THE ENDOCRINE SYSTEM'S E
ffects on Aging

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• Falls Prevention a New Focus for Endocrinologists

• Thyroid Boosters or Busters: The Truth About Thyroid Supplements
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Thyroid Boosters or Busters: The Truth About Thyroid Supplements

It's next to impossible to avoid ads suggesting that thyroid support supplements may cure what ails you, but a word of caution is in order. Not only are such claims misleading, but taking support supplements could actually harm thyroid function.

When a Tingling Sensation Is Cause for Concern

Most people experience “pins and needles” feelings in their feet from time to time. It’s an uncomfortable, abnormal and downright annoying sensation. For people with diabetes, the experience takes on added weight as it could be a sign of nerve damage commonly known as diabetic neuropathy.

Robust Resources Now Available for Diabetic Gastroparesis Patients

Those who suffer from the devastating disorder diabetic gastroparesis can now access much-needed support and resources with the introduction of a new website and app.
AACE adopted the universal endocrine logo design (left), which is intended to serve and be recognized by the scientific community and the public at large as an international symbol of recognition of all areas of the specialty of endocrinology (academic/research/clinical).

In its simplest form, the logo represents a continuous loop that conveys the concept of endocrine science, education, communication, safety, and overall good endocrine health; lay focus groups identified “balance” and endocrinologists identified “feedback loop” – both are desired interpretative attributes.
DR. EMORY HSU
is conducting research on osteoporosis and microbiota at Emory University in Atlanta, Georgia. He graduated with an undergraduate degree in biochemical sciences from Harvard University and from the Vanderbilt University Medical School, where he was a Howard Hughes Medical Institute “Cloisters” Research Scholar for a year at the National Institutes of Health near Washington, D.C. He completed his Internal Medicine residency at Emory University, where he is now an Endocrine Fellow.

DR. KOMAL MOTWANI
is a Clinical Fellow at Eastern Virginia Medical School in Norfolk, Virginia. She served her Internal Medicine residency at Jersey City Medical Center – RWJ Barnabas Health, New Jersey’s largest integrated health care delivery system and is a medical school graduate of Dow University of Health Sciences in Karachi, Pakistan.

DR. RUCHITA PATEL
is a second-year Endocrinology Fellow at Loyola University Medical Center in Maywood, Illinois. She completed her medical training at Chicago College of Osteopathic Medicine in Downers Grove, Illinois and her Internal Medicine residency and chief residency at the University of Illinois Chicago/Advocate Christ Medical Center in Oak Lawn, Illinois. After completion of her fellowship, she will be joining an academically affiliated endocrine practice in the Chicagoland area and focusing on general clinical endocrinology.

DR. JENNIFER ROSENBAUM
is a second-year Fellow in the Department of Metabolism, Endocrinology and Nutrition at the University of Washington. She is currently conducting research regarding changes in the brain associated with obesity and diabetes. She has a background in computer science and is also working on studying and improving technology used in the fields of obesity and diabetes. She attended medical school at the University of California San Francisco.

DR. DACE L. TRENCE
is Director of the Diabetes Care Center and Professor of Medicine at the University of Washington Medical Center in Seattle. She is also the University of Washington Endocrine Fellowship Program Director and Director of Endocrine Days, a medical education program for endocrinologists practicing in the Pacific Northwest.

DR. AARON I. VINIK
A world-renowned leader in the translation of basic neuropathy science into clinical care, Dr. Vinik is Professor of Medicine, Pathology and Neurobiology, the Murray Waitzer Endowed Chair for Diabetes Research, and Director of Research and Neuroendocrine Unit at the Eastern Virginia Medical Center in Norfolk, Virginia. A prolific researcher and author, he has authored or co-authored more than 500 articles published in scientific journals. Dr. Vinik is an avid windsurfer and kayaker and enjoys dancing the Argentinian tango.
B eing obese, or being grossly overweight, has become a national epidemic, with 40 percent of U.S. adults and 19 percent of U.S. children classified as obese. Furthermore, according to a recent study from the Harvard T.H. Chan School of Public Health, more than 50 percent of today’s children are expected to be obese by age 35.

This epidemic of obesity and our ongoing efforts as a society to identify ways to lose weight have led us to different approaches to address the issue, including medications, surgery and diet. One approach, the ketogenic diet, which features a high-fat, low-carbohydrate regimen, is currently a popular option. But is it a fad of the day or does it offer a valid approach to weight management — or, more specifically, allow weight loss?

The ketogenic diet approach is based on an intake regimen of more fat, moderate protein and low-carbohydrate meal content. This approach is meant to put the body in a metabolic state called “nutritional ketosis” whereby the liver bypasses using glucose (blood sugar) as its main fuel, instead converting fatty acids into ketone bodies that act as the body’s fuel for energy. It was originally conceived in the 1920s to lessen seizure activity in those diagnosed with epilepsy.

While carbohydrates – which the body breaks down or converts into glucose for energy – comprise 55 percent of the typical American diet (200-250 grams per day), the ketogenic diet only allows 20 to 50 grams of daily carbohydrates, derived mainly from non-starchy vegetables such as asparagus, baby corn, beets, beans (green, wax, Italian), broccoli, cauliflower, eggplant, onions, salad greens and squash. The theory behind the reduction in dietary sugars is that there subsequently should be a lower secretion of insulin, a hormone produced by the pancreas to regulate glucose in the blood and – in turn – a decrease in insulin resistance, a condition that occurs when cells of the body don’t respond properly to the hormone insulin, causing glucose (sugar) to build up in the blood. The high levels of insulin in the body contribute to the development of type 2 diabetes and obesity.

People on a ketogenic diet often experience rapid weight loss, up to 10 pounds in 2 weeks. The initial few pounds are due to losing water, which is otherwise required to store excess carbohydrates in the liver as glycogen, a large molecule that is the predominant storage form of glucose and carbohydrates in the body. However, the overall amount of weight loss experienced depends on many factors including age, gender, ethnicity, level of physical activity, pre-dietary body fat and lean muscle mass, as well as the number of calories decreased once on a ketogenic diet. In a review of 13 studies comparing low-carbohydrate diets with ketogenic diets, the conclusion was that
there was greater weight loss in those on the ketogenic diet. However, looking more closely at the results, the “significant difference” was 1 kilogram, the equivalent of 2.2 pounds.

It’s important to remember that maintaining weight loss is an even harder challenge than achieving it. Once your body begins to sense you are losing weight, it triggers a series of physiological adaptations to preserve your weight, such as decreasing your metabolic rate (slowing your metabolism, the process of biochemically converting calories into energy required for body functions) and increasing your sense of hunger, with a tendency to restore body fat. Whereas low-fat diets were found to slow metabolism by more than 400 kilocalories per day, an extremely low-carb diet resulted in no significant decrease in metabolic rate. So a ketogenic diet should offer a better ability to keep weight off.

Additionally, people feel less hungry on a ketogenic diet, presumably due to the hunger-satisfying properties of fat and protein. Additionally, changes in appetite-regulating hormones and the direct hunger-decreasing role of ketone bodies are possible factors. Combined, these features not only help, but also maintain weight loss.

And a ketogenic diet is reported as more heart-healthy, despite the higher fat intake. People on ketogenic diets lose more deep (intra-abdominal fat) than low-fat dieters. Ketogenic diets increase high-density lipoprotein (HDL or good cholesterol) and lower triglycerides (sugar fats), abdominal girth/waist size and blood pressure. Moreover, a ketogenic diet can lead to improvement in diabetes-related blood sugar control as suggested by decreases in HbA1C, a blood test that assesses the control of blood sugar over the previous three months. Ketogenic diets have even been reported to help in decreasing the need for blood-sugar control medications used in the treatment of diabetes, potentially allowing some patients to come off medications within a year after starting the diet.

This is all good news, but does a ketogenic diet pose any concerns?

Of course, the answer is yes. On the negative side, some people on this diet experience an increase in low-density lipoprotein (LDL or bad cholesterol). Eating more unsaturated, rather than saturated, fat could possibly help decrease some of the rise in LDL levels, but the ideal ketogenic diet fat composition is unclear at this point.

The most common side effect of this type of diet includes a constellation of symptoms called “keto flu” which can last as little as a few days but also up to several weeks. Symptoms include lightheadedness, dizziness, fatigue, difficulty exercising, poor sleep and constipation. Maintaining a good electrolyte (sodium, potassium and magnesium) balance on this diet by consuming protein intake from whole foods such as cooked grains and hummus, rather than purified protein products, can help diminish some of these effects.

Not everyone needs an equal amount of carbohydrate restrictions to lose weight. Expert individualized advice is recommended to determine if you’re a good who candidate for this diet and also to establish individual goals. Most people with insulin resistance benefit from strict carbohydrates restriction. However, the carb intake and diabetes medications may need continued monitoring and adjustment to prevent low blood sugar, especially in those individuals with diabetes who are using insulin or other diabetes medications. Similarly, blood pressure medications may also need monitoring for possible adjustment.

Once a weight goal is achieved, some people may be able to add a limited amount of carbohydrates back in their diet while still maintaining their lower weight. This will vary based on individual carbohydrate tolerance or one’s ability to metabolize carbohydrates.

Overall, a ketogenic diet is generally considered safe when supervised by a medical professional and has been successfully used for sustained weight loss. However, it needs to be implemented with a dedicated program after an assessment of individual variations, with continued monitoring of diabetes, blood pressure and cholesterol parameters and medications. Large-scale trials are needed to further assess the diet for better understanding of its benefits in the long run.
Frequently Asked Questions about Using Apps for Weight Loss

By Jennifer Rosenbaum, MD

Apps for weight loss are incredibly common. So as a physician, I receive a lot of questions from my patients about using them. If an app is the right tool for you, I’ve put together a list of the most common questions that I receive to try to help you make the most of your app experience.

Should I use an app for weight loss?

There are a lot of apps designed to help with weight loss. Most of them have not been studied to prove that they achieve the goals they claim. However, we do know that keeping a food journal and counting calories are associated with successful weight loss, and apps can be great for those activities. Your cell phone has a few advantages over pen and paper. First, most people have their phone with them all the time, so it’s more convenient than a paper log. Second, it can be easier to look up things like calorie counts and add up your total calories for the day. If you’re a person who carries a smartphone frequently and wants to lose weight, it might be a good option for you to try.

Which app do you recommend?

There is no one best app. Apps have diverse features such as tracking different macronutrients (carbohydrates, protein and fat) in addition to calories, tracking exercise, accessing community support forums, and so forth. Finding one that meets your needs and is easy for you to use is key. An app that you will use consistently is what is most important. If you try an app and find the interface confusing or difficult to use, then try a different one. If there is one that your friends use and enjoy, that might be a good one to try first. Oftentimes you can share food logs or achievements with friends, and that accountability and community support might be helpful.
My app gives me a calorie goal. Is it the right goal? What calorie goal should I use?

This is a tricky, complicated question. Research says 3,500 calories is equal to a pound. If you want to lose a pound a week, then you would want to eat 3,500 calories less than you burn each week, or 500 calories less than you burn each day. The question is, how many calories does your body burn each day? This depends on how tall you are, how much muscle you have, how active you are and other factors. If you have lost weight previously, you probably burn fewer calories each day than someone your exact same height and weight who has never lost weight before. Most apps have a built-in calculator to give you an estimate of what your daily calorie goal should be. Generally, these are pretty good estimates, but remember that it’s just an estimate.

Is the app giving me the right macronutrient goals? Should I eat low-carb or low-fat foods?

There are a lot of diets available that focus on low-fat or low-carbohydrate foods. Many apps will set different macronutrient goals for you that may or may not fit with what is right for you. What’s most important is to eat a diet that is medically healthy. For example, people with kidney disease should probably avoid high-protein diets because the diminished kidney function can affect the ability to eliminate all of the waste products of protein metabolism. Low-carbohydrate diets can be great for people with diabetes, but should be started with caution since reducing carbohydrates can greatly impact your blood sugar and how much medicine you need for your diabetes. As long as you’ve talked to your doctor about changes to your diet and it is medically safe for you, there does not seem to be one best diet plan.

Many apps will allow you to set different goals based on whatever you would like to do. In general, the studies that have examined different kinds of diets in medicine seem to show that low-fat versus low-carb diets can both result in weight loss. A diet that you can stick with is the diet most likely to work.

If you get cravings for items such as popcorn and cookies when you are on a low-carb diet, try to find a diet where you can count those towards your calorie goal. If you don’t feel full on a low-fat diet, a low-carb diet may make you feel more satiated and result in fewer cravings. Or, perhaps try more vegetables, which can give you more food volume without an abundance of calories. Give whatever diet plan you choose a try. Don’t worry too much if you have one bad day or “fall off the wagon.” The trick is to get back on it again. If you find you’re unable to stick with the diet, try to figure out what about the diet did not work for you. Were you too hungry? Were there specific foods you were craving? Adjust your plan to try and avoid those pitfalls on your next attempt and try again.

My app warns me if I don’t eat enough. Is it possible to eat too few calories?

There’s a lot of debate in the app forums about “starvation mode” and whether eating too few calories actually inhibits weight loss. It is definitely possible to get sick from not eating enough, and it’s debated whether not eating enough can slow weight loss. What we do know is that your body needs certain vitamins and nutrients each day, and the less you are eating, the harder it can be to get those essential nutrients. In general, eating less than 1,000 calories a day puts you at higher risk for not getting the nutrition that your body needs. When you are on a calorie-restricted diet, it becomes more important to eat nutrient-rich foods like vegetables to make sure that you are getting enough nutrients in your limited consumption.

But my app says I should eat more. Should I eat more if I am under my calorie goal at the end of the day?

The short answer is probably not, assuming that you are eating enough to meet your basic needs. Many apps tell you that if you are under your calorie goal for the day, then you should eat more. This often is related to the question above about eating too few calories and concerns for “starvation mode.” Remember that the calorie goal you have is an estimate. We don’t really know how many calories you burn on an average day, so we want to see it as an estimate and not a rule. Similarly, calorie counting is an estimate. Did you put ketchup on that burger? Just how much ranch dressing was on your salad? For some people, it’s probably a very good estimate – if you are cooking all your own food, weighing it on a food scale and eating every last morsel, you’re probably pretty close to how many calories you ate that day. But most people are not quite so exact. Some people overestimate portion sizes and some underestimate them. Some apples are bigger than other apples. Sometimes we forget to account for the oil we used for cooking, and sometimes half of your yogurt sticks to the side of the bowl. Some entries in the food database list an egg as 60 calories while others say 85. Which is right? With all these different calorie count factors, if you’re not hungry at the end of the day, don’t eat more just to meet a goal, since the numbers aren’t that accurate.

My app keeps track of my exercise and then adjusts my calorie goal for me. Should I eat my exercise calories?

My father called me very upset last week. He was on vacation and the treadmill at the hotel told him he burned half as many calories as his treadmill at home says he burns doing the exact same workout. He desperately wanted me to tell him which was right. As tempting as it was to make him feel better by saying the machine with the higher calorie estimate was right, the real answer was that I didn’t know. Most likely,

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Walking is wonderful exercise. It’s been shown to be one of the exercises people are most likely to continue to do on a regular basis and least likely to lead to injury. But not every step is the same. Try taking 40 nice slow steps around your kitchen. How do you feel? Now try walking up three flights of stairs. Although those are likely very similar step counts, you likely feel a little more tired after walking up those stairs. Similarly, recognize that hitting your step goal by going for a run burns more calories than hitting your step goal just walking around during the day. Don’t let your daily steps turn into an excuse not to exercise. Try to use your step goal to push yourself to do more, and don’t avoid beneficial activities such as riding a bike, going for a swim or lifting weights just because they won’t raise your step count.

What tools for weight loss are missing from apps?

Obviously, there is no single answer for how to lose weight, but there are a lot of things that we know do or do not work. Though apps have a lot of strengths, it takes more than use of an app to help with weight loss. This includes accountability to other people and social support. Whatever approach you take, we know it will be enhanced if you engage other people. For example, Weight Watchers has had great success with its group classes. Peer pressure seems to be a benefit in this instance. And from television shows to friendly office competitions, we know people tend to lose weight when competing. A small wager with a friend or relative can provide a huge incentive. For me, my bet is that you can indeed lose weight.

In conclusion:

- Weight loss apps can help better log your efforts than pen/paper
- Calorie estimates are just that - estimates
- Physical activity estimates are just that - estimates
- Personal efforts at changing lifestyle can be more successful when done with a group
When children with type 1 diabetes experience the everyday fun and freedom of camp with others just like them, something incredible happens. Diabetes isn’t the focus of their day. Lilly Diabetes believes that every child should have the opportunity to go to camp, and that’s why we’ve provided insulin and a variety of carefully designed resources to diabetes summer camps for more than 10 years. We help camps care for your child’s unique, personal needs so your child can focus on what’s most important — having a summer to remember.

LillyDiabetes.com
To register for a camp near you, visit www.diabetescamps.org.
There seems to be a lot of mainstream media articles lately highlighting a medical condition called adrenal insufficiency. But exactly what is it?

First, it's helpful to know what the adrenals are and what their function is. The human body has two adrenals, triangle-shaped glands located on the top of each kidney like a cap. Each adrenal gland is composed of two distinct parts: the outer part called the adrenal cortex and the inner adrenal medulla. The adrenal glands produce and secrete several hormones which act as a chemical “messengers,” traveling through the bloodstream and acting on various body tissues to enable them to function correctly, including glucocorticoids involved in the metabolism of carbohydrates, proteins and fats; mineralocorticoids that help maintain the body’s salt and water levels which, in turn, regulates blood pressure; and adrenal androgens, which play a role in early development of the male sex organs in childhood and female body hair during puberty.

Normally, the hormones produced and released by the adrenals are very carefully regulated to maintain the necessary balance that the body requires for optimal function. This regulation includes signals produced by the pituitary gland – a pea-sized structure located at the base of the brain – that stimulate adrenal hormone production and, in turn, receive feedback that sufficient levels of adrenal hormone are present. A small portion of the brain called the hypothalamus plays a further role by regulating the function of the pituitary.

With such intricate feedback loops, there can be several ways that systems affecting adrenal function can fail to work as they should. For example, dysfunction or destruction of the adrenal gland can result from infections. In the past, tuberculosis – a serious infectious disease that mainly affects the lungs – was recognized as a major culprit. But other infections such as those produced by bacteria or fungus have also been reported as affecting the adrenals’ ability to produce hormones. More recently, it has been recognized that the body can produce antibodies against its own adrenal tissue (referred to as an autoimmune response), which causes destruction of adrenal cells.

Other potential causes of adrenal function loss include medications, such as select anti-coagulants (commonly referred to as blood thinners) that can cause bleeding into the adrenal, resulting in the inability of the adrenals to maintain normal hormone production; cancer (usually metastasized from other organs); HIV infection; and congenital adrenal hyperplasia, a group of inherited genetic disorders.

Sometimes adrenal destruction affects only the adrenal cortex, whereas other times the entire adrenal can be affected. This is called primary adrenal insufficiency, as the problem is in the adrenal gland.

If the problem originates in the pituitary because there is not enough “message” hormone being sent to the adrenal (deficient ACTH secretion), then this is called secondary or central adrenal insufficiency. ACTH is released into the bloodstream in intermittent pulses throughout the day. When ACTH reaches the adrenal glands, it causes them to secrete more cortisol, a steroid hormone best known as the “stress” hormone, which allows your body to respond to stress or danger, increases your body’s metabolism of glucose, helps control your blood pressure and reduces inflammation.

Whether primary or secondary adrenal insufficiency, the symptoms are mostly similar, with a few exceptions. Common symptoms include weakness, fatigue, weight loss without trying to lose weight, abdominal pain, nausea and, at times, vomiting.

Patients might also have low blood sugar (hypoglycemia), low blood pressure (hypotension) and abnormally low levels of sodium in the blood (hyponatremia).
Primary adrenal insufficiency patients can have hyperpigmentation (darkening) of the skin, much like an overall suntan, except the darkening can affect areas of the body that aren’t typically exposed to the sun such as mucous membranes. An example is along the inner cheeks of your mouth where your teeth meet; chewing traumatizes this skin, which sets the stage for the darkening. Sometimes there is also darkening along the gums or tooth line and at elbows and knees. With long-lasting primary adrenal insufficiency, there can be darkening of the creases of the palm, along fingernail rims and nipples. Also, scars that form after a person has developed primary adrenal insufficiency may be darker than previous scars. In addition, those with primary adrenal insufficiency may experience dizziness when sitting or standing and salt cravings – a condition called hyperkalemia, which describes a potassium level in your blood that’s higher than normal.

Certain conditions can lead to rapid onset of symptoms, such as bleeding into the adrenal gland, which can lead to an adrenal crisis (also known as Addisonian crisis), a medical emergency requiring immediate treatment. Other causes result in a more gradual onset of symptoms. Symptoms of primary adrenal insufficiency occur only after loss of about 90 percent of both adrenal cortices, so there is considerable reserve available to protect normal body function.

Secondary adrenal insufficiency usually results from a decrease in ACTH, which then causes low cortisol (glucosteroid) levels. Other causes of secondary adrenal insufficiency are the presence of a pituitary mass leading to underproduction of pituitary hormones, or surgical removal of a pituitary mass. But the most common reason people develop secondary adrenal insufficiency is from long-term use of steroids, a substance found in medications for conditions such as rheumatoid arthritis and asthma. While there is a decreased response by the body to stress in secondary adrenal insufficiency, darkening of the skin is not seen and potassium blood levels are usually normal.

Both primary and secondary adrenal insufficiency are initially screened for with a test called the rapid ACTH stimulation test. Also called the cosyntropin, tetracosactide, or Synacthen test, the test is performed in a clinic setting with a blood draw. The test checks to determine what the adrenal gland can produce after it is stimulated by either an intramuscular or intravenous dose of synthetic ACTH; those results are compared to the patient’s ACTH level before the synthetic hormone is administered. The ACTH hormone level can help differentiate between primary and secondary adrenal insufficiency. At times, test results can be difficult to interpret, such as when there might be only partial adrenal insufficiency. More specialized testing can be done in this circumstance.

Once a diagnosis is confirmed, treatment for adrenal insufficiency consists of replacing the hormones the glands are no longer producing. There are maintenance doses of oral steroids meant for long-term daily intake and doses used to prevent adrenal crisis that can occur when the patient is experiencing stress or illness. The most commonly used steroids are hydrocortisone or cortisol acetate taken in two or three divided doses. The highest dose is given in the morning shortly after awakening, and the second dose is given around lunchtime or early afternoon. A third dose is needed occasionally even later in the day. A higher dose is given in the morning because steroids are normally produced in a circadian rhythm, the body’s 24-hour internal clock that is running in the background of your brain and cycles between sleepiness and alertness at regular intervals.

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A typical medication regimen might be 15 milligrams oral hydrocortisone taken in the morning and either 5 milligrams or 10 milligrams taken in the afternoon. If the patient has difficulty remembering to take multiple doses, oral prednisolone or prednisone can be used once daily.

In those diagnosed with primary adrenal insufficiency, another hormone is needed to replace mineralocorticoids because there is a deficiency of aldosterone hormone production. Replacement is typically with a medication called fludrocortisone. In persons diagnosed with secondary adrenal insufficiency caused by steroid use, full recovery of their own production of adrenal steroid hormones is expected, but this may take weeks to years to occur. In primary adrenal insufficiency, patients will be on lifelong steroids and fludrocortisone.

Since an impaired adrenal gland is deficient in making appropriate amounts of cortisol, patients will need to take larger doses of hydrocortisone (the name for the hormone cortisol when supplied as a medication) to compensate for the body’s higher steroid needs during times of illness or stress. What is considered stress can vary from person to person, but there are some general principles to keep in mind. If the patient has a fever, a double or triple dose of hydrocortisone replacement is recommended until recovery, which is usually about two to three days. They should also increase their intake fluids rich in electrolytes that are essential for normal function of our cells and our organs. Examples are Gatorade, electrolyte-enhanced drink tab Nuun, or a homemade concoction made of mixed fruit juice such as citrus juice or tart cherries juice and honey, water and a pinch or two of table salt.

If patients develop nausea and can’t take in pills or fluids, or start vomiting, prompt medical help should be sought. Keeping intramuscular hydrocortisone on a hand as an emergency supply is recommended, as this allows for time to get to an urgent care center or emergency room after the intramuscular dose is given. But don’t delay seeking medical help – this is a critical situation.

Another stressful condition is when a patient is undergoing a surgical procedure. Major surgical procedures (trauma, delivery of a baby, those requiring general anesthesia) require stress-dose steroids be administered and monitored by the patient’s medical team. For more minor procedures, it is recommended that the steroid dose be doubled the day of the procedure and for one to two days following the procedure. Discuss with your endocrinologist the specific recommendations for maintaining adrenal health in a variety of situations.

Overall, the prognosis for someone diagnosed with adrenal insufficiency is very good, as proper diagnosis and treatment can lead to a healthy life. However, be careful not to attribute symptoms of the condition that we can all experience from time to time – fatigue and weakness, for example – to a possible adrenal issue when there’s no other indication that the adrenals aren’t functioning normally.
Point, Click, Learn.

Free educational resources featuring expert content curated by our own member endocrinologists to further patient understanding of endocrine-related health issues.
The Endocrine System’s Effects On Aging

By Aaron I. Vinik, MD, PhD, FCP, MACP, FACE with Mary Green

The many advances realized in modern medicine – enhanced diagnostic tools, more and better-targeted drug therapies, vaccinations against common killer diseases, and improved public health measures in areas such as nutrition and sanitation – have dramatically increased the average life span in the United States during the past century.

But healthful longevity with an excellent quality of life is the goal.

In consideration of the rapidly growing elderly population, examination of the endocrine system’s far-reaching effects in longevity and healthy aging deserve greater attention and understanding. Here we examine just a few of the many endocrine factors that impact the aging process and provide insight regarding interventions that can support moving through the golden years more gracefully.

Sarcopenia

Defined as age-related low muscle function (walking speed or grip strength) in the presence of low muscle mass (muscle wasting), the prevalence of sarcopenia varies widely, with estimates suggesting its presence in up to 13 percent of persons 60 to 70 years of age and up to 50 percent in those 80 years of age and older. It is one of the root causes of a host of health issues that plague the elderly, including physical frailty, hip fractures and other injuries (see related article, "Falls Prevention A New Focus for Endocrinologists," on page 17). A prime example of sarcopenia is former world-class bodybuilder and Governor of California Arnold Schwarzenegger. Although he claims to still work out daily, recent photos show the 70-year old Schwarzenegger’s body no
longer has muscles that are full and solid – the muscles are wasted because of sarcopenia.

While there are common, non-endocrine causes of sarcopenia such as inactivity, weight loss without exercise, reduced blood flow and genetic factors, the muscles are supported by the endocrine system. And one of the major endocrine hormones that is important here is testosterone, which begins declining at the rate of 1 percent per year beginning around 30 years of age.

Another contributing factor to sarcopenia is insufficient leucine, a principal amino acid in the diet that stimulates the rate of protein synthesis and, thus, is critical to improving the integrity of muscle by slowing down the rate of muscle tissues degradation.

Growth hormone (GH) and insulin-like growth factor (IGF1), an endocrine hormone found naturally in your blood whose main job is to regulate the effects of growth hormone, also become insufficient as we age and are contributing factors to sarcopenia, as normal IGF-1 and GH functions include tissue and bone growth.

Diagnosing sarcopenia in the clinical setting can be achieved with a simple questionnaire called SARC-F (an acronym for strength, assistance in walking, rising from a chair, climbing stairs and falls, which asks: How much difficulty do you have in lifting and carrying 10 pounds?; How much difficulty do you have walking across a room?); How much difficulty do you have transferring from a chair or bed?; How much difficulty do you have climbing a flight of ten stairs?; How many times have you fallen in the last year?

Once sarcopenia has been identified, management and therapy is remarkably straightforward. While numerous studies have demonstrated that resistance exercise is the best primary treatment for sarcopenia, the key is providing individuals with options for movement that incorporate simple measures for strength and balance, that motivate them and that they will continue to stick to. For some it may be stretching bands, dancing or running, for others weight lifting or Tai Chi. The use of BOSU® balance-training balls and pilates to strengthen the core muscles are examples of worthwhile options.

Also, medical and nutritional therapy can be introduced. There is evidence suggesting that leucine-enriched essential amino acids, when taken in conjunction with an exercise regimen, will reduce sarcopenia. And the administration of testosterone in low doses can help build muscle mass, although it does not affect muscle strength.

Additionally, many elderly are insufficient in Vitamin D, which improves muscle function. Therefore, vitamin D replacement to achieve appropriate levels is recommended. Cell-based therapies to treat sarcopenias, such as repopulation with stem cells, may have potential in the future, but to-date have had success in the pre-clinical area only.

Thyroid Function With Advancing Age

Another area that deserves examination is the impact of the aging process on thyroid function.

With an increase in age, changes in thyroid hormone production, metabolism and action occur. Specifically, aging is associated with decreased secretion of thyroid-stimulating hormone (TSH), which is produced by the pituitary gland in the brain and directs the thyroid to make and release essential thyroid hormones T3 and T4 into the blood, where they travel to and are used by multiple target organs and systems. T3 and T4 secretions also are impaired as we age.

As a result of these changes, there is an increased prevalence of thyroid disease in the elderly, particularly what is known as sub-clinical thyroid disease, a disease that is not severe enough to present definite or readily observable symptoms. In general, subclinical thyroid disease is associated with an increased risk of overt thyroid disease.

The clinical signs of thyroid disease in the older population may be different that those observed in younger patients. For example, symptoms and signs that are typically hallmarks of an underactive thyroid — fatigue, weakness, constipation, reduced appetite, cold intolerance, hair loss and dry skin, for example — are more subtle and often attributed to the normal aging process.

As a result, identifying and appropriately treating thyroid diseases in elderly patients requires special attention, since symptoms can often manifest as a disorder of another system in the body, and are often influenced by a host of other concurrent conditions and factors, including medication that directly interferes with thyroid function.

For aging patients who have been diagnosed with overt hypothyroidism (underactive thyroid), treatment remains the introduction of hormone replacement therapy, which is the recommended treatment for hypothyroidism at any age. However, a more conservative approach is often used, with a lower starting dose of the replacement medication than

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younger adults might receive, as the replacement hormone might increase the risk of cardiac events such as angina pectoris (chest pain), irregular beating of the heart, or heart attack.

Likewise, the prevalence of hyperthyroidism (overactive thyroid) is increased in the elderly. As with hypothyroidism, the elderly usually lack the classic signs and symptoms typically seen in hyperthyroidism. Gastrointestinal issues and symptoms such as cognitive impairment, mania or depression can be signs of hyperthyroidism in the elderly. While surgery is a treatment option in younger patients, radioactive iodine treatment to destroy some of the thyroid tissue so that it will produce less thyroid hormone is a more convenient and effective treatment for the older patient. If this results in post-treatment hypothyroidism, hormone replacement medication can be administered.

**Decreased Testosterone In Aging**

While much has been researched and reported regarding hormone replacement therapy in older women, particularly the use of estrogen to lower the chances of death and disability from cardiovascular disease and osteoporosis, awareness of the decrease in testosterone levels that occurs with aging (referred to as gonadopenia) is a relatively recent phenomenon, gaining momentum over the last two decades as the elderly population expanded and patient interest in testosterone replacement therapy grew.

Produced primarily in the testicles, testosterone is responsible for maintain a male’s bone density, fat distribution, muscle strength and mass, facial and body hair, sex drive and sperm production.

It is widely known that testosterone concentrations decline with age. In fact, males achieve peak testosterone concentrations in their third decade of life, experiencing a 2 percent decline per year in testosterone after the age of 40 that continues throughout their lives. However, other factors such as obesity and type 2 diabetes can contribute to the decline. It is important to determine in older men if a low testosterone level is simply due to aging or if it is due to hypogonadism, a disease in which the body is unable to produce normal amounts of testosterone due to a problem with the testicles or with the pituitary gland that controls the testicles.

Although mainstream discussions of decreased testosterone in the aging male often focus on issues such as low sex drive and erectile dysfunction, symptoms related to low testosterone are numerous and varied and range from decreased muscle mass and reduced strength that can lead to physical frailty, depression, fatigue, difficulty concentrating and poor quality of life. And some studies have shown that low testosterone concentrations are associated with an increase in the incidence of cardiovascular disease and mortality.

There are a number of testosterone replacement therapy options available in the U.S. to improve symptoms and quality-of-life issues, among them injections, nasal formulations, and topical therapies such as patches and gels. Many small clinical trials have found that testosterone therapy in elderly men may increase their muscle mass, strength and physical functioning, as well as increasing bone mineral density at the hip and spine. However, concerns remain regarding lack of long-term data regarding whether the therapy increases the risk of prostate cancer or prevents cardiovascular issues. Thus, the risk-to-benefit ratio of testosterone therapy in elderly men is not yet clear.

**Conclusion**

There are many other endocrine system changes that occur with aging that significantly impact how we age and, thus, deserve greater attention — bone disease, growth hormone therapy, how to improve long-term outcomes in older persons with type 2 diabetes, the interaction of nutrition and metabolism. Those highlighted here are just a few.

As we become more focused on these changes and gain critical insight into the complex association between aging and the endocrine system, the valuable information produced by these efforts will help us enhance function in our aging patients and lead to not only a longer life, but a better quality of life.

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Do not try to live forever, you will not succeed.

- George Bernard Shaw (1856-1950)
This past year, the American Association of Clinical Endocrinologists (AACE) formed a task force of physicians to look at issues surrounding the risk of falling in the elderly. Why, you might ask, is this important? And more specifically, why is it important to medical professionals such as AACE members who specialize in endocrinology and metabolism?

Here are key points put forth in a major paper focusing on the problem of falls published in the association’s peer-reviewed medical journal *Endocrine Practice* and spearheaded by endocrinology and aging expert Dr. Aaron Vinik (interviewed in this magazine):

1. Falls are a major health issue for older adults, leading to adverse events and even death. This is a not well-recognized public health concern. Yet falls could be prevented.

2. Older persons with type 2 diabetes are at increased risk of falling compared to healthy adults of a similar age. And diabetes itself, or diabetes-associated conditions, are a large portion of what many endocrinologists spend their day caring for.

3. Over 400 factors are associated with falls risk, making identification and targeting of key factors to prevent falls challenging. However, major risk factors include hypertension, diabetes, pain, and the simultaneous use of multiple drugs by a single patient (called polypharmacy).

4. In addition to age and polypharmacy, diabetes-related loss of strength, sensory perception, and balance secondary to neuropathy (nerve disease), along with the decline in ability to think clearly and quickly (cognitive function) lead to increased risk of falling.

5. Designing specific interventions such as strength improvement and balance training, reducing polypharmacy to improve cognitive function, reviewing goals of diabetes control and management to prevent low blood sugar and low blood pressure, and helping to relieve pain safely could provide benefits in reducing falls.

Let’s look at the big picture. According to a 2016 National Council on Aging report, one in four Americans 65 years or older fall each year. Every 11 seconds, an older adult is treated in an emergency room for a fall. Even more concerning is that every 19 minutes an older adult dies from a fall. Falls are not only the leading cause of fatal injury, but also the most common cause of trauma-related hospital admissions among older adults. More than 2.8 million injuries from falling are treated in emergency departments each year, there are over 800,000 hospitalizations and more than 27,000 deaths are related to falls. The numbers demonstrate that falls are clearly a problem in need of attention.

Even the fear of falling can impact life. Many older adults are concerned with falling — either because they have fallen themselves or because of falls experienced by friends or family that resulted in a major impact on their lives. Pain, prolonged hospitalization or prolonged nursing home rehab stays, incapacitation, loss of home and loss of independence are powerful drivers for those that have fallen to do as much as possible to prevent falling again.

Following a fall, physical activities can become limited, even in one’s own home, and the possibility of getting out of the home becomes less frequent - or even non-existent. After all, snow and ice remain in many parts of the country for many months of the year, and even in warm climates, it can be dark outside during fall, winter and spring. We all need brighter light to see as our eyes age – Mother Nature does not accommodate!

This restriction in activities, and the resulting lack of social interaction, can result in further physical decline, often leading to depression and feeling socially isolated, lonely, or helpless. Increasingly, it is recognized that as we all get older, we need social contacts even more than when we were younger, as socialization is directly related to a longer and better quality of life.

Further, sometimes the fear of falling and, even more so, the subsequent results that come from a fall, can make a person hesitant to report a fall to their family or even their healthcare teams. It’s easy to understand the line of thinking: If I report I’m falling, my family will make me move and leave where I am comfortable, make me go to assisted living, and my life will be changed forever. No one wants that! So, it’s not surprising that falls often aren’t reported, even to primary care providers. A

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Falls Prevention a New Focus for Endocrinologists

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2012 study of Medicare data revealed an estimated 7 million Medicare beneficiaries fell in the prior year, yet less than one-third had advised their healthcare provider and discussed fall prevention.

**So, what causes falls?**

A combination of age (over 65 years) and diabetes increases the risk of falling 17-fold. Alas, we can’t do much about aging, but what about the connection between falling and diabetes? It is believed that the link is related to loss of nerve function (common in diabetes) that automatically tells us when we are balanced, or not, based on where we feel the position of our feet. Additional contributing factors are loss of vision, slower automatic responses to “catch” ourselves when balance is off and sarcopenia, a loss of muscle strength as a natural part of the aging process.

Additionally, diabetes management itself poses an often unrecognized fall risk in the form of low blood sugar (hypoglycemia) episodes. And diabetes management can also include the need to control high blood pressure often associated with the disease, as well as deal with the side effects of blood pressure medications that can increase the risk for dizziness. Dizziness and feeling off-balance are reported as second only to lower back pain as the most common reasons Americans visit the doctor. Even moderate dizziness can affect mobility, activity levels and overall quality of life.

Cognitive decline also is a contributing factor to instability that leads to falls. Not the normal decline of forgetting where you last put your car keys, for example, this decline is specific to what has been called “executive function” – examples of which include being able to pay attention, being able to focus on what you are doing, being able to organize the process of planning and thinking what may be required to walk (such as knowing that you may need to get up slowly from a chair and remain standing for a few seconds standing before taking the first step forward). The substantial impact of cognitive impairment was revealed recently by the American Geriatrics Society, which noted that approximately 60 percent of older persons with cognitive impairment report a fall each year.

The side effects experienced from many medications are also a key culprit in falls, with effects ranging from light headiness and dizziness to drowsiness and outright sleepiness.

**What can I do to minimize the risk of falls?**

Nicely outlined in the *Endocrine Practice* review are some practical suggestions to help avoid falls.

**Remove obstacles**

This includes getting rid of loose rugs, keeping as many items off the floor as possible (books, papers, dishes, clothes) and removing items that have square corners (such as coffee tables). For an extra layer of safety, look for tables with rounded corners. That footstool might seem very comfortable for propping your feet up while sitting but could pose a danger to falling as you try to get up. Is it worth it?

**Identify and manage hazards at home**

This can include the installation of grab bars near showers, tubs and toilets. Canes and walkers also are helpful for those that have difficulty with balance. Install night lights in hallways near bedrooms and bathrooms. Make sure your lighting inside your home is adequate, even if you need to get another lamp. For some tasks, someone aged 60 may need 10 times the light that a person of 20 would need. Keep in mind that direct lighting can reduce glare, which is a more common problem as we age.

**Engage in daily physical activity**

The key to improving strength and balance is simple: Exercise, exercise, exercise. This doesn’t mean having to swim to China and back every day. Tai chi, for example, has been shown to improve balance. Originally developed for self-defense, tai chi has evolved into a graceful form of exercise that incorporates gentle, flowing movements. Plus, stretching can help maintain and even improve muscle strength. Discuss with your healthcare team what exercise programs would be good for you and what are available in your community, on the web, or even on TV that you could access on a routine basis. And remember, once-a-week exercise really is not the most effective approach. Consider daily physical activity as much as possible.

**Review your medications**

It’s always a good idea to review what medication is needed and what is not, but in the context of benefits versus risks, the balance with any medical agent can change as we age. Also, remember to review your supplements and vitamins with your healthcare team. That tea you’re drinking at night might be something that could add to risk more than you think! And there might some supplements that could be helpful as well. Vitamin B12 deficiency has been identified as a major contributor to falls and vitamin D is important for optimal bone and muscle health. Ask your physician whether blood tests for these vitamins could be helpful to you. And ask about your sodium (salt) level. A low sodium level has been linked to an increased fall risk.

While the aging process is inevitable, by exercising caution and following easy-to-implement prevention measures, older adults can decrease their odds of fall-related injuries.
By any measure, Cora Lalli is extraordinarily healthy.

The 92-year-old Jacksonville, Florida resident takes no daily medications beyond vitamin supplements and has none of the chronic medical issues often found in those in of a comparable age. She lives in her own home (with an adult daughter and two beloved dachshunds) in an active adult community, leads a robust social life and volunteers every other week through her church, visiting residents of a local skilled nursing home.

There is one way, however, in which she fits the profile of many seniors – in recent years, she has experienced fall-related injuries. Three times, in fact. And while the episodes were non-life-threatening, those experiences have given her due pause, leading to some necessary lifestyle and environmental changes to increase her odds of avoiding any future incidents.

Cora's first fall happened when she woke up late one night to take her dog, Murry, outside to do his “business.” She failed to turn any lights on and subsequently tripped over a heavy coffee table, taking a tumble that broke three ribs, punctured a lung, and landed her in the hospital for one week and a rehab facility for four weeks. Several years later, while at a local resort celebrating her then-88-year-old brother's birthday with family, she tripped over a parking space abutment, dislocating and breaking her right shoulder, which required surgery and another week at a rehab facility.

The most recent fall episode – in which her sneaker sole “stuck” to the floor of the nursing home where she was visiting residents – resulted in a severely broken right wrist, which is still healing months later and for which she is receiving steroid injections.

As the saying goes, the third time’s the charm.

“After I broke my wrist, it really took a toll on me,” Cora says. “Routine tasks that I normally would have been able to do without a thought were next-to-impossible. I realized that I had to make some serious changes, otherwise this was going to happen again, and the outcome might be far, far worse.”

Finally taking seriously the recommendations previously provided by medical caregivers, she began exercising twice daily, following the illustrated instructions furnished by a physical therapist. The routine focuses on enhancing balancing skills as well as spatial awareness techniques - taking the necessary time to organize knowledge of objects in a given space in relation to oneself and moving thoughtfully, rather than focusing on an in-the-moment urge to “get up and go,” Cora notes.

These days, acting purposefully is an essential part of Cora’s daily life.

When getting out of bed in the morning, she takes time to sit up for several minutes and center her body before attempting to move off the bed. She's relocated several area rugs in her home away from her routine walking path and has added night lights in key areas throughout the home. She's also traded in her previous sneakers for a pair with soles that she feels “safer” in. And she always wears hospital-issued, non-slip, anti-skid grip socks while at home. Although she's yet to take up suggestions that she use a walker, it's something she'll consider if she feels it's necessary to avoid another fall.

“What I finally had to admit to myself after this latest injury is how it slowed me down in my social life, and that I had been ignoring the things I should be doing to avoid falls because I didn’t want to accept changes in my body and risk losing my independence,” Cora says.

“I’m grateful for having my home and not being confined to a living situation where it would be a challenge to continue the kind of lifestyle I still enjoy,” she adds. “Sometimes I still feel scared, but I’ve accepted that this a new way of life, and I know what needs to be done to ensure my remaining years are the healthiest they can be.”
Are you avoiding gluten in your food and beverages? If so, have you noticed how much easier it is these days to find gluten-free selections in the grocery store and restaurants? Is it because celiac disease triggered by the ingestion of gluten is becoming a more common problem or because it is being recognized more frequently? Or is it an entirely different phenomenon?

Since EmPower Magazine last featured a celiac disease article several years ago, more has been learned about gluten-related disorders. Indeed, the prevalence of gluten-related conditions is on the rise, with increasing numbers of individuals trying out a gluten-free lifestyle to see if they feel better on the diet. And often they do. Yet when tested by their healthcare team, the results suggest that they do not have celiac disease. So what’s going on? Let’s examine the facts.

First described by British pediatrician Samuel Gee in 1887, celiac disease is a chronic autoimmune disease that causes inflammation in the small intestine triggered by dietary gluten, a family of proteins found in grains like wheat, barley, rye and triticale, a cross between wheat and rye. Derived from the Latin word that means glue, gluten is a substance that gives elasticity to dough, helping it to rise and keep its shape. It is found in many staple foods in the Western diet.

You must have specific genes that predispose you to possibly develop actual celiac disease. And although up to as many as 40 percent of the population has the specific genotype (HLA-DQ2 or HLA-DQ8) required for the development of celiac disease, only 2 percent to 3 percent of this population will subsequently develop the disease. The prevalence of celiac disease in the general population is 1 percent, with regional differences. For example, if you live in Algeria, the reported prevalence is 5.6 percent. If you live in Finland, it is 1 to 2.4 percent. If you live in the Netherlands, 0.5 percent.

Symptoms of the condition can be extremely variable. Gastrointestinal symptoms are more common in children. In those under the age of 3 years, diarrhea, loss of appetite, abdominal distention and poor growth should be reason to screen for celiac disease. Older children and adults may also report diarrhea and bloating, but may additionally experience constipation, abdominal pain, or weight loss. But not all symptoms relate to symptoms of the gut.

Poor growth, short stature, or delayed puberty may be the only symptoms of pediatric celiac disease. Also, tooth defects are common in very young children with celiac disease. Iron-deficiency anemia is a very common presentation seen in as many as 32 percent of adults. In women with celiac disease, there is a reported increased risk of miscarriage. And there is an uncommon condition called dermatitis herpetiformis, which causes chronic, intensely itchy blistering of the skin, that can be a manifestation of gluten sensitivity, along with less-exotic dermatologic conditions such as hives, psoriasis and dry skin.

Even neurologic changes or psychiatric conditions can be a heralding sign of possible celiac disease. This may be linked to the inability to absorb adequate amounts of specific nutrients such as vitamin B12.
There are several serologic (blood) tests available to screen for celiac disease. Because the disease is characterized by elevated autoantibodies (an antibody produced by the immune system that is directed against one or more of the individual's own proteins), specifically against transglutaminase 2 (TG2), endomysium, and/or deamidated gliadin peptide, blood testing can be done to check for the presence of these antibodies. Checking for the presence of transglutaminase immunoglobulin A (IgA) antibodies, or immunoglobulin G (IgG) antibodies in patients with immunoglobulin A deficiency, is considered the best screening test. If needed, an additional test can be performed to check for the presence of IgA endomysial antibodies, but experts advise this should be used only as a confirmatory test because of the cost and some challenges in interpreting test results. Before having these tests, it is important to continue eating a normal diet, including foods that contain gluten Otherwise, avoiding or eliminating gluten could cause the antibody levels to fall to normal, delaying a diagnosis.

A small intestine biopsy remains the gold standard for diagnosis and is recommended by the North American Society for Pediatric Gastroenterology, Hepatology and Nutrition and the American College of Gastroenterology. The biopsy, in which multiple tissue samples typically are collected, should show characteristic intestinal wall and cell changes that are associated with celiac disease. Additional diagnostic procedures such as double-balloon enteroscopy, videocapsule endoscopy, or magnetic resonance imaging (MRI) are available but rarely used. They may have a role in very unusual situations, such as when there are discrepancies between blood testing and biopsy results, or when a patient with celiac disease has persistent or worsening symptoms despite following a gluten-free diet.

Because scientific evidence supports the premise that celiac disease is an autoimmune disease triggered when genetically predisposed individuals ingest gluten, the treatment is avoidance of gluten-containing products. At this time, a lifelong gluten-free diet is the only treatment option. This is easier to achieve than in the past due to better food labeling and availability of gluten-free products, but still can be a challenge as even trace amounts of gluten can be present in gluten-free foods...and these trace amounts can still trigger intestinal changes.

Experts also advise that a patient's nutritional markers should be evaluated when celiac disease is diagnosed and, if abnormal, rechecked after one year of a gluten-free diet. This is because up to 28 percent of children with newly diagnosed celiac disease have a nutritional deficiency such as low iron, low folate, low vitamin B12, or low vitamin D, and adults with newly diagnosed celiac disease often have low folate, vitamin B12, zinc, or iron. Additionally, growth progress should be monitored in children with celiac disease.

Current clinical guidelines recommend follow-up blood testing of the antibodies and nutritional markers as a way to check for a patient's dietary adherence, as truly sticking with a gluten-free diet will rapidly result in loss of the initial antibodies, and nutritional marker levels should return to normal. Other recommendations support a baseline bone density test for women and men older than 30 years diagnosed with celiac disease.

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Beyond celiac disease, there is another condition related to gluten ingestion called non-celiac gluten sensitivity (NCGS). Characterized by a lack of tolerance to gluten-containing grains and symptoms similar to those seen in celiac disease, NCGS is often diagnosed when celiac disease and wheat allergy have been excluded.

Patients with NCGS lack the same antibodies and have the intestinal damage seen in celiac disease. Symptoms can include abdominal bloating, constipation and abdominal pain. Less likely but sometimes present are nausea, vomiting and weight loss. NCGS has had a curious symptom reported as “foggy brain,” described as slowed thinking, memory disturbance, or decreased sense of alertness. Headaches, joint and muscle pain, fatigue, depression, leg or arm numbness, dermatitis (eczema or skin rash), and anemia have also been reported.

Just how often NCGS is present is unclear as there is no way to specifically test for it, although it’s thought to be more common than celiac disease. Also unclear is why this condition develops, although some think the immune system is involved, just not due to a specific antibody response that indicates true celiac disease.

Until markers of NCGS can be identified, the diagnosis of NCGS — other than a subjective trial of a gluten-free diet and reported changes in how one feels — is limited to research settings. An example of such a clinical study — and obviously not easily performed in a normal clinic setting — is an individual diet challenge in which participants are given gluten (corresponding to approximately two slices of bread) or a placebo for one week, separated by a one-week “washout” period in which study subjects receive no treatment. Symptoms are carefully monitored throughout the challenge.

The good news is that NCGS may be transient. Experts recommend that a gluten-free diet be followed for 12 to 24 months, before testing with a gluten challenge. Currently there is no scientific evidence that a gluten-free diet is part of a healthier lifestyle. Gluten can be difficult to digest completely, even in the absence of sensitivity to the substance, so avoidance of gluten could make anyone feel better — less bloating, less bowel irregularity, and so forth. Gluten-containing cereals are a source of fermentable products that are poorly absorbed, so avoidance of these — especially by individuals with irritable bowel symptoms — can also be beneficial.

Finally, there is a third gluten-related disorder: wheat allergy. This is a true food allergy (an overreaction of the immune system to a specific food protein) and not to be confused with gluten intolerance or celiac disease. The body responds very quickly after a wheat product is ingested. Symptoms can include swelling or itching of the mouth, throat and skin; nasal congestion; watery eyes; and difficulty breathing. First identified during Roman Empire times and referred to as baker’s asthma, we now know this as an allergic response to inhaling wheat flours, which has been reported to affect up to 10 percent to 15 percent of all bakers, millers and pastry factory workers. Wheat allergy is more common in children, with a prevalence between 2 percent and 9 percent, and less so in adults, with a prevalence of 0.5 percent to 3 percent.

In summary, there are several gluten-related disorders. Fortunately, maintaining a gluten-free diet is becoming increasingly easier due to the increase in availability of gluten-free foods. If you are concerned that you might have a sensitivity to gluten, discuss screening with your healthcare team. This is especially important if there have been other family members already diagnosed with celiac disease, or if you have other autoimmune diseases such as type 1 diabetes mellitus or autoimmune liver disease.
One website. A wealth of resources.

You can become an active participant in protecting your well-being by visiting www.thyroidawareness.com.

The site features in-depth content about thyroid disease risk factors, symptoms and treatment options, as well as downloadable flyers about the range of thyroid conditions.
Thyroid Boosters or Busters? The Truth About Thyroid Support Supplements

By Emory Hsu, MD

All-natural herbal thyroid support! Support your hormonal balance! Boost your energy level now with a healthier thyroid! You may have seen such statements online or at drugstore displays suggesting the power of supplements to enhance thyroid function. But do these products really have any effect on your thyroid gland and its function? And what miracle substance do they contain?

Like many things in the world, it’s wise to exercise caution in this matter — what sounds enticing or helpful may not necessarily be so. If you have an actual thyroid disorder such as hypothyroidism (low thyroid hormone level) or hyperthyroidism (too much thyroid hormone), then you should be monitored regularly by your endocrinologist and likely will need treatment with prescription medication. Conversely, if you don’t actually have a thyroid problem, there is no reason whatsoever to take thyroid hormone. Period. Even Consumer Reports recommends steering clear of all over-the-counter supplements marketed for thyroid support.

It’s vitally important to be aware of what these over-the-counter products contain. Some actually incorporate animal parts, including thyroid glands that have thyroid hormone in them. For example, if you see “bovine” (means cow) and/or “porcine” (means pig) in the ingredients list, the supplements usually have ground-up animal thyroids, which will provide varying amounts of thyroid hormone. This can potentially affect your body’s natural thyroid production and certainly will affect hormone levels.

It is also generally recommended to avoid dietary supplements containing bovine tissues because the cattle might have had bovine spongiform encephalopathy (BSE), more commonly known as mad cow disease, a fatal neurodegenerative disease that currently has no cure. Scientists say that those who directly ingest cattle tissue are at a lot more risk for BSE. In fact, the FDA issued warnings in 2000 and 2011 urging consumers to be extremely cautious and to avoid supplements that derive bovine from high-risk countries. Although mad cow disease is very rare in the United States, warnings like this are important to take to heart.

Some thyroid supplements claim to be all-herbal or natural. However, even those that supposedly contain no animal (and, thus, theoretically no thyroid) components have tested...
positive for thyroid hormone. A recent study showed that "adrenal support" supplements also can contain thyroid hormone – all 12 out of 12 tested brands contained detectable amounts of thyroid hormone and, if taken with label instructions, could lead to too much thyroid hormone in your body.

Also keep in mind that, unlike with prescription medication, there is no way of knowing how much thyroid hormone you will be taking in from a supplement, as the amounts of thyroid hormone may vary significantly even between different bottles of the same brand or manufacturer.

Additionally, many thyroid support pills claim to boost the thyroid gland’s interaction with iodine, a trace element that is essential for thyroid hormone production. However, boosting iodine function is oftentimes unnecessary. Although iodine deficiency is a major issue in other parts of the world, iodine nutrition status in the U.S. population has remained generally adequate for decades. There is little support for most individuals to consume iodine in the form of supplements as this actually could be harmful. Taking iodine supplements over an extended period of time can cause hypothyroidism by blocking thyroid hormone production. Plus, the risk of thyroid cancers such as thyroid papillary cancer or thyroid follicular cancer may also be higher in people taking iodine supplements. And thyrotoxicosis, a life-threatening complication resulting from elevated iodine levels, can also occur if you take iodine supplements. Symptoms include fever, confusion, rapid heartbeat and congestive heart failure. If you have any of these symptoms while taking iodine supplements, you need to seek immediate medical care.

Iodine can also be very irritative to the stomach. An overdose of iodine supplements can cause abdominal pain and, occasionally, bloody diarrhea. Corrosive gastritis (a group of conditions in which the stomach lining is inflamed), nausea, vomiting and bleeding from the intestinal tract has also been reported with high doses of iodine. For additional information about iodine excess, visit: https://www.empoweryourhealth.org/magazine/vol5_issue3/iodine_and_the_thyroid_the_connection_you_should_know_about.

Adequate iodine intake – and, thus, proper thyroid function – can be achieved easily without taking supplements. As an example, one teaspoon of iodized table salt contains 400 micrograms of iodine, far more than the recommended daily allowance needed to keep thyroid hormone levels in an ideal range. However, keep in mind that not all salt is iodized, so it’s important to check packaging labels carefully for iodine levels. It’s also important to note that sodium (salt) used in processed and packaged foods has no iodine added to it and should not be counted towards one’s daily iodine intake. Iodine is present in many foods. Examples include cheese, cow’s milk, eggs, frozen yogurt, ice cream, saltwater fish, shellfish, soy milk and soy sauce. If you’re eating a low-sodium diet, iodine supplements are available to ensure adequate iodine consumption.

Also, there are foods known as goitrogenic foods that contain a chemical (isothiocyanate) that can affect your thyroid by blocking the enzyme that allows your thyroid to use iodine. Cruciferous vegetables all contain goitrogens, including all types of cabbages (regular cabbage, Napa cabbage, bok choy); Brussels sprouts; broccoli and broccoli rabe; cauliflower; kale; collard, mustard and turnip greens; radishes; and rutabaga. If you have normal thyroid function and your diet contains adequate amounts of iodine, these compounds will have no effect on your thyroid. However, to be safe, cooking these vegetables will ensure that they don’t affect your thyroid, as the goitrogenic compounds in the vegetables are destroyed by heat.

Other foods that contain goitrogens are soy, spinach, strawberries, peaches and peanuts. Fermenting soy disables the goitrogenic isoflavones found in soy foods.

It’s important to note that there is no one special diet or vitamin that has been proven to treat thyroid disease. And while some herbs and remedies may have beneficial effects for certain conditions, this doesn’t seem to be the case with the thyroid. Furthermore, supplements can make claims that are not proven or tested and are not approved by the Food and Drug Administration for treatment of any disease. While it may be fine to seek some forms of complementary and alternative care, be sure to talk to your endocrinologist first to determine if these remedies could safely be added to proven medical therapy.

And if you’re feeling tired or showing other signs of a faulty thyroid? In addition to the old-fashioned but time-tested techniques of getting adequate exercise, enough quality sleep and following a healthy diet, you can ask your primary care physician or endocrinologist to perform a thorough evaluation to screen for thyroid disease or other contributing factors such as depression or sleep apnea. That quick fix of a “thyroid support” pill is simply a fantasy.
You’re taking good care of your diabetes. You’re eating healthier. You’ve cut out sodas and sugary drinks. You’re exercising several times a week. And you’re following the treatment plan prescribed by your endocrinologist.

But one day, you have a pesky tingling pain in your foot. Is it just a little itch, or a sign of something more serious?

Sensations can be complex – many different types of nerves go from your brain to your spinal cord, then from your spinal cord to your skin. Often a little tingling every now and then may not mean much. However, for people with diabetes, it is important to let your endocrinologist know, as it could be a sign of diabetic neuropathy.

Diabetic neuropathy is a common condition that affects around a third of people with diabetes. It comes in many different forms, and symptoms may be different from one person to the next, but it most often affects long nerves, with the longest — the nerves that go out to the feet — impacted the most. Sensory changes in the foot are the most common form of diabetic neuropathy. Other diabetic neuropathies may involve the nerves to the stomach and intestines (gastrointestinal neuropathy), while some may cause symptoms such as dizziness and low blood pressure when standing up. While we do not completely understand how diabetes causes neuropathy, it is thought that high levels of glucose in the bloodstream can cause various types of stress to the nerve cell and lead to damage, particularly to the sensory nerves.

By Emory Hsu, MD

When a Tingling Sensation Is Cause for Concern
Common symptoms are based on sensation. These include sensations such as tingling, burning and stabbing pain, as well as loss of sensation, such as numbness. Sensations are frequently symmetrical – that is, occurring on both right and left sides. Usually, nerves that carry sensations are affected first, before the nerves that transmit motor signals. Most of the time, people with diabetic neuropathy are still able to walk without any difficulty.

Then why worry? Here’s why: Decreased sensation can mean that cuts and scrapes don’t get detected as easily, especially on hard-to-see places such as the bottom of your feet. In turn, these can lead to ulcers and infections. That’s why it’s important to regularly check the bottom of your feet, including in between the toes. If you have problems seeing or being able to bend your legs, ask someone close to you to help check your feet regularly. In fact, if you have loss of sensation in your feet, we recommend checking every day! This easy step helps prevent complications down the road.

Tingling or pains are also common symptoms of sensory changes with diabetic neuropathy. Some people describe them as like standing on hot coals, while others may feel a deeper, gnawing pain. Again, there is no one uniform description. If you have pain, let your endocrinologist know.

Your doctor can do a foot exam to make sure you don’t have other causes of pain or sensory loss in the feet. These may include checking blood work, making sure your vitamin B12 level is sufficient, and doing a physical exam to check for other nerve or blood vessel disorders. If your endocrinologist feels like you have severe diabetic neuropathy, a referral to a podiatrist may be recommended. The podiatrist will be able to screen and treat for any ulcers or conditions on the foot and may be able to suggest good socks and shoes, which are actually quite helpful in taking better care of your feet.

The best way to treat diabetic neuropathy is simply taking good care of yourself, the foundation for treating any diabetes complications. This includes healthy eating habits such as avoiding high spikes of carbohydrates or sugar-laden foods or drinks. In general, the better your blood glucose control, the less likely you are to develop symptoms of diabetic neuropathy, so stay committed to lifestyle interventions like diet and exercise.

However, if the neuropathy-related pain progresses, your physician can prescribe medications to help you. One medication is a topical pain-relieving cream called capsaicin. You can get low-dose versions over the counter or ask your endocrinologist for prescription-strength capsaicin. If creams are not enough, there are other medications that are prescribed for diabetic neuropathy pain. Gabapentin and pregabalin are two of the most common ones. Gabapentin will probably be started at a low dose, and your doctor will advise you on how to increase the dose gradually until at the appropriate concentration. Others include various types of antidepressants. Duloxetine is one in a class called “selective norepinephrine and serotonin reuptake inhibitors.” Others are in classes called tricyclics. Some, but not all, of these medications may cause a little sleepiness when first started, so be sure to discuss potential side effects with your doctor before you start. Your doctor can discuss other possible side effects of the drug, such as weight gain, or caution use when the patient also has certain heart conditions. In general, though, drugs such as gabapentin and pregabalin are well tolerated by most people.

Some people may wonder if painkillers such as narcotics (opioids) should be used for diabetic neuropathy. While narcotics may temporarily dull the pain, long-term use may cause medication tolerance, requiring higher and higher doses until they may become less effective. Furthermore, there is a very high risk of addiction and abuse. Thus, narcotics are generally not prescribed for diabetic neuropathy.

While that tingling in your feet may be just an itch, it also may be a symptom of diabetic neuropathy. Don’t worry, though. With help from your endocrinologist, you can exercise damage control by stabilizing your blood sugar so it stops damaging nerves and reduce the risk of further diabetic neuropathy symptoms.
Although it is among the more dreadful complications resulting from diabetes, very few people beyond those who suffer from gastroparesis are familiar with the condition.

A chronic disorder in which food moves through the digestive tract much slower than normal, gastroparesis occurs because the muscles that grind food into smaller pieces and move it through the stomach into the small intestine don’t work properly due to nerve damage. In some individuals, the stomach may not empty completely between meals. Also, undigested food can form solid masses called bezoars that can cause obstructions.

The effects of gastroparesis can be grueling and unpredictable on a day-to-day basis. They include bloating, acid reflux, abdominal pain, chronic nausea and vomiting, and a feeling of fullness after eating only a few bites of food. Gastroparesis can also cause erratic blood glucose (sugar) levels, nutritional deficiencies and can lead to dehydration. In the most severe cases, patients require some form of feeding tube to ensure adequate nutrition.

Some estimates suggest the prevalence of gastroparesis in people with type 1 diabetes ranges from 27 to 58 percent and 30 percent in those with type 2 diabetes, although definitive statistics are lacking. In the majority of insulin-dependent diabetics, gastroparesis is often overlooked and under-diagnosed, especially in its early stages.

While medication and dietary changes can provide some relief, there is no known cure for diabetic gastroparesis. Consequently, those who are afflicted must adopt substantial lifestyle modifications to manage their symptoms and deal with the physical/mental/emotional fallout that is part and parcel of living with the condition.

Fortunately for those diagnosed with the disorder, a Los Angeles-based company is now offering much-needed support via a new website and app.

Launched in April 2018, the Diabetic Gastroparesis Xplained website (dgxplained.com) and downloadable app (available for free on iTunes and Google Play) explain diabetes gastroparesis in an engaging, easy-to-understand, animated storytelling format. Created by former developers of companies such as Marvel, Netflix and Nickelodeon and based on a real-life patient’s experiences, the site and accompanying app explain the condition, its symptoms and treatment options and feature a section entitled MY DG, which includes a symptom tracking diary and notes section optimized for sharing.

Representatives of the International Foundation for Functional Gastrointestinal Disorders (IFFGD) collaborated on the site, with content reviewed by an assembly of experts in the field to ensure clinical accuracy.

The website and app resources are complemented by a Diabetic Gastroparesis Xplained private Facebook support group, accessed by sign-up on the dgxplained.com site, in which participants can ask questions, get advice, share coping tips and tricks, and chat with others who have the same diagnosis.

The initiative is an outgrowth of Medicine X (https://www.medicinex.com/), the brainchild of Australian physician Dr. Kim Chilman-Blair. Recognizing that far too many patients were confused and anxious about their diagnosis and were in need of information and resources that everyday people could understand, she launched the initiative in 2014. Since then, Medicine X has created stories highlighting 19 different medical conditions, with several more in the pipeline.

“One of our biggest mantras is ‘by doctors for patients,’” says Erin Broughton, Medicine X U.S. Operations and Project Manager. “So many people have symptoms, but often aren’t offered information about the side effects, complications, or what to expect. We want patients to fully understand their condition and feel empowered and knowledgeable enough to go to their doctors with their concerns and questions.”
Looking for Resources to Assist With Your Prescription Medication Costs? We can help.

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Presented as a public service by the American Association of Clinical Endocrinologists and the American College of Endocrinology
The American College of Endocrinology (ACE) and the American Association of Clinical Endocrinologists (AACE) would like to thank Lilly Diabetes for its support of the EmPower initiative.

Supported by a sponsorship from AbbVie.