feel fuller longer, making them a smarter bet than carbohydrate-heavy snacks.
A review of research found that pistachios have antidiabetic properties, improve cardiovascular health, reduce inflammation, help control appetite, and reduce oxidative stress.

4. Peanuts
(Serving size: about 28 nuts)

Again, peanuts are an extremely satiating, diabetes-friendly snack, thanks to their high fibre and protein content. Not only do they have a low glycemic load (a measure of how quickly a food tends to raise blood sugar), but they may help regulate blood sugar. Research has shown that they may help prevent post-meal blood sugar spikes and are associated with a lower risk of developing heart disease. Remember to avoid the common ready salted varieties of peanuts.

SEMAGLUTIDE – The Upsides and Downsides

Very few diabetes medications have received as much interest and attention as semaglutide. It was first licensed in the UK in 2019 as Ozempic (an injectable) then subsequently in tablet form, called Rybelsus, then most recently as a weight loss drug, Wegovy.

As with any drug, semaglutide was launched with a recognised set of side effects, identified during trial stages. However, as time has gone by, more side effects are being identified, some scientific, some anecdotal. This article will look at those effects, both the good and the bad.

Gastrointestinal Side Effects

This group of side effects are the most commonly experienced and also the most commonly discussed. While not everyone experiences these side effects, a substantial minority do and for some, the gastrointestinal distress they suffer is simply too much and they need to seek an alternative medication. Essentially, the higher the dose of semaglutide, the more likely you are to suffer from some form of gastrointestinal upset, including, but not limited to, nausea, diarrhoea, vomiting, abdominal pain and constipation.

Other more unusual side effects include:

- **Ozempic Burps –** While burping isn't the most debilitating of side effects, semaglutide users have reported nasty, sulfurous smells when they belch. There is broad agreement that Ozempic burps smell like rotten eggs.

- **Bloating and Flatulence –** These uncomfortable side effects are not the most commonly reported but it is important to know that they do occur.

- **Gastroparesis –** This is a condition where the stomach does not empty properly. It is known as an independent, neuropathic complication of diabetes that can occur whether semaglutide is used or not. Delayed stomach emptying, the defining feature of gastroparesis, is a known consequence of semaglutide and related drugs. This delayed emptying has positive effects, helping to reduce hunger and provoke weight loss, as well as negative ones, contributing to gastrointestinal discomfort. Cases have been reported where gastroparesis has persisted for months after discontinuing the drug but luckily, severe and persistent gastroparesis appears to be very rare.

- **Ileus (Temporary Intestinal Paralysis) –** Ileus is a type of intestinal blockage and occurs when the muscle contractions that move food through your intestines are temporarily paralyzed, trapping food within the gut. The symptoms resemble those of a physical bowel obstruction, including bloating and constipation, and the condition can lead to dehydration. Thankfully, it is extremely rare, so much so that it was not identified in clinical trials.

Hair Loss

While it is not listed as a side effect, in a pivotal trial, three percent of participants reported hair loss. However, this is not a worrying chemical effect of the drugs but rather an inevitable consequence of rapid weight loss. Dramatic weight loss, no matter how it's caused, often causes hair loss. There is some good news though, studies have shown that hair loss linked to weight reduction stops and new hair grows.

Fatigue

Fatigue (that is tiredness or exhaustion that isn't improved by sleep) is a reported side effect of semaglutide. While it is unclear why semaglutide should cause fatigue, a very plausible explanation is that it causes people to eat much less and they are not having sufficient calories to function normally.

Dizziness

Dizziness is a listed side effect and, like fatigue, it is likely that semaglutide dizziness stems from the glucose-lowering effects of

the drug. Dizziness is a common symptom of hypoglycaemia and it is known that semaglutide can cause hypoglycaemia.

Muscle Loss
It is inevitable that weight loss will involve some muscle loss. This is considered healthy and natural. However, some experts believe that semaglutide can cause worrying amounts of weight loss. Two trials from 2017 showed that participants taking semaglutide lost about 40% lean body mass compared to controls who only lost 20-30%. While it is not known if semaglutide does cause muscle loss, experts lend to agree that engaging in strength-building exercises and eating enough protein will help to preserve muscle mass during weight loss.

Vivid Dreams
It is impossible to know whether or not this a genuine side effect or it is just a result of social media chatter but earlier this year the Wall Street Journal, in the USA, published a story claiming that many patients using semaglutide were experiencing strange, vivid dreams, often involving celebrities. Some experts have speculated that this vivid dreaming is as a result of weight loss caused by the drug.

Addictive and Compulsive Behavior Relief
Many Ozempic users are amazed to find that they are engaging in less addictive and compulsive behaviour. Somehow the drug appears to reduce our damaging tendency to overindulge in activities like drinking, shopping, gambling, or to compulsively pick at our skin or bite our nails.Research into this side effect is still in its early stages but the thinking is that while semaglutide works directly on the brain to reduce the craving for food, it also reduces the craving for other things as well.

Suicidal Thoughts
Suicidal thoughts and thoughts of self-harm are being investigated as possible side effects of Ozempic. Currently Ozempic does not have these types of thoughts listed as a side effect, however, in the USA, its higher strength counterpart, Wegovy, does carry such a warning. The Federal Drug Administration (FDA) recommends that semaglutide should not be prescribed to "patients with a history of suicidal attempts or active suicidal ideation", and that users should be monitored for emerging or worsening depression.

Diabetic Retinopathy
This is a side effect that people taking semaglutide should know about – studies have found that semaglutide increases the risk of diabetic retinopathy. That said, the findings are disputed as other studies have found no such increased risk. If the connection is real, then it appears that the effectiveness of semaglutide makes it its own worst enemy. as rapid improvement in blood glucose control can actually worsen diabetic retinopathy before the long-term benefits of better control become evident.
Experts believe that this "early worsening is temporary and manageable but does warrant extra scrutiny from ophthalmologists".

Hypoglycaemia
While it's thought that semaglutide itself does not cause hypoglycaemia, its glucose-lowering effects sharply increase the risk that other diabetes medications that you may be taking could cause a hypo, hence hypoglycaemia is listed as a side effect.

Rare, Serious Side Effects

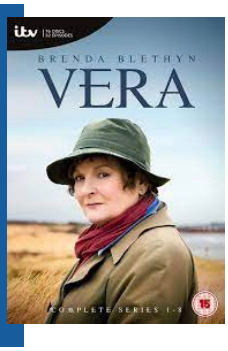
- **Pancreatitis -** This condition, in which the digestive enzymes attack the pancreas, may feel like intense stomach pain that radiates to your back.
- **Kidney Failure -** Research indicates that, in some cases, semaglutide contributes to kidney disease. Dehydrating side effects, particularly diarrhea and vomiting, may enhance this risk.
- **Gallbladder Disease -** This may cause severe stomach pain, yellowing of the eyes or skin, fever, and clay-colored stools.
- **Thyroid C-Cell Tumors -** It's unknown if semaglutide actually causes these potentially cancerous tumors in humans, but it has been observed in studies of rodents.
- There have also been some reports of allergic reactions to GLP-1 receptor agonists.

Semaglutide is a very effective drug in the armory of medications to treat Type 2 diabetes and its benefits greatly outweigh any possible risk of side effects.

Nonetheless, like all medicines, there is a possible risk of side effects and if you experience any reactions or symptoms that are unexpected then you should speak to a healthcare professional.

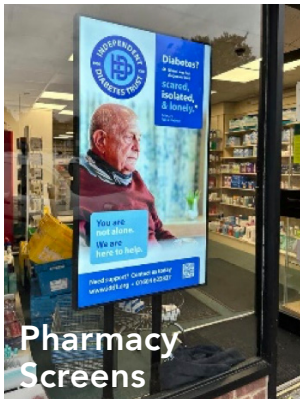
VERA (What on earth?)

What on earth? You may well ask. Well, it's not this:



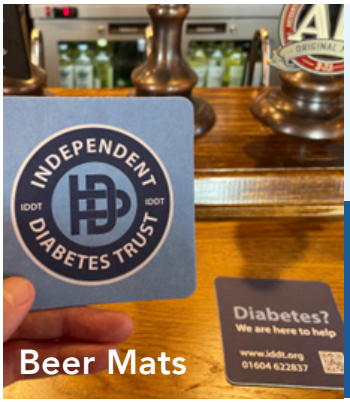
It's actually the nickname we gave to the largest promotional campaign that IDDT has ever launched, beginning at the start of September. For a long time IDDT has been aware of the growing numbers of people being diagnosed with diabetes without being given the support they need to successfully manage the condition. The main message of the campaign was **"Diabetes? You are not alone. We are here to help".**

To develop the campaign we worked closely with a media planning and buying agency, TMH and long-term partner Orange Juice Communications. Together, we developed a set of adverts and promotional materials to try and encourage people to contact IDDT to get the support they were needing. These materials are being used on buses, bus shelters, hospital clinics, pharmacies, washrooms, beermats, selected radio stations, TV channels and social media. Here are some pictures of our adverts "in-situ":



Pharmacy Screens


Washrooms



Beer Mats

The results have been astounding. With the campaign running until the end of December, at the time of writing (early October) we have:

- **Over 1000 new members**
- **Over 500 new Facebook followers**
- **Social media traffic increased by 4000%**

We would like to welcome all our new members and also say a big thankyou to the teams at Orange Juice and TMH for helping to make Vera such a success.If you would like more information about the campaign then please email **martin@iddtinternational.org**

HbA1c & Blood Glucose (BG) Tests: How do they measure up?

All us of will, at some time, have had a blood test in relation to our diabetes, be it at diagnosis, as part of a health check or as part of our daily diabetes management. These will most likely be either a blood glucose test or an HbA1c test. This article looks at the both these tests, what they measure and the relationship between the two.

What are Blood Glucose tests?

As you can probably guess these tests measure the amount of glucose in the blood at any given time and the results will depend on what you have eaten, when and what you have been doing, among several other factors. There are two methods of carrying out the tests:

'Classic' Blood Testing. For people that have been testing for years, this is probably the most familiar of the two.
It involves pricking the finger to draw a little blood, applying the blood to a disposable test strip and using a meter to give an immediate reading of the amount of glucose in that blood.

Continuous Glucose Monitoring (CGM).
This works using a small device that you wear just under your skin. It measures your glucose levels continuously throughout the day and night, letting you see trends in your levels and alerts you to highs and lows. It sends this information wirelessly to a display device. It doesn't actually measure your blood glucose levels, it measures the amount of glucose in the fluid that surrounds your body cells – called interstitial fluid. There is a small time-delay when checking this fluid, especially after eating or if you're exercising. It is worth noting that specific criteria have to be met to be eligible for CGM on the NHS for people who have Type 2 diabetes.

What are HbA1c tests?

The abbreviation HbA1c stands for 'Glycosylated Haemoglobin' and it's a test that usually involves taking blood from your vein. The HbA1c develops when haemoglobin, a protein within red blood cells that carries oxygen throughout your body, joins with glucose in the blood, becoming 'glycated'. The amount of glucose that combines with the haemoglobin is directly proportional to the amount of glucose in the blood.
In this test, the HbA1c reflects your average blood glucose level over the last 8-12 weeks and you should have it done at least every 12 months, although you may be advised to have it done more often, such as 3 or 6 monthly. The HbA1c test helps you see how well you are looking after your diabetes. For people with diabetes, it is important because the higher the HbA1c, the greater risk of developing diabetes related complications.

It is regularly used for diagnosing Type 2 diabetes and has the advantage of not requiring fasting before the test.

Sometimes, it is called simply the 'A1c' test.

What are the different readings and what are they for?

Each of the two types of test has its own results and the units of measurement for these are similar but different, so it is important not to get confused.

BG level measurements:

- **mmol/l.** This stands for millimoles per litre. A mole is a scientific unit often used to measure chemicals, including glucose. So, a reading of 7.5 means 7.5 millimoles of glucose in every litre of blood.
- **mg/dl.** This stands for milligrams per deciliter and is read as above. It is most commonly an American measurement and not used in the UK.

HbA1C measurements:

- **mmol/mol** stands for millimoles per mole. A mole is a scientific unit often used to measure chemicals, and it has been the standard measurement for glucose levels since 2009
- **Prior to 2009,** a percentage was used to show measurements. That's why measurements often have a percentage as well.

Do not confuse mmol/mol with your home blood glucose check which is measured in mmol/l

What is the relationship between the two?

As we have said earlier the relationship between the two test measures is simple. The HbA1c gives an indication of your average blood glucose levels in the 8-12 weeks prior to the test.This means that it can, to some degree, give an idea of how steady your blood sugar levels have been over that period, rather than at any specific time of day. In that way, they measure high BG levels, which routine BG tests may not pick up, hence the adage "You can't cheat an HbA1c".

What are my ideal BG and HbA1c levels?

Quite logically, this is the next question that most people will ask. Unfortunately, there is no one right answer to this. The best thing to do is to discuss your readings and targets with your health professional and go from there. That said, the medical profession has given us some very useful, if broad, guidelines.

People with Type 2 diabetes should aim to have BG levels of 6-8 mmol/l before a meal, rising to 6-10 mmol/l two hours after starting a meal. A good HbA1c target is 48 mmol/mol or 6.5%. By way of a note, people are at risk of developing Type 2 diabetes (often known as prediabetes) if they have an HbA1c that is between 42 and 48 mmol/mol or 6 and 6.5%

If you are interested in converting your HbA1c score into your average BG score, or vice versa, then a useful calculator/converter can be found at:

www.hba1cnet.com/hba1c-calculator/

Christmas Tips

Christmas is a mixture of many things – presents, excitement for children [and adults] and a busy time for adults. But if you or a member of your family has diabetes, Christmas can be a worrying and stressful time too, especially if this is your first time with diabetes. Celebrating Christmas is not just a time for presents but also about food!

We all eat a lot more than we should and we tend to eat much more of the sort of food that is not exactly ideal for people with diabetes. It doesn't matter whether you are taking tablets and/or insulin for Type 2 diabetes, you can't take a day off from it but it is important to remember that it is a time to be enjoyed with family and friends.

If you would like more information about managing over the Christmas period ask for a copy of our **FREE BOOKLET – DIABETES AT CHRISTMAS**, using the details at the end of this newsletter.

Fats: What are we talking about?

The terms "fat" or "fats" conjure up different ideas for different people, so when we talk about fats, what are we actually talking about? There are lots of different technical (and not so technical) terms that are often floated around in discussions related to fats. It is important to distinguish between the different terms to understand what we are actually talking about and the impact they have on our diet and health management.

Dietary Fat or Body Fat?

The first important distinction to make is between fat cells in the body (body fat) from fat molecules in food that we eat. Biologists refer to body fat as adipose tissue, while the molecules of dietary fat are called lipids. Because there is a clear relationship between the two it would be easy to assume that the fat in our diet is automatically stored as fat in the body, but this is not the case.

The dietary fat we consume is not stored directly as body fat. All the foods we eat are broken down through metabolism and used either for energy or as raw materials for building the structures of the body. Under certain circumstances, the body will store energy it has derived from the food we eat as adipose tissue, that is, body fat.
Dietary fats are one of the three main food groups that we eat, the others being carbohydrates and proteins.
These main food groups are referred to as macronutrients. Dietary fats belong to a group of compounds called lipids. Lipids are organic compounds characterised by the fact that they are not soluble in water.

Some Dietary Fat Facts:

Dietary fat has a number of important functions. It is:

- the highest density energy source in the body, providing more than double the energy per gram than carbohydrates or proteins.
- an important structural component of cells and membranes.
- a carrier of fat-soluble vitamins A, D, E, and K, which the body could otherwise not absorb.
- it also plays a role in neural development and inflammatory reactions.

Saturated or Unsaturated?

A second distinction can now be made between different types of dietary fats, those

that are derived from animal sources as opposed to those coming from plant sources. As a general rule, animal fats are generally solid at room temperature, such as lard, while fats that come from plants and tend to be liquid at room temperature and we know them as oils, such as olive oil. Those that tend to be solid at room temperature are generally saturated fats, those that are liquid at room temperature are generally unsaturated fats. This distinction is important because most health authorities have dietary guidelines recommending how much of each people should eat, in order to maintain good health.

For the biochemists among us, fats and oils are made up of complex mixtures of molecules called fatty acids. The difference between saturated and unsaturated fat lies in the number of double bonds in the fatty acid chain. Saturated fatty acids lack double bonds between the individual carbon atoms, while in unsaturated fatty acids there is at least one double bond in the fatty acid chain. Unsaturated fats are subdivided into monounsaturated and polyunsaturated fatty acids.

More about Saturated Fats...

Foods high in saturated fats include

- fatty cuts of meat
- meat products, including sausages and pies
- butter, ghee, and lard
- cheese, especially hard cheese like cheddar
- cream, soured cream and ice cream
- some savoury snacks, like cheese crackers and some popcorns
- chocolate confectionery
- biscuits, cakes, and pastries
- palm oil, coconut oil and coconut cream

Eating too much saturated fats in your diet can raise "bad" LDL cholesterol in your blood, which can increase the risk of heart disease and stroke. Most people in the UK eat too much saturated fat.

The Government recommends that:

- men should not eat more than 30g of saturated fat a day
- women should not eat more than 20g of saturated fat a day

More about Unsaturated Fats...

Unsaturated fats are found in:

- olive oil, rapeseed oil and spreads made from these oils
- avocados
- some nuts, such as almonds, brazil nuts, and peanuts
- oily fish, such as kippers, herring, trout, sardines, salmon, mackerel

Unsaturated fats help protect your heart by maintaining levels of "good" HDL cholesterol while reducing levels of "bad" LDL cholesterol in your blood. If you want to reduce your risk of heart disease, it's best to reduce your overall fat intake and swap saturated fats for unsaturated fats. There is good evidence that replacing saturated fats with some unsaturated fats can help to lower your cholesterol level.
It is thought that unsaturated fats that come from fish have a more beneficial effect on heart health than those derived from plant sources so it is recommended to eat at least 2 portions of fish each week, with 1 portion being an oily fish.

What are Triglycerides?

Most people will have heard warnings about triglycerides. Triglycerides are a combination of: three fatty acids and glycerol, a form of glucose.
When you eat, your body converts any calories it doesn't need to use right away into triglycerides. The triglycerides are stored in your fat cells. Later, hormones release triglycerides for energy between meals. If you regularly eat more calories than you burn, particularly from high-carbohydrate foods, you may have high triglycerides (hypertriglyceridemia).High triglycerides may contribute to hardening of the arteries or thickening of the artery walls (arteriosclerosis) — which increases the risk of stroke, heart attack and heart disease. Extremely high triglycerides can also cause acute inflammation of the pancreas (pancreatitis).

There are several ways to avoid or reduce high triglyceride levels:

- Exercise regularly.
- Avoid sugar and refined carbohydrates.
- Lose weight.
- Swap saturated fats for unsaturated fats.
- Limit how much alcohol you drink.

Buying lower fat foods

The nutrition labels on food packaging can help you cut down on total fat and saturated fat (also listed as "saturates", or "sat fat"). Nutrition information can be presented in different ways on the front and back of packaging.

Total fat:

- high fat – more than 17.5g of fat per 100g
- low fat – 3g of fat or less per 100g, or 1.5g of fat per 100ml for liquids (1.8g of
- fat per fat-free – 0.5g of fat or less per 100g or 100ml

Saturated fat:

- high in sat fat – more than 5g of saturates per 100g
- low in sat fat – 1.5g of saturates or less per 100g or 0.75g per 100ml for liquids
- sat fat-free – 0.1g of saturates per 100g or 100ml

"Lower fat" labels

For a product to be labelled lower fat, reduced fat, lite or light, it must contain at least 30% less fat than a similar product.

However, if the type of food in question is usually high in fat, the lower fat version may still be a high-fat food (17.5g or more of fat per 100g).

For example, a lower fat mayonnaise may contain 30% less fat than the standard version, but it's still high in fat.

Remember, cutting down on fat is only one aspect of achieving a healthy diet!

BITS AND PIECES

• Should Patients Choose Their Pills?

A recent study at the University of Exeter has looked at this interesting question, namely, whether people with Type 2 diabetes, not their doctors, were capable of choosing the best diabetes medicines for them. 444 participants were asked to take three medicines (pioglitazone, sitagliptin and canagliflozin) for 16 weeks each.

After they had taken all three, they were surveyed on which one they preferred and believed worked best for them. While the data showed that all three medications were roughly equally effective in controlling blood sugars, participants expressed clear preferences; canagliflozin (38%), sitagliptin (35%), pioglitazone (28%).

These preferences were based not only on lower HbA1c levels but also on fewer side-effects. The researchers concluded "Allocating therapy based on the individually preferred drugs would result in more patients achieving the lowest HbA1c for them (70% versus 30%) and the fewest side effects (67% versus 50%)" and that "When it's not clear which drug is best to use, then patients should try before they choose".

• Do SGLT2 Inhibitors Protect Against Hyperkalaemia in Patients with Type 2 Diabetes?

Hyperkalemia is defined as a serum or plasma potassium level above the upper limits of normal, usually greater than 5.0 mEq/L to 5.5 mEq/L. While mild hyperkalemia is usually asymptomatic, high potassium levels may cause life-threatening cardiac arrhythmias, muscle weakness, or paralysis. For some time there has been uncertainty over whether SGLT2 inhibitors cause hyperkalaemia or protect against it.

Researchers at University of Surrey and King's College National Health Service Foundation Trust conducted a meta-analysis of nine studies, identified after a search across electronic databases. They found that, in patients with Type 2 diabetes, the use of sodium-glucose co-transporter 2 (SGLT2) inhibitors significantly reduced the risk of developing a hyperkalaemic event but did not reduce the serum-potassium level.

• Could Danuglipron Be the Next Rybelsus?

A more user-friendly version of Rybelsus (oral semaglutide) is in development — but will

its side effects get it sidelined?
While it is widely recognised that Rybelsus has taken the world by storm, it does have drawbacks. It must be swallowed on an empty stomach exactly 30 minutes before eating or drinking anything other than water, and before using any other oral medications. On the other hand, Danuglipron can be taken with or without food, and therefore may be a more user-friendly therapy.
In trials, Danuglipron appears to be potentially more powerful than Rybelsus, though the published results require some interpretation. Danuglipron achieved the same improvements in HbA1c and weight loss in a shorter time but there may be some side-effects and these may be considerable. Similar to other GLP-1 RAs in the group, Danuglipron trial subjects reported significant gastro-intestinal upset.
It may be that these side-effects can be limited with tailored dosages, to the point where the benefits outweigh the disadvantages and further research is needed before it gets approval. We think you should watch this space.

• High-dose Rybelsus trial shows greater HbA1c and weight reduction in Type 2 diabetes

Rybelsus is a tablet form of semaglutide, prescribed for people with Type 2 diabetes along with diet and exercise to help control blood sugar and promote wight loss. Results from the phase 3 trial showed that Rybelsus at experimental doses of 25mg and 50mg for 68 weeks outperformed a 14mg dose, which has been the maximum approved dose of Rybelsus thus far. Based on these results, which reveal an average HbA1c reduction of roughly 2 percentage points and an average weight reduction of 10% with the highest Rybelsus dose, Novo Nordisk plans to file for regulatory approvals of the 25mg and 50mg doses in the US and the EU later this year.

• Type 2 Diabetes Drug Class Tied to Slower Cognitive Decline in Dementia

People with diabetes have been shown to have a higher risk of Alzheimer's disease, possibly due to high blood sugar levels, which have been linked to the buildup of amyloid plaque in the brain. A US study has shown that a class of Type 2 diabetes drugs called dipeptidyl peptidase 4, or DPP-4, inhibitors, prescribed to lower blood sugar levels, is associated with reduced brain plaque and better cognitive scores in people with Alzheimer's disease. DPP-4 inhibitors available in the UK are Alogliptin, Linagliptin, Saxagliptin, Sitagliptin and Vildagliptin.

The study showed that not only did people prescribed DPP-4 inhibitors have lower overall levels of amyloid in their brains but they also had lower levels of amyloid in the areas of the brain associated with Alzheimer's disease.

The study included three cohorts: 70 people with diabetes treated with DPP-4 inhibitors; 71 people with diabetes who didn't take DPP-4 inhibitors; and 141 people without diabetes. Brain scans showed that people on DPP-4 inhibitors had a lower amyloid burden than either of the other two groups in the study after researchers adjusted for age, sex, education, cognitive status, and a mutation of the APOE-4 gene associated with Alzheimer's disease.

Individuals with diabetes also experienced smaller declines in global cognition and memory recall when they took DDP-4 inhibitors than when they didn't use these drugs.

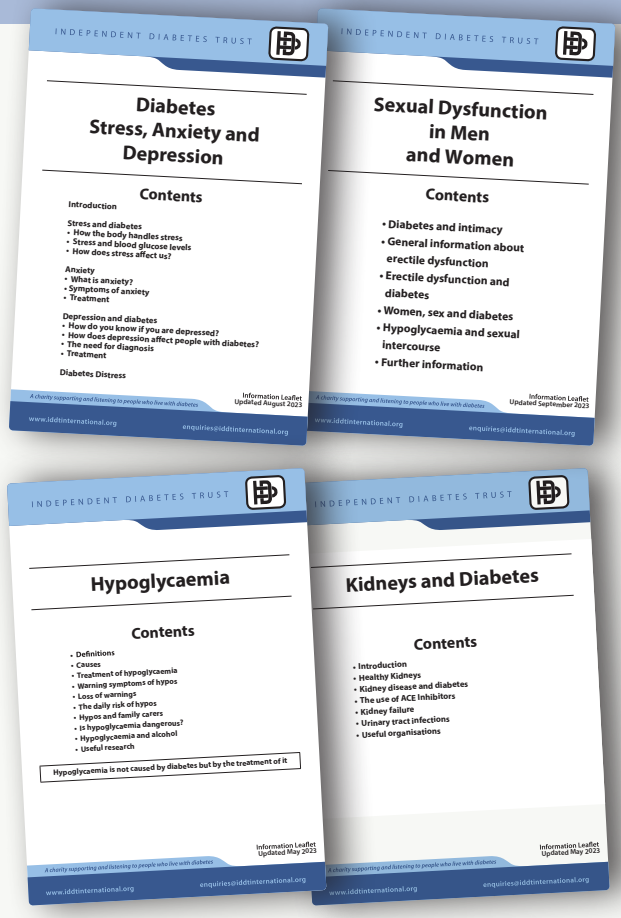
• Even an Hour's Walk a Week Lowers Neuropathy Risk in Type 2 Diabetes

A study in the UK has shown that performing any level of leisure-time physical activity reduces the risk for neuropathy and nephropathy in individuals with type 2 diabetes, by between one fifth and one third. It also found that it reduced the risk for diabetic retinopathy, although the association was not as strong.

The research, based on data from more than 18.000 participants in the UK Biobank, suggests that the minimal level of self-reported activity to reduce the risk for both neuropathy and nephropathy may be the equivalent of less than 1.5 hours of walking per week. Researchers commented "Our findings are particularly promising for neuropathy since currently, no disease-modifying treatment exists and there are limited preventive strategies available."

InDependent Diabetes Trust

Updated IDDT booklets



We have updated several of our booklets, so if you would like copies of any of them, please give us a call on 01604 622837 or email enquiries@iddtinternational.org

- Diabetes – Stress, Anxiety and Depression
- Sexual Dysfunction in Men and Women
- Hypoglycaemia
- Kidneys and Diabetes

Enter the IDDT Lottery now!

The winners of IDDT's lottery draw!

We are delighted to announce the winners of our latest monthly lottery draws. They are as follows:

IDDT LOTTERY RESULTS

Winners of the July 2023 draw are:

1st prize of £482.88 goes to Sylvia from Barton Seagrave

2nd prize of £362.16 goes to Anon. from Wakefield

3rd prize of £241.44 goes to Julie from Barnsley

4th prize of £120.72 goes to Anon. from Bridgnorth

Winners of the August 2023 draw are:

1st prize of £487.20 goes to Peter from Nelson

2nd prize of £365.40 goes to Anon from Caralisle

3rd prize of £243.60 goes to Anthony from Rhyl

4th prize of £121.80 goes to Neil from Thetford

Winners of the September 2023 draw are:

1st prize of £487.20 goes to Jeff from Loughborough

2nd prize of £365.40 goes to Richard from Stondon

3rd prize of £243.60 goes to Sandra from Kettering

4th prize of £121.60 goes to James from Rainham

Just to remind you that as a thank you to our members and Lottery players and as a celebration that 2024 is 30 years since IDDT formed, we are having JACKPOT Lottery draw in early January. The prizes will be:

• First prize: £1,000 • Second Prize: £750 • Third prize: £500 • Fourth prize: £250

If you are already a Lottery player, then you will automatically be entered into the JACKPOT. However, if you would like to join the Lottery for just £2 per month to have a chance of winning the JACKPOT, act NOW as you still just have time to set it up. Just contact IDDT for a Lottery form by calling IDDT on 01604 622837 or email karl@iddtinternational.org

If we can be of help in any way, please contact:
InDependent Diabetes Trust (IDDT), PO Box 294, Northampton NN1 4XS
Tel: 01604 622837 email: **enquiries@iddtinternational.org** Or visit our website: **www.iddt.org**

A charity supporting and listening to people who live with diabetes