LIVING THE CONTINUOUS GLUCOSE MONITOR LIFE: CHALLENGES, OPPORTUNITIES AND THE FUTURE
Buy your copy of Sugar Happy for $14.95 from Amazon and Barnes & Noble and receive a free one year subscription to Diabetes Health Digital magazine - valued at $11.95

“This is a wonderful new diabetes guide written by the editor/publisher of the highly-regarded Diabetes Health periodical. It is an easy-to-read paperback, especially for those recently diagnosed or those who wish to improve their current diabetes management. It benefits from the author’s substantial experience with diabetes in her family. The comprehensive approach offers many tools to help - both devices and personal tips, plus moral support.

Gary Arsham MD PhD FACP

This book gives the reader a personal perspective on not only living with diabetes but also caring for someone with this disease. It is presented in a simple, easy to understand format yet also presents the emotional issues that both families and those with diabetes deal with on a daily basis. Kudos to Nadia for providing this meaningful information that is useful to both professionals and nonprofessionals alike.

Dr. Kathleen Palyo DNP BC-ADM

A thought-provoking, yet interesting question: can managing your blood sugar be as simple as what you don’t know? I think so.

Information is power! Making informed medical decisions can save your life by delaying or preventing diabetes complications. I call this being “diabetes literate”.

I was not only born into a type 2 diabetes family but also married a type 1. I was propelled at a young age into “caretaker mode,” and with my knowledge of the scarcity of resources, support, and understanding for people with diabetes, co-founded Diabetes Interview, now Diabetes Health magazine.

Sugar Happy-Your Diabetes Health Guide in Achieving Your Best Blood Sugars and Letting Go of Your Diabetes Complication Fears will help you understand:

- Why diabetes is overwhelming. You are not alone.
- How to cope with diabetes burnout.
- How to bring down a blood sugar when your glucose meter reads 200 mg/dl or 4.4 mmol/L.
- Why you can wake up with a high or low blood sugar.
- Why exercise raises blood sugars.
- Type 2- going on insulin does not make you a failure.
- How to avoid or delay diabetes complications.
- Which diet is best for you.
- The important role of medical devices.
- The discouraging cost of diabetes and how it can lead to denial and the worst possible outcomes.
- Financial help with your diabetes supplies and how to apply for them.
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We've said this before in other columns, but it bears repeating: The world of diabetes is a fascinating blend of patients and their emotions, drugs, and technology.

The technological marvel that most people with diabetes are aware of is CGM—continuous glucose monitoring. The ability to continuously track blood sugar levels throughout the day makes CGM a godsend for both type 1s and type 2s. In "Living the Continuous Glucose Monitor Life" (page 6), Clay Wirestone looks at the future of continuous glucose monitors, both in their capabilities and durability, and the evolution of their status from very expensive devices to lower-cost technology that could soon be available on a mass-market basis.

Clay continues his in-depth reports on diabetes in "9 Things to Know About Insulin" (page 9), short bullet-point observations about what some say ranks alongside penicillin as the greatest drug discovery in history.

Diabetes patients experience many ups and down with their emotions. Our type 1 correspondent Meagan Esler offers a touching vignette about the support and encouragement two women at work give her in "My Own Little Cheering, Volunteering Committee" (page 12).

A less consoling observation about the emotional states of people with diabetes is "How Depression Affects Your Diabetes Self-Management" (page 22). There is an increasing awareness that along with controlling their blood glucose numbers, diabetics often must deal with depression from the constraints and demands posed by their disease.

But back to a sunnier side: "Diabetes Camp Life" (page 14) reports on one of the best tonics there is for diabetic children: a week or two at a summer camp designed especially for them. Such camps offer safe places for kids to play without worrying about insults or censure from non-diabetic kids, and to experiment with dosing and controlling their diabetes on their own, under good, but hands-off, supervision.

At the opposite side on the age scale is Emile Backofen, an 86 year old man who regularly plays tennis, both because he can and because it helps him control his blood sugars: "Tennis Helps Type 2 to Control His Blood Sugars" (page 16).

In "Ask Nadia" (page 18), a reader wants to know what to do about a mother whose blood glucose level is 434 (!) That's an astoundingly high number to people who have their BG levels under relative control, but not as uncommon as you might think.

Spring is here! A good time to smell the roses and enjoy the greening of the land.

— Nadia Al-Samarrie
Founder, Publisher, and
Editor-in-Chief

people, drugs, and technology
Over less than two decades, continuous glucose monitor technology has revolutionized care for type 1 diabetics. For long-term diabetics, the concept still carries a whiff of wizardry. A transmitter attached to the body sends information about blood glucose levels to a receiver throughout the day. Health care professionals and people with diabetes are only beginning to explore the potential of CGMs. To move to the future, though, we have to understand where we’ve been, and where we are now with the technology.

FACING DOWN THE CHALLENGES
Regardless of the glossy brochures provided by manufacturers, continuous glucose monitoring systems aren’t perfect. Let’s repeat that one more time for emphasis: continuous glucose monitoring systems aren’t perfect.

Why not?
The simplest answer is that they don’t actually test blood glucose levels. Blood sugar is a precise thing, and you can figure it out by looking at the name. It’s a measure of glucose contained in the blood circulating through your body. A blood glucose meter does that measurement, and current technology allows it to do so with a fair amount of precision.

A CGM, on the other hand, tracks glucose using your body’s interstitial fluid, the stuff that fills space around cells. In general, it tracks blood glucose levels, but it can lag behind. It can also be a relative measurement, which means it usually requires some kind of calibration.

Although Dexcom’s latest models have been approved for making treatment decisions without a finger stick, other models haven’t quite gotten there yet. And it’s a brave person with diabetes indeed who would
inject or infuse a sizable correction based solely on a CGM reading. Those who have dealt with the disease for decades know that multiple measurements are the surest way to be certain.

Secondly, the technology is expensive. You can go to a drugstore and buy a meter and test strips for $20 to $30. A continuous glucose monitoring system will set you back more than $1,000, depending on the model and needed supplies. Insurance can cut that cost, true, but coverage varies.

Again, companies are working on that challenge too. The FreeStyle Libre, for example, offers a CGM-like experience for a far cheaper price. One imagines other options will follow.

**EMBRACING THE OPPORTUNITIES**

Depending on how a person with diabetes chooses to use it, a continuous glucose monitor holds exceptional promise. Think of it this way: For decades, diabetes educators and endocrinologists had to guess what a patient’s blood sugar levels were doing overnight. They had to use sparse data points to even figure out what those levels were doing during the day.

Now, all the professional has to do is download data from the last few weeks or months. They can look over graphs with the patient, pointing at spikes and dips, attempting to figure out precisely what’s going on and when.

There are daily benefits, too. For people with diabetes, the ability to run to the grocery store, or take a trip around town, or go for a jog without carting around blood sugar testing equipment is a godsend. Yes, you might have to bring a receiver, but it’s going to be smaller and easier to handle than a monitor, lancing device and bottle of test strips.

There’s a social benefit, too. Those with diabetes can sometimes feel frustrated when trying to communicate about the disease to friends and loved ones. The ability to show these well-meaning individuals direct evidence of blood sugar trends makes a difference.

For decades, diabetes educators and endocrinologists had to guess what a patient’s blood sugar levels were doing overnight. They had to use sparse data points to even figure out what those levels were doing during the day.
“See,” the diabetic can say, “I’ve been up and down all day. That’s why I’m irritated!”

Or, “See how I’m heading down right now? That’s why I need some sugar right this instant!”

That hypoglycemic example highlights one of the most practical and immediate benefits of the CGM for everyday treatment: The virtual elimination of low blood sugars. Since tight control and multiple injections became the norm in the late 1980s, diabetics have grappled regularly with unpredictable lows.

The CGM, by showing not only lows but declines as they’re happening, makes hypoglycemia far simpler to handle. If you see a downward trend with a blood sugar of 180, and 9 units of insulin still on board, you can take advance action by eating a few quick-acting carbs. A simple finger stick check wouldn’t have given you anywhere near that amount of information.

LOOKING TO THE FUTURE

If past experience with diabetes technology has shown us anything, it’s that technology only improves over time. Insulin pumps, for instance, were once bulky and difficult to use. The principles behind them weren’t difficult to understand, but most diabetics stayed away. These days, with improved form factors and interfaces, insulin pumps are widespread.

Likewise, CGMs are only going to get better and more accurate. They will require less frequent calibration (or no calibration at all, as the case may be). They will predict trends further in advance. They will integrate more tightly with pump technology. And they will continue to shrink in size and improve in convenience.

Ultimately, it’s likely that CGM technology will become integrated with pumps. Multiple established and startup companies are working on closed-loop systems that include both pump and glucose monitoring components. It seems incomplete, even now, to talk about one without the other.

In diabetes equipment, as much of technology these days, users can expect more features in a more compact package, each and every year.
Insulin matters. For diabetics and the people who love them, no medication matters as much as insulin. It’s literally the difference between life and death for type 1 diabetics, and a substantial number of type 2 diabetics depend on it too.

But how much do you actually know about insulin? How much do you know about that clear, distinctive-smelling hormone that you inject or infuse into your body? Here’s a list of 10 important things to understand about insulin.

NUMBER ONE: A lot of people use it
In the United States, about six million people use insulin. That’s more than the population of Los Angeles. That’s more than the population of Chicago.

In fact, that’s more than the population of any U.S. city, with the exception of New York. Think of the number of vials, pens and needles. Think of the amount of insulin-pump paraphernalia. Think of the millions of pokes, pricks, injections, and insertions.

In other words, insulin is everywhere.

NUMBER TWO: There are a multitude of ways to get it in your body
The iconic clear glass vial of insulin and a sharp new needle aren’t the only ways diabetics get the medicine they need. These days, they can also use insulin pens, which come pre-filled. They can use the infusion set of an insulin pump. Or, if they’re feeling especially daring, they can try Afrezza, a type of inhaled insulin.

The iconic clear glass vial of insulin and a sharp new needle aren’t the only ways diabetics get the medicine they need. These days, they can also use insulin pens, which come pre-filled.

NUMBER THREE: It was invented in Canada
A team of researchers at the University
of Toronto discovered insulin in 1921. The work won a Nobel Prize and is now commemorated on the Canadian $100 bill. Although accounts of the discovery have been disputed over the years, according to a November 2018 Medical News Today article the most accurate credit is as follows:

“Frederick G. Banting came up with a way to extract pancreatic extract in 1921; John MacLeod, the head of physiology at The University of Toronto, oversaw this process; Charles Best, Banting’s assistant, helped refine the process, and a biochemist named James Collip helped to purify insulin even further to make it clinically useful.”

NUMBER FOUR: The original patent was sold for a dollar
Banting sold the patent for insulin to that same University of Toronto for a dollar. The university then licensed it to pharmaceutical companies royalty free. Banting and the university’s thinking was simple: If drug companies held the patent, they would drive up prices. Likewise, if they had to pay exorbitant royalty fees, companies might charge too much. The creators of the drug wanted it available as widely and as cheaply as possible.

That was a noble goal (even a Nobel one!). Unfortunately, it also hasn’t worked out in practice. More about that below.

NUMBER FIVE: When Humulin was introduced in 1983, it was a big advance
The first insulin given to diabetics was produced from animal sources, usually cattle and hogs. Some patients were allergic to the mixture and struggled to control their blood sugar levels. It wasn’t until 1982 that Eli Lilly introduced Humulin, which was genetically engineered. Humulin was the first of the “human” insulins, meaning that they more precisely mirrored the hormone released by nondiabetics.

NUMBER SIX: Only three companies control the insulin market
Despite the demand for the stuff, more than 90 percent of the world’s insulin comes from
three main manufacturers. They would be Novo Nordisk, which makes Novolog; Eli Lilly, which makes Humalog; and Sanofi-Aventis, which makes Lantus. Each of the companies produces other versions as well, but those are three most recognizable.

NUMBER SEVEN: There’s a national conversation going on about price
If you’re uninsured or on a high-deductible health plan, you may have noticed that insulin’s list price is incredibly high. A single vial costs around $300. According to the American Diabetes Association, “the average price of insulin nearly tripled between 2002 and 2013.” Lawmakers have been examining the issue, and insulin manufacturers have also rolled out programs meant to help diabetics pay for their insulin.

NUMBER EIGHT: Brew your own? Efforts are underway to do just that
As Diabetes Health reported in its annual product guide this year, there’s currently an “open source” insulin effort underway meant to democratize who can manufacture the drug. While you might not be able to brew some up in your bathtub, those working on the project envision a future in which local hospitals or universities could produce local, lower-cost supplies.

NUMBER NINE: There’s no shame in taking it
Type 1 diabetics know this already, but it bears emphasizing for the type 2s out there: You shouldn’t be afraid of taking insulin. As a matter of fact, it can radically improve your control of diabetes. Yes, an injectable drug can seem scary and uncomfortable. But insulin is necessary for life, and nondiabetics produce their own. So grit your teeth, face your fears, and inject.

Your body will thank you.
Less than a week before International Women’s Day I sat at my office desk trying to finish some work. At some tables across the room two of my most dedicated volunteers, and good friends, discussed Social Security benefits and retirement. One mentioned she would try to wait until age 70 to take her Social Security benefits, the other had already started. They discussed aging and hoping for a good long life expectancy and then turned the conversation to me.

“How about you, Meagan?” one asked. “When do you think you’ll retire and take your Social Security benefits?” I thought for a moment. I’m only 41 now but I have had type 1 Diabetes for more than half my life. I also have celiac disease and thyroid issues. I quietly said “I don’t know. I really don’t know how long I’ll live with all that is wrong with me. I don’t think I’ll get to be really old”.

Instantly they sprang into protective mode. One sweet volunteer pulled out her phone tapped away wildly and exclaimed loudly “Hey! Mary Tyler Moore (who also lived with type 1 diabetes) lived to be 80! She passed away from causes that could have happened to anyone, not from her diabetes. You could easily have more than 40 years left!” The other volunteer chimed in and pointed out that when people live with chronic illness, they usually take far better care of themselves than the rest of the population does, adding that it could mean a much longer life.
population does, adding that it could mean a much longer life.

I felt so overwhelmed by their sweet pep talk and caring. Here, I just assumed my life would be a shorter one because of my autoimmune illnesses. They have a beautiful point, perhaps all my hard work – my daily exercise, carb conscious food choices, and frequent blood sugar testing could lead to a great long life.

I couldn’t be more thankful to these two amazing people in my life. They do exactly what women should do for each other – they build you up when you are down. I strive to always be there to support these two during their hardships and worries too. They make my life better each and every week and I feel blessed to work with them. Who knows, with any luck when I do retire I can volunteer alongside these two incredibly inspiring people.

Meagan Esler is one of our longest type 1 contributors. Her articles are flavored by many of her real-life stories that captivate us because of her courageous writing style where she shares all. You can also follow her on her low-carb gluten-free blog on ToTemptation.com.
DIABETES CAMP LIFE: Why a special summer program could be just the ticket.

Clay Wirestone

Summer will arrive before long, and parents of children with diabetes might wonder how to fill the long, active days while staying safe. So many children love to run around outside unsupervised, but that can carry risks for those looking after their blood sugar.

Enter the diabetes camp.

The concept, for those familiar, is simple. Bring together diabetic kids of different ages and backgrounds in a supportive, nurturing environment packed with experienced staffers and medical professionals. Children have the opportunity to meet peers who deal with the same challenges that they do. And parents can breathe a sigh of relief because of the extensive, trained supervision.

HOW DO I FIND ONE?
The internet serves a great resource for would-be campers. Both the Diabetes Education and Camping Association (found at diabetescamps.org) and the American Diabetes Association (at http://www.diabetes.org/in-my-community/diabetes-camp/) offer lengthy lists of programs.

Make sure to read up on the various camp programs that might be available to you. Your child’s safety — and your own peace of mind — are critical factors. So make sure you’re comfortable with the options. Don’t be afraid to make some phone calls to find out more.

IS THERE A CHARGE?
Camps are usually committed to making sure the experience is affordable for families. According to the ADA: “Through the Association’s year-round fundraising efforts and generous donors, we only charge families 50% of the true cost to provide camp for a child. In addition, camperships are available to help families pay the camp...
fee. The amount of assistance awarded is based on financial need. We use a sliding scale to determine if you qualify for partial or full campership.”

In other words, don’t let any concern about cost dissuade you. The resources are there to make sure your child has an experience that he or she won’t soon forget.

WHAT CAN MY CHILD EXPECT?
To have fun! More specifically, diabetes camps include many of the expected activities of summer camps, such as making friends, enjoying campfires, and experiencing nature. But diabetes camps pack in a few bonus activities too.

For one thing, they allow young campers to gain confidence and independence. Many of those attending won’t have had the experience of managing their diabetes on their own -- and feeling secure in their decisions. The trained staff help instill that confidence.

For another, the offer abundant opportunities for education. The staffers and medical professionals on hand have a wealth of knowledge, tips and tricks to share. The experience of camp gives abundant natural moments for that education to take place.

THE LONG HAUL
As the parent of a child with diabetes you know: The road is long. Your child will likely be dealing with diabetes for a long time -- until the day a cure arrives, at the very least.

Dealing with the disease can sometimes feel like a punishment. Not that your child did anything wrong, but the limitations and restrictions can pile up. As a parent, you’re also constantly concerned, worrying about blood glucose levels, basal rates, and carbohydrate counts.

Summer camps allow both of you — child and parent — to step back from that long slog, if only for a short time. They allow your child to see that he or she isn’t alone. They allow you a bit of a breather. And the education and confidence gained by your child could well transform his or her life. Not a bad result.

So this summer, try looking into a camp. Ask your child’s health care professionals what they think. Ask your child. And make it a vacation to remember.

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Emil Backofen didn’t have any relatives with type 2 diabetes so he wasn’t keenly aware of it. When he was traveling in Europe 29 years ago, he felt very thirsty and didn’t know why. He went from fast food place to fast food place getting some extra-large cold drinks and they still weren’t satisfying his thirst.

It was during a hospitalization on that trip to Europe that the doctors ran some blood tests. Discovering that his blood sugar level was 700, Emil was shocked but at least he had an explanation for his symptoms.

The physicians started him on oral medications and insulin but after his hospitalization he was able to stop the insulin. He was 57 then.

Now 86, Emil says that he manages his type 2 diabetes by taking his medicine which includes oral medications and injecting Victoza once a day, by watching what he eats, and by doing a good amount of exercise each day.

“I play tennis three out of the four months of the year. I don’t play during the cold winter months. It’s much nicer to play when the weather is warm and balmy.”

He adds, “When not playing tennis I walk a lot. I’m known as the walker in the
A 30-year employee of Xerox Corp., Emil started working for them as a messenger. “I worked my way up to being a production manager. Now that I’m retired, I get to spend my time as I please,” Emil says. “When you’ve got a sport or a hobby that keeps you active, exercising isn’t a chore at all,” Emil says. “It’s fun and it’s a good way to stay healthy.”

Emil, a widower who is the father of four children, eight grandchildren, and two great-grandchildren, divides his time between Long Island and Florida.

Emil, a widower who is the father of four children, eight grandchildren, and two great-grandchildren, divides his time between Long Island and Florida.

He enjoys spending time visiting with family and friends, and he also likes to watch TV, read some good books, and follow the stock market. “Whether it’s on the cable business news channels or in the newspapers, I tune in to the stock market every day,” Emil notes. “It’s been a long-time interest of mine.”

neighborhood. These days my a1C is under 7 so that pleases my doctors and me. It’s been consistently good so I know I’m doing the right things each day.”

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AskNadia: How to Bring Down a 434 Blood Sugar?

Nadia Al-Samarrie

Dear Nadia:
My mother’s blood sugar level is 434. What kind of fruits and food is she supposed to be eating?

JN

Dear JN,

I am happy to read that your mother has an advocate such as yourself. You did not mention if she has been diagnosed with type 1 or type 2 diabetes.

My first recommendation is to reach out to your mother’s healthcare professional to discuss her high blood sugar. Many variables can be the cause of high blood sugar. Diet is undoubtedly the most common. But, sometimes specific medications, like anti-inflammatories can also raise your blood sugar as a side effect. Getting sick or feeling stressed can also impact blood sugar levels.

You did not mention if your mother is on an oral type 2 medication or if she is taking insulin. Depending on how long she has been on her medication, healthcare professionals tend to adjust medications accordingly.

Balancing the perfect dose from your healthcare professional can start out as a trial and error; requiring fine-tuning. Depending on your mother’s circumstance, it could be that she is in the trial and error process with her healthcare professional who is looking for the perfect dose to balance her blood sugars.

A big kudos to your mother for testing her blood sugars. How else would she know how effective her medication and diet is unless she has feedback? I admire that she is not keeping her head in the sand and guessing her blood sugars.

I managed my type 2 mother’s insulin, thyroid and depression medication. It was apparent to me when my mother needed to go back in to meet with her healthcare professional for blood work to see if her medication required to be increased or if it was time to start a different medication. Her
depression and thyroid medication made a big difference in her will and motivation in managing her diabetes.

I would like to offer these general evergreen tips from Sue Thom. Check in with her healthcare professional before changing your mother’s therapy. Sue Thom, a Certified Diabetes Educator offers these tips:

1. Eating less food at the next meal, eliminating a snack and/or eating foods with a lower glycemic index.
2. Increasing activity or incorporating more exercise.
3. Increasing, changing medications, and/or administering them more frequently.
4. Relaxation techniques and behavioral management.
5. Treating identified illness and/or infections.
6. Monitoring on a more frequent basis and/or monitoring other parameters.
7. Increasing consumption of sugar-free fluids.

Disclaimer
Nadia’s feedback on your question is in no way intended to initiate or replace your healthcare professional’s therapy or advice. Please check in with your medical team to discuss your diabetes management concerns.

AskNadia@diabeteshealth.com and receive her unique perspective on your question.

About Nadia:
AskNadia (ranked #1 by Google), named “Best Diabetes Blog for 2019 & 2017 by Healthline and with 24 nominations, Nadia Al-Samarrie’s efforts have made her stand out as a pioneer and leading patient advocate in the diabetes community.

Nadia was not only born into a family with diabetes but also married into one. She was propelled at a young age into “caretaker mode,” and with her knowledge of the scarcity of resources, support, and understanding for people with diabetes, co-founded Diabetes Interview, now Diabetes Health magazine.

Under her reign- Diabetes Health magazine was named one of the top 10 magazines to follow in the world for 2018 by Feedspot Blog Reader

A big Kudos to your mother for testing her blood sugars. How else would she know how effective her medication and diet is unless she has feedback? I admire that she is not keeping her head in the sand and guessing her blood sugars.
Is your Medicare coverage “sticking it” to you? According to some recipients, the answer is a clear “yes.”

Health and Human Services Secretary Alex Azar is the subject of a new class action lawsuit led by two plaintiffs, Douglas B. Sargent and Carol A. Lewis. They allege that Medicare’s repeated refusal to cover continuous glucose monitors (CGMs) results in serious negative health outcomes to patients. CGMs have been approved by Medicare as a replacement to a “finger prick” method of testing blood glucose. CGMs are effective because they continuously monitor a patient’s blood glucose level and easily send the data to patients and caregivers alike. This makes it easier to catch any potential issues before they become serious. Denying diabetes patients access to them, then, might put their health in jeopardy.

The plaintiffs are hoping to receive retroactive payments for patients who have shoulerded this cost alone.

According to researchers from the Wake Forest Baptist Medical Center, that might be the case. Your gut bacteria, you see, are a key component to how your body metabolizes medications. The bacteria themselves might even be the determining factor that decides whether a specific medication works for you.

With the global diabetes rate reaching “pandemic” proportions and more than 415 million people affected across the globe, any news research on how your gut bacteria affects your diabetes self-management is insightful.

With the global diabetes rate reaching “pandemic” proportions and more than 415 million people affected around the globe, any news research on how your gut bacteria affects your diabetes self-management is insightful. While this area of research is still in its infancy, it could put scientists one step closer to finding a cure. And we’ll keep you up-to-date with new developments as they are released.
Fortunately, hearing loss is not inevitable among people with diabetes, and there are ways to prevent it. The most important step is to maintain good blood sugar control. This includes taking any prescribed medications, portion control, eating a healthy diet, and getting regular exercise. Not only will you protect your hearing, but you’ll also enjoy many other overall health benefits.

Another way to prevent diabetes-related hearing loss is to avoid smoking. Smoking speeds up hearing loss by itself, but when combined with other hearing loss factors like uncontrolled diabetes, it acts like a multiplier. Current smokers should talk to their doctors about interventions that may help them to quit.

Currently, there are no official recommendations for hearing screenings for people with diabetes. People living with the disease should be sure to have their progress managed by a doctor regularly and discuss any signs of hearing loss immediately.

A new study recently concluded that there is no significant difference in the prevalence of hearing impairments between people with and without type 1 diabetes. Researchers studied 1,150 participants with type 1 diabetes and about 300 of their spouses who did not have the condition. No difference was detected with hearing ability between the two groups. However, among participants with type 1 diabetes, a higher mean HbA1c level over time was associated with hearing impairments.

This research project was the largest of its kind. The research team recruited individuals from a large-scale diabetes study, which has been following the lives of people living with type 1 diabetes for over 30 years. Still, more research is needed to better understand the relationship between diabetes and hearing impairment.
How Depression Affects Your Diabetes Self-Management

Tanya Caylor

Of all the medications people living with diabetes are commonly prescribed, antidepressants could be the most valuable.

Depression is a common problem for people living with type 2 diabetes, and with good reason: managing the disease at times can be overwhelming.

It should come as no surprise, then, that studies show nearly a third of people living with diabetes exhibit symptoms of depression, with more than one in 10 meeting the criteria for major depressive disorder.

That’s the bad news. The good news is people with diabetes who take antidepressants medication have significantly greater success in controlling their blood sugar levels than those who have been diagnosed with depression but are not receiving treatment.

Researchers involved in a 2016 study couldn’t say whether treating patients’ depression helped lower their blood sugar levels, perhaps by making it less daunting for them to follow a healthy diet and exercise plan, or if it was the other way around – that achieving better blood sugar levels gave them a morale boost that helped reduce symptoms of depression.

In the study, patients were considered to be receiving treatment for depression if they received a prescription for any one of 19 drugs in four classes of antidepressants. The study didn’t measure patient adherence to the prescribed antidepressants, nor did it look at which drugs were most effective in treating depression.

Generally speaking, most antidepressants work by increasing the levels of certain brain chemicals believed to elevate mood. These chemicals – typically serotonin, dopamine, or norepinephrine – act as neurotransmitters in the brain’s communications network.
between nerve cells, these neurotransmitters are reabsorbed into the brain’s nerve cells. Antidepressant medication block this reabsorption process, known as reuptake, thereby making more of the chemical available.

Different classes of antidepressant medication target different chemicals. Selective serotonin reuptake inhibitors (SSRIs), for instance, target serotonin. This class of antidepressants contains some of the most widely prescribed antidepressant medications, including Lexapro, Paxil, Prozac, and Zoloft.

Selective serotonin and norepinephrine reuptake inhibitors (SNRIs) are a newer class of antidepressant that blocks the reabsorption of both serotonin and norepinephrine. It includes antidepressant medication such as venlafaxine (Effexor), duloxetine (Cymbalta), and levomilnacipran (Fetzima).

It is the mental healthcare professional’s job to assess whether the benefits of a particular antidepressant medication outweigh the risks for people with diabetes which in the case of type 2 diabetes may be much more complicated. Some SNRIs, such as venlafaxine, desvenlafaxine and levomilnacipran, may raise blood pressure, for instance. Some tricyclic antidepressants (TCAs), are linked to weight gain.

A new form of antidepressant medication currently being fast-tracked for potential FDA approval is being hailed as a breakthrough in depression treatment. Johnson & Johnson’s Esketamine is a nasal spray formulation of ketamine, a psychedelic street drug known as “Special K” that is also used as an anesthetic in surgery. Unlike traditional antidepressants, ketamine appears to block a receptor called NMDA, which is activated by the neurotransmitter glutamate.
The drug is making waves not only because it involves a new pathway in antidepressant medication brain circuitry, but because early evidence indicates that a much smaller dosage than what is typically used in anesthesia has been shown to relieve severe, treatment-resistant depression.

Unfortunately, ketamine is not without risks that may make it a deal breaker for many patients with type 2 diabetes. When used as an anesthetic, it has been linked to elevated heart rate, blood pressure and blood glucose. A 2015 study in the International Journal of Clinical and Experimental Medicine found that diabetic rats treated with ketamine had an increased risk of hyperglycemia. To help address concerns with the growing number of ketamine clinics, a 2017 consensus statement issued by the American Psychiatric Association recommended that the screening process at such clinics include an in-depth look at each patient’s medical and psychiatric records, along with a thorough explanation of both the risks and limitations of ketamine treatment.

Luckily, drugs are not the only option for treating depression in type 2 diabetes patients. A study called Program ACTIVE II has shown that regular exercise with a personal trainer is another promising avenue for treatment, and one that has the added benefit of helping manage diabetes symptoms in the process. In the study, participants assigned to 12 weeks of guided exercise were reported to be significantly more likely to be free of major clinical depression symptoms compared with a control group. The exercise group also averaged a “clinically meaningful” 0.7% reduction in their A1c levels.

“Our study is the first to demonstrate that exercise guided by a personal trainer and performed by participants in their communities is effective in treating both depression and diabetes,” said lead study author Mary de Groot, associate professor of medicine and acting director of the Diabetes Translational Research Center at Indiana University, in a 2017 news release.
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But no matter what type of depression treatment is used, one thing seems increasingly clear: Patients’ mental health must be included as part of their diabetes management plan.

In recognition of this increasing need, the American Diabetes Association issued a Psychosocial Position Statement in 2017 directing health care professionals to regularly screen diabetes patients for mental health concerns. It recommended patients be referred to mental health professionals attuned to the special challenges presented by diabetes.

“As more collaborative efforts like these take place, the psychosocial side of diabetes can be more adequately and appropriately addressed,” said Korey Hood, co-author of the ADA’s Psychosocial Position Statement and member of the ADA’s Mental Health Provider Diabetes Education Program development team.

In an effort to help make this goal more attainable, the ADA has collaborated with the American Psychological Association to create training opportunities for mental health professionals.

“As a professor of both pediatric endocrinology as well as psychiatry and behavioral sciences at Stanford University, Hood is uniquely situated to help bridge the gap.

“People with diabetes need compassionate clinicians, who are aware of the lifelong challenges of living with diabetes and the impact mental health has on diabetes management,” he said. “This initiative will have a positive impact on care and lead to optimal health outcomes, and at minimum, raise awareness of the psychosocial side of diabetes for clinicians administering care to people with diabetes.”

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DIABETES HEALTH CROSSWORD PUZZLE

Test your knowledge to see how well you understand the articles in this magazine.
If you would like to sign up to receive a weekly puzzle, please email puzzle@diabeteshealth.com. In the subject area write "add me to your weekly word puzzle list." If you would like us to create a puzzle for you and our players, send your 8 words to puzzle@diabeteshealth.com and we will post your challenge online. In the subject area write "create my special word puzzle." We can all have fun posting and solving your word puzzles.

Across:
2  A medical device that tracks glucose through interstitial fluids.
3  You should reach out to this person when you are having trouble maintaining your target blood sugar.
6  Parents love to send their children to these places for the summer.
7  To prevent hearing loss, you need to quit this habit.
8  Medication that was sold for one dollar that is used by both Type 1 and Type 2 people living with diabetes.

Down:
1  You can increase certain brain chemicals with this drug.
4  Managing diabetes can be overwhelming and cause this condition.
5  Your gut bacteria can affect your prescription.
DIABETES HEALTH CROSSWORD SOLUTION

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QUINOA PESTO SALAD WITH SUN-DRIED TOMATOES
(VEGAN, DAIRY-FREE, GLUTEN-FREE)

Serves 2
Preparation: 10 minutes

INGREDIENTS*
For the Salad:
1 cup cooked quinoa (look at the package instructions. Usually you need 1 cup of quinoa and 2 cups of water and cook it for 15 minutes)
about 10 chopped sundried tomatoes (Hack: use scissors to cut the tomatoes)
handful of spinach

Rocket pesto:
4 bigger handfuls of fresh rocket leaves
one handful of fresh basil leaves
1 clove of minced garlic
pinch of pink Himalayan salt & black pepper
100 g cashew nuts
2 tbsp parmesan cheese (optional, if you’re on a paleo diet or your body doesn’t tolerate it, then use an extra handful of cashews to balance it up)
about 6 -10 tbsp of extra virgin olive oil

INSTRUCTIONS
Make the pesto. Blend all the pesto ingredients. Add some extra salt, pepper or olive oil when needed. Mix cooked quinoa, sundried tomatoes, and spinach leaves. Add about 3 – 4 tbsp of pesto. Keep the leftover pesto in a small jar covered with extra virgin olive oil. Serve the salad right away.**

*If you don’t serve the salad as a side dish, then you can always add some smoked chicken or other meat to serve it as a quick lunch.

** If you don’t want to serve the salad right away, then add the spinach leaves just before serving.

Laura is a simple girl usually covered with almond flour, who hides herself in the kitchen, where she tries to develop new recipes. It’s important for her that the ingredients should be as less processed as possible. She always looks for natural ingredients or grows the ingredients by herself. She posts her new recipe creations in her blog called Healthy Laura (www.healthylaura.com).
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