

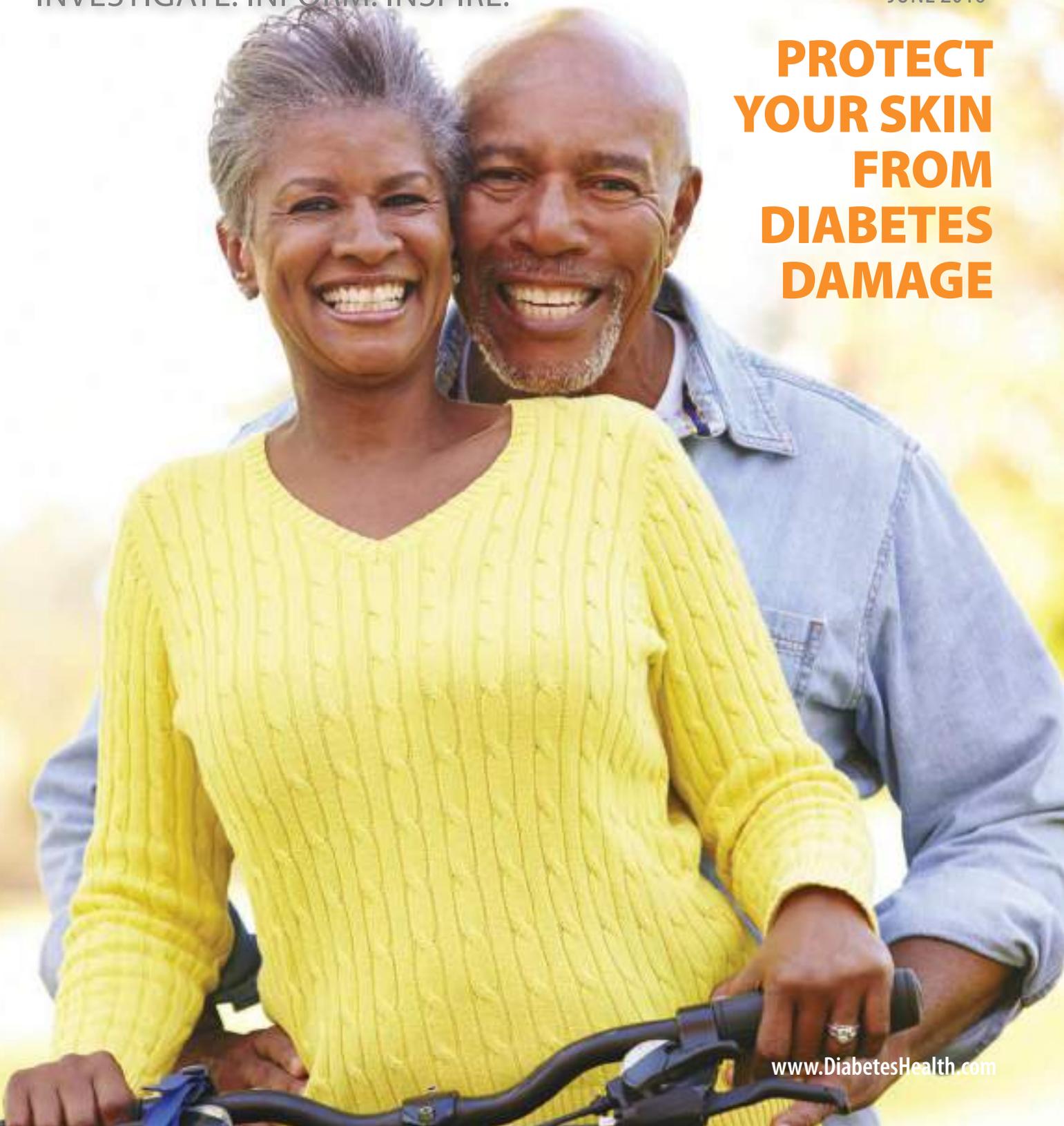
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Diabetes Health is the essential resource for people living with diabetes—both newly diagnosed and experienced—as well as the professionals who care for them. We provide balanced expert news and information on living healthfully with diabetes. Each issue includes cutting-edge editorial coverage of new products, research, treatment options, and meaningful lifestyle issues.

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THE OFTEN NEGLECTED DIABETIC SKIN

The first thoughts about diabetes that occur to most of us are images of excess weight, daily injections, and restricted diets. Skin is often an afterthought.

Nadia Al-Samarrie 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.

Nadia’s leadership has spanned 25 years, establishing the magazine as a preeminent consumer and professional resource.

With our profound Web presence, *Diabetes Health* leads the way with an informative blend of content and technology, delivering Nadia’s enduring vision to investigate, inform, and inspire.

It shouldn’t be. How diabetes affects skin is something everybody with the disease comes to know all too well: dryness and cracking, slow-to-heal nicks and scratches, and often pain at a mere touch.

Our main stories this issue focus on dealing with diabetic skin. In “Protect Your Skin From Diabetes Damage” (page 6), Tanya Caylor provides an in-depth series of practical steps people with diabetes can take to protect and restore their skin. Robert Levine D.O., F. A.O.C.D., continues the discussion by advising how to protect diabetic skin from bright outdoor light in “Protecting Your Skin From the Sun” (page 8).

Don’t let mouth-watering package illustrations fool you: Common additives in packaged foods can create some distressing problems in the digestive tract. Tanya Caylor lists some of them in “Food Additives That May Trigger Autoimmune Disease” (page 10).

On a brighter note, a reader asks me about my diabetes gym workout plan in “Ask Nadia” (page 18.) and I offer some advice—including a grateful nod to Comedy Central for helping me stick to my exercise routine. There’s more encouragement in “Diabetes Support Group Energizes and Informs” (page 14). It tracks one dedicated woman’s progress from feeling alone with her diabetes to starting a women’s support group that has made a

world of difference in her outlook and those of her fellow diabetes patients.

Beginning on page 22, our Research Reports cover three areas of vital concern to people with diabetes: medications, mental health, and weight loss. It turns out that the most popular medicine in the diabetes drug arsenal, metformin, is suspected of playing a role in vitamin B12 deficiency and neuropathy. Research shows that improved treatment for depression improves diabetes self-management, while simply losing weight can have the best effect of all on blood glucose and fasting insulin numbers.

In Food for Thought, these two light recipes will refresh your menus with a cooling touch. Oinamul (Korean Cucumber Salad) and Seared Tuna With a Sicilian Tomatoey Potato Salad (pages 28 and 29).

Type 2 columnist Patrick Totty wonders about hypoglycemic symptoms that are not the real thing in “The Hypoglycemia That Isn’t There” (page 20). In “Thank You for Not Holding a Grudge” (page 25), type 1 correspondent Meagan Esler writes a touching tribute to her husband, a man who has seen her through some pretty rough days.

Our crossword puzzle (page 23), always good for a break, focuses on this issue’s articles.

Summer is a comin’ in. Enjoy!

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

PROTECT YOUR SKIN FROM DIABETES DAMAGE

Tanya Caylor

Skin issues aren't the first thing most people associate with diabetes. But they are a very real and potentially serious problem, affecting one-third of both type 1 and type 2 patients at some point in their lives, according to the American Diabetes Association.

The good news is many skin issues are manageable and can even be prevented with proper self-care.

The most important component in keeping skin healthy is proper disease management. Eating right, exercise, monitoring blood sugar, and taking medication as directed all help improve circulation in the body, which is the most important factor in keeping skin hydrated from within.

HOW DIABETES AFFECTS THE SKIN AND FEET

When glucose levels are high, the body flushes out fluids, meaning less moisture makes its way to the skin. Over time, especially in those who have difficulty managing the disease, tiny blood vessels near the skin's surface may narrow and even become clogged, exacerbating the problem. Dry, itchy skin can crack, leading to complications such as infections and slow-healing sores. At this point, gangrene becomes a danger which can lead to amputation.

Diabetes patients are especially vulnerable to foot-related complications such as corns,

calluses, ingrown toenails, and foot ulcers. However, periodic foot screens by a doctor, in addition to daily personal monitoring of both the skin and toenails, can reduce the risk of amputation by more than 50 percent, according to the National Diabetes Education Program.

The most important component in keeping skin healthy is proper disease management. Eating right, exercise, monitoring blood sugar and taking medication as directed all help improve circulation in the body, which is the most important factor in keeping skin hydrated from within.

BATHING CONSIDERATIONS

Good hygiene is critical to reduce the risk of infection, especially for those with type 1 diabetes, who are more likely to have a compromised immune system. Cleanse the skin daily with antibacterial but gentle soaps such as Dial, Safeguard, or products with labels suggesting they are intended for use on sensitive skin.

A relaxing soak in the tub has been shown to decrease blood sugar levels, according to a 2008 study by Dr. Philip Hooper of the McKee Medical Center in Loveland, Colo., but always check skin and feet first for cuts and abrasions that could allow bacteria to cause infection. Treat any openings in the skin with antibacterial ointment, and contact your doctor if they don't seem to heal in a timely manner.

Overly hot water should be avoided, as it can dry out the skin. It can also cause

burns in patients with neuropathy. Because numbness in the extremities may impair the ability to accurately register water temperature, use a thermometer to make sure bath water doesn't exceed 104° F.

After cleansing, it's important to dry the skin thoroughly, especially between the toes. Finally, apply a moisturizer daily to help keep skin from drying out.

CHOOSING A MOISTURIZER

Experts say it is not necessarily important what kind of moisturizer is used, so long as it is applied regularly. Some doctors even recommend patients try rubbing petroleum jelly or olive oil into their feet, then covering with a pair of clean socks overnight. However, because moisturizing must be done frequently, it is important to select a product that does not irritate your skin. Though this can vary considerably from person to person, it is generally best to avoid products containing fragrance, menthol, camphor, and high concentrations of alcohol. Never use a lotion or cream that contains phthalate, which may increase the risk of insulin resistance.

Moisturizers marketed for diabetic use tend to be hypoallergenic and fragrance-free. There are many such products on the market, most of which are available over the counter. However, whichever type of moisturizer you decide to use, never apply it between the toes. It is very important to keep this area dry to prevent the risk of fungal infections.

AVOIDING FUNGAL INFECTIONS

Several over-the-counter remedies, such as Zeasorb powder and Sarna lotion, can be

used under the breasts, in the groin area and under a flap of belly skin to prevent fungal infections that may develop in areas where skin comes in contact with other skin. Athlete's foot antifungal creams such as Lotrimin and Lamisil can be used to treat fungus on the feet or between the toes. When getting a manicure or pedicure, be careful to avoid allowing the cuticles to be pushed back, as this can cause possible yeast or fungal infections.

CHOOSE SOCKS WITH CARE

People who have diabetes should avoid socks made of pure nylon, dacron, and wool, as those materials can irritate the skin. These fabrics may also cause excessive sweating, which can lead to the development of cracks and fissures. It is best to use socks made of cotton or cotton blends. It is also very important to change socks frequently, especially if they get damp or sweaty.

DON'T FORGET SUNSCREEN

Finally, diabetes patients should take extra precautions whenever spending time outdoors. Wear a hat and sunscreen even on a cloudy day. A sun protective factor of at least 15 is recommended for daily use. If your skin is particularly sensitive or prone to burning, opt for an SPF of 50. 

Moisturizers marketed for diabetic use tend to be hypoallergenic and fragrance-free. There are many such products on the market, most of which are available over the counter. However, whichever type of moisturizer you decide to use, never apply it between the toes. It is very important to keep this area dry to prevent the risk of fungal infections.

PROTECTING Your Skin From the Sun

Robert Levine, D.O., F.A.O.C.D.

Use a sunscreen with an SPF (sun protection factor) of 30 or more that is “broad spectrum,” meaning it protects against both UVA and UVB radiation. Choose a moisturizing sunscreen that contains lanolin or glycerin to protect against harsh sun conditions.

The vast majority of skin cancers are caused by exposure to the sun. As dangerous as it is, cancer isn't the only consequence of sun exposure. Changes to the skin that are often thought of as a natural result of aging—wrinkling, sagging, leathery, and the pigmentation known as age spots or liver spots—are also the result of sun exposure. Two types of ultraviolet rays, UVA and UVB, damage DNA in ways that cause cells to grow out of control and become

cancerous; these rays also cause premature aging. And while UVB rays decrease during the winter months, UVA rays are just as intense. You can't prevent all damage to the skin from sun exposure - at any time of the year. But you can take steps to minimize the risk.

DR. LEVINE'S SUN PROTECTION TIPS

Sunscreen: Use a sunscreen with an SPF (sun protection factor) of 30 or more that is “broad spectrum,” meaning it protects against both UVA and UVB radiation. Choose a moisturizing sunscreen that contains lanolin or glycerin to protect against harsh sun conditions. Apply sunscreen to all exposed skin, especially the face, and slather it on liberally—use at least a teaspoon on your face. Sunscreen isn't just for days when you are engaging in sports. Use it anytime you will be outdoors for 15 minutes or more,



even when the skies are overcast. Apply sunscreen 15 minutes before going out and reapply every two hours, more often if you've been sweating or if you've been out in strong wind, which can reduce its effectiveness. Every time you apply sunscreen, also apply lip balm with SPF of 15 or above.

Protect your eyes from both the brightness of the sun's reflection off the snow and from ultraviolet radiation. Wear sunglasses that provide 99 percent protection against UV rays and that have wraparound frames that cover the largest possible area. Moisturize the skin around your eyes carefully; that area is particularly susceptible to dehydration in dry weather.

Clothing: Cover up as much as possible, for warmth as well as sun protection. When a broad-brimmed hat isn't feasible,

make sure your neck is protected by a ski mask. Avoid the sun at midday, especially at high elevation: Try to stay out of the sun between 10 a.m. and 4 p.m. when the sun's rays are strongest. And keep in mind that UV radiation increases by 4 percent for every thousand feet above sea level. At elevations found on many mountains, UV radiation is about 30 percent more intense than at sea level.

Robert Levine, D.O., F.A.O.C.D., is experienced in many areas of medical and surgical dermatology with a particular interest in cosmetics. [DH](#)

Protect your eyes from both the brightness of the sun's reflection off the snow and from ultraviolet radiation. Wear sunglasses that provide 99 percent protection against UV rays and that have wraparound frames that cover the largest possible area.

"Safe" Food Additives That May Trigger Autoimmune Disease

Tanya Caylor

The picture on the package looks like home cooking: Chicken Alfredo, made with "oven-roasted white meat chicken and penne pasta in a creamy alfredo sauce."

Flip the package over, however, and you'll discover that the chicken, pasta, and sauce are accompanied by or composed of more than three dozen ingredients, including a nanoparticle, an emulsifier linked to intestinal inflammation, and a modified starch product that's been shown to disrupt the behavior of intestinal bacteria.

The human digestive tract is an amazing filtering system that puts the world's most complex transportation hubs to shame. But in the last half century it has been challenged as never before, tasked with sorting an increasingly complex brew of chemicals and molecular configurations that can team up to overwhelm the body's built-in defenses.

Here are some common food additives that show up in the modern American diet and their impact on the human intestinal tract:

Maltodextrin: This wheat-derived thickening agent is used in everything from sports drinks to salad dressings to Hormel Compleats Chicken Alfredo microwavable dinners. Researchers at the Cleveland Clinic have found that it makes intestinal bacteria stickier and therefore more likely to populate the epithelium, the layers of cells that line the intestines. This is particularly troublesome for people with Irritable Bowel Syndrome, whose epithelium is compromised to begin with. The higher bacteria levels may also increase the risk of developing Crohn's disease.

In a separate study, also conducted by the Cleveland Clinic's Department of Pathobiology at the Lerner Research Institute, it was found that maltodextrin also contributes to the survival of salmonella bacteria in the gut.

Carboxymethylcellulose and polysorbate-80: These relatively common emulsifiers, used in everything from ice cream to mayonnaise, fall under the "generally regarded as safe" category used by the U.S. Food and Drug Administration. But a study published in the February 2015 issue of the journal *Nature* found that these additives can transform gut bacteria, causing inflammation resulting in metabolic syndrome, weight gain, and in mice that were predisposed to the condition, inflammatory bowel disease.

Bacteria impacted by these emulsifiers infiltrated the protective layer of mucus that

In a separate study, also conducted by the Cleveland Clinic's Department of Pathobiology at the Lerner Research Institute, it was found that maltodextrin also contributes to the survival of salmonella bacteria in the gut.

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lines the intestines, generating proteins called flagellin and lipopolysaccharide that activate the body's inflammatory response. The emulsifier chemicals were also linked to increased food consumption, hypoglycemia, and insulin resistance.

Carboxymethylcellulose, by the way, isn't the same substance that was the subject of an FDA investigation into parmesan cheese fillers earlier this year. Cellulose, which is used as an anti-clumping agent in grated cheeses, is a relatively common substance found in plant cell walls that is often derived from wood pulp. Though it certainly sounds like an unappealing foodstuff, it is not digested by the human body and simply passes through the bowels. (The problem in the case involving Castle Cheese Inc. and other manufacturers was not that the cellulose was included in the product, but that the amount exceeded the 2-4 percent allowed by the FDA and was therefore mislabeled.)

Titanium dioxide: This coloring agent with extremely high refractability has been used to brighten the whites in everything from paint to toothpaste over the past century. But at least 10 percent of today's titanium dioxide now comes in nanometric particle form. These particles, less than 1,000 times

the width of a human hair, started out in the pharmaceutical industry as encapsulation devices to speed drug delivery into the bloodstream but are increasingly used in the food industry to enhance the taste and texture as well as the color of foods.

The FDA allows manufacturers to use up to 1 percent food-grade titanium dioxide by weight, but does not dictate the size or structure used. Because the rules of operation at the nanotechnology level are not well understood, such tiny particles "could exhibit toxic effects that could not be predicted from data obtained on the same material" at the microscopic level, according to a 2015 study in the journal *Autoimmune Reviews*. A study in the December 2011 journal *Radiology and Oncology* found that ingested titanium dioxide migrated from the gastrointestinal tract to tissues and organs throughout the body. Though no apparent toxic effects were observed, the researchers noted that there is currently insufficient research to determine the risk of nano-sized titanium dioxide. "Therefore, it should be seriously reconsidered if the use of TiO₂ NPs (titanium dioxide nanoparticles) in nutrition and pharmacy just to shade or stabilise the products is justified at all," they wrote.

Though it was not under government pressure to do so, Dunkin Donuts recently agreed to remove titanium dioxide from its powdered sugar doughnuts after receiving numerous complaints from natural-food activists.

Azodicarbonamide: This substance is known as ADA in the plastics industry, where it is used as a foaming agent that makes everything from shoe rubber to yoga mats lighter and spongier. It has also been widely used in the food industry as a dough conditioner. The FDA permits the use of ADA at a rate of up to 45 parts per million.

A study in the December 2011 journal *Radiology and Oncology* found that ingested titanium dioxide migrated from the gastrointestinal tract to tissues and organs throughout the body.

However, companies such as sandwich chain Subway announced plans to remove the ingredient after a food blogger's 2014 petition generated consumer outrage.

The Center for Science in the Public Interest, noting that ADA has not been widely tested on humans, has called on the FDA to ban the substance due to the fact that it breaks down into two suspicious chemicals during the baking process. One of these is semicarbazide, which causes cancer in mice but poses only a slight risk to humans. The other is urethane, a carcinogen. "When azodicarbonamide is used at its maximum allowable level, it leads to slightly increased levels of urethane in bread that pose a small risk to humans," the CSPI said in a 2014 statement. "Considering that many breads don't contain azodicarbonamide and that its use slightly increases exposure to a carcinogen, this is hardly a chemical that we need in our food supply."

Microbial transglutaminase: Also known as "meat glue," this enzyme can turn cheap meat chunks into what appears to be steak. However, some studies indicate it may function as a protein glue within the intestinal tract as well, binding random bits of protein together to form giant molecules that can act as battering rams on the "tight junction," a fragile biological gateway designed to protect the body from harmful toxins and bacteria. Transglutaminase must appear on the ingredient list of meat products, with the term "formed meat product" appearing on the label, according to the USDA. This enzyme, increasingly used by chefs looking to push the boundaries of creativity as well as those restaurants simply looking to save money, is also used as a texture-enhancer in many other foods, ranging from baked goods to dairy products.

Carrageenan: A seaweed derivative used as a thickening agent in dairy products, carrageenan has a unique chemical structure that's been shown to cause gastrointestinal inflammation, intestinal lesions, and has even been linked to colon cancer. Yet in June 2012, the FDA rejected a petition by a scientist at the University of Illinois asking it to formally remove carrageenan from the nation's food supply. Though Joanne K. Tobacman continues to study the effects of carrageenan on the human body, she said she has given up hope that the FDA will act on the issue. Based on recent cases of public outrage over food additives forcing changes at companies such as Subway and Dunkin' Donuts, Tobacman wrote in an email that she now believes changes in the food industry are more likely to "come about due to customer demands, possibly influenced by litigation, rather than FDA action." [DH](#)

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Diabetes Support Group Energizes and Informs

Tanya Caylor

For as long as she can remember, Robin Wright has struggled with low energy, depression, and intense sugar cravings that make it hard to control her weight.

Complicating the situation was a genetic tendency toward weight problems in her family, along with growing up in a household environment that placed a high priority on sugary treats.

After she was diagnosed with type 2 diabetes 12 years ago, Wright, 63, couldn't help wondering "if there isn't a chicken and egg issue there." Did she wind up with diabetes because of her health issues? Or were they in fact symptoms of prediabetes?

In retrospect, says Wright, it isn't surprising she developed diabetes. Both her parents had type 2 diabetes, as did her maternal grandfather. Though she was less aware of the disease afflicting her father, who died

of cancer when she was still in her 20s, she now suspects that it affected her mother's quality of life more than she realized at the time.

"She lived a long life," Wright says, noting that her mother made it to age 86 before dying of a heart attack. But her mother dealt with many health issues along the way: phlebitis, mini strokes, vascular disease and, eventually, dementia.

Complicating the situation was a genetic tendency toward weight problems in her family, along with growing up in a household environment that placed a high priority on sugary treats. Wright, a psychotherapist in private practice in Princeton, N.J., now believes that there may have been a sense of deprivation among older family members who'd lived through the Great Depression.

"I still remember the thrill of having chocolate in the house," she says.

After her diagnosis, Wright was determined to tackle the problem rather than let it exacerbate her struggles with depression. She met with a nutritionist who walked her through the recommended dietary guidelines and activity goals. She began

tracking her walking with a pedometer and now tries to swim daily in the summer.

Though her family's been supportive, Wright believes the single biggest thing that's made a difference in her management of the disease was starting a support group.

As you might expect, Princeton, N.J., home of the university with the same name, "is filled with very dynamic people," Wright says. Through a healthy cooking group, she met someone who had type 1 diabetes, and together they built up a core group of diabetes patients who began meeting regularly to vent their frustrations and share ideas.

Then three or four years ago they affiliated with DiabetesSisters, a national organization that provides networking opportunities and support materials. The group's three co-leaders have also since trained at the Stanford Chronic Illness Program, which has also been helpful in providing guidance, she said.

Though Wright is encouraged by the difference her group is making in each other's lives; she's surprised how

uninformed many people are when they arrive at their first meeting. She'd like to see more people take advantage of all the resources available online these days. The Internet, she notes, is "like a revolution" regarding unprecedented, free access to information.

Their meetings always start out with introductions and personal updates before moving on to a structured topic. Wright thinks this is important, because "it's not just people getting together to rant." That has its place; she notes, but by the time they leave, they have an action plan. Members are motivated to do something specific to improve their situation.

Meeting with a like-minded group "really energizes you," she says. "I think it has helped me. You don't feel so alone." **DH**

As you might expect, Princeton, N.J., home of the university with the same name, "is filled with very dynamic people," Wright says. Through a healthy cooking group, she met someone who had type 1 diabetes, and together they built up a core group of diabetes patients who began meeting regularly to vent their frustrations and share ideas.

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Blood Sugar Testing FAQs

What is Blood Sugar Testing?

A blood sugar (or blood glucose) test tells you how much sugar is in your blood at the moment it is tested. One way to find out the amount of sugar in your blood is to get a blood test in a doctor's office. Another way to find out is to test it yourself. This is called self-monitoring or self-testing. Many factors affect your blood sugar levels every day. Testing your blood sugar will let you know if your meal plan, medication, and physical activity levels are working to help you manage your diabetes.

Who Should Test Their Own Blood Sugar?

Blood sugar testing is important for everyone with diabetes. People living with diabetes can learn how to test their own blood sugar using a blood glucose (sugar) meter.

How Can Blood Sugar Self-Testing Help Me?

When you self-test regularly, you learn what makes your blood sugar too high or too low. With the help of your healthcare team, you can make adjustments to your meal plan, medications, and physical activity levels that will help you better manage your diabetes. When you keep your blood sugar in a normal range, you lower your risk of developing problems with your heart, eyes, kidneys, brain, feet, and nerves that can occur because of diabetes.

How Often Should I Test My Blood Sugar?

Both the American Diabetes Association (ADA) and the American Association of Clinical Endocrinologists (AACE) recommend self-testing for patients with diabetes.

For patients taking multiple insulin injections per day or on insulin pump therapy:

- ADA recommends self-testing 3 or more times a day¹, and
- AACE recommends self-testing 2 or more times a day, and additionally, before any injection of insulin²



For patients not on insulin therapy, the ADA and AACE recommend self-testing because of the potential benefits of receiving feedback on the effects of lifestyle and medications.^{1, 2}

Your healthcare team will help you decide how often to test your blood sugar. The decision to test depends on your individual diabetes treatment plan. A personalized blood sugar testing schedule may help you understand how your meals, medications, and level of physical activity affect your blood sugar levels.

When Should I Test My Blood Sugar?

Your healthcare team will help you decide when you should test your blood sugar. Testing at different times during the day is a good idea. The number of tests you need to do each day or each week is different for everybody. One approach to blood sugar testing that your healthcare team may ask you to consider is called Paired Testing. Paired Testing recommends that you test your blood sugar level twice a day.

When you compare a "pair" of numbers, you may be able to see how actions, such as diet and exercise, affect your blood sugar levels.

References:

1. American Diabetes Association. Standards of Medical Care in Diabetes – 2015. *Diabetes Care*. 2015; 38 (1): 1 – 89.

2. Handelsman Y, Mechanick JL, Blonde L, et al. American Association of Clinical Endocrinologists Medical Guidelines for Clinical Practice for developing a diabetes mellitus comprehensive care plan. *Endocr Pract*. 2011;17(suppl 2): 1-53.

Ask Nadia: What's Your Gym Workout Plan for Diabetes?

*Dear Nadia,
I was diagnosed with diabetes three years ago
and use insulin. Now I like to go to the gym.*

What's your workout plan at the gym?

Brandon H

Dear Brandon,
That's great that you like to go the gym.
Exercise is great for your blood sugars, A1c
and keeping your weight down. Working
out at the gym should also help you
increase your insulin sensitivity.

EXERCISE HYPOGLYCEMIA

Before starting your exercise program,
I would recommend speaking to your
healthcare professional to learn more about
how to avoid hypoglycemia while exercising;
more critically while sleeping at night.

Your healthcare professional will have tips
for you based on your regime and help
refine how much insulin you should use
before and after your exercise. Different
exercises will require different amounts of
insulin. For this reason, you need to go over
your choice of exercise and the length of
time you exercise.

One of my friends who lives with diabetes
frequently experienced low blood sugars
two days after exercising. It wasn't until he

spoke to his healthcare professional that he
decided to cut down on his insulin dosage
before exercising. This did help with his
hypoglycemia episodes.

We published a study a while back about
how reducing your insulin may prevent
exercise-related hypoglycemia.

MY WORKOUT

I enjoy spinning and getting on the
elliptical. I do both for a half hour starting
with spinning. After an hour, I lift weights for
15 minutes, including bench pressing.
Since my gym partner dropped out, I have
had to motivate myself to get to the gym
because the time does not pass quickly
when my friend is MIA.

MY WORKOUT & COMEDY CENTRAL

I started watching Comedy Central while
spinning and on the elliptical, which helps
time pass quickly. Sometimes I stay longer on
the equipment because I want to finish an
episode of a show I am really enjoying. [DH](#)

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.

Ask Nadia and receive her unique
perspective on your question.

Email Nadia at AskNadia@DiabetesHealth.com.

**Your healthcare
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based on your
regime and help
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your exercise.**

Diabetes Health

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When The Wall Street Journal quoted a major public figure who called Diabetes Health the best weapon against diabetes, what did he say?

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Diabetes Health magazine is a lifestyle publication for those living with diabetes or the people who care for them. Whether newly diagnosed or experienced with diabetes, readers are delighted and impressed by the articles written by people living with type 1 and type 2 diabetes.

Other contributors include family members who care for those with diabetes. In fact, our founder and publisher, Nadia Al-Samarrie, was not only born into a family with diabetes, but also married into one. Nadia's articles are published nationally online by many news outlets. She has also been featured on ABC, CBS, NBC, and Fox television on "America's Premiere Experts."

Nadia 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.

With Nadia's leadership, Diabetes Health magazine was nominated for "Best in Health" by the Western Publishers Association in 2004 and 2014.

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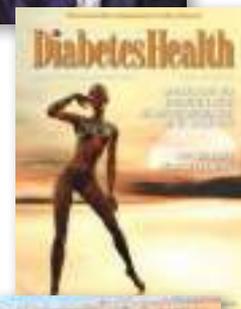
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TYPE 2: The Hypoglycemia That Isn't There

Patrick Totty

In the past few years, endocrinologists have recommended easing up on tightly controlled type 2 patients, especially among older people. Much of that advice is an outcome of the ACCORD study from the early 2000s which showed—to the chagrin of almost everybody who either treats or has diabetes—that too tight control over blood glucose levels increased the chance of cardiovascular problems.*

There's no real explanation for how false hypoglycemia comes about, even though it's not a rare event in the lives of many type 2s. One theory, certainly as yet not tested in depth, is that the type 2 metabolism becomes so used to blood glucose markers hovering in the 140s to 180s that the body can fool itself when blood glucose levels drop down to the low 100s.

For many of us in that older group, the advice we were being offered told us that chasing after a 7% A1c was no longer expected or demanded of us. While the ideal A1c remained at 7%, a more realistic 8% (183 mg/dL) was established as an OK/good enough target to try to hit.

While I think 8% is a bit too high, I understand that it's a realistic goal for older type 2s. Besides the conclusions of the ACCORD study, another thing

that convinced me to accept that number is a phenomenon I didn't know existed until I had become more conversant about diabetes. That phenomenon, fairly common, is when type 2s think they are experiencing hypoglycemia, and that their numbers have crashed down into the 60s or 50s, although their real numbers are in the 110 to 120, or even higher range.

How is that possible? How can we experience sweating, shaking, rapid heartbeat, irritability, and more when our blood glucose numbers are at a level where most endocrinologists would take one look at it and declare, "Pre-diabetes!"?

There's no real explanation for how false hypoglycemia comes about, even though it's not a rare event in the lives of many type 2s. One theory, certainly as yet not tested in depth, is that the type 2 metabolism becomes so used to blood glucose markers hovering in the 140s to 180s that the body can fool itself when blood glucose levels drop down to the low 100s.

Another cause is a sudden and drastic drop in blood glucose levels, typically brought on by intense effort or exercise.

Dealing immediately with false hypoglycemia involves a drill almost all of us have gone through many times: Take

a meter reading to confirm our blood glucose levels. If the meter shows actual hypoglycemia (<70 mg/dL), do the usual: Consume 15 grams of pure carbohydrates, such as sweet glucose tablets, wait 15 minutes and retest. Pause and repeat until our numbers are back into the 80s or 90s. A meter reading that shows a number way above what we know is certifiable hypoglycemia tells us to retest. If the meter keeps insisting that we don't have hypoglycemia, we should believe it; we really don't.

So our next two steps are 1.) be grateful that we're not having a hypoglycemic episode, and 2.) start tracking our numbers more diligently. Just as we did when we were first diagnosed with type 2, we should be looking for patterns throughout the day that we can definitely associate with certain foods or levels of physical activity.

This means tracking what we eat and when, and testing at intervals throughout the day to see the results. Yes, it can be inconvenient to do so many tests, but the end result, which is a greater knowledge of how our individual type 2 acts, justifies it.

Careful management of our numbers eventually brings our metabolisms back into line and less likely to run screaming through

the town square shouting, "Hypoglycemia! We're having hypoglycemia!"

*ACCORD: For almost four years the Action to Control Cardiovascular Risk in Diabetes study treated 10,251 type 2 patients who had longstanding diabetes with either intensive glycemic control or standard glycemic control. The goal was to show if intensive control lessened the risk of cardiovascular events by lowering the amount of inflammatory glucose in the circulatory system.

By 2008, it became apparent to researchers that patients who were receiving intensive control measures (attempting A1c's of <6%) versus standard control (A1c's from 7% to 7.9%) were experiencing a higher incidence of heart and circulatory system problems than the standard control group. Results from ACCORD eventually led to less strict A1c targets for older type 2s. [DH](#)

So our next two steps are 1.) be grateful that we're not having a hypoglycemic episode, and 2.) start tracking our numbers more diligently. Just as we did when we were first diagnosed with type 2, we should be looking for patterns throughout the day that we can definitely associate with certain foods or levels of physical activity.

METFORMIN Linked to Vitamin B12 Deficiencies and Neuropathy

Researchers recently examined the relationship between stem cells and the healing of diabetic foot ulcers. Physicians at the University of Maryland School of Medicine in Baltimore, collected blood samples and wound margins from 100 patients over the course of eight weeks. With this information, they examined stem/progenitor cell counts, along with other factors.

Dutch researchers have recently conducted a study to see how treating diabetes with metformin could affect vitamin B12 deficiencies and neuropathy. The study consisted of two groups: the first group was taking 850mg of metformin three times a day for a total of 52 months while the other group took a placebo.

The findings showed that the group taking the metformin had an increase in methylmalonic acid, which is an indicator of a vitamin B12 deficiency. An association was also revealed between a rise of metformin and worsening of a patient's peripheral neuropathy. With more than 100 million metformin prescriptions being filled each year, many patients could be at risk, but further testing is needed to understand

the relationship between metformin and the possible negative implications.

These findings were presented at the European Association for the Study of Diabetes annual meeting in September 2015.

STEM CELLS TREATMENT AID IN DIABETES FOOT ULCERS

Researchers recently examined the relationship between stem cells and the healing of diabetic foot ulcers. Physicians at the University of Maryland School of Medicine in Baltimore, collected blood samples and wound margins from 100 patients over the course of eight weeks. With this information, they examined stem/progenitor cell counts, along with other factors.

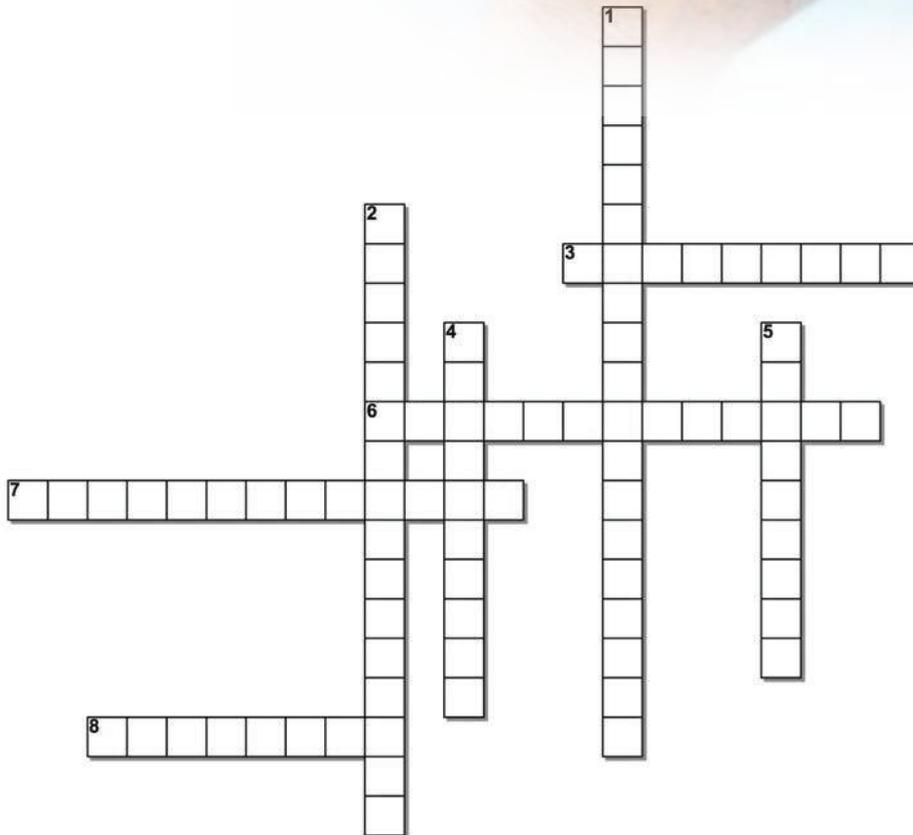
Researchers concluded that within two weeks of care, more stem cells entered the bloodstream of patients who healed than those who did not heal. These findings show that receiving stem cell assays in early diabetic foot ulcer treatment can improve the healing of these wounds.

These findings were published in *Diabetes* on October 20, 2015. [DH](#)

DIABETES HEALTH CROSSWORD PUZZLE

Test your knowledge to see how well you understand diabetic skin problems.

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Across:

- 3 What type of treatment can help heal diabetic foot ulcer
- 6 What type of diabetes is increasing at 3% a year
- 7 This food ingredient is linked to rise in autoimmune diseases
- 8 This is great for your blood sugars, A1C and keeping your weight down

Down:

- 1 SPF stands for
- 2 People that had this surgery experienced the highest reductions in fasting glucose and
- 4 Taking medication for this disorder shows better blood sugar control
- 5 This medication could affect vitamin B12 deficiencies and neuropathy

Diabetes Health in the News: Improved Treatment for Depression Improves Diabetes Self-Management

Diabetes Health Staff

A new study has shown that when people with diabetes and depression are prescribed medication for their mental health disorder, they are better able to manage their diabetes. This study was completed by researchers at Saint Louis University School of Medicine who reviewed 1,400 electronic medical records for people with type 2 diabetes.

A recent study published in *Diabetes Care* found that obese patients who lost the greatest amount of weight after bariatric surgery experienced the highest reductions in fasting glucose and insulin resistance.

Of the group studied, 225 people were being treated for depression, and 40 participants had received a depression diagnosis but were not taking medication for the disease. Researchers found that about 51% of people who were being treated for their depression with medication had their blood sugar well under control. Conversely, only about 35% of the participants with depression that were not being treated had blood sugars well under control.

These findings were published in *Family Practice* on January 7, 2016.

Diabetes Health in the News: Weight Loss Best Reduces Glucose & Fasting Insulin

Diabetes Health Staff

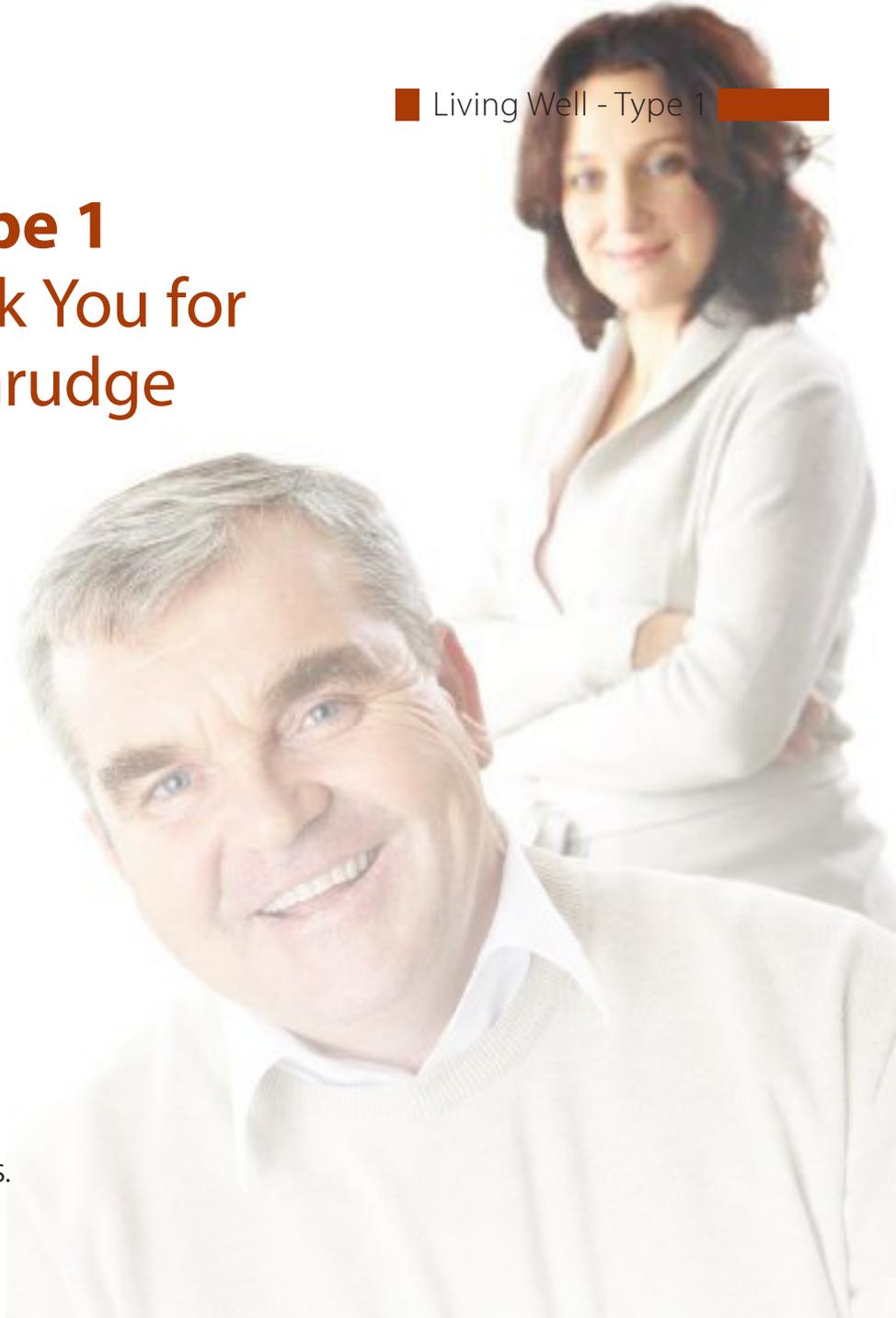
A recent study published in *Diabetes Care* found that obese patients who lost the greatest amount of weight after bariatric surgery experienced the highest reductions in fasting glucose and insulin resistance. The amount of weight lost had a greater impact on reducing these markers than the type of surgery.

Researchers at Sweden's University of Gothenburg completed this new study by comparing the weight change effects of gastric bypass versus two other procedures on changes in insulin resistance, insulin, and fasting glucose. Nearly 1,800 patients participated in the study, and it was found that weight loss of more than 30% was more common with the gastric bypass group versus the other two methods. However, the association between weight loss and insulin, glucose, and insulin resistance did not differ among the surgery groups.

These findings were published in *Diabetes Care* on December 17, 2015. **DH**

Living With Type 1 Diabetes: Thank You for Not Holding a Grudge

Meagan Esler



What a weekend. After 21 years with type 1 diabetes, you'd think I'd be used to these blood sugar swings, but that couldn't be further from the truth. I had a 330 blood sugar brought on in part by stress and PMS. I'd had a low of 37 the day before. These wildly crazy swings tend to make me feel like a newbie, but I'm not!

My husband had been the one to catch my high blood sugar in the first place, watching me get angry at a new curtain installation that wasn't going my way and then grabbing a water bottle and chugging it down, reaching for another immediately after and chugging away. I was oblivious to anything other than the wrinkled new curtains and the maddening little balls of lint that were on them from the factory. I tend to get overly hostile when my blood sugars are high, and my husband was witnessing just that.

He gently said, "Maybe you should stop and test your blood sugar? Maybe you are high?" I'm pretty sure I grunted but then I obliged. When I saw the 330 staring at me, I grabbed my insulin and took a correction shot. He asked, "What was your blood sugar?" I sort of growled back "That isn't how this works!" I refused to say the number out loud, angry then at the high blood sugar number instead of the curtains. I was still too irritated to be

My husband had been the one to catch my high blood sugar in the first place, watching me get angry at a new curtain installation that wasn't going my way and then grabbing a water bottle and chugging it down, reaching for another immediately after and chugging away.

nice and sadly I stormed upstairs and took a shower.

After the shower, my blood sugar was

Having diabetes is hard. It isn't only about what you eat. It's about hormones and stress and stupid new curtains and all kinds of factors that you just don't always see coming. My husband deserves a medal. He deals with the worst of me sometimes and instead of fighting; he simply helps me get through it and doesn't hold a grudge.

dropping nicely, and I went downstairs to apologize. I told him how high I'd been and that I was thankful he urged me to test. I felt terrible for the way I'd been acting.

He said it was fine (as he always does because he is amazing!) and told me that he was sure I was high because of my mood and all the water I was chugging. He said, "The way you drank your water was perfectly

normal...if you were at a frat party and it was beer." We laughed. I am so thankful that he knows how to handle me and when to back off when my blood sugars contribute to my mood.

Having diabetes is hard. It isn't only about what you eat. It's about hormones and stress and stupid new curtains and all kinds of factors that you just don't always see coming. My husband deserves a medal. He deals with the worst of me sometimes and instead of fighting; he simply helps me get through it and doesn't hold a grudge. Our loved ones that deal with diabetes daily and support us without faltering (even though they don't themselves have it) are our most important weapon in battling diabetes. We couldn't do it without them. Thank you to all of you out there, comforting and loving us despite the blood sugar related mood swings. **DH**

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Oinamul

(Korean Cucumber Salad)

A very refreshing salad that is a good accompaniment to grilled or stewed meats.

Serves 4

1 cucumber, peeled and thinly sliced
1 teaspoon salt
3 scallions, chopped
1 fresh red chile, seeded and finely chopped
1 tablespoon sesame oil

3 garlic cloves, finely chopped
1 teaspoon sesame seeds
1/4 teaspoon chili powder
1 teaspoon roasted unsalted peanuts, chopped
multigrain bread, to serve



1. Place the cucumber slices in a colander, sprinkle the salt over the top, and mix well. Set aside for 30 minutes to drain some of the cucumbers' natural liquid. Rinse them in fresh water and squeeze them well to remove as much liquid as possible.
2. Mix together all the remaining ingredients, then add the cucumber and mix well. This will keep, covered and in the fridge, for 3 to 4 days. Serve with multigrain bread.

TIP You could omit the salting stage, but you would then need to eat the salad within an hour or so—otherwise, the flavor will become diluted with the cucumber juices.

Amount per portion

Energy 51 cal, Protein 1.5g, Fat 4.0g, Saturated fat 0.6g, Carbohydrate 2.3g,
Total sugars 1.5g, Fiber 0.9g, Salt 0.27g, Sodium 104mg

Recipe and photo:

Excerpted from *The Essential Diabetes Cookbook* by Antony Worrall Thompson (Kyle Books, 2010) Photo Credit: Jonathan Gregson

Seared Tuna with a Sicilian Tomatoey Potato Salad

A really summery number with lots of Mediterranean flavors, this is a perfect dish for outdoor eating.

Serves 4

1½lb new potatoes, quartered

2 tablespoons olive oil

2 garlic cloves, sliced

2 onions, finely sliced

1 teaspoon dried oregano

1 fresh chile, seeded and finely chopped

4 anchovy fillets, coarsely chopped

1 (14-oz) can plum tomatoes

juice of ½ lemon

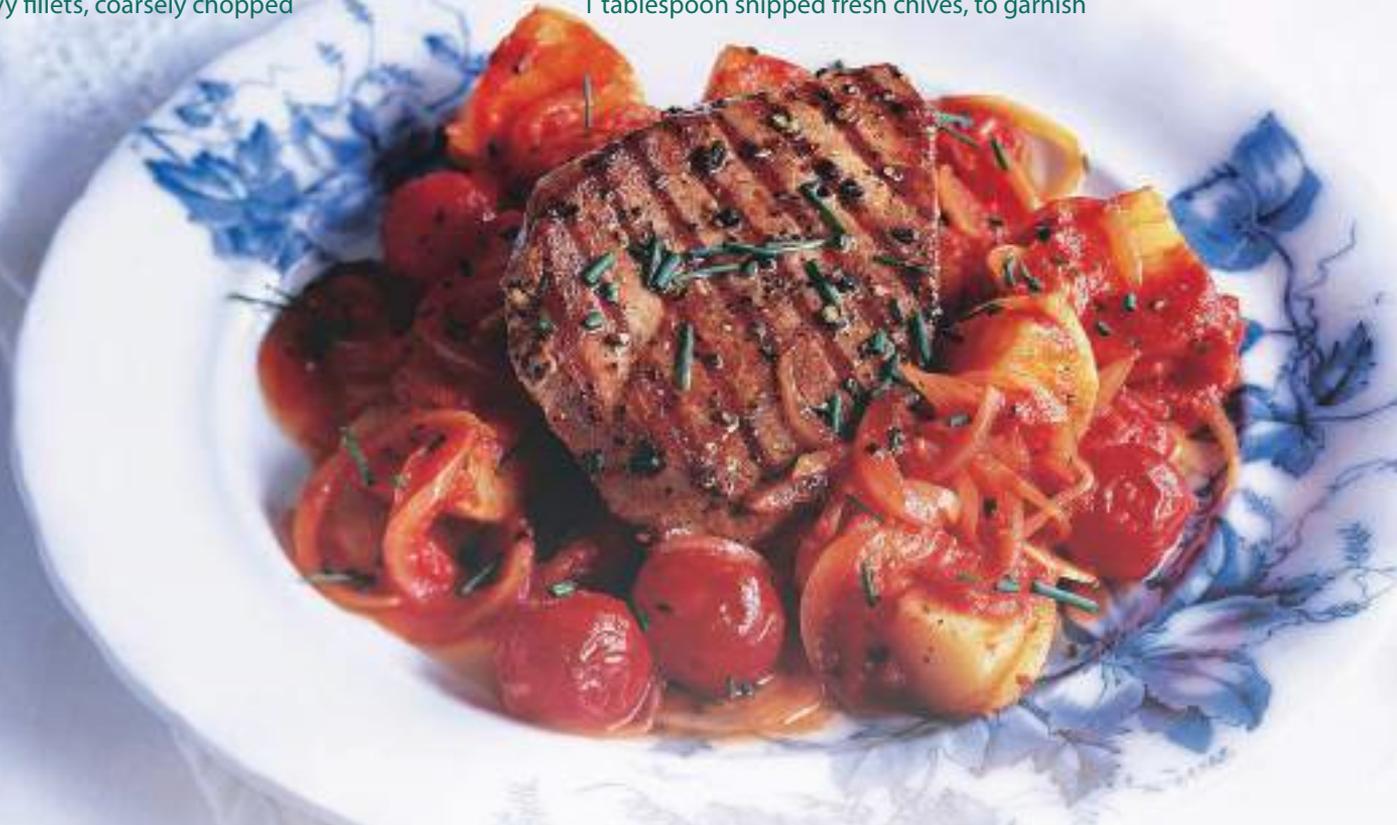
1 teaspoon sugar

salt and freshly ground black pepper

12 cherry tomatoes

4 fresh tuna steaks, about 5½oz each

1 tablespoon snipped fresh chives, to garnish



1. Cook the potatoes in boiling salted water for 15 to 20 minutes or until tender but still intact. Drain and set aside.
2. Heat 1-1/2 tablespoons of the olive oil in a saucepan, add the garlic, onion, oregano, chile, and anchovies, and cook for 5 minutes. Drain the canned tomatoes into a sieve over a bowl to collect the juices and set the tomatoes aside. Add the juices to the onion mix, then the lemon juice and sugar. Cook until the sauce is thick then season to taste with salt and pepper.
3. Crush the canned tomatoes between your fingers to create small pieces and add to the sauce along with the potatoes and the cherry tomatoes. Cook for 5 minutes.
4. Brush a ridged grill pan with the remaining olive oil and place it over high heat. Season the tuna, then cook for 1 minute on each side. Set the tuna on top of the potato salad and sprinkle with chives

TIP I urge you not to overcook the tuna, otherwise you might as well open a can. This salad is equally good eaten the next day at room temperature, maybe this time using flakes of canned tuna.

Amount per portion

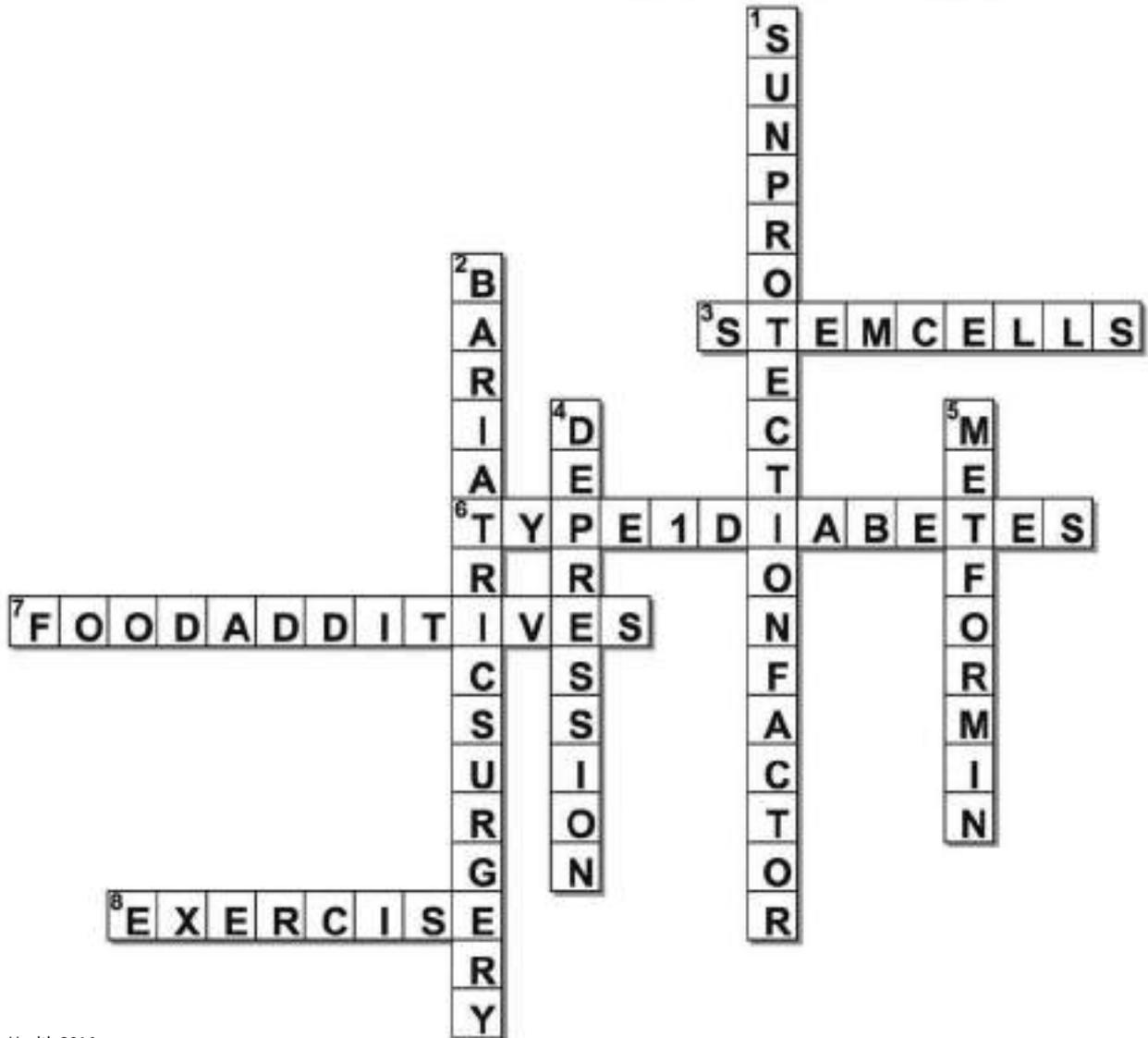
Energy 427 cal, Protein 41.5g, Fat 13.7g, Saturated fat 2.4g, Carbohydrate 36.7g, Total sugars 10.5g, Fiber 3.6g, Salt 1.36g, Sodium 536mg

Recipe and photo:

Excerpted from The Essential Diabetes Cookbook by Antony Worrall Thompson (Kyle Books, 2010) Photo Credit: Jonathan Gregson

DIABETES HEALTH CROSSWORD PUZZLE SOLUTION

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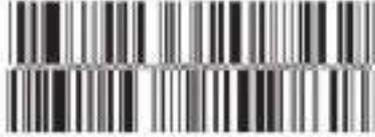
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CONSUMER: Present this coupon to the cashier at time of purchase. Limit one coupon per purchase. Cannot be combined with any other offer, including store loyalty programs. **DO NOT DOUBLE.** This offer does not apply to prescription purchases. **RETAILER:** We will reimburse you the face value of this coupon plus 5¢ handling provided you and the consumer have complied with the terms of this offer. Invoice proving purchase of sufficient stock to cover presented coupons must be shown in support. Any other application may constitute fraud. Reimbursement may not be submitted to Medicare, Medicaid or any other insurance or a claim. Coupon void where prohibited, taxed or restricted. Consumer must pay any sales tax. Cash value: 0.01¢. Reproduction of this coupon is expressly prohibited. No cash back. Mail to: Tevada Health, Inc. Investor Dept. #012882 One Power Drive, Deer Park, TX 75643

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for more information!



2. Tevada's Addressed Quality Assessment Evidence Report, conducted by UL-6781-2013, TRUEplus® Single-Use Insulin Syringes (29- and 31-gauge) received a top score of 10 out of 10 and were rated comparable to same-gauge syringes from BD, Monject, and Ullman. 10/15/2013 © 2016 Tevada Health, Inc. TRUEplus is a trademark of Tevada Health, Inc. Health Mart, the Health Mart logo and the Health Mart Private Label logo are registered trademarks of Health Mart Systems, Inc.