Special Summer Section

Diabetes Summer Camps for Kids
Educate, Empower and Inspire
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Have Diabetes, Will Travel
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To improve the health of people living with diabetes

Boehringer Ingelheim and Eli Lilly and Company are committed to researching and developing innovative treatments that make a difference for people affected by diabetes.
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Dear Reader,

Starting with this issue of EmPower® Magazine, you will notice a few changes in our Editorial Board.

Dr. Dace Trence, the original co-editor of the magazine, is now the editor-in-chief, succeeding Dr. Etie Moghissi. Dr. Trence is a perfect example of the old saying, “If you want to be sure that something gets done, give it to a busy person.” Dr. Trence is an Associate Professor of Medicine, a frequent contributor to the medical literature, a busy clinician taking care of patients, teaches medical residents and fellows training to specialize in endocrinology, and is very active in the American College of Endocrinology and the American Association of Clinical Endocrinologists. In addition to all this, she has been involved in all aspects of EmPower Magazine’s production from the very beginning. You will not notice any changes in the magazine, which is recognition of the smooth transition to Dr. Trence’s leadership.

Dr. Jeffrey Garber, this year’s President of the American College of Endocrinology, will continue to be the guest editor of the yearly Thyroid Awareness issue and serve as a contributing editor throughout the year. Dr. Garber is an Associate Professor of Medicine, teaches medical students and young physicians in training, and is chief of the endocrine section of Harvard Vanguard Medical Associates.

Please join Dr. Trence, Dr. Garber and me in thanking Dr. Etie Moghissi, the first editor of the magazine and the driving force behind its success, for all of her contributions to EmPower. Her unparalleled work with physicians and patients who contributed articles and collaboration with our industry colleagues has been instrumental in expanding the breadth and depth of the magazine. Thanks to Dr. Moghissi, EmPower is presently a regularly published periodical that is widely recognized and appreciated by physicians as well as patients and their families.

Please welcome some new staff: Glenn Sebold, the Director of Public, Media Relations & Creative Services, and Mary Green, Project Manager and Staff Writer, who will be responsible for getting the magazine to press.

If there is anything you would like to see in the magazine, please let Glenn or Mary know by sending an email to feedback@empoweryourhealth.org. We look forward to hearing from you.

Sincerely,

DONALD A. BERGMAN, MD, MACE
Executive Editor
EmPower Magazine

Dr. Donald Bergman is in private practice in New York City and is board certified in internal medicine and endocrinology and metabolism. He is Clinical Professor of Medicine at Mount Sinai School of Medicine in New York City. Dr. Bergman is past president of AACE and ACE. In 2003, during his AACE presidency, Dr. Bergman founded EmPower, previously known as “Power of Prevention,” a program that encourages people to partner with their physicians in establishing healthy lifestyles and demonstrating the importance of primary and secondary prevention. He serves as Executive Editor of EmPower Magazine.

Dr. Dace Trence is Director of the Diabetes Care Center and Associate 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. She is on the American College of Endocrinology Board of Trustees and chairs the CME Committee.

Dr. Jeffrey R. Garber is a member of the Beth Israel Deaconess Medical Center and Brigham and Women’s Hospitals endocrine division, in addition to serving as Harvard Vanguard Medical Associates’ endocrine division chief. He has taken an active role in promoting and reviewing AACE’s publications and positions in a number of clinical areas, most notably those pertaining to thyroid disease, in various arenas such as FDA hearings. He currently chairs the AACE/American Thyroid Association’s clinical practice guideline committee on hypothyroidism.
Summer vacation is the time for fun, relaxation and a break from everyday life. While having diabetes shouldn’t stop you from vacationing in style, you will need to do some careful planning to stay healthy while you’re on the go this summer. Here are some helpful diabetes travel tips from the National Diabetes Education Program.

**PLAN AHEAD. MAKE SURE YOU:**

- Get all your medical shots (immunizations). Find out what’s required for where you’re going, and make sure you get the right shots, on time.

- See your health care provider for a check-up four to six weeks before your trip to make sure your diabetes ABCs are under control and in a healthy range before you leave. The ABCs of diabetes are your A1C level, blood pressure, and cholesterol [URL: http://ndep.nih.gov/i-have-diabetes/KnowYourABCs.aspx].

- Ask your health care provider for a prescription and a letter explaining your diabetes medications, supplies and any allergies. Carry this with you at all times on your trip. The prescription should be for insulin or diabetes medications and could help in case of an emergency.
• Because prescription laws may be very different in other countries, request a list of prescription laws from the International Diabetes Federation groups at:
  
  IDF
  
  1 rue Defaeqz
  
  B-1000
  
  Belgium (or visit http://www.idf.org).

• You may also want to get a list of English-speaking foreign doctors in case of an emergency. Contact the American Consulate, American Express, or local medical schools for a list of doctors. Insulin in foreign countries comes in different strengths. If you purchase insulin in a foreign country, be sure to use the right syringe for the strength. An incorrect syringe may cause you to take too much or too little insulin.

• Wear identification that explains you have diabetes. The identification should be written in the languages of the places you are visiting.

• Plan for time zone changes. Make sure you know when to take your diabetes medicine, no matter where you are. Remember: eastward travel means a shorter day on the day you are traveling. If you use insulin, less may be needed. Westward travel means a longer day, so more insulin may be needed.

• Find out how long the flight will be and whether meals will be served. You should always carry enough food to cover the entire flight time in case of delays or schedule changes.

PACK PROPERLY:

• Take twice the amount of diabetes medication and supplies that you’d normally need. Better safe than sorry.

• Keep your insulin cool by packing it in an insulated bag with refrigerated gel packs.

• Keep snacks, glucose gel, or tablets with you in case your blood sugar (glucose) drops.

• If you use insulin, make sure you also pack a glucagon emergency kit.

• Make sure you keep your medical insurance card and emergency phone numbers handy.

• Don’t forget to pack a first aid kit with all the essentials.

SOME THINGS TO KEEP IN MIND IF YOU ARE FLYING:

• Don’t be shy about telling the flight attendant that you have diabetes – especially if you are traveling alone.

• Plan to carry all your diabetes supplies in your carry-on luggage. Don’t risk a lost suitcase.

• Have all syringes and insulin delivery systems (including vials of insulin) clearly marked with the pharmaceutical preprinted label that identifies the medications. The Federal Aviation Administration (FAA) recommends that people travel with their original pharmacy-labeled packaging.

• Keep your diabetes medications and emergency snacks with you at your seat – don’t store them in an overhead bin.

• If the airline offers a meal for your flight, call ahead for a diabetic, low-fat, or low-cholesterol meal. Wait until you know food is about to be served before you take your insulin. Otherwise, a delay in the meal could lead to low blood sugar. If no food is offered on your flight, bring your own meal.

• If you plan on using the restroom for insulin injections, ask for an aisle seat for easier access.

• When drawing your dose of insulin, don’t inject air into the bottle (the air on your plane will probably be pressurized).

SOME THINGS TO KEEP IN MIND ON A ROAD TRIP:

• Don’t leave your medications in the trunk, glove compartment, or near a window. This may cause your medications to overheat. If possible, carry a cooler to keep medications cool and store healthy snacks such as fresh fruit, raw vegetables and fat-free or low-fat yogurt instead of eating at rest stops or going to a fast-food drive-through.

GENERAL TRAVELING TIPS:

• Stay comfortable and reduce your risk for blood clots by moving around every hour or two.

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Continued from page 5

• Always tell at least one person traveling with you about your diabetes.
• Protect your feet. Never go barefoot in the shower or pool.
• Check your blood sugar often. Changes in diet, activity and time zones can affect your blood sugar in unexpected ways.

STAY ACTIVE:
• Try to be active for at least 30 minutes each day.
• Bike, camp, hike or canoe on your trip to move more.
• If you’re going to the beach, go for a swim, take a long walk or play a beach game.
• If you’re staying in a hotel, go to the gym, walk a few extra blocks instead of taking a taxi, or spend the evening dancing.

LEARN MORE:
You may not be able to leave your diabetes behind, but you can manage it and have a relaxing, safe summer vacation. To learn more about managing your diabetes or to order free resources, visit the National Diabetes Education Program at www.YourDiabetesInfo.org or call 1-888-693-NDEP (1-888-693-6337), TTY: 1-866-596-1162.

The U.S. Department of Health and Human Services’ National Diabetes Education Program is jointly sponsored by the National Institutes of Health (NIH) and the Centers for Disease Control and Prevention (CDC) with the support of more than 200 partner organizations including AACE.®
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- **Diabetes Self-Management**: Stay on track with checking and recording your blood sugar

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Fireworks, community parades, backyard barbecues: the fabulous things we love about summer have arrived! As someone who enjoys summer and has diabetes, it’s often challenging to plan for these events, especially with all of the beverage choices available! What if there is no diet soft drinks or water? How many carbohydrates are really hiding in each of the drink options?

The best thing to do is always read the label on the back of your beverage before drinking it so you know how many carbs are included. Below is a table of some common summer time drinks along with their serving size and carbohydrate count.

<table>
<thead>
<tr>
<th>BEVERAGE</th>
<th>SERVING SIZE (in ounces)</th>
<th>CARBOHYDRATE COUNT (in grams)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iced Mocha</td>
<td>12oz</td>
<td>26g</td>
</tr>
<tr>
<td>Iced tea (unsweetened)</td>
<td>8oz</td>
<td>0g</td>
</tr>
<tr>
<td>Iced Tea (sweetened)</td>
<td>8oz</td>
<td>25g</td>
</tr>
<tr>
<td>Soda (regular)</td>
<td>12oz</td>
<td>40g</td>
</tr>
<tr>
<td>Unsweetened Kool-Aid</td>
<td>6oz</td>
<td>0g</td>
</tr>
<tr>
<td>Gatorade (Lemon/Lime)</td>
<td>8oz</td>
<td>14g</td>
</tr>
<tr>
<td>Wine (Table)</td>
<td>4oz</td>
<td>4g*</td>
</tr>
<tr>
<td>Margarita (on the rocks)</td>
<td>6oz</td>
<td>39g*</td>
</tr>
<tr>
<td>Hard Lemonade</td>
<td>11.2oz</td>
<td>32g*</td>
</tr>
<tr>
<td>Beer</td>
<td>16oz</td>
<td>13g*</td>
</tr>
</tbody>
</table>

*(Information obtained from the CalorieKing Calorie Fat & Carbohydrate Counter).

Not quite sure what a serving size of carbohydrates looks like? Try this simple experiment at home before you head to your event. You will need: table sugar, a plastic baggie, a teaspoon, your favorite beverage (with a label), and the knowledge that 1 teaspoon of sugar is equal to 4 grams of carbohydrates. First step: read the back of your beverage, let’s say it’s regular soda. Looking at the table above, a regular soda has 40g of carbs. 40g divided by 4g is 10g—that is 10 teaspoons of sugar! Now place 10 teaspoons of sugar into your plastic bag. Hold up the bag and really take a look at how many grams of sugar are being consumed in one 12-ounce regular soda!
Next step, be prepared before heading to your summertime picnic or cookout. Below is a list of common picnic foods along with their carbohydrate counts.

<table>
<thead>
<tr>
<th>FOOD</th>
<th>SERVING SIZE</th>
<th>CARBOHYDRATE COUNT (in grams)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot dog with bun</td>
<td>1.5oz frank w/1.5oz bun</td>
<td>22g</td>
</tr>
<tr>
<td>Hamburger or Cheeseburger with bun</td>
<td>7.8oz patty w/bun</td>
<td>33g</td>
</tr>
<tr>
<td>Ketchup</td>
<td>1 tbsp.</td>
<td>4g</td>
</tr>
<tr>
<td>Mustard</td>
<td>1 tbsp.</td>
<td>1g</td>
</tr>
<tr>
<td>Potato chips</td>
<td>20 chips</td>
<td>15g</td>
</tr>
<tr>
<td>Corn-on-the-Cob</td>
<td>2 ¼oz (1/2 a cob)</td>
<td>14g</td>
</tr>
<tr>
<td>Watermelon</td>
<td>Fresh (¼ cup)</td>
<td>4g</td>
</tr>
<tr>
<td>Potato salad</td>
<td>½ cup</td>
<td>21g</td>
</tr>
</tbody>
</table>

So, sit back and enjoy your cheeseburger in paradise with a refreshing beverage and enjoy all of the wonderful things we love about summer! ☀️

Sara Torbet earned her Masters in Health Education from Plymouth State University in 2005 and Bachelors in Elementary Education from Montana State University in 2000. She is currently a Medical Assistant at the University of Washington Diabetes Care Center and in the past has worked for the American Diabetes Association. She has a personal 29-year history with type 1 diabetes.
Summer is here and there are so many fresh fruits and vegetables that it’s easy to make your evening meals low in fat, healthy and delicious. Bad eating habits can (and do!) sabotage your blood sugar control and your weight.

A summer vegetable casserole is a simple way to enjoy the season’s bounty. Compare these two recipes for Zucchini/Squash Casserole to make vegetables flavorful and nutritious.

• • • • •

** Summer food tip: Drinks and salads shared at barbecues and gatherings can be full of sugar, and high in calories and fatty dressings. Take a smaller portion of these food items so that you can be sociable and healthy too! **

**ZUCCHINI/SQUASH CASSEROLE (ORIGINAL)**

**Ingredients**
- 2 lbs. (about 6 cups) yellow squash or zucchini
- 1 cup chopped onion
- 1 can cream of chicken soup
- 1 cup sour cream
- 1 cup shredded carrots

**Directions:**
Cook the onions and zucchini in salted water for 5-6 minutes at medium temperature, then drain. Combine soup and sour cream in a separate pot. Stir in the carrots. Fold in drained squash and onions. Combine stuffing mix and butter or margarine. Spread half of this mixture in a 12 x 7½ x 2 baking dish. Layer with vegetable mixture and top with remaining stuffing mixture. Bake at 350 degrees for 25-30 minutes or until well heated.

**Regular Recipe:** 1/12th of the recipe = 267 calories and 35 grams of carbohydrates

**LIGHT-AS-A-FEATHER ZUCCHINI CASSEROLE**

* *, **, *** (See page 28 for ingredient notes)

**Ingredients**
- ½ cup butter or margarine
- 1 package herb seasoned stuffing (or 4 cups dry stuffing)

**Directions:**
Cook the onions and zucchini in salted water for 5-6 minutes at medium temperature, then drain. Combine soup and sour cream in a separate pot. Stir in the carrots. Fold in drained squash and onions. Combine stuffing mix and butter or margarine. Spread half of this mixture in a 12 x 7½ x 2 baking dish. Layer with vegetable mixture and top with remaining stuffing mixture. Bake at 350 degrees for 25-30 minutes or until well heated.

**Regular Recipe:** 1/12th of the recipe = 267 calories and 35 grams of carbohydrates

**Continued on page 28**
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.

To register for a camp near you, visit www.diabetescamps.org.
Living with diabetes is not easy for anyone, but it’s especially difficult for children who are supposed to be focused on school, sports and friends. But each summer, there’s a popular camp option for kids with diabetes, where they can have fun while monitoring their condition.

Diabetes camps held by the American Diabetes Association (ADA) are for children dealing with this disease. These camps provide a fun and worthwhile way for kids to learn about diabetes from each other and experts. There are day camp options for younger children and sleep-away programs for older kids and teens, ages seven to 18. The camps are a community in themselves.

Dr. Dana Hardin, medical director and pediatric endocrinologist [en-doh-cri-NA-lo-jist] at Lilly Diabetes, has spent many summers volunteering at the camps since 1982. She said kids learn to manage their condition at the camps and develop friendships with others who are facing the same issues.
“It is often difficult for children to adjust to managing their diabetes, but it’s important for them to know that they are not alone,” said Dr. Hardin. “Diabetes camps are a great way for children to relate to others of the same age who have the same chronic disease and can share similar experiences.”

Kids learn to administer insulin on their own, and monitor and log their sugar levels and log their blood glucose levels. They also get to participate in a variety of activities that they wouldn’t get a chance to do during a school year.

For example, kids who may want to try out for the school basketball team can play basketball at camp to see how their bodies are affected by diabetes. This is all done in a protected environment, surrounded by physician volunteers and counselors, which provides the child or teen the opportunity to see if it is safe to proceed with plans to try out for a team, all while having a safety net around them.

Dr. Hardin says that children with chronic illnesses tend to rely on their parents or guardian more, and that an experience away from home can really help them become more confident about managing diabetes on their own. As a parent, it can be very frightening to send a child to camp. Dr. Hardin recognizes that there is a fine balance between self-management and parental management of diabetes. For many, the first time children or teens will make significant decisions on their own is at camp.

“What I would want parents to know is that their children are in good hands with professionals around the clock. It will help parents and children become more confident for their future when it comes to sleepovers, traveling or going away to college,” said Dr. Hardin. “To let these children go to these camps is to allow them to spread their wings.” Parents also benefit from the camps by being able to connect with other parents who have a child with diabetes.

Another great reason for attending a diabetes camp is that kids and teens get a chance to talk to and spend time with a doctor in a casual setting as compared to a doctor’s office, where time can be limited. Dr. Hardin says kids and teens feel more confident and are more inclined to express their needs and concerns about diabetes when they are in a fun environment.

Dr. Hardin has identified three key takeaways kids get from the diabetes camp experience:

- **Social opportunity** – these camps give children and teens with diabetes the opportunity to make vital connections and lifelong friendships.

- **Education** – the camps help children about how to manage their diabetes and learn how to be independent.

- **Physical opportunity** – camps give kids with diabetes the opportunity to be active in a safe environment, which helps build confidence.

Providing camps for kids with diabetes is written into the ADA’s original charter. The Association has held diabetes camps for 70 years. There are 40 camps in 25 different states, providing a total of 50 sessions, each serving a new group of children.
Our evolution and existence are dependent on exposure to sunlight. The sun’s ultraviolet rays should provide us more than 80 percent of our daily vitamin D requirement. However, over the past few decades, our exposure to sunlight has declined. This has led to an increasing incidence of vitamin D deficiency and the disorders associated with it. Consequently, the role of diet and dietary supplements has become more important. Vitamin D is not only needed to regulate calcium and phosphorus [FOS-for-russ] in the body, it also plays an important role in maintaining bone structure and general health.

**HOW DO WE GET VITAMIN D?**

Sun exposure is the most reliable and economical way to get vitamin D. More than 80 percent of the vitamin D needed by humans comes through exposure to sunlight. For a person with lighter skin, exposure of the hands, face, arms and legs to sunlight (without sunscreen) for about 20 minutes, three to four times a week, makes the vitamin D needed by the body. However, longer sun exposure is required for persons with darker skin and the elderly. The necessary exposure time varies with age, skin type, season and time of day.

Vitamin D is stored in the liver and in body fat and is present in small amounts in some foods, including fatty fish such as herring, mackerel, sardines and tuna. Sun-exposed or irradiated [ih-RAY-dee-ay-ted] mushrooms are the only vegetable sources with higher amounts of vitamin D. In North America, vitamin D is added to dairy products, some juices and cereals. Vitamin D is made in laboratories using ultraviolet ray exposures and is given as a supplement to treat vitamin D deficiency. For a variety of reasons, most experts think vitamin D3 is superior to D2.
Vitamin D deficiency is becoming more widespread worldwide and is nearly epidemic. This worsens several existing medical disorders. Yet most people have undiagnosed and untreated vitamin D deficiency.

**VITAMIN D DEFICIENCY**

Vitamin D deficiency is very common; half of the people in the United States are affected. It is common even in sunny states, such as Florida, possibly because people are staying indoors more, and when they are outside, they are covered up in clothes or sunscreens that prevent the skin from making adequate amounts of vitamin D. Those who are not getting sufficient sunlight exposure are at higher risk. More than 80 percent of those residing in assisted living, nursing homes and disability centers are deficient in vitamin D, and, thus, need to be supplemented with adequate doses.

The risk for vitamin D deficiency and consequent complications increases after 60 years of age. This is in part because people spend less time in the sun, are less able to generate vitamin D in their skin, do not get vitamin D in their diet, are less able to absorb vitamin D from their diet, and may have more trouble converting vitamin D to its active form because of liver or kidney damage. Thus, for better health, vitamin D supplements are necessary for many older people and people with dark skin who live in northern areas.

Measurement of the blood’s vitamin D level is the only reliable way to diagnose vitamin D deficiency. Most professional societies recommend a blood/serum vitamin D concentration of 30 to 50 ng/mL, with an average level of 40 ng/mL (100 nmol/L), as the healthy range. For most, this can be achieved by taking approximately 1,000 IU (25 µg) daily in adults and 2,000 IU (50 µg) for people older than 65.

**CONSEQUENCES OF VITAMIN D DEFICIENCY**

Rickets is a disease caused by deficiency of vitamin D. More than 100 years ago, children with rickets were exposed to sunlight to cure it. Later, they were successfully treated with cod liver oil. Today, rickets is much less common in the United States. Vitamin D deficiency causes softer bones (osteomalacia [ah-stee-oh-mah-LAY-she-uh]), weaker bones (osteoporosis [ah-stee-oh-pore-OH-sis]), and increased falls and fractures. Vitamin D deficiency also increases the activity of the parathyroid [pah-ruh-THIGH-roid] glands located in the neck. This condition, known as secondary hyperparathyroidism [hie-per-pah-ruh-THIGH-roid-is-m], further weakens bones. Vitamin D needs to be activated in the kidney to become its active, hormonal form. Thus, another highly vulnerable group is those with kidney failure. Unless treated with vitamin D, they are likely to have bone problems and fractures, and blood vessel calcification, which leads to premature death.

Recent evidence suggests that vitamin D may help prevent many disorders, such as diabetes, multiple sclerosis, rheumatoid arthritis, chronic obstructive pulmonary disease, asthma, bronchitis, premenstrual syndrome, increased blood pressure, strokes and heart attacks, and even cancer. Low serum vitamin D levels are also associated with being overweight, abdominal obesity, metabolic syndrome, stroke and diabetes. In addition, having lower blood vitamin D levels for a long period is associated with increased heart attacks and all-cause mortality.

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**Community-based and country-wide preventative strategies are necessary to ensure adequate vitamin D in relation to where people live, seasonal variations, skin pigmentation, and culture and habits.**

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Dr. Sunil Wimalawansa is a Professor of Medicine and former chief of the Division of Endocrinology, Metabolism and Nutrition at the Robert Wood Johnson Medical School and Robert Wood Johnson University Hospital. He is an international authority on bone disorders and is currently a member of the AACE board of directors.
AMOUNTS OF CALCIUM AND VITAMIN D REQUIRED

The current recommendation for total daily calcium intake is 1,200 mg, but no more than 1,500 mg (that is, diet + supplements). Virtually all of our diets contain about 300-400 mg of calcium, even those devoid of dairy products. This means for a vast number of people, supplemental calcium should not exceed 800 mg per day. Consumption of one or two tablets containing 400 to 800 mg of calcium a day is adequate for most patients. When in doubt, talk with your physician, endocrinologist, or registered dietitian for assistance with choosing dietary supplements. Extra vitamin D is necessary for premature infants and those who are exclusively breast-fed to ensure proper growth and optimal health. People older than 65 years are likely to need 2,000 international units (IU) per day of vitamin D, whereas 1,000 IU per day may be enough for people younger than 65 years. Those with low serum vitamin D levels are also treated with high doses (e.g., 50,000 IU capsules) for a shorter duration; however, this should be done under medical supervision. Daily consumption of vitamin D-fortified foods, such as milk and other dairy products, is encouraged.

Vitamin D supplementation is safe and cost-effective in improving a variety of disorders.

In certain groups of patients, including those with granulomatous [gran-u-LO-muh-tus] diseases (chronic conditions with granulomas, which are types of nodules or lumps due to inflammation), such as sarcoidosis [sar-koy-DOH-sis], lymphoma, or overactive parathyroid glands, vitamin D needs to be replaced cautiously under medical supervision to prevent increasing their serum and urine calcium levels. There are no known interactions of vitamin D with food and no serious drug interactions of vitamin D with other medications. In addition to calcium and vitamin D, a balanced diet, good eating habits and moderate weight-bearing physical activity are recommended.

SAFETY OF VITAMIN D

Vitamin D is safe when taken by mouth, in recommended amounts. National scientific organizations indicate taking as much as 4,000 IU vitamin D per day is safe for longer-term supplementation. However, one needs to be cautious, as taking larger quantities of vitamin D for a long duration may lead to adverse effects related to increased calcium in the blood and urine. These adverse effects include weakness, irritability, fatigue, sleepiness, headache, loss of appetite, dry mouth, metallic taste, and nausea and vomiting. In general, vitamin D supplementation is safe and cost-effective in improving a variety of disorders.

AACE RESPONSE TO NEW PROPOSED RECOMMENDATIONS FROM USPSTF ON CALCIUM AND VITAMIN D

The new US Preventive Services Task Force’s (USPSTF) proposed recommendations on calcium and vitamin D have been in the news. The USPSTF concludes that the doses of calcium and vitamin D that they considered are not protective against fractures or cancers.

They studied a low dose of vitamin D (400 IU) that is known to be ineffective against fractures, so the outcome is not surprising. Since many of the trials included people already getting plenty of calcium and vitamin D (where more would not be expected to have any benefit) or subjects at low risk for fractures or cancer (where benefits would be hard to demonstrate).

They previously concluded, in a separate recommendation, that vitamin D supplementation is effective in preventing falls, so, despite their language that “the USPSTF recommends against daily supplementation with ≤400 IU of vitamin D3 and 1,000 mg of calcium carbonate for the primary prevention of fractures in non-institutionalized postmenopausal women,” they still recommend vitamin D for reducing the risk of falling. AACE recommends that people with osteoporosis [ah-stee-oh-pore-OH-sis] and those concerned about their bone health consume 1000-1200 mg calcium daily, using supplements only if diet is insufficient and then only enough calcium supplement to reach the target intake of 1200 mg daily. For many patients with osteoporosis it may be appropriate to do a blood test of vitamin D and individualize the amount of vitamin D supplement. For most older patients, a vitamin D supplement of 2000 IU daily, which can be obtained without a prescription, should be both safe and beneficial.
You are more than your type 2 diabetes.

You are a partner, a friend and a fighter. And you have a chance to control your blood sugar for yourself and those who depend on you most. Reducing your blood sugar can help reduce the risk of diabetes complications such as blindness, kidney disease, nerve damage and other serious health problems. If pills, diet and exercise aren’t enough, insulin is the most effective way to reduce your blood sugar. And today insulin comes in easy-to-use pens.

**Important Safety Information About Insulin:**
The most common side effect of insulin is low blood sugar. Some people may experience symptoms such as shaking, sweating, fast heartbeat, and blurred vision, while some experience no symptoms at all. That’s why it’s important to check your blood sugar often.

Talk to your doctor about whether insulin is right for you. Learn more at UnderstandControl.com or call 1.866.766.6415.
The thyroid gland is located in the central, lower portion of the neck above the breast bone. It produces thyroid hormone, which is needed for your body’s tissues and organs to work normally and for you to feel well. Thyroid nodules are lumps that occur in the thyroid gland.

Thyroid nodules are common in the United States population. Roughly one in every three adults (more common in females) has one or more nodules. About 95 percent are benign and very small. Benign nodules only occasionally enlarge or cause symptoms such as pain, tenderness, neck pressure or trouble swallowing. A thyroid nodule may be detected after noticing fullness or swelling in the lower, central neck or picked up on a routine physical examination. When a nodule is discovered during an x-ray examination such as a CAT (CT) scan of the neck or chest being done for reasons unrelated to the thyroid, it is called an “incidental” finding. Because medical imaging procedures are being used more than they use to be, incidentally discovered thyroid nodules have become quite common. Regardless of how a nodule is detected, for further evaluation a thyroid ultrasound and a blood test to check how the thyroid is working (serum Thyroid Stimulating Hormone or TSH) are recommended.

An ultrasound provides important information about nodules in particular and the entire thyroid gland in general, including its size. Seventy to 75 percent of nodules can accurately be called benign on the basis of an ultrasound. The others will have some features that are sometimes seen with thyroid cancer, such as an irregular shape or certain types of calcium deposits and blood flow patterns. These nodules usually require a fine needle aspiration (FNA) biopsy in order to determine whether or not they are cancer. During 2012, there will be more than 500,000 FNAs performed, and the American Cancer Society estimates more than 56,000 new thyroid cancers will be discovered by FNA.

An FNA biopsy is usually performed by an endocrinologist who is trained to evaluate and take care of patients with thyroid diseases. Sometimes a radiologist or a surgeon performs thyroid FNAs. An FNA is typically performed with a 25 or 27 gauge needle, which is smaller than the needles used to draw blood, creates little discomfort and provides enough cytological material (cells) to make a diagnosis.

About 80 to 85 percent of FNA cytology (study of cells under a microscope) results are benign. Although
this is quite reassuring, a few percent of the time the result may be wrong. Therefore, periodic follow-up is still required in order to make sure that the nodule is stable and that the report is correct. The other 15 to 20 percent – or one in every five or six of thyroid nodules that are not read as benign – are called “indeterminate,” which means that it is not certain whether the nodule is benign or cancer. This year alone, there will be up to 90,000-100,000+ patients with “indeterminate” FNAs. Until recently, even though almost two-thirds of these nodules turn out to be benign, surgical removal of half or more of the thyroid gland done under general anesthesia has been the only way to figure out whether these nodules are benign or cancer.

PROMISING NEW DEVELOPMENT

Recent scientific advances in the field of genomics (study of genes) show great promise for more accurately predicting prior to surgery whether an “indeterminate” nodule is benign or cancer. Newly developed techniques are used to analyze FNA material for “molecular markers,” genetic material or the products of genes that are found in many thyroid cancers or benign thyroid nodules. Preliminary studies suggest that by combining these tools with standard cytology the approach to “indeterminate” nodules may change. The number of surgical procedures for “indeterminate” nodules that are benign, and do not have to be removed, would be reduced. On the other hand, when cancer is highly likely the entire thyroid would be removed—the standard approach for thyroid cancer—rather than just one side to diagnose cancer followed by a second operation at a later date.

For more information about thyroid nodules and these new tests, ask your endocrinologist and check out the following websites: www.veracyte.com (Afirma® Gene Expression Classifier test) and www.asuragen.com (miRInform® test).

Dr. Daniel S. Duick was a member of the staff of Mayo Clinic (Rochester, MN) before relocating to Phoenix, Arizona, where he served as Director of the Internal Medicine Residency Training Program for 12 years at St. Joseph’s Hospital and Medical Center. He then joined Endocrinology Associates in private practice in Phoenix. A consultant to Asuragen, Inc and Veracyte, Inc. Dr. Duick is a past AACE president and the immediate past president of the American College of Endocrinology.
PERSEVERANCE AND ACHIEVEMENT: A Thyroid Cancer Survivor’s Story

An estimated 30 million Americans suffer from a thyroid disease, mostly from an underactive thyroid known as hypothyroidism [hie-po-THIGH-roid-is-m].

Joy Cortese is one of them, having been diagnosed with thyroid cancer three years ago. Even though Joy is one of millions, her story is one of a kind.

Joy, a former flight attendant and an avid animal lover, moved with her husband, Victor, to Kentucky in 2006. They settled on a 13-acre property and enjoyed horses, gardening and being outdoors. But one day in 2008 a terrible accident occurred, and Joy was thrown off one of her horses and broke her back in two places.

After the accident, Joy spent one week in the hospital and three long months in a large custom back brace. During the first month, she was essentially unable to move and spent hours lying flat on her back and reading. Recalling those long and discouraging days, Joy explained, “I knew I could either feel sorry for myself and give up, or I could choose to embrace life and make the most of it.” After a lot of praying, Joy knew what her decision had to be. One day Joy read in a magazine about an upcoming half-marathon. Still flat on her back, and never having run before, Joy decided to pursue it. “I’m going to focus on this. I’m going to do this,” she told herself.

Although the road to recovery wasn’t easy, Joy’s determination and focus kept her motivated. She did
most of her physical therapy by herself in the pool and amazed her doctors at how quickly and completely she recovered. In January 2009, as soon as she was able, Joy found a training schedule and began preparing for the half marathon. “I needed to focus on something other than what had happened,” she said. Joy’s hard work and mental toughness paid off, as she completed her first half marathon in April 2009.

But Joy’s story doesn’t end there. In the midst of her recovery and half marathon training, Joy received another piece of news – she had an enlarged thyroid, or goiter. Joy had not noticed any neck enlargement or any thyroid symptoms, attributing her recent weight gain to menopause and changes in her activity levels. But, when she went to a new gynecologist in early 2009, he immediately noticed her enlarged thyroid and ordered some tests.

Joy went through a series of tests on her thyroid, starting with blood work and followed by an ultrasound. After the ultrasound her doctor performed a biopsy, which was inconclusive regarding the presence of cancer, but Joy did have Hashimoto’s [hash-ee-MO-toes] thyroiditis [thigh-roid-EYE-tis], a common cause of thyroid inflammation, hypothyroidism and enlargement, particularly in women. Joy’s ENT physician then recommended she have surgery to remove her thyroid in case she also had thyroid cancer. Still training for her half marathon and not wanting to give up on her goal, Joy postponed the surgery for a few months. “Deep down,” she recalls, “I also think I knew that the results would not be good and wanted to put that off as long as possible.”

Soon after completing her race in the spring of 2009, Joy had the surgery and had a complete thyroidectomy (surgical removal of the thyroid). She then endured two rounds of radioactive iodine therapy to destroy any lingering thyroid cells in her body. After two full body scans that showed the presence of some thyroid cells, her most recent two scans have been negative.

Joy now takes daily medication to keep her thyroid hormone levels in the proper range, but otherwise she is living a full and healthy life. She credits her endocrinologist, AACE member Dr. Philip Morrow, for assisting with a successful treatment plan and regulating her medication. Although Joy no longer rides horses, she still owns and cares for one and is active in other ways. Joy stays fit by walking, hiking and participating in weight training, and she still runs in some races. She also enjoys vegetable and flower gardening, cooking and traveling with her husband.

Joy’s example of overcoming enormous obstacles, challenging herself to accomplish lofty goals and living a full life has been an inspiration to her friends and family. In fact, after seeing her mother go from being unable to move to completing a half marathon and defeating thyroid cancer, Joy’s daughter Maggie began running and has completed several races of her own. The two celebrated Joy’s recovery by running a half marathon in New York City together last year.

When asked what advice she would give to others, Joy says, “Get your thyroid tested. Even if a doctor doesn’t see a problem or recommend testing, ask for it and get it checked. It could save your life.”

(Editors Note: See related article about assessing thyroid nodules on pages 18-19).
Excerpted from Thyroid Disease: Understanding hypothyroidism and hyperthyroidism, Copyright ©2012, Harvard University.

Your initial dose of thyroid medication is carefully selected based on your weight, your age and whether you have any other medical conditions. A general guideline is 0.8 mcg for every pound of weight (or 1.6 mcg for every kilogram of weight). But your doctor may decide on a lower or higher dose depending on your individual circumstances.

Treatment of an older person begins gradually because of a higher risk of underlying heart disease. In older people, achieving full hormone replacement too quickly may put stress on the heart or central nervous system. If medication increases slowly, the heart and central nervous system progressively adjust to a faster pace. For instance, your doctor may start you with 12.5 to 25 mcg of synthetic T4 (levothyroxine sodium) per day and increase the dose every four to six weeks until laboratory tests show that your TSH and T4 levels are within the normal range. Doctors will prescribe an even more gradual dosing schedule for certain patients who experience symptoms of heart failure, angina or anxiety.

The dose is also based on the severity of your hypothyroidism. For instance, someone with autoimmune-induced hypothyroidism whose thyroid is still producing some hormone may require only partial hormone replacement. But a person whose thyroid has been removed requires total hormone replacement, which on average means a higher dose.

Another important factor in determining dose is whether you are on any medication that may interfere with the absorption or metabolism of your thyroid medication. For instance, if you are on estrogen therapy, birth control pills or certain antidepressants, you may need a higher dose (see “Drug Interactions graphic,” page 23). So it’s important to tell your doctor if you are taking any other medication, or if you begin to take another medication after you start taking your thyroid pills.

Think of your initial dose as an estimate of your need. There is likely to be a bit of trial and error, because your thyroid hormone needs are very precise, and you probably will need adjustments until your TSH level is within the normal range. Your doctor may begin with a low dose because too much thyroid hormone may cause symptoms of hyperthyroidism, such as nervousness,
anxiety or racing heart. If you experience any of these symptoms, contact your doctor immediately.

Once the initial dose has been decided, remember that it may take several weeks before you experience any changes in your system. T4 is a slow-acting hormone, and you are not likely to feel its effects immediately. Generally, anywhere from four to eight weeks after you begin taking your medication, your doctor will want to check your TSH level. If, at that point, your TSH level still is not within the normal range, the doctor will adjust the dose, repeating this process until your TSH level is normal and your symptoms have improved. Once the appropriate dose has been established, you will have a TSH test, and sometimes a test for free T4, every six to 12 months.

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**Dr. Jeffrey R. Garber** is an Associate Professor of Medicine at Harvard Medical School, chief of the endocrine division of Harvard Vanguard Medical Associates, and President of the American College of Endocrinology (ACE). His book, The Harvard Medical School Guide to Overcoming Thyroid Problems, and monograph Thyroid Disease: Understanding hypothyroidism and hyperthyroidism, Copyright ©2012, Harvard University, were written for members of the lay public interested in learning about thyroid disorders.

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### DRUGS AND FOODS THAT INTERACT WITH THYROID MEDICATIONS

The following medicines and therapies can influence the effectiveness of thyroid medicines in one or more of the following ways: by interfering with the absorption of thyroid hormone, by binding thyroid hormone to binding proteins, and by interfering with thyroid hormone metabolism.

#### Cancer therapies
- asparaginase
- bexarotene*  
- fluorouracil
- interferon*
- interleukin*
- ipilimumab*
- sunitinib*
- tamoxifen
- thalidomide and lenalidomide

#### Cardiovascular therapies
- amiodarone*
- furosemide
- heparin
- oral anticoagulants

#### Cholesterol therapies
- bile acid sequestrants including cholestyramine,* clofibrate, and colestipol*
- slow-release niacin

#### Gastrointestinal therapies
- aluminum hydroxide antacids
- cation exchange resins
- charcoal
- proton-pump inhibitors
- sucralfate

#### Hormonal therapies
- androgens/anabolic steroids
- dopaminergic drugs including bromocriptine and cabergoline
- estrogens
- glucocorticoids such as prednisone
- growth hormone
- metoclopramide
- raloxifene

#### Neurologic/psychiatric therapies
- anticonvulsants including phenytoin,* phenobarbital,* and carbamazepine*
- lithium*
- sertraline*
- other antidepressants and antipsychotic agents, including clomipramine and quetiapine

#### Nutritional supplements
- calcium carbonate
- chromium picolinate
- ferrous sulfate (iron)
- iodine* (including kelp supplements)
- multivitamins (presumably because of iron and calcium content)

#### Foods
- espresso coffee
- grapefruit
- soy

#### Other medicines
- antituberculous drugs (rifampicin, ethionamide)
- bisphosphonates taken orally, such as alendronate
- ciprofloxacin
- methadone
- nonsteroidal anti-inflammatory drugs such as meclofenamic acid, mefenamic acid, and phenylbutazone
- orlistat
- orphenadrine
- propranolol
- radiographic agents (such as contrast agents containing iodine)
- salicylates (high doses of aspirin and salsalate)
- sulfonamides (acetazolamide, sulfisoxazole)
- sulfonyleureas

*These drugs can have a major impact on thyroid treatment.
RECORD-SHATTERING heat waves. Out-of-control wildfires. Tornadoes, severe thunderstorms and flooding reaching from Florida to Alabama to Minnesota and beyond.

If it feels like unmitigated disaster is all around, it’s no wonder. Lately, the fallout from destructive forces is dominating the national news.

While it’s prudent for everyone to have a game plan for what to do in the event of emergency situations such as those sweeping the nation of late, in the case of people with diabetes, it can be critical. Thus, the American College of Endocrinology (ACE) and Lilly Diabetes have partnered to implement the EmPower Diabetes Emergency Plan program.

A revision of a patient education initiative launched in 2006 in the aftermath of Hurricane Katrina, the updated program extends beyond natural disasters to encourage those with diabetes to be prepared for any type of unexpected situation.

At the core of the program is a checklist of 17 essential items those with diabetes would need in the event of an emergency, with all information contained in a tear-proof and waterproof mini-brochure which folds conveniently into credit card size for quick access. The reference tool is available in both English and Spanish and is published here as reference. Patients of AACE member endocrinologists are encouraged to request one of the cards from their physician.

In addition to the printed checklist, the Diabetes Emergency Plan program features an informative four-minute video providing step-by-step instructions on how to prepare an emergency kit.
Prepare a portable, insulated and waterproof diabetes emergency kit that contains the following items:

- List of the following information:
  - Type of diabetes
  - All of your medical conditions, allergies and prior surgeries
  - All medications (include pharmacy contact information, active prescription information and eligible refills)
  - Previous diabetes medications and reason for discontinuation
  - Contact information for all your healthcare providers
- Letter from your diabetes healthcare providers with most recent diabetes medication regimen (especially if taking insulin)
- Most recent laboratory results (especially A1C, kidney and liver tests)
- A 30-day supply of all medications taken by mouth or injection for diabetes as well as all other medical conditions
  - Include insulin and a severe hypoglycemia emergency kit—if prescribed (always check expiration date)
- Blood glucose testing supplies and 2 glucose meters with extra batteries
- A cooler for 4 re-freezable gel packs, insulin and unused injectable medications to be added when ready to go
  - Note: Do not use dry ice and avoid freezing the medication

- Empty plastic bottles or sharps containers for syringes, needles and lancets
- Source of carbohydrates to treat hypoglycemic reactions (for example, glucose tablets, 6 oz. juice boxes, glucose gel, regular soda, sugar, honey or hard candy)
- A 2-day supply of nonperishable food (for example, peanut butter or cheese crackers, meal replacement shakes or bars, etc.)
- At least a 3-day supply of bottled water
- Pen/pencil and notepad to record blood sugar, other test results and any new signs/symptoms suggesting medical problems
- First aid supplies like bandages, cotton swabs, dressings and topical medications (antibiotic ointments or creams)

Other recommendations:

- Wear shoes at all times and examine your feet often for cuts, sores, red spots, swelling, blisters, calluses and infected toenails or any unusual condition
- Make sure that all vaccinations, including tetanus, are up-to-date
- Pack extra comfortable clothing, including undergarments
- Take a mobile phone with an extra charger or extra batteries for you and family members
- Choose a designated meeting place in case you are separated from your family and are unable to reach them by phone

Both the video and the checklist can be viewed at ACE’s patient education and awareness website. To access the information, visit http://www.empoweryourhealth.org/diabetes-emergency-plan.

“The health of a person with diabetes depends on discipline, balance and good decision making—things that tend to suffer when stressed by an emergency,” said AACE member Dr. Lawrence Blonde, MD, FACP, FACE. “We hope the resources we’ve created, when implemented, will help people rest easier knowing that if they need to act, their emergency kit with the necessary supplies to maintain their health is ready. That way, they can focus on managing, or in some instances, surviving, the situation at hand…especially when seconds count.”

THE EMPOWER DIABETES EMERGENCY PLAN
All We Do Is About You.

Serving our patients is the heartbeat of our work.

From breakthrough scientific research to innovative products, our mission is to make a difference in the treatment and care of people all over the world.

Just like you.
WATCH, LEARN, SHARE: EmPower Online Videos Offer Guidance for a Number of Endocrine-Related Medical Issues

EmPower Magazine is just one spoke in the wheel of the American College of Endocrinology’s (ACE) efforts to improve patient health awareness and education.

ACE’s EmPower website (www.empoweryourhealth.org) also features a number of videos designed to educate viewers about a variety of endocrine-related subjects.

Among the topics covered in the informative series of videos are:

• A physician overview and interviews with people with diabetes about diabulimia, a little-known but dangerous condition in which people with type 1 diabetes (most frequently females) deliberately give themselves less insulin than they need in order to achieve weight loss;

• “Learn To Check Your Neck,” an effort to bring awareness to symptoms of thyroid disorders, which afflict an estimated 30 million Americans;

• Diabetes 911: How to prepare a portable diabetes emergency kit, a particularly timely topic given the many occurring natural disasters wreaking havoc throughout the U.S. recently; and

• How to fight temptation and make healthy nutritional choices when dining out or grocery shopping.

The EmPower videos page was recently revised to enhance navigation and create a more user-friendly experience. The organization has plans to add to its video library, so visitors are encouraged to bookmark the site address and check back frequently. The site address is: www.empoweryourhealth.org/video#. Alternatively, the videos can be viewed on AACE’s YouTube channel at www.youtube.com/user/aacepr.

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Vascular Oncology Renal  Care Neuroscience Anti-Infectives
Diabetes Care Molecular Immunology Anesthesia Cardiovascular
Diagnostics Metabolics Pain  Care Nutrition Medical Optics
Respiratory Virology Hematology Point of Care
Use 6 to 8 slices of your own toasted bread and let sit out overnight to dry. Add 1 teaspoon of your favorite Italian herbs or 1 tablespoon of fresh herbs like basil, oregano and thyme to control the salt and nutrition.***

*This version has half the salt and 1/3rd of the fat and saves you nearly 200 calories (480 calories & 40 grams cholesterol vs. 320 calories and 48 grams of cholesterol)

** Use soy or Toffuti® sour cream for a dairy-free option (8 oz. fat-free sour cream = 35 grams cholesterol & 170 calories; regular sour cream = 10 grams cholesterol & 492 calories)

*** Works just as well at half the calories and none of the cholesterol

****For people sensitive to gluten, brown rice bread or corn bread works well

Directions
Grill the zucchini and onions or steam, in a saucepan, the sliced squash and onions for 4-5 minutes (these methods retain more of the nutrients and flavor). Combine the soup and sour cream in a separate saucepan. Stir in the carrots. Fold in the squash and onions. Combine the bread crumbs, seasoning and oil. Spread half of this mixture in a 12 x 7 1/2 x 2 baking dish. Layer with vegetable mixture and top with remaining stuffing mixture. Bake at 350 degrees for 25-30 minutes or until heated through.

Light Version: 1/12th of the recipe = 150 calories and 25 grams of carbohydrates

Serve this with grilled or baked poultry, fish or meats. Prepare ahead of time and freeze. Then just pop into the oven to reheat.

**FEEDBACK FROM OUR FOLLOWERS**

**Question:** What, if any, studies are currently underway to seek a correlation between a pregnant woman’s low-functioning thyroid and the brain development of her fetus, particularly in regard to autism?

If the rate of diagnoses of thyroid disorders, as well as the number of autistic children, are increasing astronomically, could there be a causal relationship between the two issues? I ask because these statistical trends parallel one another, and we also know the mother’s thyroid supplies the growing fetus with brain-developing hormones and a lack of supply from the mother leaves the unborn child’s brain function underdeveloped.

**Answer:** To date there has been no study looking at whether or not there is an association between maternal hypothyroidism and autism in the offspring. A couple of studies have postulated that there may be a connection, but as noted, this has never been evaluated.

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With your help, the College will be able to continue providing first-rate educational advancement programs and support groundbreaking clinical research.

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