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SPECIAL REPORT

DIABETES IN AMERICA

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If we can use public policy to change attitudes and behavior around using seat belts, we can use it to help prevent type 2 diabetes and its complications. Right now, there are 26 million Americans with diabetes and another 79 million at risk of developing the disease. That's why Novo Nordisk supports fully funding the National Diabetes Prevention Program, a public-private partnership to ensure the availability of cost-effective, community-based diabetes prevention programs.

Learn more about Novo Nordisk at www.novonordisk-us.com
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The Center for Disease Control and Prevention reports diabetes mellitus affects nearly 26 million Americans. Are you one of them?

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EmPower, published by the American College of Endocrinology (ACE), the educational and scientific arm of the American Association of Clinical Endocrinologists (AACE), is dedicated to promoting the art and science of clinical endocrinology for the improvement of patient care and public health. Designed as an aid to patients, EmPower includes current information and opinions on subjects related to endocrine health. The information in this publication does not dictate an exclusive course of treatment or procedure to be followed and should not be construed as excluding other acceptable methods of practice. Variations taking into account the needs of the individual patient, resources, and limitations unique to the institution or type of practice may be appropriate.

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A Note from the Editors:

Dear Reader,

Thank you for picking up the first issue of the newly branded EmPower Magazine, a Power of Prevention publication. You may have read this magazine before under a different name, Power of Prevention Magazine. EmPower Magazine will still have the same structure with articles written by the experts in the field on various endocrine topics, but with a new title and fresh look. We are excited to present this magazine to you!

The original goal of the Power of Prevention program was to equip people with the tools they need to live healthier lives through resources, such as this magazine. In doing so, we realize that this magazine is not just giving you the power to learn about endocrine conditions. Many of you have told us that the articles in the magazine empower you to take charge of your health!

The name has changed but the idea has not. EmPower Magazine is the American Association of Clinical Endocrinologists’ and the American College of Endocrinology’s voice to you. Through this magazine, AACE and the College will help you stay up-to-date on the topics important to you, just like these organizations help your endocrinologists put the latest knowledge and research into practice so you can live longer, healthier and thrive!

In this issue of EmPower Magazine, you will read about the discovery of insulin and how it has changed the lives of diabetes patients worldwide. You will also learn about topics such as the history of diet treatments for the management of diabetes, what to know about your osteoporosis medication and the importance of the adrenal gland.

We hope that as you read this issue, you will learn something new and feel empowered to live a healthier lifestyle. We are excited for the opportunities this new venture will bring, and we welcome your feedback!

Be healthy. EmPower!

Sincerely,

DONALD A. BERGMAN, MD, MACE

ETIE S. MOGHISI, MD, FACP, FACE

DACE L. TRENCCE, MD, FACE

Dr. Donald Bergman is in private practice in New York City and is board certified in internal medicine and endocrinology and metabolism. He has been 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. Etie Moghissi is board certified in endocrinology, diabetes and metabolism and is in private practice in Marina del Rey, California. She is a Clinical Associate Professor of Medicine at UCLA. Dr. Moghissi is a recognized expert in the field of diabetes and is actively involved in direct patient care as well as in professional medical education. She has published in peer-reviewed medical journals including Endocrine Practice and Diabetes Care. She serves as Vice President of the American Association of Clinical Endocrinologists.

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According to the 2011 CDC (Center for Disease Control and Prevention) report diabetes mellitus affects nearly 26 million Americans. About seven million Americans are undiagnosed. Another 79 million Americans over age 19 have prediabetes, a condition in which blood sugar (glucose) levels are higher than normal but still not high enough to be diagnosed as diabetes. This condition is now believed to affect 30% of Americans who are over 20 years old. Prediabetes raises a person’s risk of type 2 diabetes, heart disease, and stroke. About 27% of people 65 years and older have diabetes and 50% have prediabetes. The rate of diabetes and pre-diabetes are even higher in many racial and ethnic minorities.

These are alarming statistics. As a society and as individuals we need to find a way to prevent diabetes and to manage the illness in those already affected.

**THE GOOD NEWS IS, DIABETES CAN BE PREVENTED!**

Diabetes can be prevented by changes in lifestyle, good nutrition, increased physical activity, and moderate weight loss. Clinical trials show that losing 5%-7% of body weight—that’s 10 to 14 pounds for a 200-pound person—and getting at least 2½ hours of moderate physical activity each week reduces the risk of type 2 diabetes by nearly...
60% in those at high risk for the disease. We know that remaining smoke free, increasing intake of whole grains (such as whole wheat bulgur, whole wheat couscous, brown rice, steel-cut oats, rolled oats and whole rye) and cutting back on refined carbohydrates and sugary drinks can help lower your risk for diabetes. White bread, white rice, white pasta, and potatoes cause increases in blood sugar, as do sugary soft drinks, fruit punch, and fruit juice. Over time, eating a lot of these may increase your risk for type 2 diabetes.

WHAT ARE THE RISK FACTORS FOR DIABETES?
Risk factors for type 2 diabetes include older age, obesity, family history of diabetes, prior history of diabetes during pregnancy, impaired glucose tolerance, physical inactivity, and race/ethnicity. African Americans, Hispanic/Latino Americans, American Indians, and some Asian Americans and Pacific Islanders are at particularly high risk for type 2 diabetes.

TAKE CHARGE OF YOUR HEALTH! - GET TESTED!
It is important to find out early if you have prediabetes or type 2 diabetes because early treatment can prevent the serious problems caused by high blood sugar.

<table>
<thead>
<tr>
<th>KNOW YOUR BLOOD GLUCOSE NUMBERS</th>
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<tr>
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<td>Normal</td>
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Remember that there is no such a thing as “borderline diabetes.” That would be like being “borderline pregnant!” Ask your doctor if your blood sugar is normal or in the diabetes or prediabetes range.

HERE IS WHAT YOU CAN DO TO STAY HEALTHY:

If you are in the prediabetes category:
Modify your lifestyle, eat a little less at meal time, plan your meals ahead of time so you do not grab rich snacks on the road, and eat more fruits and vegetables and less salt and saturated fat. Replace soft drinks with water and limit juices. Increase your physical activity to moderate intensity for at least 30 minutes on five or more days of the week. Make sure your blood pressure and your cholesterol are in the normal range. Talk to your doctor and set goals.

If you have been diagnosed with type 2 diabetes:
It is important to know that by controlling your blood sugar early and aggressively you may be able to preserve your insulin-producing cells in the pancreas, called beta cells, so your diabetes will not progress. By the time diabetes is diagnosed almost half of the beta cell function is gone and over time people with type 2 diabetes will need to take insulin to control their blood sugar.

People with diabetes must take charge of their day-to-day care and keep their blood sugar levels from going too low or too high. Staying informed is essential in managing your diabetes to prevent long-term complications.

THE BASICS:
1. Healthy eating and physical activity are the cornerstones of managing type 2 diabetes. See a nutritionist to help you create a meal plan that is right for you. Many people with type 2 diabetes need to take diabetes medication, too. There are many choices of medications. Some are taken by mouth and some are injectable. Ask your doctor which one is best for you. Understand the risks and the benefits of what he or she recommends.

2. Know your “numbers.” Ask your doctor
   • What are my blood sugar, blood pressure, and cholesterol numbers?
   • What should they be?
   • What actions can I take to reach my goals?

3. Check your progress by keeping track of your blood sugar and your A1c.

4. See your doctors regularly and get ready for each visit by writing down your questions ahead of time so you make the most of your visit.

Continued on page 4
Continued from page 3

5. Get your eyes examined on a yearly basis if your eyes are healthy. If you have problems with your eyes, work with your eye doctor to make sure they remain stable.

6. Protect your kidneys: Keep your blood pressure under control and get screened for kidney problems. A blood test called glomerular [glo-MER-yuh-ler] filtration rate (GFR) and a urine test for protein called microalbumin [migh-kro-al-BYOO-min] are important as a part of your annual check-up (See the Kidney Connection article in this magazine for more information).

7. Protect your heart: Make sure that your cholesterol is under control. Stop smoking and ask your doctor if you should take a daily aspirin.

8. Get an annual flu shot and make regular visits to the dentist.

9. Take your medications as prescribed.

10. Stay in touch with your support system, family and friends, and smile often!

For more information visit http://www.cdc.gov/diabetes/consumer/learn.htm and http://www.yourdiabetesinfo.org
The American College of Endocrinology has published The Complete Guide to Lifelong Nutrition, edited by Dr. Jeffrey I. Mechanick, M.D., F.A.C.P., F.A.C.E., F.A.C.N. and Dr. Elise M. Brett, M.D., F.A.C.E., C.N.S.P. This book is written for the general public in an easy-to-read style and is unique because each chapter is authored by a Clinical Endocrinologist with expertise in nutrition. It is part of the ACE Power of Prevention campaign to promote healthy lifestyle and disease prevention. The book is designed to teach people to enjoy food while making healthier choices and getting adequate nutrients from their diets. Nutritional science is simply reviewed. There are separate chapters discussing eating patterns for men and women and for different stages of life. The book discusses strategies to help people attain or maintain a healthy weight. Special sections were written to help people with different disease states such as diabetes, heart disease, cancer and gastrointestinal diseases modify their diets to improve their health.

ORDER THIS BOOK FROM WWW.AACE.COM/NUTRITIONGUIDE FOR ONLY $29.99
In the fall of 1988, actress Faith Ford should have been on top of the world. The 24-year-old former model had just landed a leading role on the hit comedy Murphy Brown. Playing the lovable journalist, Corky Sherwood, she was an overnight star across the United States. But while she was experiencing virtually overnight success, she was struggling with more subtle changes in her body. “I was losing weight, even though I was eating enough food for two full grown men,” said Ford. While many might think that is a good thing, she knew something wasn’t right in her body. Despite being an avid exerciser, she often found herself very weak. Often, she would find herself incredibly hot, despite being in relatively cool rooms. “I wanted to dip my hands in ice water just to cool down,” Ford recalled. To make things worse, she often felt that she had sand in her eyes.

It’s Christmas time. A childhood dream is coming true for the girl from Pineville, Louisiana. As she gets ready to tape an episode of a hit new television comedy, she starts to feel hot and jittery. “Just nerves” is what people tell her. But then she realizes she is having trouble remembering her lines. It gets so bad that someone calls the paramedics.

“An anxiety attack,” they say. The young actress is given a glass of milk and a peanut butter sandwich. She knows that something isn’t right. Somehow, she pulls everything together to give her performance. But once the taping is over, the star of the show, Candice Bergen, gives her simple, and ultimately life-saving advice.

“You need to see your doctor.”

In the fall of 1988, actress Faith Ford should have been on top of the world. The 24-year-old former model had just landed a leading role on the hit comedy Murphy Brown. Playing the lovable journalist, Corky Sherwood, she was an overnight star across the United States. But while she was experiencing virtually overnight success, she was struggling with more subtle changes in her body. “I was losing weight, even though I was eating enough food for two full grown men,” said Ford. While many might think that is a good thing, she knew something wasn’t right in her body. Despite being an avid exerciser, she often found herself very weak. Often, she would find herself incredibly hot, despite being in relatively cool rooms. “I wanted to dip my hands in ice water just to cool down,” Ford recalled. To make things worse, she often felt that she had sand in her eyes.
Ford tells of a bonding experience where Candice Bergen invited the cast of Murphy Brown on a ski trip. But every time that Ford would fall down, she struggled to gather the strength to stand up again. Later, after the misdiagnosed panic attack episode happened on the set of Murphy Brown, Ford knew she needed to take the advice of her co-star and go see a doctor. But because her symptoms were somewhat vague, the doctor had a hard time making a diagnosis.

“I stayed with my doctor for more than two hours,” said Ford. “Finally, he had an ‘A-ha’ moment and asked me to take a glass of water and swallow.” That’s when the doctor noticed a lump at the bottom of Ford’s throat. It looked like a bulging muscle. Ford had seen it, but assumed it was the result of her workout routine. The doctor knew that it was a malfunctioning thyroid.

Ford had a condition called Graves’ disease. This condition is marked by an overactive thyroid. The thyroid gland produces the hormone which regulates the metabolism in the body. In Ford’s case, too much of this thyroid hormone was responsible for the symptoms she was experiencing.

Happy to finally have a diagnosis, Ford was ready to deal with the problem. Her doctor prescribed a medication to regulate her thyroid hormone levels. She took the medication as prescribed and thought that her thyroid problems were behind her.

Fast forward to six years later, Ford started to notice that, again, she wasn’t feeling right. This time, she recognized the symptoms right away and went right back to her doctor. She received the same treatment as before, but this time it didn’t work.

Her doctor informed her that in order to maintain a normal thyroid hormone level, she would have to lose her malfunctioning thyroid. This left her with two options: remove the thyroid surgically, or kill the thyroid using radioactive iodine (RAI) treatment.

By this time, Ford was very thyroid smart. She had learned that her mother has an underactive thyroid, and that thyroid conditions are hereditary and highly common in families. Her mother advised her against having her thyroid surgically removed. Add to that the fact that surgery would take her away from work for about three weeks in the middle of the season, and Ford’s decision was easy. She opted for the RAI treatment.

Once her diseased thyroid had been destroyed, Ford’s doctor needed to replace the thyroid hormone her body should have been producing normally. She was placed on a synthetic thyroid hormone replacement therapy. Simply put, she started taking one pill, every day, to replace the thyroid hormone her body could no longer make. That was more than 16 years ago. And every day since, Ford takes her medication religiously.

“I take it at the exact same time, every day, first thing in the morning,” said Ford. “I take it on an empty stomach and I never skip a day.”

Ford has enjoyed a long and successful career in acting, including Murphy Brown and Hope and Faith, and will next be seen in the upcoming Disney feature film Prom, scheduled for release on April 29th. Recently she ventured into the producing business. She just produced and starred in a feature film entitled Escapee that will be released later in 2011. She’s working with her husband to run a full production company in her home state of Louisiana while helping to invigorate the growing film industry in the state.

In addition to acting and producing, Ford has hosted two seasons of a lifestyle web series for MSN and Kraft called “Mind Body Balance” (www.mindbodybalance.com). On the series, Ford interviews experts and gives tips about how to simplify life in all areas, particularly when it comes to cooking, exercising and organization. Ford enjoys cooking and is the author of the cookbook Cooking With Faith, which features some traditional Southern recipes along with some healthier, updated versions of Southern favorites.

How does she manage to keep up the energy to juggle all of these tasks at once?

“Because I feel better today than I did in my 20s,” said Ford. “Once my thyroid was in balance, it gave me my life back.”

And she has one simple piece of advice for you.

“If you aren’t feeling like yourself… if you just feel like something is different and you aren’t sure what it is or why… it might be your thyroid. So do what I did. Talk to your doctor.”

Ford and Dr. Garber spoke to television and radio stations around the country promoting thyroid health as a part of Thyroid Awareness Month 2011. You can watch some of these interviews on our YouTube Channel. Go to YouTube and search “aacepr”
So much of what we are told about discoveries is a simplified version of what really happens in the scientific world. Scientists are human, just like the rest of us, and the path to discovery can be a very interesting story that shows just how human scientists are.

Such a story lies behind the discovery of insulin and its’ travels to market—a drug that we all tend to take for granted in the world of diabetes!

Elizabeth Hughes was a cheerful, pretty little girl who grew up in the early 1900s. She had straight brown hair and a large interest in birds. She was diagnosed with diabetes when she was 11. Doctors started her on the Dr. Frederick Allen diet, the only treatment for diabetes mellitus type 1 at that time. The diet was basically a starvation diet. She started to lose weight and got to 65 pounds, then to 52 pounds, then to only 45 pounds after a dangerous episode of diarrhea. And she was 5 feet tall! She had survived on the diet for three years—far longer than her doctors had predicted—but she was getting sicker. Then her desperate mother heard some incredible news: insulin was tested in Canadian dogs with diabetes and they recovered from near death!

Who was the scientist who tested insulin in the dogs? It was Frederick Banting, a very awkward Ontario farm boy. He graduated from medical school as an average student and began working in a laboratory at the University of Toronto. During a very hot summer in 1921, Banting and his assistant Charles Best experimented on diabetic dogs, with dismal results. But when they got to dog number 92, a yellow collie, she jumped off the table after an injection of pancreas extract and began to wag her tail.

Dr. Banting’s mentor and lab director, Dr. John J.R. Macleod, had spent the summer in Scotland. Macleod returned to Toronto in the fall of 1921, rested and refreshed from his vacation, and reviewed the exciting research from Banting. A strain in their relationship began and resentment developed between student and mentor. This hostility lasted years, even after the Nobel Prize ceremony in 1923, which Dr. Banting refused to attend because he would not share the stage with Macleod.

Another researcher of insulin was James Collip, a professor of physiology and biochemistry. He offered to help Banting and Best to identify and purify whatever in the pancreas was the active treatment agent. As time progressed, Collip and Macleod became closer, mostly in discussions but then in actual lab work. When Banting and Macleod were awarded the Nobel Prize, Banting insisted on sharing his prize with Best, and Macleod shared his with Collip.

Elizabeth Hughes had a significant advantage. She was the daughter of Charles Evans Hughes, a member of the US Supreme Court. When Elizabeth’s mother pleaded for insulin for her daughter, Dr. Banting replied initially that...
no insulin was available. His team was having trouble making enough for patients who needed it in Canada.

But Banting changed his mind. So, Elizabeth received her first insulin injection in Toronto. Was it due to Justice Hughes, her father, who was nicknamed “the bearded iceberg”? Or did others intervene? We can only guess!

And rather than being an advocate for the treatment of diabetes mellitus, Elizabeth Hughes shied away from the headlines that made her the most famous diabetic child in the United States. Before she died in 1981 at the age of 74, she destroyed material documenting her illness, removed all references to her diabetes from her father’s papers, and occasionally was known to even deny she had been ill as a child. She did not even share her medical information with her fiancé until a week after their engagement.

But without mass production of insulin, little could be accomplished. The tedious process of initially purifying insulin from animal pancreases could not possibly supply the large need for ongoing available insulin.

Eli J. Lilly and Company, the Indianapolis drug firm, won the right to mass produce insulin in the United States. It was the first partnership negotiated among university circles, individual physicians, and the drug industry, facilitated by a research chemist George Clowes who worked at Lilly.

August Krogh wanted to produce insulin in Denmark. In 1920 he won the Nobel Prize in physiology and medicine and he was motivated by his wife Marie’s battle with late-onset of diabetes. He traveled to Toronto to obtain permission to produce insulin in Europe. In 1923 he joined forces with Dr. Hans Christian Hagedorn, a specialist in regulating blood sugar, and pharmacist August Kongsted. They founded the not-for-profit company Nordisk Insulinlaboratorium. Because Denmark had abundant bacon factories, pork pancreases were easy to obtain and “insulin-Leo” came on the market. In 1925, two brothers who had both worked at Nordisk Insulinlaboratorium founded Novo Terapeutisk Laboratorium. Novo Nordisk was formed in 1989 when the two companies came together.

Although animal insulin is similar to human insulin, they are slightly different. To produce human insulin researchers have been using recombinant DNA technology for more than 25 years. This method is more reliable and sustainable. Today, different types of insulins with different durations of action are available. As a result, individuals with diabetes are able to control their blood sugars much better and live a healthier life!
Did you know that diabetes and high blood pressure are the two main causes of kidney disease? That’s why it is so important for you to get checked for kidney disease—and take steps to keep your kidneys healthy—if you have one of these two conditions. You should also get checked for kidney disease if you have heart disease or if you have a mother, father, sister, or brother with kidney failure.

Here are the top three facts everyone should know about kidney disease:

1) Early kidney disease has signs or symptoms. Usually the damage occurs slowly over many years, but because you can’t feel kidney disease, you don’t know the damage is happening. However, simple blood and urine tests can check on the health of your kidneys.

2) Kidney disease usually does not go away. It tends to get worse over time and can in time lead to kidney failure. If your kidneys fail, you will need to be treated with dialysis or undergo a kidney transplant.

3) Kidney disease can be treated. The sooner you know you have kidney disease, the sooner you can get treatment to help protect your kidneys.

WHAT DO KIDNEYS DO?
You have two kidneys. Their main job is to filter waste and the extra water out of your blood and make urine. Healthy kidneys also help keep the levels of sodium, phosphorus, and potassium balanced in your blood. (Graphic 1)

TESTING FOR KIDNEY DISEASE
Two tests are used to check for kidney disease.

A blood test checks your glomerular [glo-MER-yuh-ler] filtration rate (GFR), which measures how well your kidneys filter blood. A GFR of 60 or higher is in the normal range. A GFR below 60 may mean kidney disease. A GFR result of 15 or lower may mean kidney failure. (Graphic 2)

A urine test checks for the level of albumin [al-BYOO-min] in your urine. Albumin is a protein found in the blood that can pass into the urine when the kidneys are damaged. A healthy kidney does not let much albumin pass into the urine. So, the less albumin in your urine, the better. A urine albumin result below 30 is normal. A urine albumin result above 30 may mean kidney disease. (Graphic 3)
Kidney disease can be treated. The sooner you know you have kidney disease, the sooner you can begin treatment and take steps to keep your kidneys healthier longer, possibly preventing kidney failure. Treating kidney disease may also help prevent heart disease. None of the drugs that are used to treat kidney disease are ones that are also used to treat heart disease.

To slow kidney disease in people with diabetes, medicines are available to lower blood pressure, control blood sugar, and lower blood cholesterol. Two types of blood pressure medicines—angiotensin [an-jee-oh-TEN-sin]-converting enzyme (ACE) inhibitors and angiotensin receptor blockers (ARBs)—can slow kidney disease and help delay kidney failure, even in people who don’t have high blood pressure. In some cases, health care providers will prescribe extra drugs to help slow down kidney damage.

**HELP OTHERS MAKE THE KIDNEY CONNECTION**

Talk to your family and community about kidney health. Encourage those at risk to talk to their health care providers about getting checked for kidney disease. You don’t have to be a health expert to talk about kidney health. The National Kidney Disease Education Program (NKDEP) offers free tools that can tell you how!

The Family Reunion Health Guide can help you talk about the connection between diabetes, high blood pressure, and kidney disease at your next family gathering. And the Kidney Sundays Toolkit gives faith-based organizations what they need to include kidney health messages in programs and events. The materials are easy to use by anyone who wants to talk about kidney disease with their friends, family, co-workers, or community.

For more information about kidney disease, visit the NKDEP website at www.nkdep.nih.gov. To order the tools described above or the For People with Diabetes or High Blood Pressure: Get Checked for Kidney Disease brochure, call 1-866-4 KIDNEY (1-866-454-3639) or visit www.nkdep.nih.gov/resources. (Graphic 4)

Also, join NKDEP’s Make the Kidney Connection page on Facebook (www.facebook.com/pages/Make-the-Kidney-Connection/363329971883) to get regular tips about kidney health.

**KEEP YOUR KIDNEYS HEALTHY: Tips for People with Diabetes**

- Get your blood and urine checked for kidney disease
  - For type 2 diabetes, get tested every year
  - For type 1 diabetes, get tested every year starting five years after you were diagnosed with diabetes
- Keep your blood pressure controlled
- Aim for your blood glucose targets as often as you can:
  - The American Association of Clinical Endocrinologists (AACE) recommends a blood glucose level of under 110 in the morning and under 140 two hours after a meal
- Keep your cholesterol levels in the target range
Insulin is the main hormone that controls your blood sugar (glucose). Cells in the pancreas called islet [EYE-let] cells secrete insulin.

Antibodies are proteins made by your immune system to defend against foreign substances. Sometimes antibodies can be directed against your own body organs. This results in diseases that are called “autoimmune.” Type 1 diabetes is one such disease where antibodies are made against the body’s own islet cells. These antibodies can be detected by blood tests. Several antibodies against the pancreas are islet-cell antibodies (ICA), anti-glutamic [anti-gloo-TAM-ic] acid decarboxylase [dee-kahr-BOK-suh-leyz] antibodies (anti-GAD) and Insulin autoantibodies (IAA).

Type 1 diabetes results from the destruction of insulin producing pancreatic islet cells. The pancreatic antibodies, however, do not cause type 1 diabetes. They simply happen to be present in people at risk of developing type 1 diabetes. They can be detected years before diabetes begins. Doctors can use the antibody levels in the blood to predict who will develop type 1 diabetes. This is still mostly done in research studies, especially in research aimed at preventing the onset of type 1 diabetes.

Not all people with type 1 diabetes have these antibodies, because these antibodies can disappear after years of diabetes being present. So not having these antibodies doesn’t mean you don’t have type 1 diabetes. Presence of the antibodies can help doctors distinguish between type 2 diabetes or type 1 diabetes. This is particularly true in people who might seem to have type 2 diabetes (develop diabetes later in life, have a family history of diabetes, have had diabetes during pregnancy) but do not have the typical body appearance (are lean), or do not respond to oral pills used for the treatment of diabetes when the diagnosis is not clear. Also, more and more children with newly discovered high blood sugars are being tested for antibodies, because many youth have diabetes that requires only a pill to treat or diet! Young children often are thought to have type 1 diabetes and are started on insulin right away. Clearly, antibody testing can make a huge difference to quality of life for the child and parent.

“CAN I BE GENETICALLY MORE AT RISK OF HAVING PANCREAS ANTIBODIES?”

Type 1 diabetes is hereditary in only 20% of people. This means that for 80% of people diagnosed with type 1 diabetes, it likely wasn’t hereditary. There are certain gene patterns that have been associated with a higher versus lower risk of developing type 1 diabetes. Researchers are trying to find these gene patterns, because they can be useful when antibody levels are borderline and not strongly positive. We
still do not know what triggers antibodies to form in pancreatic tissue. It is unclear if some specific genes cause antibodies to be produced.

“CAN I DO SOMETHING TO CHANGE MY PANCREATIC ANTIBODY LEVELS?”

There is no medicine on the market that can make the pancreatic antibodies disappear. There are many promising trials of drugs that perhaps in the future might be used to prevent type 1 diabetes, but these are still in very early stages of testing. Diet and exercise are very important in the treatment of diabetes, but they have no impact on the antibody levels.

“DOES A HIGHER LEVEL OF ANTIBODIES MEAN MORE SEVERE DISEASE?”

No, the antibodies are considered either positive or negative. Higher or lower levels do not mean more severe diabetes. Also, higher levels do not mean that the diabetes will be more difficult to treat. There is usually no need to follow the levels of antibodies over time as they do not change the way diabetes is managed.

“ARE THERE OTHER DISEASES THAT ARE ASSOCIATED WITH PANCREATIC ANTIBODIES?”

There is a less common form of diabetes called latent autoimmune diabetes in adults (LADA). With LADA, people affected can also have positive pancreatic antibodies. LADA, also called “slow-onset type 1 diabetes” is a form of type 1 diabetes that typically occurs in people over 30 years old. People with LADA will likely need insulin, and there is data that suggests that these people should be started on very low doses of insulin early to protect the pancreas’ own insulin production.

“ARE PANCREATIC ANTIBODIES FOUND IN DISEASES OTHER THAN DIABETES?”

Pancreatic antibodies are associated only with diabetes. However, there is evidence that people with one autoimmune disease are at risk for getting another one. As such, people with type 1 diabetes may also develop other autoimmune diseases, such as autoimmune thyroid disease, celiac [SEE-lee-ack] disease (antibodies to wheat product gluten in the diet), or rheumatoid arthritis. Still, many people with type 1 diabetes do not develop any other autoimmune disease, even if they have positive antibodies to other organs.

“I HAVE TAKEN NON-HUMAN INSULIN IN THE PAST. WHAT ARE ANTI-INSULIN-BINDING ANTIBODIES?”

Before 1982, insulin in the market was mostly from animals (cows or pigs). Now, all insulin on the market is of human origin. Insulins made from cows or pigs are considered foreign substances by the human body. Many people who received them developed antibodies to insulin called “anti-insulin binding antibodies.” These antibodies can be measured and can interfere with the treatment of diabetes. The newer insulins are nearly identical to the human insulin and rarely cause antibodies to form.

There is much ongoing research on pancreatic antibodies, and many questions need to be answered. As more is learned and understood about what happens in the body to develop type 1 diabetes, there is promise of treatments to actually prevent type 1 diabetes in high-risk people, and to hopefully cure type 1 diabetes in newly diagnosed people. In the meantime, continue to focus on your diabetes through keeping your sugars as near normal as safely possible, keeping your blood pressure and cholesterol under control, and keeping as healthy as possible to decrease the risk of diabetes complications.

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Why should you take a drug that may cause damage to bones of your jaw or hip? The answer is simple.

If you have osteoporosis the drug may save your life. Osteoporosis [os-tee-oh-puh-ROH-sis] causes 250,000 hip fractures per year in this country. Hip fractures can be associated with many complications, including death in the months after the fracture. The drugs called the bisphosphonates [biss-FAHS-fuh-nates] (available under the trade names Actonel, Boniva, Fosamax, and Reclast) have been shown to reduce the risk of hip fracture by close to 50%. They also reduce the risk of other fractures, including spine fractures and fractures of other bones. When taken properly the bisphosphonates are safe for most people.

UNDERSTANDING OSTEOPOROSIS

“Osteoporosis is a condition in which the bones become thin and full of holes like a sponge. Why does that happen? Bones are constantly repairing themselves. Your bones are able to handle great stress, bearing up under constant stress. Every time you lift something, run, jump, or fall down your bones must be hard enough to support the load of what you are carrying, including the weight of your own body. At the same time, your bones must be flexible enough to bend slightly when you lift a heavy package. Your bones are able to do this because they are made of collagen, the same collagen that is under your skin and that holds you together. This allows your bones to be flexible. The bones also have calcium mixed in with the collagen, very much like vegetables floating in vegetable soup. The calcium crystals allow the bones to be hard so that your bones can give your muscles support and allow you to move, as well as carry and lift things. Day-to-day stress on your bones causes little cracks to occur, which must
be repaired. If they weren’t repaired, the damage from the little cracks would build up, weaken the bone structure, and allow fractures to occur. But with healthy bone, small bits of bone are regularly removed and new bone is laid down. You get a whole new skeleton on average every ten years!

In the most common type of osteoporosis, the process of removing old bone and putting down new bone happens too quickly. There is not enough time to fully replace the bone that has been removed as part of the normal repair process. This results in thinner bone that becomes porous (full of holes like a sponge or swiss cheese). Also, there is no time to fully repair the normal daily damage that occurs to our bones. In osteoporosis the “holes” in the bone and the normal daily damage results in weak bones, which will break.

WHAT THE BISPHOSPHONATES DO

The bisphosphonates slow down the bone repair cycles. This prevents further damage and porosity. Even though this does not sound like much, bisphosphonates work well, usually reducing fracture risk in the hip by close to 50% and fracture risk in the spine by more than 50%. This type of drug mostly works by keeping bone from breaking down, which is part of the problem in osteoporosis, but unfortunately it also can keep new bone from forming. This is because the two processes are connected. The breaking down of old damaged bone and the formation of new bone to replace the old are closely tied to each other like a beautiful ballet of the bones. So, when the bisphosphonates slow down bone breakdown, they also slow down bone formation, which may prevent proper healing of bone. This slowing down of bone healing seems to become more of a problem in people who use the drug for a length of time. If bone repair is slowed, then fracture – the very thing that the drug is supposed to prevent – may happen.

SOLVING THE PROBLEM

Both jaw damage and spontaneous hip fracture are rare and occur in people who have never taken this type of drug. Jaw damage may be due to the drug slowing down bone repair along with poor blood supply to the jaw in people with other diseases, but this is not certain. Spontaneous hip fracture may be related to how many years you take the drug. No studies have looked specifically at these complications and how to prevent them, so the suggestions given here are based on opinion rather than evidence.

If spontaneous hip fracture is related to how long you’ve taken the drug, then it makes sense to get off the drug now and then (a “drug holiday”). Exactly when you should take this holiday is not really based on any hard evidence, so you may get different suggestions. One suggestion is that you should stop every five years and then start again after one year if you are still at increased risk for fracture. Another way to decide is by getting tests called “bone markers.” These are tests measured from blood and urine specimens, which show how fast you are making new bone and how fast you are removing old bone. Some specialists feel that stopping the drug should be recommended when the markers get too low, meaning that bone activity has slowed down too much. This approach is also based on opinion, not hard evidence, which right now is lacking. Sometimes, stopping the drug may be risky (for example, multiple prior spine fractures while taking steroids), so good advice from an endocrinologist [en-doh-cri-NA-lo-jist] is important.

If you are going to have major dental work, you should stop the bisphosphonate some months before the procedure, and then start it again some months after all work is complete. Check with your dentist and endocrinologist.

Remember that these drugs do not replace the benefits of daily exercise, proper diet, and the correct amount of calcium and vitamin D. Opinions differ on how much and what type of calcium and vitamin D you should take. Check with your family doctor, gynecologist, and/or endocrinologist for professional recommendations.

PUTTING IT ALL TOGETHER

All drugs have risks and benefits. The bisphosphonates can be life-saving when used properly (knowing when to start, when to stop, and when to start again, if necessary) and when taken along with a proper exercise regimen, healthy diet, and adequate intake of calcium and vitamin D.

Dr. Donald Bergman is in private practice in New York City and is board certified in internal medicine and endocrinology and metabolism. He has been 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.
Before insulin was discovered in 1922 and the first oral diabetes medicine was available in 1955, the only treatment for diabetes was called “nutrition therapy.” Through the years, diabetes nutrition guidelines have varied greatly.

As far back as 1500 BC, Egyptians were first described treatment for excessive urination. The Egyptians treated this problem with a diet of grains, fruits, honey, and beer. Hindu doctors between 100 BCE to 700 CE observed that diabetes could be inherited. They also thought that diabetes was a result of too much food and alcohol and being sedentary. In 150 AD, the Greek physician Arateus described what we now call diabetes as “the melting down of flesh and limbs into urine.” From then on, doctors began to understand diabetes better, but treatment was still unclear.

By the seventeenth century, doctors noted that people with diabetes had sweet-tasting urine. Soon two different types of nutrition therapy emerged. Some doctors believed that restricting carbohydrates (carbs) was necessary to reduce the sugar in the urine. Other doctors felt that replacing sugar lost in the urine was the best treatment. A typical carb-restricted breakfast could include milk, a slice of bread with butter, and lime water. The midday meal might be a serving of plain pudding (either blood or suet pudding). A serving of rotten old meat or game was a common evening meal. However, a high-carb “cure” might include several servings of diluted milk boiled with white bread and barley or rice, oatmeal, potato, legumes, or porridge.

Around the early 1900s doctors prescribed diets low in total calories for people with diabetes. The most popular low-calorie diet for diabetes in the United States was the Allen Starvation diet, with a book available for home use. In 1921 Dr. Allen opened the first clinic in the world for people with diabetes. People on the Allen Starvation diet had to fast for several days until no trace of sugar appeared in their urine. Then the patient was started on a very strict, low-carb diet. The diet consisted of vegetables boiled 3 times, and very small amounts of protein and fat. The diet also recommended an occasional 1½ ounces of whisky for additional calories. The alcohol also helped to make the patient feel more comfortable as he/she were starving.

A noted doctor who supported this dietary approach stated, “It is not particularly important for a diabetic to know a great deal concerning the theory of the disease, but it is vital for him to be able to plan his diet intelligently, and to cooperate with his physician.” Needless to say, the person with diabetes did not have much say in what they could eat.

All of this changed after insulin was discovered. Dr. Elliot Joslin from Boston was the first to teach patients to care for their own diabetes. This approach is now referred to as diabetes self-management education. With Dr. Joslin’s process, the patient would spend several weeks in the hospital after being diagnosed with diabetes. Then, a traveling nurse trained by Dr. Joslin would go to the patient’s home and teach them how to manage their diabetes. Education included learning how to weigh, measure, and record every bite of food. Diets were carefully planned to match the insulin that had been prescribed. The diets were still very strict, but at least now people could eat some fruit, vegetables, and starchy foods. However, sugar and desserts were still not allowed. When the patient returned to the clinic for follow-up care, Dr. Joslin would spend up to half of the appointment talking about what his patient had been eating.
Renal impairment is the leading microvascular complication associated with type 2 diabetes (over 40%), followed by retinopathy (28.5%) and neuropathy (19.4%)—it is important to recognize these complications as soon as possible.1-4

According to the National Kidney Foundation, diabetes and renal impairment are considerably underdiagnosed, which may lead to disease progression because of missed opportunities to provide appropriate care for patients with these conditions.5

Microalbuminuria (albumin in the urine ≥30 mg/day or ≥20 µg/min) is the earliest clinical evidence of renal disease.6

Patients with renal impairment may have poor glycemic control (A1C ≥7%), may have hypertension (BP ≥130/80 mm Hg), and may have dyslipidemia as well as other comorbidities.5,7

It’s important to recognize microvascular complications in patients with type 2 diabetes as early as possible. Microalbuminuria is the earliest sign of renal disease, the leading microvascular complication, in type 2 diabetes.


患者伴有肾脏损害的可能有不良的血糖控制（A1c ≥7%），可能有高血压（BP ≥130/80 mm Hg），也可能有血脂异常以及其他并发症。5,7

重要的是要早期识别出二型糖尿病患者的微血管并发症。微量白蛋白尿是肾脏疾病最早期的标志，是微血管并发症中的一类重要表现。


微量白蛋白尿（尿中蛋白≥30 mg/day or ≥20 µg/min）是肾脏疾病最早期的临床证据。6

患有肾脏损害的患者可能有不良的血糖控制（A1c ≥7%），可能有高血压（BP ≥130/80 mm Hg），也可能有血脂异常以及其他并发症。5,7

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WHAT ARE THE ADRENAL GLANDS?
The adrenals are two small glands that look like mushroom caps. One adrenal gland sits above each kidney. These glands are 1-2 inches long and weigh only 1.5-2.5 grams. Even though they are small, the adrenal glands are very important. They make several hormones that are needed for well being and normal body functioning. The adrenal hormones play a major role in regulating metabolism and immunity; maintaining blood pressure, body water and minerals; and helping the body respond and adapt to stress.

WHAT ARE THE ADRENAL HORMONES? WHAT ARE THEIR FUNCTIONS?
Each adrenal gland is made up of a large outer zone—the adrenal cortex, and a small inner zone—the adrenal medulla.

The adrenal cortex produces three different kinds of hormones: glucocorticoids [gloo-koh-KAWR-ti-koids], mineralocorticoids [min-er-uh-loh-KAWR-ti-koids], and androgens.

CORTISOL
Cortisol is the major glucocorticoid. It regulates glucose, fat, and proteins and helps keep the body’s metabolism in check. Cortisol is important in regulating blood pressure. It also plays a role in controlling inflammation, and, by its action on the brain, has an effect on emotion and perception. The pituitary [pi-TOO-i-ter-ee] gland in the brain controls cortisol production.

ALDOSTERONE
Aldosterone [al-DOS-tuh-rohn] is the major mineralocorticoid. Its main function is to regulate sodium and potassium balance, as well as blood pressure.

ANDROGENS
Androgens cause some of the changes seen in puberty, such as growth of pubic and underarm hair, body odor, and acne.

The adrenal medulla [muh-DUHL-uh] produces a family of hormones known as catecholamines [kat-i-KOL-uh-meens].

CATECHOLAMINES
Catecholamines, such as adrenaline [uh-DREN-I-in], cause the “fight or flight” response. They also help mobilize sources of energy, since energy is needed in coping with stressful situations.

What happens if the adrenal glands are producing too many hormones? How can these be treated?

CORTISOL EXCESS
Too much cortisol can cause Cushing’s syndrome. This is usually because of a tumor in the adrenal gland or pituitary glands. Signs and symptoms of Cushing’s syndrome include the following:

- weight gain
- round or “moon-like” face
- fat in the back of the neck (called a “buffalo hump”)
- purple stretch marks on the belly
- lack of or fewer menstrual periods
- muscle weakness
- thinning of the skin and bones
- high blood pressure
- high blood sugars, and
- depression.
People who take steroids for a long time can also get Cushing’s syndrome. In most cases of Cushing’s syndrome from an adrenal or pituitary tumor, the tumor will need to be removed.

**ALDOSTERONE EXCESS**

Too much aldosterone can be produced by both adrenal glands or by a tumor in one of the adrenal glands. This can cause high blood pressure and sometimes low potassium levels.

If a tumor is found, it will usually have to be removed by surgery. In patients who do not have a tumor, and those who cannot or are not willing to go through surgery, too much aldosterone can be treated with medication.

**ANDROGEN EXCESS**

Too much androgen is usually caused by a genetic condition (congenital adrenal hyperplasia [hy-per-PLAY-zuh]), or to an adrenal cancer. Congenital adrenal hyperplasia is the result of a lack of enzymes that are necessary for cortisol and aldosterone to be produced. Because of the lack of enzymes, the adrenal glands will make less cortisol and aldosterone and more androgens. This disorder is sometimes diagnosed at birth in girls who may have genitals that aren’t clearly male or female. Sometimes this disorder is diagnosed later in life around puberty. Too much androgen in females causes excess facial hair, acne, and deepening of the voice. The condition is usually treated with corticosteroids [kor-tih-koh-STER-oids]. Adrenal cancer is rare. In some cases, adrenal cancer can produce excess androgens. This results in acne, excess hair growth, and decreased/absent menstrual cycles in females. Adrenal cancer is treated with surgery when possible, and in some cases additional medications, chemotherapy, or radiation are needed.

**CATECHOLAMINE EXCESS**

An adrenal tumor that produces excess catecholamines [kat-i-KOL-uh-meens], is known as a pheochromocytoma [fee-oh-kroh-moh-sahy-TOH-muh]. These types of tumors are rare. Even though most of these tumors are not cancerous, it is very important to test for this condition. High levels of catecholamines can cause a dangerous rise in blood pressure. Symptoms include headaches, sweating, palpitations, paleness or flushing, and elevated blood pressure. These symptoms aren’t always present. The high blood pressure may be continuous or periodic. Once blood pressure is controlled, these tumors can be treated by surgery.

**WHAT HAPPENS IF THE ADRENAL GLANDS ARE NOT PRODUCING ENOUGH HORMONES? HOW CAN THIS BE CORRECTED?**

Adrenal insufficiency [in-suh-FISH-uhn-see], or not enough cortisol, can be from a disorder in the adrenal gland itself. Such a disorder can be caused by the immune system going haywire and destroying the adrenal glands. It can also be caused by bleeding or infection in the adrenal glands. This condition usually goes hand in hand with aldosterone deficiency. Symptoms include fatigue, weakness, dizziness, and low blood pressure. These symptoms can sometimes be severe. Treatment involves replacing the lack of hormones. Adrenal insufficiency can also be caused by the pituitary gland failing to stimulate cortisol production by the adrenal glands. In the majority of these cases, aldosterone production is sufficient. It is usually treated by giving corticosteroid hormones to replace cortisol.

**WHAT IS AN ADRENAL INCIDENTALOMA?**

An adrenal incidentaloma [in-sih-den-tah-LOH-mah] is an adrenal tumor that is found unexpectedly during a CT scan (“CAT scan”). Adrenal incidentalomas are found in about 4% of CT scans. When one of these tumors is found, it is important to make sure that it is not cancerous and/or is not producing excess hormones. Cancerous tumors look different than non-cancerous tumors. Blood or urine tests can check for excess hormone production. Adrenal tumors that appear not to be cancerous or hormone-producing can be watched, but those that are cancerous or are producing excess hormones usually need to be removed by surgery.

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No Time like the Present to Prepare for THE UNKNOWN

BY SARAH SENN

We often think about disasters in terms of the seasons of the year and the regions affected. However, a disaster can happen on any day of the year, in any part of the country or world.

You might say, “I don’t live in Florida, so I don’t have to be prepared during hurricane season,” or “I don’t live in the north, so I can wait until after the winter to prepare my disaster kit.” But the truth is, no one knows when a disaster might strike. The best strategy is to always be prepared.

With 2011 underway, now is a great time for you to evaluate your disaster plan. Throughout the year, there are a variety of natural disasters that you may encounter, which could compromise your ability to manage your diabetes if not prepared.

• WINTER STORMS / ICE STORMS

There is often advance warning before a winter storm or ice storm; however, the severity of such a storm is frequently unknown until after the storm is over. During the winter months, simple space heaters can cause house fires that leave hundreds homeless each year. Snowstorm and blizzard conditions can make roads impassable. Ice packed on power lines can cause outages for days and even weeks. In 2009, Kentucky experienced one of the worst ice storms in history, crippling communication and transportation systems. In late 2010, much of the southeast US received record-breaking snowfall, shutting down roads and forcing businesses to close.

• SEVERE THUNDERSTORMS, FLOODING AND TORNADOES

Severe weather storms that produce torrential flooding, and in some cases tornadoes, are not limited by time or by region. Dangerous lightening from severe storms can start fires, and high gusts of wind can compromise structures and make driving nearly impossible. In 2010, the Federal Emergency Management Agency (FEMA) cited at least 50 major disaster declarations in the US due to flooding. According to the National Weather Service, in 2010, there were 1,180 confirmed tornadoes in the US.

• TROPICAL DEPRESSIONS, TROPICAL STORMS AND HURRICANES

Many patients think if they don’t live in a coastal state, they won’t be affected by a hurricane. However, this is often not the case. In 2010, Arkansas declared a state of emergency in the wake of Hurricane Gustav, due to severe storms and flooding. While many states may not experience the brunt force of a hurricane as it makes landfall, the storm system can cause excessive flooding and severe storms as it moves across land. A tropical depression or storm can be just as devastating as a hurricane, and can linger for days producing a greater threat for severe weather.

• WILDFIRES

Wildfires can be a threat at almost any time of the year, especially in regions lacking rain and prone to excessive heat. While these fires would seem to be localized to certain regions or states, they can spread at a moment’s notice, destroying anything in their path, including homes. In October 2003, a wildfire in Cedar, CA destroyed 275,000 acres of land as well as 2,400 structures and claimed 15 lives. According to the National Interagency Fire Center, there were nearly 72,000 wildfires in the US in 2010, burning nearly 3.5 million acres of land.

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Lilly congratulates the American Association of Clinical Endocrinologists on its 20-year anniversary and for continued care of those with endocrine disorders.
“Hey Doc, my cat is really getting fat! She only eats a little bit of dry food every day. Do you think she could be hypothyroid?” This is a common question that veterinarians are asked regularly, mainly because there is an epidemic of overweight indoor cats these days.

It is rare to ever see a cat that is truly hypothyroid. Most cats are overweight, or even obese, because of their sedentary lifestyles and because of the cat food that they eat. For years, many of us have believed that dry food was better for our cats. Good marketing, convenience, and affordability have helped to make dry foods the main diet of American cats. But only in the past several years has better information on ideal diets for cats become the focus of more discussion.

Cats are carnivores (that is, they eat only meat). Unlike dogs and humans, they cannot digest plant-based proteins. In the wild, they eat animals that they kill, and their nutrients come from the prey’s muscle and intestinal contents. Almost all dry foods are too high in plant-based proteins. Dry foods are made mostly from corn, wheat, soy, and rice because of the low cost. So, even though the packages say that they meet the required protein levels for cats, the inability to utilize these proteins means that cats don’t receive the protein levels that they should. Dry foods are also cooked at high temperatures to kill off germs, which lessens the biological value of the proteins. The only reason cats even eat these foods is because they are tricked into liking them—the food is coated with animal fats and is crunchy.

The bottom line is that most of these ingredients are just carbohydrates (“carbs”) to a cat. Since cats can’t use these carbs for energy, the carbs are stored as fats. These carbs affect a cat’s blood glucose (“sugar”) and insulin. Plus, some foods contain soy, which affects a cat’s thyroid gland.

We now know that a better diet for cats is a meat-based, high-protein, low-carb canned food. Certain home-cooked or raw foods are also healthy for your cat. Starting your kitten on these types of diets at a young age will help prevent the typical weight gain seen in so many cats. Kittens must be given a wide variety of foods before they reach six to eight weeks of age; because, at this point they have chosen the kind of food that they will always crave. If they only receive dry food up to this time, it can be very hard to change their food to wet food later in life, but it is possible.

Also, weight can be managed by getting your cat to exercise more by promoting outdoor activities, using a laser light to help them play and run, and putting their food higher up so they have to jump for it. All of this makes them burn more calories and increase muscle tone.

But what happens when the opposite occurs? If you notice your cat losing weight, even though he or she seems to be eating well, but is maybe drinking a little more water
than before, what could be going on? At this point, most people would take their cat to the veterinarian. Several diseases can cause this extreme weight loss; the most common are diabetes mellitus [dye-a-BEE-tus MELL-i-tus] and hyperthyroidism [hy-per-THY-roid-ism].

Obesity is one of the more likely reasons for diabetes to occur. The high amount of carbs consumed with a regular dry diet causes too much insulin to be produced over too long a period. This leads to the body not being able to make enough insulin to keep blood sugars at a normal level. The body’s cells can’t receive sugar from the blood because there is no insulin to transfer it to those cells. The body can’t detect that there is sugar in the blood, so it still thinks it is hungry. Excess sugar is lost in the urine, drawing extra water with it, increasing the urine that is produced, increasing the cat’s ability to keep up with the loss of fluids.

If sugar is found in the urine, and your cat has elevated blood sugars, then diabetes is diagnosed. Most cats have non-insulin dependent diabetes, similar to type 2 diabetes in humans. The cat’s diet should be changed right away to a canned, high-protein, low-carbohydrate meal. Insulin is also started. Often, once the diet is changed, many cats will temporarily go into remission and stay there for some period, no longer needing their insulin. Constant monitoring of symptoms, along with regular visits to the veterinarian, is essential for healthy management of this disease.

Another leading reason for extreme weight loss is hyperthyroidism [hy-per-THY-roid-ism]. This is the most common endocrine disease of cats. About 98% to 99% of these cases are caused by a benign [bee-nine] adenoma [ah-de-NO-ma], which is a nodule (lump) of the thyroid gland that is working overtime. Less than 1% to 2% of these nodules are caused by cancer. No one yet is sure why we are seeing more of this disease, but, once diagnosed, it must be treated promptly before more serious side effects occur, including loss of muscle tone, fast heart rate, irregular heartbeat, vomiting, diarrhea, and behavioral changes. The best therapy, radioactive iodine (radioiodine [RAY-dee-oh-EYE-oh-dine], can actually cure the disease. The injected radioiodine destroys all abnormal thyroid cells, whether in the neck, chest, or other areas, and leaves behind inactive normal cells. A board-certified specialist in radiology, who has the state-approved facilities to handle the radioiodine, must perform it at his or her specialty clinic. Once

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It is rare to ever see a cat that is truly hypothyroid.

Dr. Karen Werner-Petak has been a practicing veterinarian in Houston for over thirty years. She currently serves on the Texas Veterinary Medical Association’s Ethics and Grievance Committee. She is particularly interested in dermatology, endocrinology, gastrointestinal and cardiac cases in the dogs and cats that she sees. She has been married to Dr. Steven Petak for 32 years and has two children, Kate and Alex.
injected into the cat’s body, your cat will be radioactive for several days and will be able to go home with you once radioactivity levels are safe. This treatment is very easy for the cats to handle, and they almost always begin to gain weight after their treatment.

Other methods of treating this disease include surgical removal of the thyroid gland, or daily dosing of methimazole [meh-THY-mah-zole]. Methimazole will reduce the active thyroid levels in the body, but it must be given by mouth or as a gel rubbed on the inside of your cat’s ear, once or twice daily, for life. This drug only manages hyperthyroidism, which means that your cat will need regular blood work for life. There are several side effects with this drug, since it was made for humans, not cats.

Unlike humans, cats do not typically have to go on oral thyroid hormone replacement after therapy. We are not sure why cats don’t seem to need this replacement.

As to the original question posed at the beginning, cats are rarely found to be hypothyroid. That is almost never the reason why they become overweight, as you can now understand. Please ask your veterinarian about changing your cat’s diet if you think he or she is overweight. Though it was once thought to be cute when your cat was pudgy, we now know that it can lead to many other serious problems. ☺

• EARTHQUAKES

Earthquakes tend to be localized to areas near fault lines; however, the timing and severity of an earthquake and its aftershocks are virtually unknown. While some earthquakes may rattle walls and be considered minor, no one knows when a catastrophic earthquake like the event in Haiti could occur. Structural damage can limit accessibility to resources and compromise safety. Some fault lines are more active than others, and some have not been active in more than a hundred years. However, earthquakes are unpredictable and the potential for this type of disaster should not be overlooked.

According to FEMA, there are 9 US states at very high risk, 10 states at a high risk and an additional 21 states at a moderate risk of experiencing an earthquake. This means 80 percent of the US is at risk for an earthquake.

Unfortunately, as we know, we can’t always predict when the next disaster will strike. The best thing that we can do is to prepare and stay prepared. Whether it’s January or June, it’s never too late to prepare for disaster. The American College of Endocrinology developed a checklist of essential items that diabetes patients need to prepare before a disaster. This list is designed to help these patients “weather the storm” and avoid unnecessary consequences and complications. The checklist details items that every diabetes patient should include in his/her disaster kit, as well as other useful tips to help keep you safe.

The EmPower Diabetes Disaster Plan is just one of the many ACE resources available for patients. With a free magazine, website, school program and many other resources, including the disaster plan, the EmPower program is reaching patients coast to coast and around the world. EmPower is equipped to educate patients on the importance of primary and secondary prevention. These resources are available for free, and we hope that you feel empowered too with this information.

The EmPower Diabetes Disaster Plan is made possible through the generous support of Eli Lilly and Company. ☺
The goal of the American College of Endocrinology’s EmPower program is to give you, the reader, all of the tools that you need to manage your endocrine disorder. But with NEARLY 26 million Americans with diabetes, and another ESTIMATED 79 million with pre-diabetes, it’s going to take many groups working together to get valuable information to everyone who needs it.

That is why we are proud to share the following announcement:

The National Diabetes Education Program, a federally sponsored initiative of the National Institutes of Health and the Centers for Disease Control and Prevention, is proud to collaborate with ACE to bring information to the public on healthy living to prevent and manage disease.

The National Diabetes Education Program (NDEP) is a partnership of the National Institutes of Health, the Centers for Disease Control and Prevention, and more than 200 public and private organizations. The NDEP website (www.YourDiabetesInfo.org) has more than 400 audience-specific publications and resources for people with and at risk for diabetes, health care professionals, businesses and school personnel. These items, which include publications, public service announcements, posters, and articles, promote diabetes prevention and control messages. MANY Materials are adapted INTO 17 different languages. Among the materials are tip sheets and brochures tailored to high-risk audiences, including African Americans, Hispanics/Latinos, American Indians, Alaska Natives, Asian Americans, Pacific Islanders, older adults, teens, and women with a history of gestational diabetes and their children. To download or order materials online, please visit www.yourdiabetesinfo.org. To order NDEP publications by phone, call 1-888-693-NDEP (1-888-693-6337).
In the early 1950s the American Diabetes Association, the American Dietetic Association, and the United States Public Health Service joined forces to create national diabetes dietary recommendations. This dietary approach was called the Exchange Lists Meal Planning and became the Carbohydrate Counting meal planning. Now, the diabetes diet is tailored to the individual.

Thank goodness times have changed! However, “what can I eat” is still very commonly asked by people with diabetes.

SO, WHAT IS RECOMMENDED IN 2011?

• Try to eat at regular times. Don’t eat all of your food at one time. Instead, eat smaller amounts at each meal.

• Use a plate to see how much you are eating, instead out of the bag or box.

• Eat whole foods and whole grains more often – they are good sources of fiber.

• Drink water when you are thirsty instead of soda or juice.

• Eat five or more servings of vegetables and fruits. Try picking from the rainbow of colors that are available. Fresh and frozen vegetables are usually lower in salt than canned and are a good value.

• Choose non-starchy vegetables more often, such as spinach, carrots, broccoli or green beans.

• Choose lean protein foods, such as chicken and turkey without skin, and cuts of beef and pork that end in “loin.”

• Choose low-fat and non-fat dairy foods.

• Try to eat fish two or three times per week.

• Try to eat meatless meals once a week or more using kidney or pinto beans or lentils.

• Sweets and desserts are okay for people with diabetes, but should be eaten in small amounts. Sweets are foods to eat “once in a while.” People without diabetes should follow the same advice!

If you are still struggling to figure out what to eat, ask for a referral to a registered dietitian [dye-uh-TISH-un] or certified diabetes educator to help you create an individualized meal plan.

LETTERS FROM READERS

Question: My doctor says I need to lose weight, but it’s very hard. What’s the best way to quickly lose weight?
Answer: You are right, losing weight can be very difficult. But the important thing is not to lose weight quickly, it’s to lose it permanently. There are thousands of "lose weight quick" programs, but the only way to make a lasting difference is to change your lifestyle. Start small by doing just a little more physical activity, or making healthier food choices for at least one meal a day. Once you can sustain that change for a while, you’ll feel and see the difference! And you’ll be motivated to make another small change. Add up enough small changes, and you’ll have real and sustained weight loss.

Question: What’s the perfect diabetes diet?
Answer: There is no such thing as a perfect diabetes diet. But the most important thing to remember is all things in moderation. There are no foods that are off limits to you, but too much of anything can be a problem. For tips on eating healthy with diabetes and a number of other conditions, check out The Complete Guide to Lifelong Nutrition on Amazon.com

Question: I saw a copy of your magazine in my doctor’s office, and didn’t pick it up. Is there any way I can get a copy?
Answer: In fact, there are many ways. You can go to www.powerofprevention.com to access online copies of every issue of the magazine. You can also send an e-mail to feedback@powerofprevention.com

Question: I saw your article about Olympic athlete Gail Devers’ struggle with thyroid disease. I’d like to tell her what an inspiration she is.
Answer: Gail’s story is truly inspiring and yet, not unlike the struggle that millions go through every day. We’ve shared your comments with Gail, and we’re sure she appreciates them. Anyone who would like to comment on an article in this magazine can send your thoughts to feedback@powerofprevention.com and we will make sure that the appropriate person receives your message.
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.
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