

Welcome to the 49th issue of Type 2 & You

Welcome to the forty-ninth issue of Type 2 and You. In this issue we look at eye health checks and one of the sets of nine key tests to which you are entitled. We have a look at several classes of medicines that can affect diabetes and blood glucose levels, as well as articles about prescribing guidelines for some Type 2 drugs, new advice for the criteria needed to define “remission” of diabetes and some work that has questioned the orthodox view that HDL cholesterol is always “good”.

When it comes to day-to-day living, we have a look at the relationship between diabetes and coffee and also NHS advice on this winter’s Flu jabs and Covid 19. There is also a reminder about our Christmas cards, 2022 diary and other items that may be useful. As usual, we have a round-up of recently published research and articles, as well as the latest lottery winners.



Common medicines that can alter blood sugar levels

This article is not, and doesn’t pretend to be, a list of all the medicines that can alter blood glucose levels – there are over 443 of those. What we hope it does, is provide some basic information about drugs commonly prescribed for people with diabetes, in addition to their diabetes medication and how these drugs may affect their diabetes.

GLUCOCORTICOIDS

Glucocorticoids are a class of drugs belonging to a larger group of drugs called steroids. They are used as anti-inflammatories, to treat such conditions as rheumatoid arthritis or severe

asthma. Prednisolone and Dexamethasone are commonly prescribed tablet forms but drugs such as Cortisone and similar can be used as injections to ease joint pain and Hydrocortisone creams are also available to treat some skin conditions.

We have written on several occasions about the effects of taking steroids on diabetes, and more specifically blood sugar levels. Anything more than a short course of treatment (2-3 days) will invariably cause a rise in blood sugar levels. This happens because glucocorticoids are stress hormones and serve to increase

insulin resistance and thus raise blood sugar levels. They are also strongly implicated in prompting the onset of Type 2 diabetes.

These drugs can have other serious side effects, including osteoporosis and cataracts. For these reasons, they are only used when the possible benefits outweigh the risks and you should talk to your doctor about the implications of their long-term use. The inhaled or topical forms have far fewer side-effects, including those related to diabetes.

THIAZIDE DIURETICS

High blood pressure is a significant and not uncommon condition for people with Type 2 diabetes. Thiazide diuretics are a class of diuretic drugs that treat high blood pressure by helping your kidneys release more sodium into your urine. The sodium helps remove water from your blood, decreasing the amount of fluid flowing through your veins and arteries. This reduces blood pressure. Examples of thiazide diuretics include Chlortalidone and Indapamide, both presented as tablets.

The majority of studies have shown that thiazide diuretics tend to raise blood sugar levels. That being said they are very effective at reducing blood pressure when compared to alternatives such as ACE-inhibitors. Studies also found the thiazide diuretics also caused low levels of potassium in the blood (hypokalaemia) which caused several side effects including low levels of insulin secretion and glucose uptake into body tissue. This, in turn, explains the raised blood sugar levels. Once hypokalemia is corrected, blood glucose control improves.

In short, thiazide diuretics are considered a good first choice for treatment of high blood pressure because they are effective, cause few side effects, and are inexpensive, but certain individuals may experience difficulty controlling blood glucose while on a thiazide diuretic. Therefore, potassium levels should be monitored and corrected when necessary to minimise problems.

BETA-BLOCKERS

Beta-blockers are the other major class of blood-pressure-lowering drugs that have been implicated in causing problems with diabetes control, leading to either high or low blood sugar levels. With beta-blockers, the key factor in producing high or low blood sugar levels is the use of insulin, as opposed to other anti-diabetic medications.

For people who use insulin, beta-blockers can prolong, enhance, or alter the symptoms of hypoglycemia. They can do this by harming a person's ability to recognize and respond to low blood glucose, mainly by keeping the heart rate slow, which can dampen symptoms of hypoglycemia. They may also inhibit the release of glucose from the liver.

For people not using insulin, hyperglycemia appears to be the major concern. To cause this, they block the release of insulin by interacting with nerve signals to the pancreas, thus lowering insulin levels and raising blood sugar levels. They may also impact on the action of oral hypoglycemic drugs.

NIACIN

Niacin is a B vitamin commonly used to lower blood lipids (fats). It can reduce low-density lipoprotein (LDL, or "bad") cholesterol and also raise high-density lipoprotein (HDL, or "good") cholesterol. The combination of elevated LDL cholesterol with low HDL cholesterol is a common lipid profile in people with diabetes.

While the drug has many side effects, one of the more important ones is the possibility that it may worsen blood glucose control. However, data on the effect of niacin on blood glucose control is not as plentiful as might be wished for. Reviews of the available research have concluded that there may be a small minority of people for whom use of niacin is not appropriate. However, researchers concluded that immediate-release niacin in doses less than 3 g per day can safely be used in patients with type 2 diabetes and that it was clear that niacin has significant and positive benefits for cardiovascular health (namely, reduced

heart attacks) but that small increases in blood glucose and insulin levels occur that may require adjustments to diabetes therapy.

ANTIPSYCHOTIC DRUGS

Antipsychotic drugs are used to treat severe psychiatric conditions, such as schizophrenia. While schizophrenia is not a common disease among people who have diabetes, among people with schizophrenia, there is a 15% prevalence of diabetes and a risk of developing it two to three times that of the general population. Some of this risk may be due to family history, poor diet, and physical inactivity. However, recent evidence suggests that some drugs used to treat schizophrenia may increase the risk of developing diabetes.

A consensus statement from the American Diabetes Association and the American Psychiatric Association recognizes that antipsychotic drugs, in particular olanzapine and clozapine, can elevate blood glucose, cause weight gain, and increase blood lipids. These drugs also raise the risk of diabetic ketoacidosis, an uncommon but extremely serious

complication of diabetes. Several hypotheses have been proposed regarding how these drugs may cause diabetes, from simply inducing weight gain to impairing insulin secretion. However so far, no strong evidence explains why these drugs have this effect.

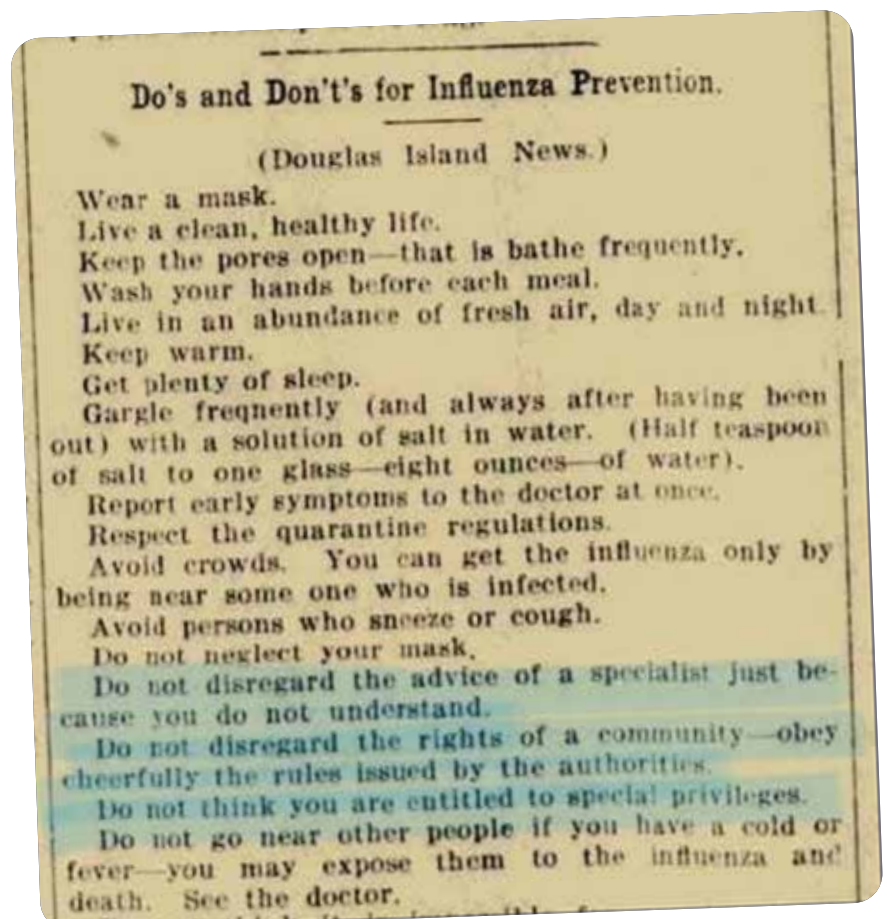
STATINS

Statins are another group of cholesterol-lowering drugs that are frequently used as part of diabetes care, with the knowledge that people with diabetes face a greater likelihood of heart attack and stroke. Used alongside blood glucose control, statins are medically proven to cut cholesterol levels and decrease the likelihood of a cardiovascular event.

It is not uncommon for people with Type 2 diabetes taking statins to experience a rise in their blood sugar levels. The exact mechanism for this is not fully understood and there are several theories. If you are concerned then you should talk to your doctor to discuss alternatives. However, the consensus is that the benefits of taking statins outweigh the risks.

SOME THINGS DON'T CHANGE...

Here's an article from a newspaper published in Alaska in 1918! Over a hundred years later, people and attitudes have changed but maybe the advice in 1918 is worth thinking about, especially as we are now having to follow most of it! People born around the 1940s will remember that most of the advice in the article was followed when they were young, so when did things change?



Reminder - Flu and Covid

The flu vaccine is a safe and effective vaccine. It's offered every year on the NHS to help protect people at risk of getting seriously ill from flu.

The best time to have the flu vaccine is in the autumn or early winter before flu starts spreading. However, you can get the vaccine later.

FLU VACCINATION IS IMPORTANT BECAUSE:

- more people are likely to get flu this winter as fewer people will have built up natural immunity to it during the COVID-19 pandemic
- if you get flu and COVID-19 at the same time, research shows you're more likely to be seriously ill
- getting vaccinated against flu and COVID-19 will

provide protection for you and those around you for both these serious illnesses

- If you are offered both vaccines, it's safe to have them at the same time but you don't have to

THE FLU VACCINE IS GIVEN FREE ON THE NHS TO PEOPLE WHO:

- are 50 and over (including those who'll be 50 by 31 March 2022)
- have certain health conditions, including diabetes

YOU CAN HAVE THE NHS FLU VACCINE AT:

- your GP surgery
- a pharmacy offering the service
- a hospital appointment

SIDE EFFECTS ARE UNCOMMON and most are mild and only last for a day or so, such as:

- slightly raised temperature
- muscle aches
- sore arm where the needle went in – this is more likely to happen with the vaccine for people aged 65 and over

Flu vaccinations given with a syringe contain killed viruses. Those given by nasal spray contain weakened viruses. Neither can cause illness.

The information in this article has been taken from the NHS and CDC websites:

<https://www.nhs.uk/conditions/vaccinations/flu-influenza-vaccine/>

<https://www.cdc.gov/flu/prevent/misconceptions.htm>



TYPE 2 DIABETES - A DEFINITION OF REMISSION

IDDT has had long internal debates and discussions about the positive management of Type 2 diabetes that has resulted in a sustained improvement in their condition leading to metabolic scores that are close to normal levels. These conversations have often focused on how we should refer to this improvement; resolution, reversal, cure or remission?

We had, as an organisation, come to an internal consensus position but now representatives from an international group of diabetes organisations have written that **remission** should be the preferred term, as it strikes a balance between:

1. The condition not being active and progressive but also
2. Recognizing that the improvement may not be permanent.

It is without doubt that the term remission covers both of these points, and, with reflection, this cannot be said of any of the alternatives mentioned above. (By the way the IDDT's preferred term was also remission.)

These two elements are central to the concept of remission but the researchers went further to outline a single definition of specifically diabetes remission. They proposed that there should be a single, preferred means of confirming remission, that being:

- a return of HbA1c to less than 6.5% and
- that return may happen spontaneously or following an intervention and
- that it persists for at least 3 months after stopping any glucose-reducing medication.

The writers were also quite adamant that clinical diabetes care should continue so that, for example, people with diabetes remission should continue to have regular retinal screening, tests of kidney function, foot evaluation and monitoring of blood pressure and weight.

The writers also outlined areas for future research to ensure that the definitions of remission remain valid and thus can be used in clinical settings.

For us it should flag up warning signs for products that are advertised and claim to 'reverse' or 'cure' diabetes – They almost certainly do not.

GLP-1 RAs - We Forgot Rybelsus!

In our last newsletter we looked at the group of drugs called GLP-1 Receptor Agonists, which are a comparatively new group of injectable drugs used to treat Type 2 diabetes. We have to confess that while this is the truth, it is not the whole truth (Your Honour). We forgot to mention the newest addition to the family, Rybelsus.

Rybelsus is a form of semaglutide but unlike its sister drug Ozempic (also semaglutide), or other GLP-1 RAs, it is presented in a once daily tablet form. It should be taken on an empty stomach at any time of the day with water and at least 30 minutes before food or other medicines. It is used in conjunction with diet and exercise.

Being in tablet form means it has obvious benefits for people who are needle-phobic, as well as the other benefits accompanying the group, including lowering blood sugar levels, lowering cholesterol and weight loss. On the flip side of the coin, it has side effects, the most common being nausea, vomiting and diarrhea.

Rybelsus has caused quite a lot of interest in the clinical research world but we have yet to hear from anyone who has been prescribed the drug. If you have been prescribed Rybelsus we would like to hear about your experiences, good or bad, using the contact details at the end of this newsletter.

Prescribing SGLT-2 inhibitors or GLP-1 receptor agonists for adults with Type 2 diabetes: Clinical Practice Guidelines

For most of us, the amount of research, information and advice about the prescribing of SGLT-2s, such as empagliflozin, and GLP-1 RAs, such as liraglutide, is overwhelming, with news about the relative merits of each being presented almost every week. Also, for most of us the minute detail in which this information is presented, if even intelligible, is almost impossible to translate into practice – What do I do now that I know “SGLT2i and GLP-1RA improved CV morbidity and mortality in patients with T2D when compared with DPP-4i as an add-on therapy”?

Perhaps with this in mind, the British Journal of Medicine (BMJ) has published a paper giving guidance as to when to prescribe people drugs from these groups, not just to manage their diabetes but also to give maximum benefit to those with cardiovascular disease (CVD), chronic kidney disease (CKD) or both. The guidelines provide a set of five prescribing recommendations according to a persons’ risk or established diagnosis of CVD or CKD. All the recommendations are made in conjunction with “usual care” by which it means lifestyle interventions such as weight loss or smoking and/or other diabetes drugs, such as metformin. The recommendations also refer to cardiovascular risk factors by which it means things like age, ethnicity or gender.

The recommendations are as follows:

PATIENT HEALTH STATUS	RECOMMENDED DRUG TYPE
1. Patients with 3 or fewer cardiovascular risk factors	None – usual care only
2. Patients with more than 3 cardiovascular risk factors	SGLT-2 inhibitors
3. Patients with established cardiovascular or renal disease	SGLT-2 inhibitors or GLP-1 receptor agonists
4. Patients with established cardiovascular and renal disease	SGLT-2 inhibitors with GLP-1 receptor agonists as an alternative
5. Patients committed to further reducing their risk for cardiovascular and renal disease outcomes	SGLT-2 inhibitors rather than GLP-1 receptor agonist

The guidelines from this paper were published in the BMJ in May 2021 and aim to shift the traditional but varied focus on glycaemic control to a focus on the absolute reduction of cardiovascular and kidney disease outcomes. The full article can be read here: <https://www.bmj.com/content/373/bmj.n1091>

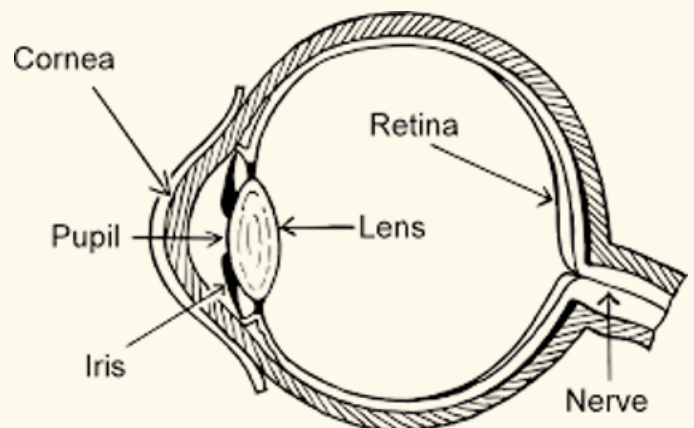




This is the eighth and penultimate piece on key tests that we will be including in Type 2 and You and in this article we will be looking at eye health.

The eye is a complex sensory organ and there are quite a range of potential problems that can occur so it is useful to start by looking at the basic structure and functioning of the eye.

- The cornea is the clear front window of the eye that transmits and focuses light into the eye.
- The pupil is the dark aperture in the iris that determines how much light is let into the eye.
- The iris is the coloured part of the eye that helps regulate the amount of light that enters the eye.
- The lens is the transparent structure inside the eye that focuses light rays onto the retina.
- The retina is the nerve layer that lines the back of the eye, senses light, and creates electrical impulses that travel through the optic nerve to the brain.
- The optic nerve connects the eye to the brain and carries the electrical impulses formed by the retina to the visual cortex of the brain.



Not displayed in this diagram is the macula. This is a small central area in the retina that contains special light-sensitive cells and allows us to see fine details clearly.

So how does this all work to allow us to see?

For us to see, the first thing we need is light. This light then passes through the cornea and enters the eye through the pupil. It then passes through the lens and is focussed on the retina. The focussed light or images of what we have been looking at are turned into electrical impulses by the retina and passed down the optic nerve to the brain.

HEALTH COMPLICATIONS AFFECTING THE EYES

There are several types of complications affecting eye health and people with diabetes are more likely to develop these when compared to someone without diabetes. These are referred to as diabetic eye disease and include diabetic retinopathy, macular degeneration, cataracts, and glaucoma. Over time, diabetes can cause damage to your eyes that can lead to poor vision or even blindness.

MACULAR DEGENERATION.

Macular degeneration accounts for around 50% of all visual impairment in developed countries and usually affects people over 50 years old.

Smoking, high blood pressure, high cholesterol, being overweight, being light-skinned, female, and having a light eye colour are risk factors. Genetic factors may also be important in developing the condition.

Symptoms of Macular Degeneration

- Early on, you might not have any noticeable signs of macular degeneration. It might not be diagnosed until it gets worse or affects both eyes.
- Worse or less clear vision. Your vision might be blurry, and it may be hard to read fine print or drive.
- Dark, blurry areas in the centre of your vision.
- Rarer can be worse or different colour perception.

If you have any of these symptoms, seek professional help as soon as possible.

How is macular degeneration diagnosed?

If your optician or GP suspects that you have macular degeneration then they will refer you to the hospital where one or more of the following tests will be carried out:

- Looking at a grid test page to check for blind spots.
- A colour vision test.
- Photographs of the back of the eye to

provide a record for future reference.

- A fluorescein angiogram where a dye is injected into a vein in the arm, allowing the blood vessels at the back of the eye to be checked for any damaged or if new vessels have developed.

How is macular degeneration treated?

- Drugs – Drugs such as Lucentis and Eylea are injected directly into the eye and prevent the growth of new blood vessels. They are not suitable for everyone and you should discuss their possible use with your health professional.
- Laser treatment – This is also used in the early stages of the disease and only if the vessels to be treated are not too near the centre of the macula.
- Diet – This is a prevention rather than a cure. Research has shown that people who have a low glycaemic diet (containing slowly absorbed carbohydrates) have a lower risk of developing the condition when compared to those with a high glycaemic diet.
- Nutritional supplements – There have been some reports that some nutritional supplements may help to treat macular degeneration.

DIABETIC RETINOPATHY

Some facts about diabetic retinopathy

Diabetic retinopathy is caused by high blood sugar levels damaging the back of the eye (retina). If left undiagnosed and untreated it can reach a stage where it could threaten your sight. To minimise the risk of this happening, people with diabetes should:

- ensure they control their blood sugar levels, blood pressure and cholesterol.
- attend annual diabetic eye screening appointments.

You're at a greater risk of developing diabetic retinopathy if you:

- have any type of diabetes, particularly if you

- have had it for a long time.
- have a persistently high blood glucose level.
- have high blood pressure.
- have high cholesterol.
- are pregnant.
- are of Asian or Afro-Caribbean background.

Treatment

If caught early enough, diabetic retinopathy is readily treatable, hence the importance and need for regular screening. The usual treatment for diabetic retinopathy is laser treatment but more recently some drugs have become available for use under certain circumstances.

Laser treatment:

This involves shining a laser into your eyes. Treatment is under local anaesthetic, normally takes around 20-40 minutes and is usually carried out on an outpatient basis. It isn't usually painful but occasional side effects may include blurred vision, increased sensitivity to light and aching or discomfort.

Other treatments may include:

- Eye injections – to treat severe maculopathy that's threatening your sight.
- Eye surgery – to remove blood or scar tissue from the eye if laser treatment isn't possible because retinopathy is too advanced.

Reducing risk

You can reduce your risk of developing diabetic retinopathy, or help prevent it getting worse by:

- controlling your blood sugar, blood pressure and cholesterol levels.
- taking your diabetes medication as prescribed.
- attending all your screening appointments.

- getting medical advice quickly if you notice any changes to your vision.
- maintaining a healthy weight, eating a healthy, balanced diet, exercising regularly and stopping smoking.

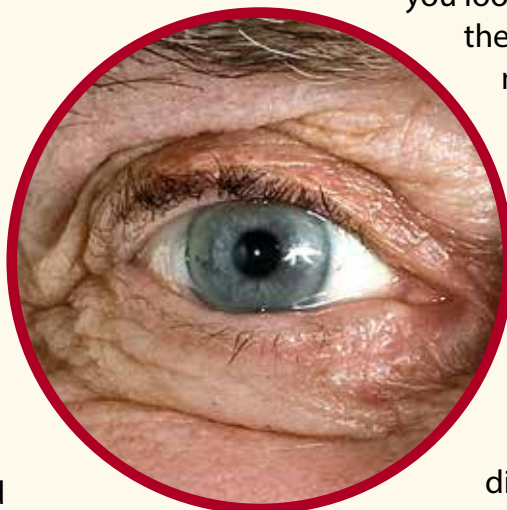
CATARACTS

What are cataracts?

In a normal eye the lens, behind the iris and pupil is clear and transparent. When a cataract forms the lens becomes cloudy or opaque. This can cause dim or blurred vision.

As cataracts develop, they can cause more symptoms. You may have double vision when you look at things through the eye with the cataract. These problems can make it hard to read or work on a computer for example. You may have poor night vision and find it harder to drive when it's dark due to glare from headlights.

Cataracts develop slowly over time, usually affecting the older population. In the diabetic population, cataracts are more common and develop at an earlier age.



Regular eye checks as part of your annual diabetic review will help your health team to identify any signs of cataracts at an early stage and advise on treatment.

Cataracts are nearly always treated surgically, replacing the lens in the affected eye with a permanent, clear plastic lens.

The surgery usually takes well under an hour does not require a stay overnight at the hospital.

Can cataracts be prevented?

There's no known way to prevent cataracts, but making some lifestyle changes might slow their development.

- Eat healthily.

- Quit smoking.
- Wear sunglasses. Ultraviolet (UV) light can cause damage to the lens. Your optician will advise on what is best for you.
- Limit alcohol.
- Keep blood sugar in check and try to avoid high blood sugar levels.
- Get regular eye exams. Your eyes should be checked for cataracts every 12 months as part of your 9 key checks.
- Your age – glaucoma becomes more common as you get older especially over 40.
- Your ethnicity – people of African, Caribbean or Asian origin are at a higher risk.
- Your family history – you're more likely to develop glaucoma if you have a parent or sibling with the condition.
- Other medical conditions – such as short-sightedness, long-sightedness and diabetes. Some studies have estimated that people with diabetes are twice as likely to develop glaucoma compared to those who do not have diabetes

GLAUCOMA

What is glaucoma?

Glaucoma is a condition where there is a loss of vision due to damage to the optic nerve. Usually, glaucoma is accompanied by an increased pressure in the eye (IOP) and it is this pressure that causes damage to the optic nerve.

There are several different types of glaucoma. Chronic open-angle glaucoma is the commonest form of glaucoma and produces no symptoms. It usually affects both eyes and develops slowly so that the loss of vision is gradual.

Other forms of glaucoma are:

- Acute angle glaucoma
- Secondary glaucoma.
- Congenital glaucoma.

Tests for glaucoma

Glaucoma can usually be detected during a routine eye test, often before it causes any noticeable symptoms. If the optician suspects you have glaucoma, they will refer you to the hospital.

At the hospital the doctor will ask you to undertake a range of tests to give the doctor more information about your condition.

Who is at risk?

There are several facts that affect the likelihood of developing glaucoma:

Treatment for glaucoma

It's not clear whether you can do anything to prevent glaucoma and unfortunately, it's not possible to reverse any loss of vision that occurred before glaucoma was diagnosed. However, treatment can help stop your vision getting worse.

There are several different treatment routes available and your doctor will discuss with you which will suit you best:

- Eyedrops – The aim of this treatment is to reduce IOP and prevent further vision loss. While this is effective, life-long treatment with drops is usually needed.
- Surgery – In some cases the IOP can be reduced by using laser treatment or surgery. However, this route is not suitable for everyone and life-long treatment with eyedrops may still be required.
- Tablets – In some cases tablets may be given to reduce the amount of fluid produced in the eye. Initially, these tablets may cause you to urinate more frequently.
- Exercise – Some research has suggested that frequent activity, such as swimming or brisk walking may lower IOP.

For a more detailed look at these conditions, as well as others such as Dry Eyes and Floaters, IDDT has produced two FREE booklets, "Diabetes and the Eye" and "Diabetes – Your 9 Key Tests". To get your copies contact IDDT using the details at the end of this newsletter.

Dysfunctional HDL cholesterol and Type 2 diabetes

HDL cholesterol is nearly always referred to as "good cholesterol". HDL cholesterol, far from being a single particle made up from one substance, actually consists of a variety of components with one analysis revealing 85 different component proteins. These all vary in size and density, combining to form a functional HDL particle. HDL cholesterol is credited with several benefits, most notably reducing the risk of coronary heart disease.

A recent paper has put forward a hypothesis that challenges this orthodox view that HDL cholesterol is always good for people with Type 2 diabetes. For the purposes of this article, we have tried to cut through the thousands of words of bio-chemistry speak and to put it in terms that we can all understand. The theory proposes an on-going cycle of processes, so we have to pick a starting position:

- 1** The presence of Type 2 diabetes (or pre-diabetes) has the effect of causing high levels of sugar, insulin and fats in the blood.
- 2** This in turn means that the body produces dysfunctional HDL cholesterol (more about this in a minute)
- 3** This dysfunctional HDL cholesterol does not have the same antioxidant properties as normal HDL particles and further cell damage occurs.

There is another serious problem that this dysfunctional HDL cholesterol can cause, namely, that through its composition (small particles like LDL cholesterol) it can actually aggravate, rather than reduce cardiovascular problems. At present this is very much a theory, albeit based on pre-existing research, and we will have to wait to see if further research backs it up. This then begs the question, "How this is managed?"

JUST TO REMIND YOU



2022 Diabetes Everyday Diaries still available!

Last year we published our Everyday Diary for anyone who lives with diabetes, whether you have diabetes, your partner has diabetes or your child has diabetes and this proved very popular, so we have published a Diary for 2022.



Christmas cards

We would like to thank everyone who has already bought Christmas cards from us and remind those who haven't that we still have cards available, they are £3.25 per pack of 10 plus 80p per pack p&p.

IDDT Shopping List

The Shopping List has a magnet on the back to attach to your fridge door for easy jotting down and so it will not get lost! On one half of the page you plan your meals for each day and on the other half you write down the items you need to buy. This is a tear off section to take to the shops with you or to order your online shopping. It works well with the 28-day meal planner in IDDT's FREE booklet, "Diabetes Everyday Eating".

Take a look at the leaflet included with this Newsletter entitled 'Thinking about Christmas' for gift ideas and to support IDDT!

COFFEE AND DIABETES

Information about the effects of coffee on diabetes can often appear confusing and contradictory. However, this is not necessarily the case as coffee contains a range of chemicals, some of which can have beneficial effects and others less so. Not only can the coffee itself have an effect on diabetes but the increasing number of ways we choose to take our coffee can also impact on our diabetes management.

BENEFITS AND RISKS OF DRINKING COFFEE

Coffee has been shown to lower risks of developing the following conditions:

- Type 2 diabetes
- Cancer – such as endometrial cancer and aggressive prostate cancer
- Cardiovascular disease
- Strokes
- Alzheimer’s disease
- Parkinson’s disease

Caffeine’s common side effects include:

- Headaches
- Restlessness
- Anxiety
- Heartburn
- Raised cholesterol levels

COFFEE AND THE PREVENTION OF TYPE 2 DIABETES

There is now a compelling body of research-based evidence to suggest that

coffee can play a role in the prevention of Type 2 diabetes.

Coffee contains polyphenols, which are molecules with anti-oxidant properties and are widely believed to help prevent inflammatory illnesses, such as type 2 diabetes, and anticarcinogenic (anti-cancer) properties.

As well as polyphenols, coffee contains the mineral magnesium. Greater magnesium intake has been linked with lower rates of type 2 diabetes.

The blend of these nutrients can be helpful for improving insulin sensitivity.

CAFFEINE, BLOOD GLUCOSE, AND INSULIN

While coffee could be beneficial for protecting people against diabetes, some studies have shown that plain black coffee may pose risks to people who already have type 2 diabetes.

One 2004 study showed that taking a caffeine capsule before eating resulted in higher post-meal blood glucose in people with type 2 diabetes. It also showed an increase in insulin resistance. Increased

insulin resistance means that the body cannot use the insulin provided and as a result blood sugars rise.

There may be a genetic proponent involved. Genes may play a role in caffeine metabolism and how it affects blood sugar. One study showed that people who metabolised caffeine slower showed higher blood sugar levels than those who genetically metabolised caffeine quicker.

There is also a tolerance effect that can develop over time. A 2008 study had habitual coffee drinkers with type 2 diabetes continuously monitor their blood sugar while doing daily activities.

During the day, it was shown that right after they drank coffee, their blood sugar would rise. Blood sugar was higher on days that they drank coffee than it was on days they didn't.

Coffee consumption before exercise can speed up fat loss. A recent study has shown that a strong cup of coffee before physical exercise could boost fat burning, researchers have said. They found evidence to suggest that caffeine increases fat oxidation which will help people to burn off the pounds more easily.

The study involved 15 men aged about 32 who were asked to complete an exercise test four times at seven-day intervals. To make sure the trial was fair, the time between each participant's last meal, physical exercise and the consumption of any other substances were standardised across everyone.

Researchers said: "The results of our study showed that acute caffeine ingestion 30 minutes before performing an aerobic exercise test increased maximum fat oxidation during exercise regardless of the time of day."

LATTES AND SYRUPS IN COFFEE

Some varieties of coffee need to be approached with caution by those of us with diabetes. Coffees with syrup have become a much more popular variety of coffee recently but could be problematic for people either with or at risk of diabetes.

If you have diabetes or are at risk of diabetes, it is advisable to reduce your exposure to too much sugar. If you want to enjoy a syrupy coffee from time to time, pick the smaller sized cups and drink slowly to better appreciate the taste without dramatically raising your blood glucose levels.

Another modern trend in coffee is in the popularity of lattes, very milky coffees. Lattes present two considerations: the number of calories in the latte and the amount of carbohydrate in them.

Whilst skinny lattes are usually made with skimmed milk, some of them may be sweetened which will raise their calories. Milk, whether full fat or skimmed, tends to have around 5g of carbohydrates per 100g. A regular, unsweetened skinny latte can typically contain anywhere between 10 and 15g of carbohydrate.

Some healthy tips to flavor your coffee include:

- add vanilla and cinnamon as a healthy, zero carb option.
- choose an unsweetened vanilla milk option, such as coconut, flax, or almond milk.
- ask for half the amount of flavored syrup when ordering from coffee shops, or missing out syrup altogether.

RITS + PIECES

AN INVESTIGATION INTO THE EFFECTIVENESS OF FAST-TRACK PATHWAYS (FTP) FOR DIABETIC FOOT ULCERATIONS.

The study looked at 200 people with diabetic foot ulcers (DFUs) and divided them into 2 groups; early referral (ER) and late referral (LR) patients. According to the FTP guidelines, those defined as ER had a greater chance of positive outcomes such as healing, healing time, limb salvage, hospitalization, and survival, while LR patients were more likely to have minor and major amputations and episodes of hospitalization. The fast-track pathway reflects recent International Working Group for the Diabetic Foot guidance and directs treatment based on the severity of a patient's ulcer and comorbidities. The pathway can be adapted to conform with legislation in different countries and has already been tailored for use in the UK, Spain and Germany.

GENETIC PREDICTORS OF RAPID DECLINE IN KIDNEY FUNCTION (RDKF) FOR PEOPLE WITH TYPE 2 DIABETES.

This study looked at the association of genetic predictors in blood plasma

and the development and progression of chronic kidney disease. The results of the study found that having the LRG1 gene increases the risk of RDKF. They suggested that this may form the basis of another treatment route for RDKF but that the relationship may not be causal and that further research is needed.

BONE MINERAL DENSITY (BMD) AND INSULIN GLARGINE IN PEOPLE WITH TYPE 2 DIABETES.

There is an established link between osteoporosis and Type 1 people using long-acting insulins as a result of hyperglycaemia. This study looked to see if there was a similar relationship for people with Type 2 diabetes. The study found that there are implications for the selection of hypoglycemic agents for diabetic patients at risk of osteoporosis and bone fracture, namely that treatment for people with insulin glargine should be given consideration when formulating a treatment plan and that this warrants further discussion.

TYPE 2 DIABETES; GLYCAEMIC CONTROL, DIABETIC COMPLICATIONS AND DEMENTIA.

Type 2 diabetes; Glycaemic control, diabetic complications and dementia. Type 2 diabetes is a well-established risk factor in the development of dementia. This large UK study looked at the roles of HbA1c levels and the presence of diabetic complications in the development of the condition. The study found that people with higher or unstable HbA1c scores and diabetic complications are at higher risk of developing dementia and suggests that effective management of blood glucose levels may have a significant role in maintaining cognitive health.

THE BURDEN OF TYPE 2 DIABETES AND THE BENEFITS OF ACHIEVING NEAR NORMAL BLOOD GLUCOSE LEVELS: A PATIENT PERSPECTIVE.

People with T2D have a high disease burden, a broad range of unmet needs, varied experiences and expectations, predominantly around diet, diabetes-related complications, weight changes, and psychological and emotional issues. A large majority of participants in the study indicated that achieving normal HbA1c would substantially change their lives in terms of their physical and emotional health.

KIDNEYS

You may well have seen that the BMJ has just published clinical practice guidelines about the prescribing of SGLT-2 inhibitors and GLP-1 receptor agonists, namely that people with impaired kidney function should be prescribed medication from one or the other of these two groups of drugs. However, while the benefits are proven, they may need to have a re-think. A study published earlier this year has shown that a combination of SGLT-2 inhibitors (Dapagliflozin) and GLP-1 receptor agonists (Exanatide) may be more effective in treatment than either drug alone.

Another published study has found that treatment with SGLT2Is was associated with a clinically significant reduced risk of kidney stones (nephrolithiasis).

MORE ABOUT SGLT-2s: EMPAGLIFLOZIN.

It is widely accepted that treatment with insulin may become necessary for some people with Type 2 diabetes and that along with this come problems, not least hypoglycaemia and weight gain. This study looked at people with Type 2 diabetes and cardiovascular disease. It found that treatment with empagliflozin:

- delayed insulin initiation
- delayed substantial increases in insulin dose
- and facilitated sustained reductions in insulin requirements over time.

MORE ABOUT GLP-1 RECEPTOR AGONISTS

This study aimed to determine the real-world outcomes of patients with diabetes mellitus receiving GLP-1 RAs as compared with those receiving DPP4Is in terms of major adverse cardiovascular and limb events. The use of GLP-1 RAs was associated with significantly lower risks of major adverse limb events when compared with the use of DPP4Is. Moreover, treatment with GLP-1 RAs was also associated with lower risks of cardiovascular death, non-fatal stroke, non-fatal myocardial infarction and death from any cause.

ONCE-WEEKLY DULAGLUTIDE AND GASTRO-INTESTINAL "DISTRESS".

A recognized side-effect of dulaglutide are gastro-intestinal (GI) upsets, including nausea, vomiting and diarrhea. This study investigated the relative dosages given in relation to episodes of GI upset. Researchers found that those experiencing GI upset were most likely to experience upset within the first two weeks of starting treatment. Those taking larger doses did not suffer either more severe or frequent episodes than those on smaller doses.

THE HISTORICAL EFFECTS ON CURRENT DIABETES HEALTH STATUS

In the following two studies it has been reported how a person's historical health status (the legacy), in these cases HbA1c values, can impact on their current diabetic health status.

The first study looked at individuals' earlier HbA1c levels and the subsequent effect on both all-cause mortality (ACM) and myocardial infarction (MI). They found that these historical values had a greater impact on the above health issues than current measures, suggesting that earlier detection and intervention is beneficial.

The second study looked at the impact of pre-diabetes on long-term cardiovascular outcomes in patients following myocardial infarction with nonobstructive coronary arteries (MINOCA). Pre-diabetes was defined as raised HbA1c values and the researchers suggested that early recognition of the condition may facilitate risk identification and treatment.

IMPROVING THE EFFECTS OF GLP-1 RAs

A recently published paper has looked at the possibility that other drugs may be used as an adjunct to GLP-1 RAs with a view to improving diabetic health, particularly weight loss. They started by noting that bariatric surgery still remains the most effective way to achieve sustained weight loss. They also noted that several gut-derived hormones, also modulated by bariatric surgery, display additive properties when combined with GLP-1 receptor agonists thus amplifying their antidiabetic effects. Glucocorticoids and oestrogen have shown promise in augmenting the biological actions of GLP-1 RAs but only in animal models so far and further research will be needed.



THE IDDT'S LOTTERY DRAW WINNERS

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

Winners of the June 2021 draw:

- 1st prize of £552.96**
goes to Julie from Gosport
- 2nd prize of £414.72**
goes to Margaret from Hereford
- 3rd prize of £276.48**
goes to Sylvia from Kettering
- 4th prize of £138.24**
goes to Haydn from Porthcawl

Winners of the July 2021 draw:

- 1st prize of £545.**
goes to Colin from Barrow-in-Furness
- 2nd prize of £408.96**
goes to Emma from Pembury
- 3rd prize of £272.64**
goes to Susan from Hereford
- 4th prize of £136.32**
goes to Nita from Harrow

Winners of the August 2021 draw:

- 1st prize of £551.52**
goes to Michael from Bradford-on-Avon
- 2nd prize of £413.64**
goes to David from Nottingham
- 3rd prize of £275.76**
goes to Margaret from Hereford
- 4th prize of £137.88**
goes to Denis from Bromham

Winners of the September 2021 draw:

- 1st prize of £548.80**
goes to Anne from Grantham
- 2nd prize of £411.84**
goes to Anon from Northwich
- 3rd prize of £274.56**
goes to Jeanette from Greasby
- 4th prize of £137.28**
goes to Anon from Doncaster

A huge 'Thank You' to everyone who supports IDDT through the lottery.

If you would like to join in for just £2.00 per month, then give us a call on 01604 622837 or email jenny@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.iddtinternational.org