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Number of Americans

who have diabetes.

RECENT HEADLINES

KEEP UP WITH THE LATEST RESEARCH

TREATMENT PROS AND CONS

Do you take metformin for your type 2 diabetes? You may be getting other benefits from it, too. New research suggests that women who take metformin for diabetes have a lower chance of developing estrogen-receptor positive breast cancer, the most common type of breast cancer. Interestingly, the drug doesn't seem to protect against other forms of the disease. In fact, type 2 diabetes may increase women's risk for triple negative and estrogen-receptor negative breast cancers. The bottom line? Talk to your doctor about how diabetes and your treatment affect your odds of getting breast cancer, and follow the recommendations for screening and prevention.

SOURCE: Annals of Oncology

Age after which most people get a type 2 diabetes diagnosis.

BARIATRIC SURGERY

1 in 10

BREAKTHROUGH Weight loss surgery could cure severe diabetes. In a

randomized controlled clinical trial, researchers tracked a small group of patients who either had bariatric surgery or followed lifestyle changes for their extreme case of diabetes. Not only did the surgery lead to bigger improvements in people's condition, it completely wiped out diabetes for some of them. Ten years later, 1 in 3 people who had surgery were still diabetes-free. The American Diabetes Association defines "cure" as just 5 years disease-free.





HIGH BMI CONNECTION TO CONTINUAL COMPLICATIONS

Doctors recommend weight loss for most anyone who gets a diagnosis of type 2 diabetes. But, the exact role that it plays in long-term health is the subject of much debate. A new study sheds light on the issue. Researchers tracked 1,000 people with type 2 diabetes for 10 years. They found that those with the highest body mass index at diagnosis were more likely to develop diabetes-related problems with their kidneys, nerves, and eyes. Those who lost the most weight after diagnosis were least likely to face these complications.

SOURCE: Diabetologia

Taking diabetes pills and still living with a beast of a high A1c?



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SOLIQUA 100/33 is an injectable prescription medicine that contains 2 diabetes medicines, insulin glargine and lixisenatide, which may improve blood sugar (glucose) control in adults with type 2 diabetes when used with diet and exercise.

- It has not been studied in people with a history of pancreatitis.
- It is not recommended for people who also take lixisenatide or other medicines called GLP-1 receptor agonists.
- It is not for use in people with type 1 diabetes, or people with diabetic ketoacidosis.
- It has not been studied in people who have a stomach problem that causes slow emptying (gastroparesis) and is not for people with slow emptying of the stomach.

SOLIQUA® 100/33 insulin glargine & lixisenatide injection 100 Units/mL & 33 mcg/mL

- It has not been studied in people who also take a short-acting (prandial) insulin.
- It is not known if SOLIQUA 100/33 is safe and effective in children under 18 years of age.

Important Safety Information

What is the most important information I should know about SOLIQUA 100/33?

Do not share your SOLIQUA 100/33 pen with other people, even if the needle has been changed. You may give other people a serious infection, or get a serious infection from them.

SOLIQUA 100/33 can cause serious side effects, including inflammation of the pancreas, which may be severe and lead to death.

Before using SOLIQUA 100/33, tell your doctor if you have had pancreatitis, stones in your gallbladder (cholelithiasis), or a history of alcoholism. These medical problems may make you more likely to get pancreatitis.

Stop taking SOLIQUA 100/33 and call your healthcare provider right away if you have pain in your stomach area (abdomen) that is severe, and will not go away. The pain may be felt in the back area. The pain may happen with or without vomiting.

Who should not use SOLIQUA 100/33? Do not use SOLIQUA 100/33 if you:

- are having an episode of low blood sugar (hypoglycemia)
- are allergic to insulin glargine, lixisenatide, or any of the ingredients in SOLIQUA 100/33. Symptoms of a severe allergic reaction with SOLIQUA 100/33 may include swelling of the face, lips, tongue, or throat, fainting or feeling dizzy, problems breathing or swallowing, very rapid heartbeat, severe rash or itching, or low blood pressure.

Before using SOLIQUA 100/33, tell your healthcare provider about all your medical conditions, including if you:

- have or have had problems with your pancreas, your kidneys, or your liver, stones in your gallbladder, or a history of alcoholism.
- have heart failure or other heart problems. If you have heart failure, it may get worse while you take thiazolidinediones (TZDs).
- have severe problems with your stomach, such as slowed emptying of your stomach or problems digesting food.
- are taking certain medicines called glucagon-like peptide 1 receptor agonists (GLP-1 receptor agonists).
- have had an allergic reaction to a GLP-1 receptor agonist.
- are pregnant or breastfeeding or plan to become pregnant or to breastfeed. It is not known if SOLIQUA 100/33 will harm your unborn baby or pass into your breast milk.

Tell your healthcare provider about all the medicines you take, including all prescription and over-the-counter medicines, vitamins, and herbal supplements. SOLIQUA 100/33 may affect the way some medicines work. Before using SOLIQUA 100/33, talk to your healthcare provider about low blood sugar and how to manage it. How should I use SOLIQUA 100/33?

- Do not change your dose without first talking to your healthcare provider.
- Check the pen label each time you inject to make sure you are using the correct medicine.
- Do not take more than 60 units of SOLIQUA 100/33 each day. Do not take SOLIQUA 100/33 with other GLP-1 receptor agonists.
- Only use SOLIQUA 100/33 that is clear and colorless to almost colorless. If you see small particles, return it to your pharmacy for replacement.

- Change (rotate) your injection sites within the area you chose with each dose to reduce your risk of getting lipodystrophy (pitted or thickened skin) and localized cutaneous amyloidosis (skin with lumps) at the injection sites. Do not use the same spot for each injection or inject where the skin is pitted, thickened, lumpy, tender, bruised, scaly, hard, scarred or damaged.
- **Do not** remove SOLIQUA 100/33 from the pen with a syringe.
- Do not re-use or share needles with other people. You may give other people a serious infection, or get a serious infection from them.
- Check your blood sugar levels. Ask your healthcare provider what your blood sugar should be and when you should check.

What are the possible side effects of SOLIQUA 100/33?

SOLIQUA 100/33 may cause serious side effects, including:

- Serious allergic reactions. Stop taking SOLIQUA 100/33 and get help right away if you have any symptoms of a serious allergic reaction, including swelling of your face, lips, tongue, or throat, problems breathing or swallowing, severe rash or itching, fainting or feeling dizzy, and very rapid heartbeat.
- Low blood sugar (hypoglycemia). Your risk for getting low blood sugar is higher if you take another medicine that can cause low blood sugar. Signs and symptoms of low blood sugar may include headache, dizziness, drowsiness, sweating, weakness, irritability, hunger, blurred vision, fast heartbeat, feeling jittery, confusion, and anxiety.
- Kidney problems (kidney failure). In people who have kidney problems, diarrhea, nausea, and vomiting may cause a loss of fluids (dehydration), which may worsen kidney problems.
- Low potassium in your blood (hypokalemia).
- Heart failure. Taking certain diabetes pills called TZDs (thiazolidinediones) with SOLIQUA 100/33 may cause heart failure in some people. This can happen even if you have never had heart failure or heart problems before. If you already have heart failure, it may get worse while you take TZDs with SOLIQUA 100/33. Tell your healthcare provider if you have any new or worse symptoms of heart failure, including shortness of breath, swelling of your ankles or feet, or sudden weight gain. Treatment with TZDs and SOLIQUA 100/33 may need to be adjusted or stopped if you have new or worse heart failure.

The most common side effects of SOLIQUA 100/33 include low blood sugar (hypoglycemia), nausea, diarrhea, upper respiratory infection, stuffy or runny nose, and headache. Nausea and diarrhea usually happen more often when you first start using SOLIQUA 100/33.

Please see a Brief Summary of Prescribing Information on the next page.

Ask your doctor about taming your A1c!



Brief Summary of Information for SOLIQUA® 100/33 (insulin glargine and lixisenatide injection) 100 Units/mL and 33 mcg/mL

This is a brief summary of important information about SOLIQUA 100/33. This information does not take the place of talking with your healthcare professional about your medical condition or treatment. Only your healthcare professional can determine if SOLIQUA 100/33 is right for you.

What is SOLIQUA 100/33?

SOLIQUA 100/33 is an injectable prescription medicine that contains 2 diabetes medicines, insulin glargine and lixisenatide, that may improve blood sugar (glucose) control in adults with type 2 diabetes, when used with diet and exercise.

- It has not been studied in people with a history of pancreatitis.
- It is not recommended for people who also take lixisenatide or other medicines called GLP-1 receptor agonists.
- It is not for use in people with type 1 diabetes, or people with diabetic ketoacidosis.
- It has not been studied in people who have a stomach problem that causes slow emptying (gastroparesis) and is not for people with slow emptying of the stomach.
- It has not been studied in people who also take short-acting (prandial) insulin.
- It is not known if SOLIQUA 100/33 is safe and effective in children under 18 years of age.

What is the most important information I should know about SOLIOUA 100/33?

 Do not share your SOLIQUA 100/33 pen with other people, even if the needle has been changed. You may give other people a serious infection, or get a serious infection from them.

SOLIQUA 100/33 can cause serious side effects, including inflammation of the pancreas, which may be life-threatening.

Before using SOLIQUA 100/33, tell your doctor if you have had pancreatitis, stones in your gallbladder, or a history of alcoholism. These medical problems may make you more likely to get pancreatitis. Stop taking SOLIQUA 100/33 and call your healthcare provider right away if you have pain in your stomach area [abdomen] that is severe, and will not go away. The pain may be felt in the back area. The pain may happen with or without vomiting.

Who should not use SOLIQUA 100/33?

Do not use SOLIQUA 100/33 if you are having an episode of low blood sugar or if you are allergic to insulin glargine, lixisenatide, or any of the ingredients in SOLIOUA 100/33.

Tell your healthcare provider about all your medical conditions, including if you:

- Have or have had problems with your pancreas, kidneys, or liver, stones in your gallbladder, or a history of alcoholism.
- Have heart failure or other heart problems. If you have heart failure, it may get worse while you take TZDs (thiazolidinediones).
- Have severe problems with your stomach, such as slowed emptying of your stomach or problems digesting food.
- Are taking certain medicines called glucagon-like peptide 1 receptor agonists [GLP-1 receptor agonists].
- Have had an allergic reaction to a GLP-1 receptor agonist.
- Are pregnant or breastfeeding or plan to become pregnant or breastfeed. It is not known if SOLIQUA 100/33 will harm your unborn baby or passes into your breast milk.

Tell your healthcare provider about all the medicines you take, including all prescription and over-the-counter medicines, vitamins, and herbal supplements. SOLIQUA 100/33 may affect the way some medicines work.

How should I use SOLIQUA 100/33?

- Read the detailed Instructions for Use that come with your SOLIQUA 100/33 for instructions on using the SOLIQUA 100/33 pen and injecting SOLIQUA 100/33.
- Use SOLIQUA 100/33 exactly as your healthcare provider tells you to.
- Do not change your dose unless your healthcare provider has told you to change your dose.
- Your healthcare provider should teach you how to inject SOLIQUA 100/33 before you use it for the first time. If you have questions or do not understand the instructions, talk to your healthcare provider.
- Take SOLIQUA 100/33 only 1 time each day within 1 hour before the first meal of the day.
- If you miss a dose of SOLIQUA 100/33, take your next scheduled dose at your regular time. **Do not** take an extra dose or increase your dose to make up for the missed dose.
- Check the label on the SOLIQUA 100/33 pen each time you give your injection to make sure you are using the correct medicine.

- Do not take more than 60 units of SOLIQUA 100/33 each day. SOLIQUA 100/33 contains two medicines: insulin glargine and lixisenatide. If you take too much SOLIQUA 100/33, it can cause severe nausea and vomiting. Do not take SOLIQUA 100/33 with other GLP-1 receptor agonists. If you take too much SOLIQUA 100/33, call your healthcare provider or go to the nearest hospital emergency room right away.
- Only use SOLIQUA 100/33 that is clear, colorless to almost colorless. If you see small particles, return it to your pharmacy for replacement.
- Change (rotate) your injection sites within the area you chose with each
 dose to reduce your risk of getting lipodystrophy (pitted or thickened skin)
 and localized cutaneous amyloidosis (skin with lumps) at the injection
 sites. Do not use the same spot for each injection or inject where the skin
 is pitted, thickened, lumpy, tender, bruised, scaly, hard, scarred or damaged.
- Inject your dose of SOLIQUA 100/33 under the skin (subcutaneously) of your abdomen, thigh or upper arm. Do not use SOLIQUA 100/33 in an insulin pump or inject SOLIQUA 100/33 into your vein (intravenously) or muscle (intramuscularly).
- **Do not** mix SOLIQUA 100/33 in any other type of insulin or liquid medicine prior to injection.
- Do not remove SOLIQUA 100/33 from the throwaway (disposable) prefilled pen with a syringe.
- Do not re-use or share your needles with other people. Check your blood sugar levels. Ask your healthcare provider what your blood sugar should be and when you should check your blood sugar levels.

Your dose of SOLIQUA 100/33 may need to change because of a change in level of physical activity or exercise, weight gain or loss, increased stress, illness, change in diet, or because of other medicines you take.

What are the possible side effects of SOLIQUA 100/33? SOLIQUA 100/33 may cause serious side effects, including:

- Serious allergic reactions. Stop taking SOLIQUA 100/33 and get help right away if you have any symptoms of a serious allergic reaction, including swelling of your face, lips, tongue, or throat, problems breathing or swallowing, severe rash or itching, fainting or feeling dizzy, and very rapid heartbeat.
- Low blood sugar (hypoglycemia). Your risk for getting low blood sugar is higher if you take another medicine that can cause low blood sugar.
 Signs and symptoms of low blood sugar may include: headache, dizziness, drowsiness, sweating, weakness, irritability, hunger, blurred vision, fast heartbeat, feeling jittery, confusion, and anxiety. Talk to your healthcare provider about how to treat low blood sugar.
- Kidney problems (kidney failure). In people who have kidney problems, diarrhea, nausea, and vomiting may cause a loss of fluids (dehydration), which may worsen kidney problems.
- · Low potassium in your blood (hypokalemia).
- Heart failure. Taking certain diabetes pills called TZDs (thiazolidinediones) with SOLIQUA 100/33 may cause heart failure in some people. This can happen even if you have never had heart failure or heart problems before. If you already have heart failure, it may get worse while you take TZDs with SOLIQUA 100/33. Tell your healthcare provider if you have any new or worse symptoms of heart failure, including shortness of breath, swelling of your ankles or feet, or sudden weight gain. Your healthcare provider may need to change or stop your treatments if you have worsening heart failure.

The most common side effects of SOLIQUA 100/33 may include low blood sugar (hypoglycemia), nausea, diarrhea, upper respiratory infection, stuffy or runny nose, and headache. Nausea and diarrhea usually happen more often when you start using SOLIQUA 100/33.

What are the ingredients in SOLIQUA 100/33?

Active ingredients: insulin glargine and lixisenatide.

Inactive ingredients: 3 mg of methionine, 2.7 mg of metacresol, 20 mg of glycerol, 30 mcg of zinc, hydrochloric acid, sodium hydroxide and water for injection.

Other important information

The risk information presented here does not include everything that is in the FDA-approved product label. To get more information:

- Talk about SOLIQUA 100/33 with your healthcare provider or pharmacist.
- For FDA-approved product labeling, go to www.soliqua100-33.com or call sanofi-aventis at 1-800-633-1610.
- You are encouraged to report negative side effects of prescription drugs to the FDA. Visit www.fda.gov/safety/medwatch, or call 1–800–FDA–1088.

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QUESTIONS TO ASK YOUR DOCTOR TODAY

Could a treatment change be right for you?

Here's what to ask about SOLIQUA 100/33 and blood sugar management.

- What is my A1c now, and what A1c should I be aiming for?
- I diet, exercise and take my diabetes medicine. Why isn't that enough to lower my A1c?
- My A1c is still too high. Is this a sign that my diabetes treatment plan may need to change?
- How could a treatment like SOLIQUA 100/33—which combines a long-acting insulin with a non-insulin diabetes medicine—help me tame my beast of a high A1c?

- Is SOLIQUA 100/33 right for me? Are there side effects I should be aware of?
- If you prescribe SOLIQUA 100/33, what should I know about the pen? Will my dose change over time?
- 7 If SOLIQUA 100/33 is right for me, when would I administer it and what will my routine be like?



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Please see Important Safety Information on the previous pages and Brief Summary of Prescribing Information on the adjacent page.



YOUR A1C

WHY THIS TEST MATTERS

By Sonya Collins Reviewed by Brunilda Nazario, MD, WebMD Lead Medical Director

When you have diabetes, you have to keep a close watch over your blood sugar. You do routine finger sticks to see what your blood sugar level is at any given time. The readings from less than 140 to 200 or more show how many milligrams of glucose (that's sugar) are in a deciliter of your blood at that moment. The number fluctuates depending on factors such as when you last ate, what you ate, and whether you just exercised.

Your doctor takes a different measure of your blood sugar called A1c. "This is a test that shows us what the average blood glucose has been over the last 3 months," says Constance Brown-Riggs, RD, CDE, a diabetes care and education specialist and owner of CBR Nutrition Enterprises in Massapequa, NY.

This number gives doctors a better picture of how your blood sugar runs overall, rather than simply in response to your most recent activities. The American Diabetes Association compares this to the difference between how a baseball player hits in one game (that's blood sugar) and the player's overall batting average (that's A1c).

WHAT A1C **MEASURES**

Glucose attaches to proteins in red blood cells called hemoglobin. The higher your blood sugar is over time, the more glucose latches onto these proteins. "A1c is a measure of the percentage of hemoglobin that is saturated with glucose," Brown-Riggs explains.

A1c gives health care providers insight into your blood sugar levels over the last 3 months since red blood cells have a life span of about 3 months.

A normal A1c is 5.7% or below. Prediabetes range is over 5.7 and under 6.5. Diabetes range is 6.5% or higher. A 6% A1c means your blood sugar has averaged about 126 mg/dL over the last 3 months. An 8% A1c equals a 3-month average of about 183.

WHY A1C MATTERS

A doctor needs to see an A1c of 6.5% or higher on two separate tests to diagnose diabetes. After you get a diagnosis, your health care provider will use routine A1c tests, at least twice a vear but maybe more, to see how well your treatment is working.

Your treatment plan, which may include weight loss if you are overweight or obese, exercise, changes to your diet, and medication, is designed to keep your blood sugar as close to normal as possible at all times. On your own, you'd have to do multiple finger sticks throughout the day for many days to see how your body is responding to your treatment plan. Your A1c provides the

same information with one blood test.

"We know that the higher glucose is, and the longer it is out of range, the more likely complications will occur," Brown-Riggs explains. "We want to keep that blood glucose level as close to normal as possible to prevent those long-term complications."

TIPS FOR LOWERING YOUR BLOOD SUGAR

Weight Loss

Losing just 5% of your body weight—that's 10 pounds if you weigh 200—can lower blood sugar and make it easier to control.

A 15-minute walk after meals can help reduce the blood sugar spike that typically happens after you eat.

A Fiber-Rich Diet

Foods that are high in





LIVING WITH TYPE 2 DIABETES

HOW THE POWER OF INNER HEALING HELPS ME MANAGE THIS CHRONIC CONDITION

By Tiff McFierce

Reviewed by Brunilda Nazario, MD, WebMD Lead Medical Director

Five years ago, my doctor told me I had prediabetes. Her advice at the time: "Just get back to eating correctly and working out so you don't progress to diabetes." But I have a history of food issues-emotional eating, sometimes binge eating. So although I understood the importance of the situation, I still had the same stressors in my life. I didn't have a plan for how to cope with them in a new way.

Slowly things got worse. I felt terrible. My hands and feet were always swollen, and my limbs would tingle and burn. I couldn't stay awake. In meetings, I would fight not to fall asleep sitting up. But still I put off going to the doctor because of the shame I felt.

Finally, I made the appointment. Sure enough, I had

progressed to type 2. I didn't get much support at that visit beyond a push for a prescription-no education on the medication or diabetes. I burst into tears as I left. I felt so disappointed in myself. I didn't want anybody to know about my diagnosis. I resolved then to "get rid of it." I was going to reverse my type 2.

And after only 4 months, I had. I was aggressive. I cut out everything and only ate "green and clean." It's how I am in my career: If I want to achieve something, I'm going to go all out to get it. I approached that goal the same way. And although it worked, it couldn't last. I wasn't fully connected to my body. There was no grace, or plan for slipups.

I could tell I was going to spiral into old habits. I realized it wasn't strict rules that would

be the key to a healthy balance for my life. I couldn't just go into "avert crisis" mode and fight against a diagnosis I didn't want. I needed to look within and grieve the kind of health I assumed I would have. I had to acknowledge the feelings my diagnosis brought up so I could accept and love myself.

So I channeled my go-gettedness into a new direction and in 2017 started a wellness community and brand. I called it Look IN: a restorative space for Black women and women of color to explore and support healing and creative modalities to self-care through music, movement, and meditation. We host health experts (which due to COVID-19 can be accessed via Instagram @Look IN. and @TiffMcFierce), but we also work on radical acceptance of who we are so we can support our power of inner healing. It's all the things I needed when I was diagnosed.

Of course the tangible aspects of type 2 treatment are crucial: drinking your water, eating leafy greens, and exercise, but for me the introspective work and the community support are the building blocks that help me access all those other tools.

After a car accident earlier



Find trusted support. Connect with a counselor or dietitian who sees you, not just your "stats," to work out a sustainable plan.

Go slow and steady. Instead of an all-or-nothing approach, write down small changes you can make and build from there.

Be kind to yourself. Talk to yourself like a beloved friend. Instead of saying, "You shouldn't eat this junk," speak from a place of care: "It's nice out. It's the perfect time to take a walk.'

this year left my body inflamed and exercise much harder to do, my A1c went back up. So I started on metformin, but I don't see that as a failure. In fact, because of my inner work, I can see now how the medication supports my goals.

I want others to know they're more than their diagnosis. But also, accepting the realities of your diagnosis can help you be empowered, powerful, and whole. The journey will not always be linear, but with your mind and body connected, you can stay the course wherever it takes you.



HOW TO LOWER YOUR A1C

LIFESTYLE CHANGES YOU CAN MAKE

By Rachel Reiff Ellis

Reviewed by Brunilda Nazario, MD, WebMD Lead Medical Director

Hemoglobin A1c is a blood test that measures your average blood glucose levels over a 3-month span. Lowering your A1c is a marathon, not a sprint. You can build toward your goal by focusing on these key areas:

SHED SOME POUNDS

You may not have extra weight to lose, but if you're overweight or obese, losing weight helps your insulin work better. In fact, losing just 5% to 10% of your body weight will lower your A1c.

"Some people with fairly new onset of type 2 diabetes who are able to lose a significant amount of weight and keep it off may achieve remission in their diabetes and go back to having normal glucose levels," says Christine Lee, MD, program director of the Division of Diabetes, Endocrinology, and Metabolic Diseases at the National Institute of Diabetes and Digestive and Kidney Diseases in Bethesda, MD.

Talk to your doctor about practical diet and exercise changes that fit your lifestyle to help you lower the number on the scale.

CATER TO YOUR DIABETES

The right nutrition helps you keep healthy blood sugar levels on a daily basis, which leads to a lower A1c over

time. Lean on healthy carbohydrates, fiber-rich foods, fish, and "good" fats as you fill your plate, such as:

- Vegetables
- Fruits
- Nuts
- · Whole grains
- Legumes such as beans and peas
- Low-fat dairy
- Heart-healthy fish such as salmon
- Canola, olive, and peanut oils

Reduce or avoid foods that have trans or saturated fats, high-cholesterol foods such as fatty meats, and foods with lots of sodium. A good rule of thumb is to move toward whole foods and away from anything processed.

PLUG INTO PROFESSIONAL SUPPORT

One of the most important tools for reaching your goals is a good diabetes team. "The day-to-day challenges of managing and monitoring diet, blood sugar levels, activity, and medications can be overwhelming," Lee says. "Education and support

DOCTOR Q&A

Christine Lee, MD, at the National Institute of Diabetes and Digestive and Kidney Diseases sheds light on some A1c facts.

- Q: What's a healthy A1c goal? A: It depends on your personal health history, but most adults should target less than 7% to reduce the risk of diabetes complications.
- Q: How much exercise and weight loss will lower my A1c? A: There's no one-size-fits-all exercise regimen. The key to continuity is finding something that fits your lifestyle that you enjoy. However, 200 to 300 minutes of moderate-intensity physical activity per week such as a brisk walk can help keep weight off, which will help lower your A1c.
- Q: Are there additional aids to help me lose weight?
 A: Certain adults may benefit from weight loss medication or even weight loss surgery, but side effects need to be considered carefully. Be sure to look at your medications to ensure they aren't stopping you from losing weight.

services provide people with knowledge, informed decision-making capability, and skills needed to help them manage their diabetes on a daily basis."

For example, Lee says, a diabetes educator can teach you how to better adjust your medication dosage if you're sick, how to manage low blood sugar levels, or what to do when you accidentally miss a dose.

Focusing on all these lifestyle changes together can do even more than lower your A1c, it can improve your overall wellness. "It also has additional health benefits of improving cardiovascular risk factors, physical functioning, and quality of life," she says.

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SIGNS AND SYMPTOMS

LEARN THE CAUSES AND CUES OF HIGH BLOOD SUGAR

By Rachel Reiff Ellis

Reviewed by Brunilda Nazario, MD, WebMD Lead Medical Director

Too much sugar in your blood, or hyperglycemia, is a sign that you don't have enough insulin in your blood, or your insulin isn't working as well as it should. Often, hyperglycemia is the sign that tells your doctor you have diabetes

in the first place. But you can continue to deal with it even after you're diagnosed. Learn what leads to spikes in your blood sugar and how you can tell when you've gone too high.

DANGER ZONE

These signs mean it's time to see a doctor ASAP.

- You can't keep anything down.
- Your blood glucose is above 240 mg/dL after taking meds.
- You have a fever that lasts longer than 24 hours.
- You have ketones in your urine.
- You're having shortness of breath, dry mouth, weakness, confusion, or abdominal pain, and your breath smells fruity.

WHY IT HAPPENS

There are many reasons your blood glucose levels may be above normal. These include:

Something you ate. Foods—especially American fare—can be sneaky when it comes to added sugar. "Oftentimes people don't realize that certain foods contain a lot of sugar and can set off their blood glucose," says Emily J. Gallagher, MD, PhD, assistant professor of endocrinology, diabetes and bone disease at the Icahn School of Medicine at Mount Sinai in New York. Check labels before you eat and know what you're putting in your body.

Incorrect medication use. If you give yourself the wrong dose of your diabetes treatment, or it's expired, you may not be able to control an influx of glucose in your blood correctly. Talk to



your doctor about your treatment dosage if you're having repeated bouts of high blood glucose.

Injury, illness, or stress. When you experience a trauma to your body or are under a lot of stress from a busy schedule, heavy emotions, or illness, your body responds by putting out adrenaline and cortisol into your bloodstream. Your body also releases more glucose from your liver. These effects can last up to 6 to 8 hours after the initial stress.

WHAT TO WATCH FOR

While it's important to get ahead of the



KEEP IT STEADY

Emily J. Gallagher, MD, PhD, at Icahn School of Medicine, offers tips for stabilizing your blood sugar.

Eat mindfully. Plan your meals and snacks ahead so you prevent glucose spikes.

Reduce carbohydrates. Cut back or eliminate refined grains like white bread and white rice, sweets, and sodas.

Stay hydrated. Stick to water and avoid sugary drinks.

Exercise. It doesn't always have to be strenuous. Simply going for a walk after dinner can help your body use the glucose just while you're moving, but for hours afterward.

game by knowing what causes a rise in blood glucose, it's also good to know what you might experience once that happens.

"A lot of the time people don't recognize the symptoms of hyperglycemia," Gallagher says. In fact, she says, it's not uncommon to have no symptoms at all until you're up at 250 or 300 mg/dL, or you develop a complication.

HOWEVER, THERE CAN BE WARNING SIGNS:

You have to pee a lot. "When the glucose goes up, one of the things that people notice first is frequent urination," Gallagher says. Excess glucose in your body goes into your urine, and the glucose pulls water along with it, which tells your body to make more urine.

You're really thirsty. If you're peeing a lot, you're going to feel parched pretty quick. "Frequent urination leads to dehydration, and your body senses this, and activates the thirst response," she says.

Your head hurts and you feel tired. The dehydration you get from high blood glucose can lead to a lethargic feeling and headaches. But you may also feel tired because you don't have enough insulin to send

glucose to the tissues that need it. "When insulin levels are low, glucose doesn't go into the muscles, and the protein in the muscles is broken down, causing fatigue," Gallagher says.

Your vision is blurry. Too much glucose can increase the amount of fluid in your eyes, which reduces how sharply you can see. This should go away once your glucose goes back to normal levels.

If it continues to happen, you can have more serious eye issues. "Longer term, people with diabetes are more likely to have a number of eye conditions, including cataracts and glaucoma," she says.

THE STRESS FACTOR

HOW THIS TENSION CAN AFFECT YOUR BLOOD SUGAR

By Jodi Helmer

Reviewed by Brunilda Nazario, MD, WebMD Lead Medical Director

Feeling stressed? It might cause fluctuations in your blood sugar.

Stress causes your body to release hormones like cortisol and adrenaline to ensure that you have enough energy to go into "fight-or-flight" mode. As these hormones are released into the bloodstream, your body also releases stored sugars (called glycogen) that elevate your blood sugar.

"When you have type 2

diabetes, insulin resistance combined with the release of additional glucose from the liver may combine to raise blood sugars during stressful situations," says Mary de Groot, PhD, associate professor of medicine at Indiana University and immediate past president of health care and education for the American Diabetes Association.

Stress also takes an emotional toll that can make it harder to regulate your blood sugar. You might not get enough sleep, might eat more comfort foods, or might skip workouts during stressful periods, which can affect your blood sugar.

"When we're under stress, we also have less attention to put toward self-care behaviors," adds de Groot. "Managing diabetes is hard work under the best of circumstances; when we add stressors on top of that, it becomes that much more of a challenge."

THESE FOUR STRATEGIES CAN HELP KEEP STRESS IN CHECK

Practice mindfulness
Activities like deep breathing
and guided meditation are
designed to help you relax
and focus on the present
moment. Breathing exercises
can be especially helpful. In
one study, slowing breathing
to an average rate of four
breaths per minute helped
lower cortisol levels.

"If we practice deeper, slower breathing, we help to reset the stress response both physically and emotionally," says Mary de Groot, PhD, associate professor of medicine at Indiana University.

Get moving

You can outrun stress.

Exercise boosts your endorphins, improves mood, and counteracts the negative effects of stress.

Seek social support

Call a friend, snuggle with a pet, or attend a church service; activities that provide a sense of comfort and social engagement can help counteract the effects of stress, according to de Groot.

Address the source of stress

If watching the news or scrolling through social media gets your heart racing and your blood sugar climbing, de Groot suggests taking a media break, explaining, "Tuning out of things that trigger stress are also important."



TYPE 2 DIABETES

TIPS TO HELP MANAGE YOUR SYMPTOMS

By Matt McMillen

Reviewed by Brunilda Nazario, MD, WebMD Lead Medical Director

- DROP A FEW
 Lose just 5% to 10% of excess body weight to improve your blood glucose level.
- 2 GET UP AND GO Every half hour, leave your desk or couch and move around for a few minutes.
- **3** MAKE A PLAN
 With your doctor's help, set realistic fitness goals, start slowly, and stay focused.
- 4 KICK THE HABIT

 Quit smoking to help prevent heart disease, a common consequence of diabetes.
- 5 KNOW YOUR DISEASE
 Learn about diabetes to help
 you make better self-care
 decisions.



- 6 BUDDY UP

 To stay motivated and consistent, find an exercise partner who will go on walks and work out with you.
- T LEARN TO RELAX

 Breathe deeply, meditate, and listen to music; less stress equals lower blood glucose.
- STICK WITH IT

 Always take your medications as prescribed, even when you feel well.
- **G** COME TOGETHER

 Join a support group to connect with others who have diabetes.
- 10 KEEP COUNT

 Learn to count carbohydrates,
 the food component most likely
 to cause blood glucose spikes.

EXPERT TIPS

Diana Isaacs, PharmD, CDCES,

endocrine clinical pharmacy specialist, Cleveland Clinic, OH

"Monitor your blood glucose. It helps you understand the effects of food, medications, physical activity, and stress on your individual glucose levels. For example, black coffee may spike one person and have little effect on another. Try checking before a meal and again 2 hours after to see how different foods impact you."

Monique Dieuvil, MD,

family medicine specialist, Orlando Health Physician Associates

"See an eye doctor once a year to make sure that your eyes have not been affected by diabetes. Poorly managed diabetes can lead to diabetic retinopathy, a leading cause of blindness that often has no early symptoms. Also, see a foot doctor to examine your feet for cuts, ulcers, and other problems you may not have noticed."

Minisha Sood, MD,

endocrinologist, Lenox Hill Hospital, NYC

"Focus on lifestyle improvements, the backbone of diabetes management. Nutrition is more powerful than any diabetes medication for lowering A1c. Eat a plant-rich diet low in refined sugars and flours. Get 150 to 300 minutes of moderate physical activity per week (think cardio and weight training) and avoid a sedentary lifestyle. That means at least 8,000 to 10,000 steps per day."

STATS AND FACTS

By Sonya Collins

Reviewed by Brunilda Nazario, MD, WebMD Lead Medical Director



Number of Americans age 65 and over who have a diagnosis of diabetes.

Health care dollars spent treating diabetes and its complications.

Number of U.S. men who have a diagnosis of diabetes.



How much greater the costs of health care for people with type 2 diabetes compared with others.





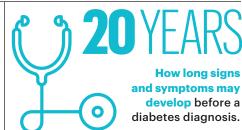
Amount of body weight you could lose to make a

big difference in blood sugar control. That's just 10 pounds for a 200-pound person.





Amount of diabetes cases that are type 2.



SOURCES: CDC, American Diabetes Association, USDA, Diabetologia