



Living with Diabetes

**What's new
in diabetes
research**

**Diabetes &
mental health**

**Diabetes &
sexuality**

**Types of
glucose
monitors**



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And
more!**

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† Smart devices sold separately, for a list of compatible devices visit dexcom.com/compatibility.

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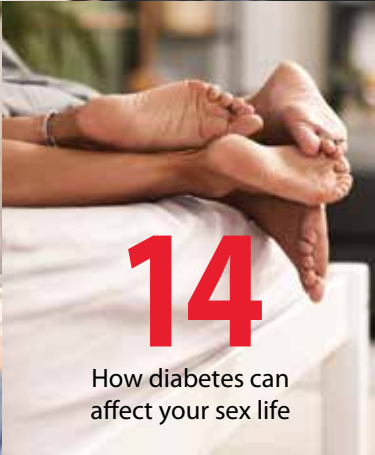
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Except for the pharmacy photos on pages 2, 9, 11, 16, 22, 24, and 25, which portray our own pharmacists, please note that the people shown throughout this publication are models. As such, their services are provided for illustrative purposes only and should not imply they suffer from any medical condition described in the associated article.

The material in this magazine has been reviewed by: Joey Minhas, BSc Pharm



Dear valued customers:

We are living in an ever-changing world—and this applies to diabetes management as well. Research is constantly opening up new windows into diabetes treatments, and manufacturers are developing new devices to help manage the condition.

This issue of **Living with Diabetes** features some of these new developments. We'd like to draw your attention in particular to two articles: "**Diabetes research roundup**," which provides an overview of some exciting new research in the field of diabetes, and "**Types of blood glucose monitors**," which highlights some of the advances in glucose monitoring and some of the new features you can find in today's meters.

In addition, you'll find articles on:

- The importance of wellness visits
- How diabetes affects men and women differently
- Diabetes and mental health
- Healthy meal planning and dining out
- Diabetes and sexuality
- How diabetes affects the ability to taste

We hope you enjoy this magazine. If you have any questions about your health, ask us.

We're here to help you.

From your London Drugs Pharmacy Team



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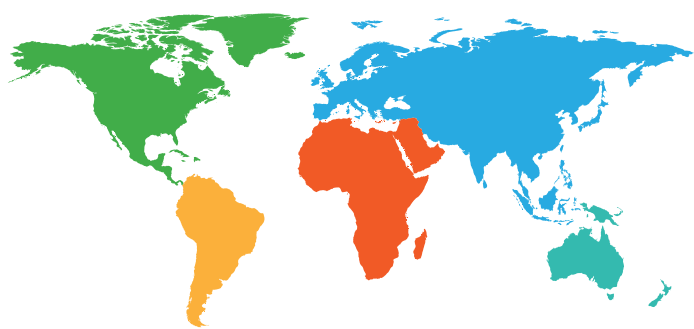
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Diabetes research roundup



Over 400 million people worldwide are living with diabetes, and that number is expected to climb to more than half a billion by 2040. Right here in



Canada, nearly 12 million people are currently living with diabetes or prediabetes. These figures have spurred much research into a better understanding of the condition, development of medical innovations to help manage it, and ultimately to find a cure for diabetes.

Here are a few highlights from the world of diabetes research.

An insulin pill?

Could an insulin pill be on the horizon?

A team of researchers at the University of British Columbia are working to develop an oral insulin tablet to replace daily insulin injections.

Some previous attempts to develop an oral form of insulin failed, because most of the insulin would accumulate in the stomach. The new research, which to date has only been conducted on rats, gets past the problem of swallowed insulin by creating a tablet that dissolves when placed between the gum and cheek. This technique utilizes the buccal mucosa, a membrane found within the lining of the inner cheek and the back of the lips. This pill delivers all of the insulin to the liver without wasting it along the way.

If the research continues to show positive results, future research on humans could help the more than 300,000 Canadians who have to inject insulin multiple times a day to have a better quality of life.



Genetics point the way



A study at Monash University in Melbourne, Australia, is pointing the way to a possible **new treatment for people with insulin-dependent diabetes.**

Advances in the study of the genetics of diabetes have led to a greater understanding of the potential to reactivate the production of insulin by pancreatic beta cells. Using pancreatic stem cells from a type 1 diabetes donor, the researchers were able to effectively reactivate the beta cells in a person with type 1 diabetes, and the cells began to create insulin again.

The research requires further work, but if it continues to show success, this new approach would allow insulin-producing cells that have been destroyed in someone with diabetes to be replaced with newborn insulin producing cells.



Sugar's not so sweet

A study in mice points to **a new problem with sugar.**

Dietary sugar alters the gut biome (the bacterial population in the digestive system), and these changes trigger a chain of events that leads to metabolic syndrome, prediabetes, and weight gain.



The typical western diet is high in both fat and sugar, which is associated with a number of unhealthy conditions. After four weeks on this type of diet, mice showed characteristics of metabolic syndrome, including weight gain, insulin resistance, and glucose intolerance. Perhaps the most telling change was the dramatic alteration in their microbiome, with a sharp drop in the cells that keep the gut healthy and protect the body from absorbing harmful lipids ("bad fats").

Eliminating sugar from their diets helped some, but not all, of the mice. This suggests that if their research proves true in humans as well, minimizing sugar in the diet may only work in people who have certain bacterial populations within their digestive biome. The researchers speculate that in some cases, adding certain probiotics might be helpful as well.

Metformin & vitamin B₁₂

Researchers have been observing people with type 2 diabetes in a number of countries who are being treated with **metformin**, a medication that can regulate high blood glucose levels, which helps prevent blindness, kidney disease, nerve damage, amputations, and problems with sexual functioning. Along with these important benefits, metformin has also been associated with vitamin B₁₂ deficiency in many people.



The researchers concluded that it is important for people taking metformin to have their vitamin B₁₂ levels checked regularly.

Diabetes, obesity & ADHD

Maternal obesity is a risk factor for having a child who develops attention deficit hyperactivity disorder (ADHD). Obese women with gestational diabetes who gain an excessive amount of weight during pregnancy are even more likely to have children who develop ADHD. However, the researchers did not observe a higher risk of ADHD in children of obese women whose weight gain during pregnancy was within the normal range. This would seem to indicate the importance of careful attention to weight gain during pregnancy.



As more research is done on diabetes and we learn more about the condition, scientists are hoping we get closer to finding a cure. **LD**

Living with diabetes

Most people who are diagnosed with diabetes start out with a strong commitment to managing their condition.

Unfortunately, as time passes, many people feel less motivated to follow their management plan carefully. This can be especially true for people who don't experience symptoms unless they are suffering from hyperglycemia (blood glucose levels that are too high) or hypoglycemia (blood glucose levels that are too low).

Your healthcare team will establish a testing schedule for you, and it is important to follow that schedule. Testing schedules vary based on a number of factors, but common times to test include before meals and snacks, before and after exercise, and before bed. Some people may need to test during the night as well. If you have questions about your testing schedule, ask your healthcare providers to clarify anything you don't fully understand.

Using CONTOUR[®]NEXT GEN

The new CONTOUR[®]NEXT GEN blood glucose monitoring system, by Ascensia Diabetes Care Canada, is extremely easy to use.¹ When you take it out of the box, it comes with a preset time, date, and target range that you can change to coordinate with your personal needs.

This meter produces highly accurate results that exceed Health Canada recognized industry standards.¹ It even alerts you to reapply a blood sample within 60 seconds if the first sample is insufficient, which can help you avoid lancing for a second time and wasting strips.²

The CONTOUR[®]NEXT GEN also has a smartLIGHT feature that helps you understand your readings. A green light appears if you are

within your target; a yellow light indicates you are above target; a red light signals that you are below target. Over 90% of users surveyed think the smartLIGHT makes it quicker and easier to interpret blood glucose readings.³⁺

To gain a better understanding of your blood glucose patterns⁴, you can also use the CONTOUR[®]DIABETES app, which seamlessly connects to the CONTOUR[®]NEXT GEN meter via bluetooth technology. You can be confident that your data is protected. The CONTOUR[®]DIABETES app uses appropriate safeguards to ensure that your personal information is processed securely and in compliance with applicable laws.

The CONTOUR[®]DIABETES app is easy to use and provides many important features.

- The easy-to-read digital blood sugar diary allows you to email your readings to your healthcare provider.
- It alerts you when your results are critically high or low and provides suggestions for follow-up.
- It can remind you when it's time for your next test.
- It permits you to add more information (such as meals, activities, medications, and photos) to your test results to create a complete Blood Sugar Diary.⁺

For further support, you can join the ContourCare community and receive free replacement batteries, offers, and discounts.

Register online at countourcare.ca or by phone at 1-800-268-7200.

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Blood Glucose
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Disclaimers: ~ Before use please see the CONTOUR®NEXT GEN user guide for full instructions. * On a compatible Android or iOS device. For a full list of compatible devices, please visit compatibility.contourone.com. † Current regulation based on Health Canada recognized ISO 15197:2013 standard requires results within $\pm 15\%$ range, specifically: $\geq 95\%$ of results must fall within ± 0.83 mmol/L for blood glucose concentrations < 5.55 mmol/L or within $\pm 15\%$ for blood glucose concentrations ≥ 5.55 mmol/L. ‡ The survey was conducted with CONTOUR®NEXT ONE and results for other meters may vary.

References: 1. CONTOUR®NEXT GEN Blood Glucose Monitoring System User Guide, Rev. 09/20. 2. Richardson JM et al. Clinical Relevance of Reapplication of Blood Samples During Blood Glucose Testing. Poster presented at the 20th Annual Diabetes Technology Meeting (DTM); November 12-14, 2020. 3. Ascensia Diabetes Care. Data on file. Smartson online survey, Sweden 2017. 352 respondents: People with type 1 and type 2 diabetes, over 18 years old, who tested at least 4-7 times a day. Participants received free meter and tests strips. Survey funded by Ascensia Diabetes Care. 4. Fisher W et al. User Experience With the Information-Motivation-Behavioral Skills (IMB)-Based CONTOUR®NEXT ONE Smart Meter and App System. Poster presented at the 78th Scientific Session of the American Diabetes Association (ADA); June 22-26, 2018; Orlando, Florida.



Diabetes

wellness visits

Routine wellness visits with a healthcare practitioner play an important role in preventing health problems for everyone, but they are especially important for people with diabetes.

According to a study conducted at the University of Virginia in the US, annual wellness visits can reduce the risk of amputations by as much as 36%. The researchers believe that this is due to earlier diagnosis of complications so treatment can be initiated before they become very serious. The researchers also believe that their results show that people who participate in wellness visits may take a more active role in managing their diabetes.

Tests to protect your health

Having diabetes can lead to complications that include heart disease and stroke, nerve damage, loss of eyesight, kidney problems, skin infections, and gum disease associated with tooth loss.

Fortunately, there are tests that can help identify new health problems at an early stage when they are easiest to treat. And this is where wellness visits come into play.

Your healthcare team can tell you what tests would be right in your personal situation and how often you should have them, but here is a general guide.



A1C blood glucose test to assess your average blood glucose over a period of time, at least every three months unless your doctor recommends a more frequent schedule



Blood cholesterol test to measure your HDL ("good") cholesterol, LDL ("bad") cholesterol, and triglycerides at least once a year



Blood pressure measured at every office visit and at home monitoring when your doctor recommends it



Complete foot exam to see if the skin, nerves, and blood circulation in your feet is normal at least once a year, with brief foot exam at every office visit



Dilated eye exam to see if the blood vessels inside your eyes are healthy once a year



Gum and teeth exam every six months



Urine test to see if your kidneys are working properly once a year



Vaccination assessment with your doctor or London Drugs pharmacist to discuss which vaccines you should have



Weight measured at every office visit to make sure your weight is in the healthy range

In addition,

there are tests you should perform at home. You should monitor your blood glucose levels on the schedule your diabetes care team has set for you, so that you can take corrective measures if your glucose is not at your target level.

You should also perform a daily foot check. Look for cuts, sores, redness, blisters, corns, calluses, swelling, and any changes to the skin or nails. If you can't see the bottom of your feet, use a mirror or ask a friend or family member for help. This is especially important for people with diabetic neuropathy, because the nerve damage makes it hard to notice small changes before they develop into big problems.



If you need help assessing your diabetes management program or deciding on how often to see your doctor, your London Drugs pharmacists can answer your questions. We want to help you manage your diabetes and live a healthy, fulfilling life. [LD](#)

Diabetes & mental health

Living with diabetes can be challenging.

It means living with the constant knowledge that you have to follow a healthy eating plan, be physically active, take your medications, and monitor your blood glucose frequently so you can adjust your diabetes management plan to respond to unanticipated swings in your blood glucose levels. So it isn't surprising that many people with diabetes experience issues with their mental health. In fact, a wide range of mental health issues are far more common among people with diabetes than in the general population. Because your mental health can affect your ability to manage your diabetes, it is just as important to look after your mental wellbeing as it is to look after your physical health.





DIABETES DISTRESS

Diabetes distress is a condition that is characterized by long-term sadness and emotional turmoil associated with having diabetes. This goes beyond everyday stress and may include feeling emotionally burdened by diabetes, feeling that your family and friends are not being supportive, worrying that you may develop complications that will make managing your condition even more difficult, and feeling that your healthcare team is either not helpful or will not be available when needed.

If this is how you feel, accept that many other people feel this way as well and don't condemn yourself for having these thoughts. You can start to deal with your diabetes distress by reviewing what you know about diabetes. Once you feel comfortable about your understanding of the condition and the way you are managing it, your distress may begin to lessen.

It is also important to share your feelings with your family and friends. Once they understand how you feel and what you are going through, they will be better able to support you.

If your diabetes distress continues, reach out to your healthcare team for further support.

DEPRESSION

It is estimated that about 30% of people with diabetes experience the symptoms of depression at some point.

These symptoms include:

- avoiding people
- being fidgety or restless
- being tired or having little energy
- believing that you are a failure or that you are letting people down
- changes in your sleep patterns
- feeling down, hopeless, or worthless
- inability to focus, concentrate, or make decisions
- loss of appetite or over-eating
- moving or speaking slowly
- thoughts of suicide

Depression can be treated effectively with medication, counselling, or a combination of the two. Not everyone responds to treatment in the same way, so it might take some time to find the right medication, the right dose, and the right type of counselling.

If you think you may be suffering from depression, discuss it with your diabetes healthcare team so you can begin the journey to finding the right treatment for you.



ANXIETY & STRESS

Many people with diabetes experience added stress from the challenges of managing their condition, and the stress can make managing the condition even more difficult.

Stress triggers our body to increase its level of a hormone called cortisol, and increased cortisol levels can signal the body to release more glucose, resulting in higher blood glucose levels. Stress can also trigger you to eat more and exercise less. Therefore, it is very important to check your blood glucose levels frequently during times of stress to help ensure that you are maintaining your target levels.

Some recommended techniques for managing stress include:

- **Breathing exercises:** Twice a day set aside time to sit quietly, breathe deeply, and focus your attention on your breathing.
- **Exercise:** Walking, jogging, dancing, and bicycling are excellent ways to reduce stress.
- **Get support:** If you feel that stress is affecting your quality of life, ask your healthcare team for suggestions on how to reduce your stress. Consider joining a diabetes support group so you can discuss your issues with people who are experiencing many of the same things that you are going through and learn about the solutions they've discovered.
- **Make time for yourself:** Think about what soothes you and try to incorporate it into your daily routine. For example, soak in a tub of warm water, listen to your favourite music, or read a book or magazine you enjoy.
- **Yoga:** This mind-body practice combines physical poses, meditation, and controlled breathing.

If your stress reaches the level of an anxiety disorder, your doctor may recommend an anti-anxiety medication, psychotherapy ("talk therapy"), or a combination of both.



Remember that if you are experiencing any mental health issues in combination with your diabetes, you are not alone. In fact, the Diabetes Canada Clinical Practice Guidelines for healthcare professionals recommends that all individuals with diabetes be screened regularly for diabetes distress as well as for symptoms of other mental health disorders. Help is available, you just have to be willing to ask for it. **LD**



FreeStyle Libre 2 gives control back to those living with type 2 diabetes

Frank, 70, was diagnosed with type 2 diabetes over 30 years ago.

Like so many other Canadians living with diabetes, Frank was familiar with type 2 diabetes, as his mother also lived with the chronic condition, but he struggled to manage his glucose levels.

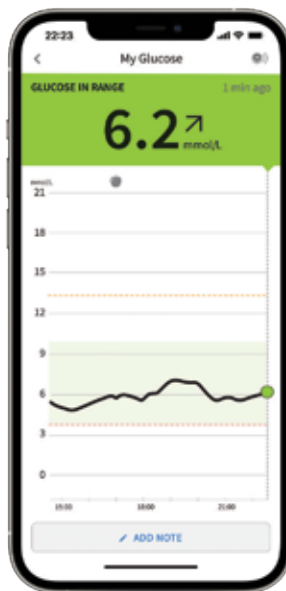
Managing glucose levels is critical for those living with diabetes as it can reduce the risk of health complications like vision loss, nerve damage, heart disease or stroke.[‡] Frank started his diabetes journey with oral medication, but he didn't monitor his glucose levels often. When he did, he pricked his finger[¥], which can be painful[Ⓡ] and inconvenient. After seeing a slow rising pattern of high glucose, Frank looked at other ways to help manage his diabetes.

"I wasn't able to be as diligent with my glucose testing as I wanted to be," said Frank. "I would take my medications or inject insulin, but then the day would get away from me and I would miss the opportunity to prick my finger to test."

Shortly after retiring from a career in software engineering, Frank learned about Abbott's FreeStyle Libre flash glucose monitoring system[§]. Always an early adopter of new technology, Frank was keen to have access to a digital health tool that could help him better self-manage his diabetes and monitor his glucose levels. After adopting the FreeStyle Libre system,



Frank, 70, uses Abbott's FreeStyle Libre 2 system to manage his diabetes.



Abbott's FreeStyle Libre 2 system features optional high and low glucose alarms.

Frank was able to view his glucose levels anytime[†], anywhere[Ⓡ]. He could check and monitor his glucose as often as he liked – pain and hassle free[Ⓡ].

"I've been able to manage and better track my glucose levels, gaining a deeper understanding of how it related to my specific eating habits. As I scan, I then use the data to change my food choices and meet my goals, without having to finger prick."

Recently, upon moving to the FreeStyle Libre 2 flash glucose monitoring system^{*}, Frank has made more connections and further understands his glucose levels. The real-time data allows Frank to better understand how nutrition affects his glucose levels. Additionally, the optional alarms feature notifies Frank if his glucose levels are going low overnight while he's sleeping, which is particularly vital because low glucose can affect awareness.

"The FreeStyle Libre 2 system, has given me much greater control of my diabetes and I feel that it will help me live a long and healthy life."

If you think the FreeStyle Libre 2 flash glucose monitoring system* may be right for you or your family, talk to your health care provider or visit MyFreeStyle.ca.

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life. to the fullest.®

[‡] Grey, H. (2020, April 28). 5 Complications of Uncontrolled Type 2 Diabetes. Healthline. <https://www.healthline.com/health/type-2-diabetes/complications-uncontrolled-diabetes>.

This article was paid for by Abbott, a manufacturer of diabetes care products in Canada. This is an actual testimonial of a FreeStyle Libre system user and Abbott has consent to use their story. Consent is on file with Abbott.

[§] The FreeStyle Libre flash glucose monitoring system is indicated for measuring interstitial fluid glucose levels in adults aged 18 years and older with diabetes mellitus. Always read and follow the label/insert.

^{*} The FreeStyle Libre 2 flash glucose monitoring system is indicated for measuring interstitial fluid glucose levels in people aged 4 years and older with diabetes mellitus. Always read and follow the label/insert.

[†] 60-minute warm-up required when applying the sensor.

[¥] For FreeStyle Libre, A finger prick test using a blood glucose meter is required during times of rapidly changing glucose levels when interstitial fluid glucose levels may not accurately reflect blood glucose levels or if hypoglycaemia or impending hypoglycaemia is reported by the system or when symptoms do not match the system readings. For FreeStyle Libre 2, Finger pricks are required if your glucose readings and alarms do not match symptoms or expectations.

[Ⓡ] Sensor is water resistant in up to 1 meter (3 feet) of water. Do not immerse longer than 30 minutes. Not to be used above 10,000 feet.

[Ⓡ] Data on file, Abbott Diabetes Care, Inc.

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FreeStyle Libre 2

FLASH GLUCOSE MONITORING SYSTEM

6.2  mmol/L

Take the mystery out of diabetes management.



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Read your glucose scans and start to see patterns



Understand the impact of food, exercise and medication



Improve your diabetes management with simple tricks and tips

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The FreeStyle Libre 2 flash glucose monitoring system is indicated for measuring interstitial fluid glucose levels in people aged 4 years and older with diabetes mellitus. Always read and follow the label/insert. The FreeStyle Libre 2 app is only compatible with certain mobile devices and operating systems. Please check the website for more information about device compatibility before using the app. Sensor is water-resistant in up to 1 metre (3 feet) of water. Do not immerse longer than 30 minutes. Not to be used above 10,000 feet.

*You must be 18 years of age or older, or be accompanied by a parent, guardian or caregiver who is 18 years of age or older, to attend this event.

† Individual private drug plans can vary. Please check with your plan administrator and/or your insurance company.

‡ Sensors are available for eligible patients who meet the labeling requirements of 4 years or older with diabetes. Limit: one per registrant.

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*How diabetes
can affect your*

sex life

Did you know that having diabetes can affect a person's sexual health? If diabetes isn't well managed, complications can develop, and some of these complications—such as nerve damage and problems with heart functioning and blood flow—can affect sexual health.



Sexual problems are common in people with diabetes, but they are not inevitable.

There are steps you can take to improve your sex life. Start by identifying issues that can cause problems, such as changes in your blood glucose levels that can make you feel unwell, depressed, or very tired. Additionally, women may experience vaginal dryness, and men may have difficulty achieving or maintaining an erection.

People who wear an insulin pump may feel self-conscious about wearing the device or may be afraid that it could become disconnected during a sexual encounter. It is generally considered safe to disconnect the pump for 45 minutes to an hour during intimacy, but it is vital to remember to reconnect it after that time. To avoid any discomfort about your partner seeing your insulin pump, let your partner know that you have diabetes and wear a pump ahead of time. Sharing some personal aspects about your health may even build trust and strengthen the bond between you. Having diabetes is nothing to be ashamed of. Some people have diabetes; some have heart issues; some have chronic headaches. Almost everyone has one health condition or another.



Gender differences

Diabetes can affect the sexes in different ways. In women, it can have a negative impact on the ability to experience sexual arousal and stimulation, and it can reduce the release of vaginal lubrication. These changes can make intercourse painful and reduce the ability to experience an orgasm. In addition, women with diabetes tend to experience more infections than other women—including bladder and urinary tract infections—and this can have an impact on their enjoyment of sexual encounters.

During menopause, a woman with diabetes may experience sudden, unexpected drops in her blood glucose levels, and the symptoms of low blood glucose may make sex seem like more of an inconvenience than a pleasure.

Men with diabetes may have reduced testosterone levels, and that can affect their sex drive. The main problem men with diabetes have is erectile dysfunction (ED), the inability to achieve or maintain an erection.

For a man to have an erection, he must have a sufficient flow of blood to his penis. One of the problems with diabetes is that it can damage blood vessels, and this can affect blood flow to the penis. Diabetes can also damage nerves, and this can make it more difficult to maintain an erection.

Treatment

Managing your diabetes and keeping your blood glucose levels in your target range will help prevent many of the complications that cause sexual health problems.

Your diabetes healthcare team can advise you on steps you can take to improve your diabetes management, including eating a healthy diet, exercising regularly, maintaining a healthy weight, monitoring your blood glucose, not smoking, and limiting your alcohol consumption. There are also treatments that address the specific causes of sexual health problems.

Many men get help from medications that enhance blood flow and improve their ability to achieve an erection, but these medicines are not right for all men. Other options include mechanical devices, such as vacuum pumps, to help achieve an erection, injections into the penis, and surgery to insert a penile implant.

Women may find it helpful to apply a vaginal lubricant prior to engaging in sexual intercourse to reduce pain. The lubricant should be a water-based product.

Hormone replacement therapy can improve sexual desire in both men and women, but these drugs can have side effects, so they aren't right for everyone.

It is important to have an honest, open discussion about any sexual problems you are having with your healthcare provider so that a treatment plan can be developed to address your specific issues. Unfortunately, research indicates that only about half of men and one-fifth of women with diabetes actually discuss their sexual health with their doctors.

Sexual activity is a normal part of life, and the lack of it can decrease the quality of your life and may affect your relationship with your partner. Don't let your embarrassment keep you from getting help.

While this may be an uncomfortable discussion for you to have, healthcare professionals are used to having these discussions. Make the decision to talk to your doctor about any sexual issues that you may be experiencing. **LD**





Gender differences in diabetes

Some conditions affect everyone in a similar way. For example, colds cause sneezing and a runny nose, whether you are a male or a female. Diabetes is not like that. It is a condition that affects men and women differently.

It has been well known for years that there are a number of factors that increase a person's risk of developing diabetes: age, ethnicity, lifestyle, obesity, and socioeconomic status. Many scientists now believe that gender should be added to that list.



Differences in symptoms

In general, many of the early symptoms of diabetes affect both sexes, including blurry vision, cuts that won't heal, excessive thirst, fatigue, and frequent urination. However, there are other symptoms that are specific to men or women.



Men with diabetes may experience:

- erectile dysfunction (the inability to achieve or maintain an erection)
- retrograde ejaculation (some or all of a man's semen goes into his bladder instead of coming out through his penis during ejaculation)
- urologic issues



Symptoms specific to women include:

- hormonal changes due to pregnancy, menstruation, and menopause that can make it more difficult to manage blood glucose levels
- polycystic ovary syndrome (a condition that increases a woman's risk of infertility)
- sexual dysfunction (persistent, recurrent problems with sexual response, desire, orgasm, or pain)
- vaginal and/or oral yeast infections

For more information about diabetes and sexuality in both sexes, see "How diabetes can affect your sex life" on page 14.



Different consequences



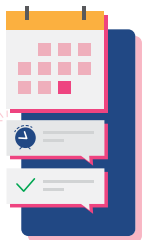
The effects diabetes can have may also vary by gender. Among the issues that are more common in women with diabetes than in men are depression, which affects twice as many women, and eating disorders. The most common eating disorder women with diabetes develop is bulimia (uncontrolled episodes of overeating).

One study indicates that heart attacks in women with diabetes are more likely to be fatal than heart attacks in men with diabetes. It is believed that this is due to the fact that symptoms in women may differ from the symptoms men experience, so women may not seek help in time. The most common warning signs of a heart attack in both men and women are chest pain or discomfort, shortness of breath, and pain or discomfort in the upper body. But there are other symptoms that affect primarily women, including fatigue, nausea or vomiting, dizziness or feeling lightheaded, and sleep problems. It is important to watch for possible warning signs and get help if you suspect you may be having a heart attack.

Recent research has shown that between 1971 and 2000, death rates for men with diabetes fell, but the rates for women with diabetes didn't change.

Despite all of the challenges living with diabetes brings, health consequences can be minimized by managing the condition through a healthy diet, an active lifestyle, careful blood glucose control, close attention to following your medication plan, and scheduling periodic checkups with your doctor.

If you have any questions about managing your diabetes, your London Drugs pharmacist will be happy to answer them. **LD**





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Healthy eating— at home & dining out

Healthy eating is a very important component of your diabetes management strategy.

Unfortunately, there's no one-size-fits-all magic formula that will be right for everyone. Your diabetes care team will help you design an individualized meal plan that meets your personal needs. Before making any changes to that meal plan, consult with your doctor, diabetes educator, or dietitian.

While everyone's plan will be personalized, there are some general strategies that apply to everyone.



- Watch your portion sizes. Portion size is important for everyone with diabetes, but it is particularly important for people who are not at a healthy weight. Actual portion sizes will differ from person to person, but in general, Canada's Food Guide recommends planning your portions this way:

- Fill half of your plate with vegetables or fruit, and focus more on vegetables because they contain less sugar.
- Divide the other half of your plate into two parts, one for protein and one for whole grain foods.

- Eat more whole foods and limit the amount of highly processed foods, which are prepared with excess sodium (salt), sugar, and saturated fat. Examples of highly processed foods include:

- processed meats such as sausages and deli meats
- fast foods like burgers and fries
- frozen entrées such as pizza and pasta dishes
- sauces, dressings, and gravies
- potato chips and pretzels
- bakery products including cakes and muffins
- syrups and jams
- candy
- sugary drinks

- Choose healthy carbohydrates, such as legumes and whole grains. Not all carbs are unhealthy. Look for low-glycemic index (GI) foods, which can help control blood glucose. The GI rates carbohydrate-containing foods and beverages on a scale out of 100, based on how much they raise blood glucose levels once they are consumed.

There are three GI categories

1 Low GI
55 or less

2 Medium GI
56-69

3 High GI
70 or higher



Choose foods and drinks in the low-GI category most often, those in the medium category less often, and those in the high category least often. You can find more information about the GI and see examples of foods in the three categories on the Diabetes Canada website <https://guidelines.diabetes.ca/docs/patient-resources/glycemic-index-food-guide.pdf>.

- Look for unsaturated (healthy) fats, such as olive oil, canola oil, avocados, nuts, seeds, and fatty fish such as salmon and trout.
- Limit the amount of sugar and sweets you eat. The more sugar you consume, the higher your blood glucose level will rise. Talk to your healthcare team about sugar substitutes that might be better choices for satisfying your sweet tooth.
- Stay hydrated. Drink more water—it's sugar-free, has no calories, and is a great thirst quencher.
- **When** you eat can be as important as **what** you eat. Try to eat three meals a day spaced no more than six hours apart. Eating at regular times helps your body control your blood glucose levels. It can also be helpful to try to eat about the same amount of food at each meal.

Eating healthy can be easier if you plan ahead. Creating a weekly meal plan with the help of your healthcare team can assist with shopping and cooking as well as seeing to your nutritional needs. Be sure to include the right type of carbohydrate in each meal or snack and to eat a consistent amount of carbohydrates at each meal and snack.

Your meal plan should chart the amount of carbohydrates you will be eating at each meal, the type of carbohydrate, how much fibre you will be getting, the calories you will be consuming, and the food groups the meal will contain.

A dietitian can help you determine the right amount for you, but as a general rule, most women should start with 45 to 60 grams of carbs per meal and men should start at 60 to 75 grams per meal. Snacks should have about 15 grams of carbs.

Dining out

The same basic guidelines apply when you eat out, but you don't have as much control over the food and how it is prepared, so you have to eat smarter.

Here are some tips that can help.



- Think about what you are going to eat before you go, so that you won't be as easily tempted by unhealthy choices.
- As soon as you sit down, drink a large glass of water. This will help you eat less.
- Avoid the bread basket or chips and salsa that some places put on the table. If your companions don't mind, you can ask the staff to take it away.
- Pay attention to how the food is prepared. Entrées that are baked, broiled, grilled, or steamed are healthier than fried foods and those covered in creamy sauces.
- Choose vegetables instead of high-calorie side dishes.
- Order sauces, salad dressings, and spreads to be served on the side, and use them sparingly.
- Consider sharing your main dish or eating half of it and bringing the other half home for another meal.
- If you decide to have dessert, choose it wisely—for example, select fresh fruit if it's available—or share a dessert with the person you are dining with.



Go out, have a good time, and make the companionship, not the food, the focus of the dining out experience. LD



Hypoglycemia

What is it?

Hypoglycemia is a condition of low blood sugar that may or may not cause common symptoms such as rapid heartbeat, shaking, sweating, as well as more severe symptoms such as headache, confusion, and even loss of consciousness.

Who is at risk?

Anyone who is taking insulin, oral diabetes medications called sulfonylureas, or other diabetic medications that stimulate the secretion of insulin, is at risk for hypoglycemia. Other risk factors include a history of hypoglycemia, hypoglycemia unawareness, pregnancy, long duration of diabetes and insulin use. Children and the elderly are also at higher risk.

When may it happen?

Low blood glucose can happen any time, but may be more likely to happen if you:

- Eat less than planned or do not eat on time
- Take more medication than planned
- Are more active than planned
- Have alcoholic drinks
- Have a mismatch between energy available and insulin levels
- Change the foods or amounts of food you usually eat

What are the symptoms?

Different levels of low blood sugar lead to many different symptoms. Check your blood sugar to confirm you are low. If you are not able to check your blood sugar, TREAT first then recheck your sugar level.

How to prevent hypoglycemia

Discuss any significant hypoglycemia, especially if unexplained, with your healthcare team to understand how to prevent lows from happening. While a few mild or moderate lows may be expected, many can be prevented.

- Check frequently, know your blood sugar level
- Eat meals at regular times
- Plan for exercise by either eating more or reducing your medication
- Discuss the risks of hypoglycemia resulting from alcohol with your healthcare provider.

One of the best preventative steps you can take with hypoglycemia is to be aware of your blood sugar levels.

Ask your healthcare provider how often you should test and learn about the treatments that work best for you.



Shaking



Transpiration
Sweating



Nausea



Headache



Drowsiness/Fatigue



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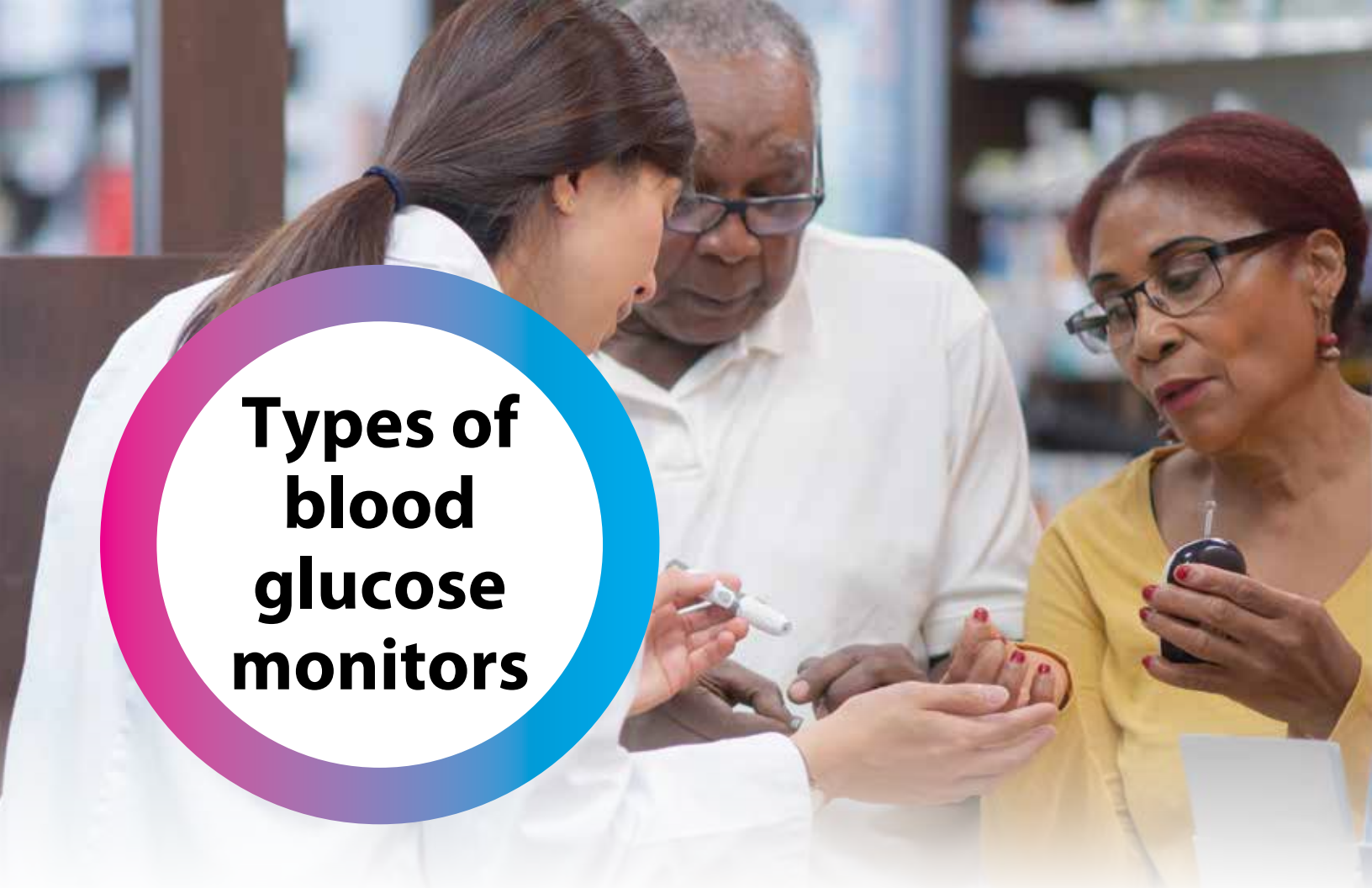
Current numerical result and healthcare professional recommendations should be considered in treatment decisions.

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Types of blood glucose monitors

Diabetes technology

has made great strides in recent years, and you now have more choices of blood glucose monitors that may be easier to use and have helpful new features. If you are still using an old meter, you may want to talk to your London Drugs pharmacist or certified diabetes educator about what's new and how it could help you.



Here is some background information on what's available to get you started on your quest to discover what's new.

There are two basic types of blood glucose monitors

1 Standard meter that uses a drop of blood to check your glucose level at the moment of testing

2 Continuous glucose monitor (CGM) that automatically checks your blood glucose regularly

Beyond these two main types of meters, there are different models to choose from, and they have different features. Here are some things to consider when you are choosing a new meter.

- **Ease of use:** Some meters are easier to use than others. Check to see which ones have the features that would be helpful to you and that you feel confident that you can learn to use.
- **Flexibility:** If you are using a meter that requires finger pricks, you may want to consider a model that allows you to draw blood from alternative sites, such as the palm of your hand, your arm, or your thigh.
- **Information retrieval:** Investigate how the meter retrieves your information and whether you can download the data to a computer or mobile device, making it easier to share with your diabetes care team.



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FACTORS TO CONSIDER

Some of the other factors you may want to investigate when considering a new meter include:

- the amount of blood needed for the test
- how long it takes to read a test strip
- the features on the meter's display
- whether the meter includes a clock that you can set for date and time and a memory for test results
- whether the meter uses test strips or replaces them with discs, drums, or cartridges that can be used for multiple tests instead of being discarded after a single use
- the meter's data handling capacity—some meters can download data to a computer; some meters permit the entry of additional data through the day (such as exercise, insulin dose, amount of carbohydrates eaten); and some can be coordinated with other equipment such as insulin injection devices
- whether the meter requires coding for test strips. Test strips can vary from batch to batch, and some meters require you to manually enter a code found on the vial of test strips or to enter a chip that comes with the test strips. By entering the code or chip into the meter, the meter will be calibrated to that batch of strips.



METERS THAT DON'T REQUIRE BLOOD DROPS

There are meters that don't require you to use a lancet to draw a drop of blood to test your glucose level.

Flash glucose meters are a newer type of device that uses a sensor placed under the skin (usually the upper arm) to measure blood glucose levels. To get your reading, you swipe a hand-held scanner over the sensor.

Continuous glucose monitoring (CGM) works through a sensor placed on your skin that transmits your readings to a small recording device. The sensor reads your blood glucose levels through the day and night and reports the readings to the recording device. It also alerts you when your glucose level goes too high or too low. CGM can be especially helpful for people with hypoglycemic unawareness—which means they have trouble recognizing when they have a blood glucose level that drops too low.

WHAT YOU NEED TO KNOW

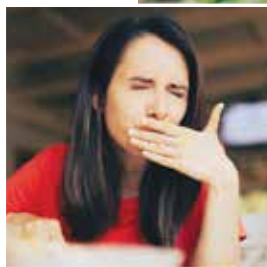
If you decide to get a new meter, before you start to use it, be sure you understand:

- how to get a blood sample and where to get it from
- the size of the drop of blood you will need to test your glucose level
- the type of blood glucose strip to use
- how to clean and maintain your meter
- how to check the accuracy of the meter
- how to code your meter, if necessary

If you have any questions about the newer types of blood glucose monitors or about using your current monitor, your London Dugs pharmacy team will be happy to help you. **LD**



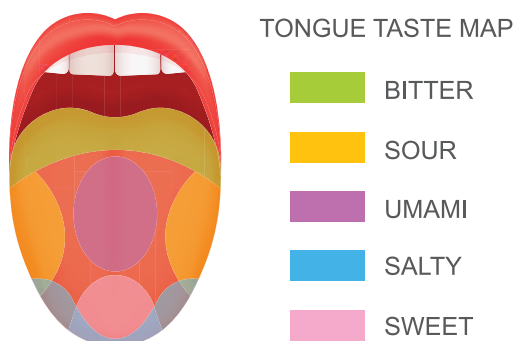
How diabetes affects taste



Sitting down to enjoy a favourite meal is one of life's great pleasures—except if you have a taste disorder. It is estimated that about 15% of the general population has a taste disorder, and there is evidence that people with diabetes are more likely to develop a taste disorder than people without diabetes.

How taste works

When we eat or drink something, the food or beverage releases molecules that stimulate cells in our mouth and throat. These cells are located in our taste buds, on our tongue, on the roof of our mouth, and in the lining of our throat. When these cells detect a taste, they send a message through specialized nerve cells to make our brain aware of the taste. The brain can perceive five different types of tastes—sweet, sour, bitter, salty, and umami (a savoury type of flavour). Other specialized nerves in our eyes, nose, mouth, and throat work together to add to our enjoyment of what we are eating.



Types of taste disorders

Fortunately, ageusia, a complete loss of taste is rare, but there are a number of other taste disorders that can affect how we perceive taste.

The main types are:

- **Dysgeusia:** a bad, sour, or salty taste that persists in the mouth
- **Hypogeusia:** a reduced ability to taste
- **Parageusia:** a metallic or other abnormal taste in the mouth
- **Phantom taste perception:** having an unpleasant taste in your mouth when your mouth is empty

The link to diabetes

Diabetic neuropathy (nerve damage) may cause injury to the nerves that help us perceive taste, and high blood glucose can contribute to a temporary loss of the sense of taste. Certain medications, including the diabetes medicine metformin, can also affect how we taste things.

If you notice any change in your ability to taste, it is important to tell your doctor, who will probably refer you to an otolaryngologist (a doctor who specializes in treating problems of the ear, nose, and throat, sometimes referred to as an ENT). This specialist will evaluate your problem, identify the cause, and determine how it should be treated.

Sometimes loss of taste can't be treated successfully. If this happens to you, talk with your dietitian about ways to help you get more enjoyment from your food.

Here are some tips that may help:

- Choose foods that have a variety of colours and textures.
- Use herbs and spices to boost flavour, but be careful about the amount of salt you use.
- Add more savory foods, such as olives and nuts, to your meals.
- Some foods taste better hot, and some taste better cold. Try to eat your foods at the temperature they taste best at.

Maintaining good control of your blood glucose level will help prevent complications such as neuropathy and, consequently, help you get more enjoyment out of the foods you eat as well as improve your overall quality of life. If you have any questions about managing your blood glucose, your London Drugs pharmacist will be happy to answer them. **LD**

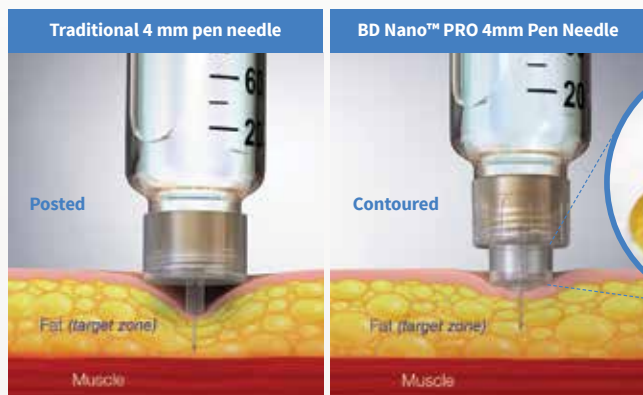


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References: 1. Hirsch L, et al. *Diabetes Technol Ther.* 2014;16(12):867-873. 2. Rini C, et al. *J Diabetes Sci Technol.* 2019;13(3):533-545. 3. Whooley S, et al. *Diabetes Ther.* 2019;10(2):697-712. 4. Frid AH, et al. *Mayo Clin Proc.* 2016;91(9):1231-1255. 5. Berard L, et al. FIT Forum for Injection Technique in Canada. Recommendations for Best Practice in Injection Technique. 4th Ed.

* As of September 2022.

† Based on mathematical calculations and not clinical study data compared to other 4 mm pen needles.

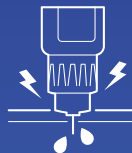
‡ Results from clinical study assessing patient preferences and feedback, and preclinical studies visualizing insulin under the skin comparing BD Nano PRO™ 4mm Pen Needles *vs.* other 4 mm pen needles.

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Each time you refill your insulin, check how many pen needles you have and, if needed, ask your pharmacist to refill them.

