

NIH MedlinePlus

the magazine

Trusted Health Information
from the National
Institutes of Health

Winter 2008

Stressed Out?

Ways to keep your emotions
from making you sick

Healthy Mom & Baby

Tips on having a healthy
pregnancy

Magician of the Heart

Dr. Michael DeBakey and
heart research advances

American Idol's **Randy Jackson**
doesn't let diabetes break his rhythm



Preventing & Controlling

Diabetes and Kidney Disease

Welcome to the Winter 2008 edition of *NIH MedlinePlus* magazine, filled with trustworthy information for you and your family from the nation's top medical experts. In this issue, we are pleased to bring you the latest on diabetes, kidney disease, the impact of stress on your health and well-being, and much more.

As always, we list useful, online references for you, always starting (of course!) with the National Library of Medicine's www.medlineplus.gov. More than 120 million people now depend on this popular, award-winning source for in-depth answers to their questions about diseases, how to stay well, and where to go for more information on literally thousands of conditions.

"This magazine is a good resource for me and my patients."

As Dr. Cheryl L. Laffer, Associate Professor of Medicine at Texas A&M College of Medicine, told us

recently, "The value of *MedlinePlus* magazine is in the trusted source and the references for more information. There is a nice pairing of human interest ... along with diagnostic treatment information and the latest research."

Said another physician, from Pasadena, "This magazine is a good resource for me and my patients. I really like the information because it is aimed at the public and includes current issues."

NIH MedlinePlus magazine is but one of the many important public services provided to you by your National Library of Medicine. We encourage you to take out a free subscription, and to visit and recommend www.medlineplus.gov to your family and friends.

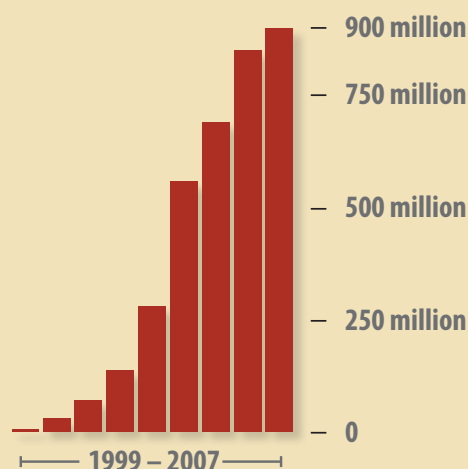
On behalf of the Friends of the National Library of Medicine, we thank you for your interest in *NIH MedlinePlus*.

Sincerely,

Paul G. Rogers, Chairman

Friends of the National Library of Medicine

MedlinePlus.gov Nears 1 Billion Page Views



Since 1999, usage of the MedlinePlus.gov Web site has soared. In 2007, more than 120 million unique visitors came to the site for free, authoritative medical and health care information. That resulted in almost a billion Web page views on the Web site. And the site's popularity continues to grow.

How You Can Help the Library Extend Medical Knowledge

You can be a part of the Friends' mission to help educate the health, corporate, and public communities about NIH's many vital research initiatives.

If you or your company can help to support and expand the Library's efforts by providing sponsorship and other charitable donations for *NIH MedlinePlus* magazine's publication and distribution, many more thousands of Americans will gain valuable, free access to the world's best online

medical library, www.medlineplus.gov.

For more information, please visit www.fnlm.org or call (202) 719-8094. Written correspondence may be sent to FNLM, 2801 M Street NW, Washington, DC 20007.

The FNLM is classified as a 501(c)(3) nonprofit organization for federal tax purposes.

Donald A.B. Lindberg, M.D.

Director, NLM

Betsy L. Humphreys, M.L.S., A.H.I.P.

Deputy Director, NLM

Donald West King, M.D.

Deputy Director for Research
and Education, NLM

Kathleen Cravedi

Director, Office of Communications
and Public Liaison, NLM

Elliot Siegel, Ph.D.

Associate Director for Health Information
Programs Development, NLM

Naomi Miller, M.L.S.

Manager of Consumer Health Information, NLM

Patricia Carson

Special Assistant to the Director, NLM

Christopher Klose

Magazine Coordinator

Peter Reinecke

Strategic Advisor, NLM



Paul G. Rogers

Chairman, Friends of the National Library of Medicine (FNLM)

Kathy White

Co-Chair, Corporate & Annual Event Fundraising Development Committee
FNLM Board of Directors

*(If you are interested in providing a sponsorship or other charitable donation
to support and extend the reach of this publication, please contact
Kathy White at (336) 547-8970, x 3327 or kathy.white@vitality.com)*

Friends of the NLM

2801 M Street NW, Washington, DC 20007

NIH MedlinePlus Magazine Editorial Board

Don Detmer, M.D. • Jordan Cohen, M.D. • The Hon. Paul G. Rogers
Jay Sanders, M.D. • Barbara Redman, Ph.D. • Roger Bulger, M.D.
Kenneth Forde, M.D. • Leslie Kuhn, M.D.



Selby Bateman, Ginny Gaylor, Managing Editors

Jan McLean, Creative Director

Traci Marsh, Production Director

NIH MedlinePlus, the Magazine is published by
Vitality Communications
407 Norwalk St.
Greensboro, NC 27407
(336) 547-8970

William G. Moore, President

Pat Blake, Controller

Pat Schrader, Administrative Assistant

Articles in this publication are written by professional journalists.

All scientific and medical information is reviewed for accuracy by representatives of the National Institutes of Health. However, personal decisions regarding health, finance, exercise, and other matters should be made only after consultation with the reader's physician or professional advisor. Opinions expressed herein are not necessarily those of the National Library of Medicine.

Photos without credit lines are provided by NIH.



21

Inside
Front
Cover

Letter from Friends of the NLM Chairman Paul G. Rogers

2 From the Director: Elias Zerhouni, M.D.

4 Emotions and Health: The Mind-Body Connection

8-16 Special Section: Are You at Risk for Kidney Disease and Diabetes?

17 Best Buy Drugs: How Can You Tell?

18 Then & Now: Dr. Michael DeBakey

20 Healthy Pregnancy

25 HealthLines from NIH

28 This Just In

29 NIH Quickfinder and NIH MedlinePlus Advisory Group

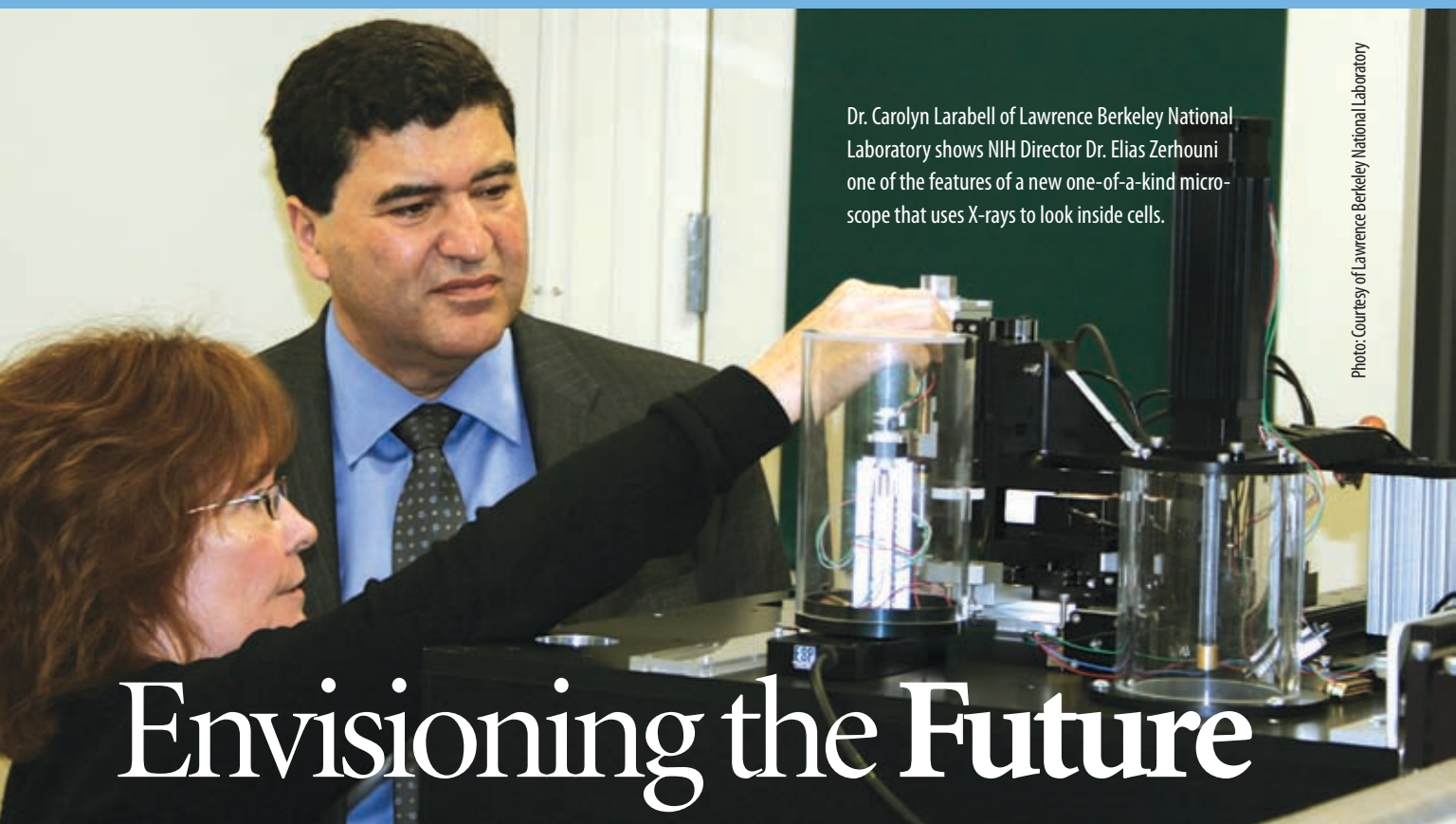


14



13

Photos: (top) Courtesy of Erica Hobby;
(cover and middle right page) Fox Broadcasting Company;
(bottom) NBC Universal, Inc.



Dr. Carolyn Larabell of Lawrence Berkeley National Laboratory shows NIH Director Dr. Elias Zerhouni one of the features of a new one-of-a-kind microscope that uses X-rays to look inside cells.

Photo: Courtesy of Lawrence Berkeley National Laboratory

Envisioning the Future

Director Dr. Elias Zerhouni is a world-renowned leader in the field of biomedical imaging—a science that uses advanced technologies to capture, store, analyze, and display images of the body. He is credited with developing imaging methods used for diagnosing cancer and cardiovascular disease. He is also one of the world's premier experts in magnetic resonance imaging (MRI), as well as computed tomographic densitometry.

MedlinePlus: As a leader in biomedical imaging, what do you consider most important for the public to understand about the field today?

Dr. Zerhouni: Biomedical imaging is fulfilling a fundamental dream of scientists to be able to peek into the human body without destroying what we're looking at. That was the impetus for my own research. Before imaging, you had to do surgery. Over the next 40 years, imaging is going to help unravel the mysteries of how our molecules, cells, tissues, and systems interact. It will be important for medical applications, but even more important for basic research and understanding biology.

MedlinePlus: There has been lots of news recently about the value of CAT scanning in detecting certain cancers. What is your view?

Dr. Zerhouni: Essentially, computerized axial tomography (CAT)

is a way of looking at biology indirectly; at anatomy, structure, and function. And whenever you have an indirect technique, you want to know how accurate it is. You don't want too many false negatives, where you are missing something, or false positives, where you are seeing something that you think is a disease but isn't.

That's why CAT scanning has been developed—to detect lesions in organs like the lung or the rest of the body. And that's why we're developing other tests, like ultrasound for example, to look at intrauterine pregnancies, or mammography to look at early cancers.

But you have to be very careful. The value of such testing depends on its accuracy. For accuracy, we need to do very rigorous trials. It's not enough to believe that something works. We have to provide the American public with scientific, evidence-based answers.

MedlinePlus: Your work has helped move forward the science of magnetic resonance imaging (MRI). What do you see as its current and long-term benefits?

Dr. Zerhouni: My work has been directed at the intersection of the physical sciences—mathematics, physics, engineering—and biological sciences. I believe deeply that we must be able to quantify what happens in biology. It's not enough to know that this molecule interacts with that one, or by how much and when? You need to quantify it.

From the beginning, I have sought to bring to biology rigorous quantitative techniques at all levels of imaging, whether trying to diagnose disease in the hospital, or in the laboratory. Quanti-

“My interest, my dream, was that, in fact, you could look inside the human body without destroying it.”

fication is the key to the future. Science advances because it has better tools to measure exactly what happens in the spot where it happens. That's what imaging is all about: to localize or extract information, then do something with it.

MedlinePlus: What sparked your interest in radiology and medical imaging?

Dr. Zerhouni: At the time I became interested, radiology was a backwater—not very prestigious. But I loved physics and math, was interested in medicine, and had an uncle who was a radiologist. He said, “You know, you might be able to marry those two things.” One day, he showed me an image of the world's very first CAT scan. It was grainy and terrible. But when he told me how it was acquired—with an X-ray that goes around with a computer recording the data, I said, “This is it. I can contribute to this!” My interest, my dream, was that, in fact, you could look inside the human body without destroying it.

MedlinePlus: You said that we are entering a new era in biomedical imaging. What do you see as its long-term opportunities and benefits?

Dr. Zerhouni: The new era is really the need to understand exactly the complex biological interactions that result in disease—or good health, from the molecular and atomic levels on up. Whether it is electron microscopy or CAT scanning, mouse or human imaging, all are bound by a common thread. And that thread is the quest to know what happens inside, without destroying the system and understanding how it really works.

MedlinePlus: How is NIH prepared to take advantage of this new biomedical-imaging era?

Dr. Zerhouni: We've seen an explosion of new ideas. For example, at NIH, Dr. Jennifer Lippincott-Schwartz and colleagues have created photo-activated light microscopy. This is a technique that relies on digital optical imaging, rather than X-rays, CAT scanning, or MRIs. It can actually highlight a single molecule with another that emits light. And the light can be triggered to determine

the exact spot in the cell where and how something happens. This is going to revolutionize the way we understand biology in health and disease.

MedlinePlus: To approach the topic differently, what promising new developments and technologies in imaging can we expect in the near future?

Dr. Zerhouni: Today, as many as 25 different techniques are under way. With magnetic resonance imaging, for example, we can see what regions of the brain are activated when you think or do things. That was an impossible dream 15 years ago that now has enormous impact.

There is also a convergence of chemistry with the development of molecules that, for instance, can shine light or send signals that can be detected with a microscope or an ultrasound machine. So scientists are now thinking, “Wait, if I can see something, then I can do something about it.” This is leading to nanotechnology cancer therapy, for example, in which drugs are inserted in a molecule that is homed in on a cancer cell, and then triggered by ultrasound or other techniques, such as heat.

MedlinePlus: Imaging technologies aren't cheap. Will NIH and other imaging pioneers have the funding to fulfill the promise of these technologies in the United States?

Dr. Zerhouni: When I began researching, in 1980, the first MRI scanners cost \$3 million—the equivalent of \$5 million today. People warned me away, saying “It's going to be a dead end because it's so expensive.” Over the years, however, just as with cell phones, the computers have become more powerful, the MRI procedure faster and cheaper.

It's always the same with new technology. The first prototypes are always expensive, but they must be supported. If not, then all that the new field promises will never be explored, let alone fulfilled.

MedlinePlus: Is there anything else?

Dr. Zerhouni: The key in science today is to understand that the complexity of biology is much greater than we thought 20 or 30 years ago, and as we've discovered more, we need more information at the local level. That is why imaging has become so important.

Even though I was fortunate to be in on its birth, I believe we are on the verge of another period in which imaging is going to be even more central to our understanding of biology. I would urge young scientists to get in on this exciting time. But I would also caution that to be good in imaging, they will have to be good at multiple disciplines. And they must be able to work with different people.

Chemistry must work with physics, which has to work with biology, with medicine, surgery, and all that. It may be difficult. But it is exciting. So my message is: break the barriers!

The Mind-Body



Emotions and Health

Doctors have pondered the connection between our mental and physical health for centuries. Until the 1800s, most believed that emotions were linked to disease and advised patients to visit spas or seaside resorts when they were ill. Gradually emotions lost favor as other causes of illness, such as bacteria or toxins, emerged, and new treatments such as antibiotics cured illness after illness.

More recently, scientists have speculated that even behavioral disorders, such as autism, have a biological basis. At the same time, they have been rediscovering the links between stress and health. Today, we accept that there is a powerful mind-body connection through which emotional, mental, social, spiritual, and behavioral factors can directly affect our health.

Mind-body medicine focuses on treatments that may promote health, including relaxation, hypnosis, visual imagery, meditation, yoga, and biofeedback.

Over the past 20 years, mind-body medicine has provided evidence that psychological factors can play a major role in such illnesses as heart disease, and that mind-body techniques can aid in their treatment. Clinical trials have indicated mind-body therapies to be helpful in managing arthritis and other chronic pain conditions. There is also evidence they can help to improve psychological functioning and quality of life, and may help to ease symptoms of disease.

Connection

How to Fight Stress and Ward Off Illness

What you Can Do to Protect Yourself

By Celia Vimont

Today scientists are looking at how stress makes people ill, and what can be done to help prevent illness caused by stress.

"This new science is forcing the medical community to take more seriously the popular notions of the mind-body connection," says Esther M. Sternberg, M.D., director of the Integrative Neural Immune Program at the National Institute of Mental Health. In response to stressful events, our bodies pump out hormones. These hormones aren't necessarily harmful and can be very useful, says Dr. Sternberg, author of *The Balance Within: The Science Connecting Health and Emotions*. "The problem is when the stress response goes on for too long," she says. "That's when you get sick. Hormones weaken the immune system's ability to fight disease."

Dangers of Chronic Stress

Unhealthy levels of stress come in many guises. You may have to take care of a chronically ill person—and that's stressful. Or you may be stressed from being in constant pain. Work related issues, marriage or family problems, and financial difficulties can generate chronic stress. Severe, chronic stress can damage our bodies in many ways.



Esther M. Sternberg, M.D.

"Chronic stress has been shown to prolong wound healing, decrease response to vaccines, and increase the frequency and severity of upper respiratory infections," Dr. Sternberg says.

Stress also can aggravate existing health problems. It can worsen angina, disturb heart rhythm, raise blood pressure, and lead to stroke. It can spark asthma and may affect the digestive system, making ulcers, acid reflux, or irritable bowel problems worse. Stress can play havoc with your nerves and muscles, causing backaches, tension headaches, or migraines.

Take Yourself "Offline"

"If you feel stressed all the time, you need to take yourself 'offline,'" Dr. Sternberg urges. "We reboot our computers when they are overworked, but we don't seem to do it with our bodies."

"If you're exhausted from constantly working on deadline or caregiving, take a vacation—they're not luxuries, they're physical necessities. Find a place of peace where you can stop, look, and listen." If vacations are out of the question, Dr. Sternberg suggests meditation to rest body and mind. "Evidence shows that meditation bolsters immune function by reducing stress hormones that dampen immune cells' ability to fight infection," she says.

Exercise is a great way to improve your mood, and it changes the body's stress response, she says. If starting an exercise program seems too hard, then go slowly, she advises. "A few minutes are better than no minutes—you can gradually increase how much you exercise every day. You don't need to go jogging—walking has significant health benefits."

Yoga helps many people relax, while others find peace of mind through prayer, music, reading, or art. "We need to find our place of peace and try to go there every day," she says.

Getting enough sleep is very important for protection, Dr. Sternberg emphasizes. "Lack of sleep can change moods, cause irritability, weight gain, inability to perform, and poor memory."

When to Seek Professional Help

If the stress is bad enough that you can't fix it on your own, Dr. Sternberg recommends seeking professional help. In some people, what may seem like ongoing stress is actually depression.

Possible signs of depression include:

- Often waking up in the middle of the night with feelings of anxiety
- Suicidal thoughts
- Loss of weight and appetite
- Not wanting to be around other people
- Constant irritability

"Depression is an imbalance of hormones and nerve chemicals—it's a biological illness," Dr. Sternberg says. "And highly treatable."

Stress and Your Brain

Researchers have long wondered why some people are resilient to stress while others aren't. A new mouse study may have brought them a step closer to the answer.

Dr. Eric J. Nestler of the University of Texas Southwestern Medical Center led a research team investigating the vulnerability of mice to stress after social defeat. When mice are put in cages with bigger, more aggressive mice, some still avoid social interactions with other mice even a month later—a sign that the stress has overwhelmed them. Some, however, adapt and continue to interact with others. The differences between these groups gave Nestler and his team the opportunity to examine the biology behind stress resilience. Their research was funded by NIH's National Institute of Mental Health (NIMH).

The researchers found that the mice that do not recover from stress have higher rates of nerve cell electrical activity in the cells that make dopamine. Dopamine is a chemical that helps transmit nerve impulses. More nerve cell electrical activity caused the subject mice to make more of a protein (BDNF), which has been linked to weakness to stress.

"The fact that we could increase these animals' ability to adapt to stress by blocking BDNF and its signals means that it may be possible to develop compounds that improve our own resilience to stress. This is a great opportunity to explore how to increase resistance in situations that might otherwise result in post-traumatic stress disorder, for example," said Dr. Nestler.

Can Prolonged Stress Affect Whether Breast Cancer Returns?

Recently, the National Institute on Aging (NIA) and the National Cancer Institute (NCI) funded a study of 94 women whose breast cancer had spread (metastatic) or returned (recurrent). Researchers asked them whether they had ever experienced stressful or traumatic life events. The categories ranged from traumatic stress to some stress to no significant stress. According to David Spiegel, M.D., one of the study's authors and a faculty member at the Stanford University School of Medicine, there were marked differences.

"Comparisons revealed a significantly longer disease-free interval among women reporting no traumatic or stressful life

events," says Dr. Spiegel. "A history of traumatic events early in life can have many physical and emotional effects, including changing the hormonal stress response system."

But Dr. Spiegel says there is good news. "Our research has shown that people do better in the aftermath of traumatic stress if they deal with it directly. Facing, rather than fleeing it, is important. We have conducted support groups for more than 30 years, and found that dealing with traumatic and very stressful experiences is much healthier. In other words, don't suppress your emotions."

Complementary and Alternative Approaches to Health

Over the past few years, many Americans have heard about complementary and alternative medicine, which is called CAM. In fact, more than one-third of American adults (36 percent) use some form of CAM, notes Catherine Stoney, Ph.D., a Program Officer with the National Center for Complementary and Alternative Medicine (NCCAM). NCCAM is the federal government's lead agency for scientific research on complementary and alternative medicine, and a part of the National Institutes of Health (NIH).

Basically, CAM is composed of medical and health care systems, practices, and products that are not now considered to be part of normal medicine. "Complementary medicine is used together with conventional medicine," says Dr. Stoney, "and alternative medicine is used in place of conventional medicine."

NCCAM has funded more than 1,800 research projects at over 260 institutions across the United States and around the globe, she adds. "For example, research results have shown that using acupuncture for osteoarthritis of the knee is a helpful addition to standard care," Dr. Stoney says. "Patients had a 40 percent reduction in pain and about a 40 percent improvement in function. Also, a 2007 study found that Tai Chi boosts resistance to the shingles virus in older adults."

A primary part of NCCAM's mission is exploring CAM practices in the context of science. As with all NIH institutes and centers, NCCAM grants go through NIH's peer-review process to assure that the highest quality science is funded. NCCAM supports detailed studies to see if the CAM approaches people are using are safe, if they work or do not work, and if they do work, how they work. Good evidence-based research leads to good medicine.

"Patients often do not talk about CAM use with their health care providers," says Dr. Stoney. "An open conversation between health care providers and patients is critical to ensuring safe care."

You can find more about these and other studies on NCCAM's research results page at <http://nccam.nih.gov/research/results/>.



Questions about CAM? Talk to Your Doctor

For your health, it is important to inform your medical provider about any complementary and alternative medications (CAM) you take. This is to assure they do not interact negatively with any prescription or over the counter drugs you already may be taking.

To Find Out More

At www.medlineplus.gov, type "mind-body" or "emotions" into the Search box. There is also more information at www.nimh.nih.gov and at www.nccam.nih.gov.

Kidney Disease and Diabetes

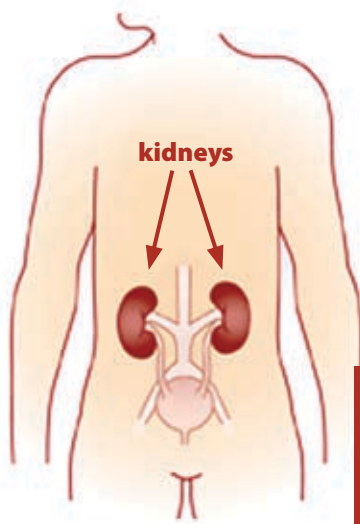
What You Need to Know

March is National Kidney Month, a good time to check if you or your family are at risk for kidney disease or diabetes—conditions that affect millions of Americans.

Your kidneys play a very important part in keeping you healthy. These two bean-shaped, fist-sized organs are located in the middle of your back, on either side of the spine. Their main job is to filter your blood to remove wastes that could damage your body. They also help to control blood pressure and make hormones that your body needs to stay healthy.

Each kidney contains about one million tiny filters called nephrons. Inside each nephron are tiny blood vessels and urine collecting tubes. Most people develop kidney disease when the nephrons can no longer filter blood as well as they used to. Damage usually happens slowly, over many years. As more and more filters fail, the kidneys eventually are unable to keep the body healthy. At that point you need either dialysis or a kidney transplant.

You should be tested for kidney disease if you have any risk factors. (See “Kidney Disease: Early Detection and Treatment” on page 9.) Early kidney disease has no symptoms, which means you can’t feel if you have it. Blood and urine tests are the only way to know if you have early kidney disease.



Proper treatment can help prevent further kidney damage and slow the progression of kidney disease. The earlier kidney disease is found, the sooner you can take medications and other steps that can keep your kidneys healthier longer.

If your body is unable to use blood sugar called “glucose” the way it should, you have diabetes. A healthy body uses

glucose for the energy it needs to do everything it does, including make new cells. If the cells of the body can’t use glucose the way they should, the glucose level increases to an abnormal level, causing damage to the kidneys, eyes, feet, heart, and other parts of the body. Almost 21 million Americans have some form of diabetes—

If you are at risk for kidney disease, there are steps to take to help protect your kidneys:

- **Manage your diabetes**
- **Keep your blood pressure below 130/80 mmHg**
- **Take medicines as prescribed.**

and 6.2 million of them are undiagnosed. That’s why it’s so crucial to detect and treat diabetes—or better yet, to prevent it.

Both kidney disease and diabetes are key areas of research for the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) at NIH. The institute carries out research at the NIH campus in Bethesda, Maryland, and also funds the work of researchers around the world.

Kidney Disease: Early Detection and Treatment

Many Americans know nothing about kidney disease—until it's too late.

“Unlike many diseases, kidney disease often has no symptoms until it is very advanced,” says Andrew Narva, M.D., Director of the National Kidney Disease Education Program (NKDEP) a part of the NIH’s National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). “For this reason and others, it is important for people to not only become aware of their risk, but also to learn about the steps they can take to keep their kidneys healthier longer. An important step is to get tested.”

That testing is even more important for populations that are at higher risk for kidney disease, such as African Americans, adds Dr. Narva.

The good news is that kidney disease can be treated very effectively if it is caught in the early stages.

How can you tell if you are at risk for kidney disease? Ask yourself these questions:

- Do you have diabetes (problems with your blood sugar)?
- Do you have high blood pressure?
- Do you have heart disease?
- Did your mother, father, sister, or brother have kidney disease? (Kidney disease runs in families.)

If you answered “yes” to any of these questions, you are at risk for kidney disease. Now is the time to get tested.

Your health care provider will order two simple tests to check your kidneys—a blood test to check your glomerular filtration rate (GFR) and a urine test to check for protein.

- **GFR**—A blood test measures how much blood your kidneys filter each minute, which is known as your GFR (glomerular filtration rate). This shows how well your kidneys are working. A GFR of 60 or higher is in the normal range. A GFR below 60 may mean you have kidney disease. You can’t raise your GFR, but you can try to keep it from going lower.
- **Urine Protein**—A urine test checks for protein in your urine, which can be a sign of kidney disease. Protein can leak into the

Your doctor can do very simple tests to check for kidney disease:

- **Measure the level of serum creatinine in your blood to estimate your glomerular filtration rate (GFR)**
- **Measure the level of protein in your urine (increased levels of protein show your kidneys are not working right)**
- **Check your blood pressure.**

urine when the filters in the kidneys are damaged. This test has several different names, including a check for “proteinuria,” “albuminuria,” or “microalbuminuria.” It can also be called a “urine albumin-to-creatinine ratio.”

Treating Kidney Disease

Kidney disease is usually a progressive disease, which means that the damage in the kidneys tends to be permanent and can’t be undone. So it is important to identify kidney disease early before the damage is done. The good news is that kidney disease can be treated very effectively if it is caught in the

early stages. This is very important, since kidney disease also makes your risks for heart disease and stroke higher.

For people who have diabetes, monitoring blood glucose levels is very important. Your health care provider can help you find the right device for doing this if you are diagnosed with diabetes.

Controlling blood pressure is also very important for people with kidney disease. There are several types of

medicine that help people keep their blood pressure in a healthy range. Two kinds of medicines, ACEi (angiotensin converting enzyme inhibitors) and ARBs (angiotensin receptor blockers) also help to protect the kidneys.

Kidney Failure: What Then?

If one or both kidneys fail completely and the damage can’t be reversed, the condition is called kidney failure or end-stage renal disease (ESRD). When this occurs, your kidneys can no longer filter wastes well enough to keep you healthy. The symptoms for ESRD include fatigue, weakness, nausea, vomiting, and itching.

Treatments for kidney failure include dialysis or transplantation. There are two major types of dialysis:

- **In hemodialysis**, blood is run through an external filter and the clean blood is returned to the body. Hemodialysis is usually done at a dialysis center three times a week.
- **Peritoneal dialysis** uses the lining of your abdominal cavity (the space in your body that holds organs like the stomach, intestines, and liver) to filter your blood. This kind of dialysis is needed daily but it can be performed at home, while you sleep.

A kidney transplant is an operation that places a healthy kidney in your body. The transplanted kidney takes over the work of the two kidneys that failed, and you no longer need dialysis.

Research on Progression of Kidney Disease

Many researchers are studying kidney disease. They are looking for ways to improve diagnosis, make treatments more effective, and make dialysis and transplantation work better. Several areas of research supported by the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) hold great potential.

NIDDK is sponsoring a major study—the Chronic Renal Insufficiency Cohort (CRIC) study—to learn more about how kidney disease progresses. CRIC is following 3,000 adults for seven years. All study participants have mild to moderate kidney disease, and about half have diabetes.

Researchers think that some CRIC study participants' kidney function will decline more rapidly than others', and that some will develop cardiovascular disease while others won't. The goal of the study is to identify the factors linked to rapid decline of kidney function and development of cardiovascular disease.



Make Health a “Family Reunion” Affair

Many people know family members who have diabetes or high blood pressure—the two leading causes of kidney failure. Diabetes and high blood pressure often run in African-American families. During National Kidney Month in March, start thinking about ways you can educate family members on steps they can take to keep their kidneys healthy. The free Family Reunion Health Guide, developed by the National Kidney Disease Education Program, contains everything you need to share this important information with your family. Call (866) 4-KIDNEY or visit www.nkdep.nih.gov/familyreunion.

Type 1 Diabetes

Type 1 diabetes, formerly called juvenile diabetes or insulin dependent diabetes, is usually first diagnosed in children, teenagers, or young adults. Treatment for type 1 diabetes includes taking insulin shots or using an insulin pump, making healthy food choices, exercising regularly, controlling blood pressure and cholesterol. Islet cell transplantation is an experimental method sometimes used to help control blood glucose levels without insulin injections.

Type 2 Diabetes

Once considered “adult-onset diabetes” because only adults got it, type 2 diabetes is now a problem for some children as well. It is one of the fastest-growing conditions in Americans of all ages. Those people at most risk for getting type 2 diabetes include those who are 45 years of age or older, overweight or obese, don't get enough exercise, have close relatives who have type 2 diabetes, and who are American Indians, Alaska Natives, African Americans, Hispanic or Latino, or Pacific Islanders.

Treatment includes taking diabetes medicines, making healthy food choices, exercising regularly, taking aspirin daily, controlling blood pressure and cholesterol, and use of oral or injected insulin.

Gestational Diabetes

Some women develop gestational diabetes during the late stages of pregnancy. Although this form of diabetes usually goes away after the baby is born, a woman and her child who have had it are more likely to develop type 2 diabetes later in life. Gestational diabetes occurs most often in women who are obese or have a family history of diabetes. It is also more common among African American, Hispanic, American Indian, and Alaskan Native women.

“Small Steps, Big Rewards”: You Can Prevent type 2 Diabetes

Joanne Gallivan, M.S., R.D., and Dr. Andrew Narva share notes on treating diabetes and kidney disease.

The good news is, type 2 diabetes can be prevented or treated. By losing a modest amount of weight, getting 30 minutes of exercise five days a week, and making healthy food choices, people at risk for type 2 diabetes can delay or prevent its onset. Those are the basic facts of “Small Steps. Big Rewards: Prevent type 2 Diabetes,” created by the National Diabetes Education Program (NDEP). This first-ever, national diabetes prevention campaign spreads this message of hope to the millions of Americans with pre-diabetes (higher than normal blood glucose levels but not yet diabetes).

“Fifty four million Americans are at risk for type 2 diabetes.”

“Fifty four million Americans are at risk for type 2 diabetes,” says Joanne Gallivan, M.S., R.D., NDEP director at the National Institute for Diabetes and Digestive and Kidney Disease (NIDDK). “There are steps you can take to prevent it. It boils down to following a healthy lifestyle—not making huge steps, but small steps that can lead to a big reward, such as eating smaller portions and taking the steps instead of the elevator.”

The science behind NDEP’s campaign is based on the Diabetes Prevention Program (DPP), a landmark study sponsored by the NIH. The study found that people at increased risk for type 2 diabetes can prevent or delay the onset of the disease by losing five to seven percent of their body weight through increased physical activity and a reduced fat, lower calorie diet. That’s about a 10 pound weight loss if you weigh 200 pounds.

In the DPP, modest weight loss proved effective in preventing or delaying type 2 diabetes in all high-risk groups. “If you have diabetes in your family, you will want to bring this information to their attention,” says Gallivan. “Healthy lifestyles are good for everyone.”

Diabetes Medicines—Always Discuss with Your Doctor

If you have diabetes, how low should your blood sugar go?

Because of safety concerns, the National Heart, Lung, and Blood Institute (NHLBI) stopped one part of a large clinical trial in early February. The ACCORD study followed adults with type 2 diabetes and heart disease. In a surprise to researchers, it showed that intensively lowering blood sugar (glucose) below current recommendations increases the risk of death when compared with less-intensive standard treatments. For decades, scientists believed that lowering blood sugar to normal levels helps reduce the risk of dying from heart disease.

But experts were quick to say that diabetics should not change their current treatments.

“People with diabetes should never adjust their treatment plan or goals without consulting their health care providers,” said Judith Franklin, M.D., director, Division of Diabetes, Endocrinology, and Metabolic Diseases at the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). “The ACCORD [study] findings are important, but will not change therapy for most patients with type 2 diabetes. Few patients with high cardiovascular risk like those studied in ACCORD are treated to blood sugar levels as low as those tested in this study,” she added.

The Growing Challenge of “Diabesity”

There is an obesity epidemic in the United States and parts of the world — especially among children. Now, we are learning about obesity’s intimate relationship with diabetes.

By Mary Best

When Francine Kaufman, M.D., talks about diabetes and obesity, it’s easy to hear her passionate commitment to educate parents and children about this growing problem. “I am concerned about our children,” says Dr. Kaufman, who is the incoming chairperson for the National Diabetes Education Program (NDEP). “I’ve devoted my career to diabetes in children. Particularly now, when we are at the point of an epidemic of childhood obesity and the development of type 2 diabetes in children, I have realized that to make a difference, we have to change the environment for children.”

She has seen firsthand the effect of a poor diet on the body. Dr. Kaufman treats thousands of children who suffer from obesity and the diseases associated with it. She is a professor of pediatric endocrinology at the Keck School of Medicine of the University of Southern California. Dr. Kaufman is also director of the Center for Diabetes, Endocrinology, and Metabolism at Children’s Hospital in Los Angeles.

Nearly 21 million Americans suffered from diabetes in 2005, according to the National Institutes of Health (NIH). A national survey calculated the obesity rate for children at 17.1 percent in that same year. Dr. Kaufman predicts that by the year 2020 the number of people around the world with diabetes will soar to more than 300 million.



Photo: courtesy Dr. Francine Kaufman

“I’ve devoted my life and career to diabetes in children,” says Dr. Francine Kaufman, right, at a clinic in India.

To Find Out More

At www.medlineplus.gov, type “diabetes” into the Search box. There is also more information at www.niddk.nih.gov.

For more information on teens and diabetes, visit www.medlineplus.gov to read about juvenile diabetes as featured in the Fall 2006 issue of *MedlinePlus* magazine.



In her book *Diabesity: The Obesity-Diabetes Epidemic That Threatens America—And What We Must Do to Stop It*, Dr. Kaufman explains the roots of diabesity quite simply: “Our ancient genes and our modern environment have collided.” Our bodies store excess calories as fat. In ancient times calories were hard to come by. Today, fast food and junk food are everywhere. Coupled with our increasingly inactive lifestyle, the result is obesity.

“Diabetes is everywhere around the world,” says Dr. Kaufman, “and it touches people, whether they are the person with diabetes or the person caring for someone with diabetes. It has a global reach and a global impact. We need to come together as a global society to find a way to combat diabetes.”



Photo: NBC Universal, Inc.

The “Biggest Loser” Expounds on the Benefits of Losing Pounds

By Shanna Potash

“I never thought I could lose this much weight!” exclaims Bill Germanakos, who lost 164 pounds to win season four of NBC’s popular television show, *The Biggest Loser*.

Germanakos, 41 and 5’8” tall, went from 334 pounds to 170 pounds in eight months. “It’s a testament to the education I received about the right way to diet and exercise,” he says.

His identical twin, Jim, was the weight-loss winner among *Biggest Loser* contestants who were eliminated but continued to train at home. He dropped 186 pounds, going from 361 to 175 pounds.

NIH MedlinePlus Magazine caught up with the twins at a recent NBC4 Health and Fitness Expo in Washington, D.C., where they were signing autographs and inspiring their fans to slim down, too.

“Remember,” they urged, “nothing tastes as good as looking good feels.”

Their advice is to “stay dedicated, make healthy food choices, and exercise hard enough to get your heart rate up.” Jim also suggests keeping a food journal and wearing a monitor to track calories burned. Blueberries and grapes are their new candy.

The twins exercise five to six days a week. Bill’s routine includes spinning classes. Jim likes to run and is set on entering a marathon. They remind people exercise can be done at home, “If you’re going to watch television, do it on a treadmill.”

Their father died of obesity-related illnesses at age 57. When they turned 40, Bill and Jim were obese, had high blood pressure, high cholesterol, and knew they had to do something. Now they are in shape and off their blood pressure medications.

“My main focus was to get healthy,” Bill says. “Now, every time I look in the mirror, all I can think is ‘I’m going to be here for my wife and kids and have the opportunity to walk my two daughters down the aisle when the time comes.’”

The Twins on Losing Weight

Bill: “The only way to get something done is to get it started.”

Jim: “If it doesn’t go in, it doesn’t go on. It’s physics. Calories in versus calories out. That’s how you lose weight.”

Bill and Jim: “It’s great to see that we are connecting with people, because we are just regular people.”

Biggest Loser Fans Chime In

“The more we learn and have positive role models, I think it gives you hope.”

—Trudy White, Fairfax, VA

“If they can do it, I can too. They are very inspirational. I’ve lost 26 pounds and joined Curves.”

—Nadine Joyner, Cheverly, MD

“They were inspiring. I got information from them to help me with my own weight loss plan.”

—Joan Saunders, Washington, DC

“One of the things I took from their presentation is setting goals and getting started.”

—Shaihi Mwalimu, Upper Marlboro, MD

American Idol's Randy Jackson

He doesn't miss a beat controlling his diabetes.

Musician, producer, and *American Idol* judge Randy Jackson is a well-known name in the music world. He has played bass guitar with such musical legends as jazz violinist Jean Luc Ponty, the pop-rock band Journey, and many others. And he's produced hit records for Mariah Carey and Whitney Houston.

While millions may know his name and face, they probably don't know he has type 2 diabetes. However, because of his celebrity, Jackson feels that he can—and should—make a difference by telling others about the dangers of diabetes. “I know first hand what it's like to live with the disease and how it affects your life,” he says. “This is why it's so important for me to get the word out about type 2 diabetes and its connection with cardiovascular disease.”

Jackson was caught off guard when he was diagnosed. In his mid-40s at the time, he had a family history of diabetes, but didn't realize that it was to blame for his feeling so tired and being dehydrated. The Louisiana native decided he needed to make some major changes for a healthier lifestyle.

“When I found out that I had type 2 diabetes, I was like, ‘Wow,’ I have a serious disease. It not only had a physical, but also an emotional impact on me.” He understands how hard it may be for people to make the necessary crucial lifestyle changes diabetes demands. “It was hard to change my eating habits because food for me is emotional—I often found comfort in eating food that happened to be unhealthy.”

“Today, I know that regular checkups with a doctor, healthy food choices, and an active lifestyle are extremely important for managing type 2 diabetes.”

Jackson, the proud father of three children, worked with his doctor to create a plan of diet and exercise to help control his blood sugar levels. And gastric bypass surgery in 2004 helped him to shed over 100 pounds, which he has managed to keep off.

“Today, I know that regular checkups with a doctor, healthy food choices, and an active lifestyle are extremely important for managing type 2 diabetes. There is no magic cure, and it's not always easy. But I believe everyone has the potential to take charge



Photo: Fox Broadcasting Company

and manage the disease in his or her own way. I am living proof that type 2 diabetes can be managed. In fact, taking charge of my lifestyle and making a change to be healthier has made me a stronger, happier person.”

To leverage his celebrity to promote diabetes research, Jackson has partnered with the American Heart Association in a program called “The Heart of Diabetes,” which teaches people to pay attention to the early warning signs of diabetes—and seek medical help.

Teen Diabetes Quiz



See page 16 for the answers.

1. Diabetes causes your:
 - a. Blood glucose to be too low
 - b. Blood glucose to be too high
 - c. Body to stop making blood glucose
2. Teens can have different types of diabetes.
 - a. True
 - b. False
3. You can keep your blood glucose close to your target range if you:
 - a. Make healthy food choices and are active every day
 - b. Stay at a healthy weight
 - c. Take your medicine if needed
 - d. Check your blood glucose
 - e. All of the above
4. Foods that contain the following nutrients help keep your blood glucose close to your target range:
 - a. Carbs
 - b. Protein
 - c. Fat
 - d. All of the above
5. Teens with diabetes can eat sugar, sweets, and desserts.
 - a. True
 - b. False
6. Carbs that have a lot of fiber are:
 - a. White bread and white rice
 - b. Whole grain foods and fresh fruits and vegetables
 - c. Sweetened fruit drinks
 - d. Sweets and desserts
7. If you have diabetes, you should:
 - a. Get 60 minutes of physical activity every day
 - b. Get 20 minutes of physical activity every week
 - c. Limit your physical activity
 - d. Try to reach 10,000 steps a day
 - e. Both a and d
8. You can make healthy food choices at school if you:
 - a. Pack your lunch
 - b. Hit the vending machine between classes
 - c. Steer clear of fried foods
 - d. Both a and c
 - e. Skip lunch and eat when you get home
9. If you are overweight, you can get to a healthy weight by:
 - a. Going on a fad diet
 - b. Cutting 1,000 calories a day
 - c. Being more active, cutting calories, and eating smaller amounts of food
 - d. Buying your own gym equipment
10. A type of fat that can be healthy for your heart comes from:
 - a. Chicken skin
 - b. Whole milk
 - c. Nuts and avocado
 - d. Butter
11. You can get enough physical activity by just:
 - a. Watching TV and playing video games
 - b. Going for a walk on the weekend
 - c. Swimming at the beach in the summer
 - d. Being active every day in a way you enjoy
12. Teens with diabetes should not eat at fast food restaurants.
 - a. True
 - b. False
13. Teens get type 2 diabetes because:
 - a. They have certain genes
 - b. They are overweight
 - c. They have a family member who has diabetes
 - d. They are American Indian, Alaska Native, African American, Hispanic/Latino, Asian American, or Pacific Islander
 - e. All of the above
14. If you get angry or feel sad about your diabetes, you can feel better if you:
 - a. Keep your feelings inside
 - b. Speak up and ask for help
 - c. Blame yourself or your family
 - d. Get in a fight with your friends
 - e. All of the above

Teen Diabetes Quiz Answers

1. Answer: B

Diabetes causes your blood glucose to be too high. Glucose comes from the food you eat and is needed to fuel our bodies. Glucose is also stored in our liver and muscles. Your blood always has some glucose in it because your body needs glucose for energy. But having too much glucose in your blood isn't healthy.

2. Answer: A

There are three main types of diabetes. In type 1 diabetes, the cells in the pancreas that make insulin are destroyed. If you have type 1 diabetes, you need to get insulin from shots or a pump everyday. In type 2 diabetes, the pancreas still makes some insulin but cells cannot use it very well. If you have type 2 diabetes, you may need to take insulin or pills to help your body use its glucose better. Gestational diabetes is another type of diabetes that can occur during pregnancy.

3. Answer: E

The best way to keep your blood glucose close to your target range is to make healthy food choices, be active everyday, and stay at a healthy weight. You also need to take your medicines (including insulin) and check your blood glucose as planned with your health care team.

4. Answer: D

Eating a balance of foods that contain carbohydrates (carbs for short), protein, and fat every day will help keep your blood glucose close to your target range. It may also keep your weight where you and your doctor want it to be. Check with your health care team about how much carb, protein, and fat you should eat.

5. Answer: A

Small amounts of foods that contain sugar can be part of a healthy meal plan. Desserts such as cakes, pies, cookies, and ice cream contain a lot of fat as well as sugar. If you choose to eat any of these sweet foods, just have a small amount at the end of a healthy meal. Talk to your health care team about how sweet foods can fit into your meal plan.

6. Answer: B

Some carbs are better for you than others. Choose fiber-rich carbs like whole grain foods and fresh fruits and vegetables from every color of the rainbow. Choose carbs like white bread and white rice, sweetened fruit drinks, and sugary desserts less often. If you eat too many carbs at one time, your blood glucose may get too high. Ask your health care team to help you plan how many carbs to eat each day to keep your blood glucose in balance.

7. Answer: E

Being active is an important part of a healthy lifestyle—whether you have diabetes or not. It can give you more energy and help you focus in school. If you haven't been very active in the past, start slowly. Don't get upset if you can't do a lot or if you get out of breath at first—keep moving. Pick something you like, such as riding a bike, roller blading, or dancing. Slowly work up to at least 60 minutes everyday. You might find it fun to count your steps with a pedometer (step counter). Add a few more steps each day—try to reach 10,000 steps a day.

8. Answer: D

Packing your lunch at home the night before is one way to eat healthy foods at school. Use leftovers from dinner or make a tuna sandwich and add raw carrots and a piece of fruit. If you buy a hot lunch, select foods that fit into your meal plan and steer clear of fried foods. Choose small deli sandwiches or subs made with lean meats like turkey with mustard or a little low-fat mayonnaise and drink nonfat or low-fat milk. If there is a salad bar, choose a variety of fresh vegetables

and fruits and use a small amount of low-calorie dressing. Try not to be tempted by vending machines—they often provide foods that are high in fat and calories. It is important that you eat regular meals and snacks every day to keep your blood glucose close to your target range.

9. Answer: C

If you are overweight, being more active and cutting some calories will help you get to a healthy weight. Eating smaller portions of food can help, too. For example, pick a regular hamburger instead of one that is super-sized. Going on a very low-calorie or fad diet is not a healthy way to lose weight. You do not have to buy your own gym equipment or go to a gym to be physically active. Pick things you like to do, such as hiking, riding a bike, or roller blading. Staying at a healthy weight as a teen may help you control your weight for life.

10. Answer: C

Some types of fats are better for you than others. They help keep your heart healthy. Choose heart-healthy fats like a ¼ cup of nuts or one slice of avocado. Fats like chicken skin, whole milk, and butter are not heart-healthy fats. When you drink milk, pick low-fat or nonfat milk. Remember that all fats have lots of calories, so you need to limit your portion sizes as in your meal plan.

11. Answer: D

It's important to be active every day! Physical activity can make you feel better if you are in a bad mood or stressed out. It also helps your body use blood glucose for energy. Start with a little, and then add more by choosing an activity you enjoy. You don't have to play a sport or go to a gym. Ask your family members and friends to do something fun with you—take a walk after dinner instead of watching TV and playing video games, or put on a CD and dance. Going for a walk on the weekend or swimming at the beach in the summer are great additions to your daily physical activity.

12. Answer: B

You can eat at fast-food restaurants, just not every day. When you do, don't "super-size" it. Choose a simple hamburger rather than a burger covered with sauce, cheese, and bacon. Add a baked potato with a small serving of sour cream or a small serving of fries. Choose a small salad with low-calorie dressing. Meals that are healthy for teens with diabetes are great for everyone—you, your family, and your friends.

13. Answer: E

There are many reasons why teens get type 2 diabetes. Being overweight puts you at risk for type 2 diabetes. Having a family member with diabetes means that certain family genes increase the risk for type 2 diabetes. Some racial groups also have a greater chance of getting type 2 diabetes—American Indians, Alaska Natives, African Americans, Hispanics/Latinos, Asian Americans, and Pacific Islanders. Genes also appear to interact with things like viruses and toxins in the environment to cause type 1 diabetes. Studies are being done to identify the causes of type 1 diabetes and in the future researchers might be able to prevent or delay the onset of the disease.

14. Answer: B

It's good that you know these feelings are normal. Lots of teens that have diabetes feel the same way. It's okay to get angry, feel sad, or think you're different every now and then. But then you need to take charge and do something to feel better. It's okay to ask for help. Talk to someone in your family or where you worship, a friend, a school counselor, teacher, or your doctor or diabetes educator. If you still feel down or sad, ask your parents to help you find a counselor.



Photo: Sara Jorde Photography

Susanna and John Dodson have found less expensive drugs that work well for them through the *CR Best Buy Drugs* program.

Are You Shopping Smart for Prescription Drugs?

A new *Consumer Reports* project compares prescription drugs on effectiveness, safety, and price. Funded in part by the National Library of Medicine, the *Consumer Reports Best Buy Drugs* program helps consumers discuss drug choices with their doctors and get the best value.

John and Susannah Dodson have struggled for years to keep their prescription drug costs under control. Now, they finally have a resource that provides comparative cost and effectiveness of those drugs. *Consumer Reports* magazine, best known for its ratings of cars, appliances, computers, and TVs, recently launched *Consumer Reports Best Buy Drugs*. The project compares prescription drugs based on their effectiveness, safety, side effects, and cost. The results are offered free at www.CRBESTBUYDrugs.org.

To Find Out More

For more information about drugs, visit MedlinePlus Drugs & Supplements at <http://www.nlm.nih.gov/medlineplus/druginformation.html>. The Best Buy information is at www.CRBESTBUYDrugs.org.

The Dodsons, who live in Shorewood, Minn., both have high cholesterol, high blood pressure, and type 2 diabetes. Between them, they take 12 prescription drugs every day, and more when allergies, arthritis, or back pain flare up. While the new Medicare

Part D program pays a good portion of their drug bill, they still face around \$260 a month in out-of-pocket expenses.

Says Susannah, who is 68, “The Best Buy Drugs site was enormously helpful right away.”

Consumers Union, the magazine’s publisher, translates the drug findings into easy-to-understand language for consumers, adds explanations and data on the cost of drugs, and chooses Best Buys for each drug category.

To date, the *Consumer Reports Best Buy Drugs* project has issued 19 reports on drugs used to treat 35 medical conditions, including many major chronic illnesses.

Consumer Reports Best Buy Drugs advises everyone to talk with their health care professional in some detail—and/or search out the information themselves on the Internet—about the potential adverse effects of drugs they are prescribed. Knowing what could happen can help prevent discomfort, pain, or harm.

This article is adapted, with permission, from the January 2008 issue of *Consumer Reports* magazine. *Consumer Reports Best Buy Drugs*™ can be found on the Internet at www.CRBESTBUYDrugs.org. ©2008 by Consumers Union of U.S., Inc. Yonkers, NY 10703, a nonprofit organization. No commercial use or reproduction permitted.

Dr. Michael DeBakey

“is a magician of the heart...”

Perhaps no person has done more to advance the surgical treatment of diseases of the heart and blood vessels than Dr. Michael DeBakey. Over his unparalleled career, he has operated on more than 60,000 patients, from presidents and celebrities to ordinary citizens the world over. An impassioned patient's advocate, he has continuously urged the support of medical research as the means of discovering improved methods of diagnosis, treatment, prevention, and cure.

As far back as 1965, Dr. DeBakey told *Time* magazine, “It is deficiencies in materials and our lack of knowledge about how they will work over a long period that are holding us up ... I am confident that if \$50 million were made available today for just this kind of research, an artificial heart, or the vital parts of one, could be ready for permanent implantation within three to five years.”

As early as 1932, he developed components that became part of the first heart-lung machines. In 1936, he was one of the first to identify a connection between cigarette smoking and lung cancer. In the 1950s, he devised plastic tubing for repairing blood vessels, a treatment he applied to prevent recurring strokes, and kidney failure, and to restore circulation to limbs that might

Dr. DeBakey with NLM's David Nash and admiring students from the Michael E. DeBakey High School for Health Professionals in Houston, Texas.



Milestones in Cardiology

1706

Raymond de Vieussens, a French anatomy professor, first describes the structure of the heart's chambers and vessels.

1816

Rene T. H. Laennec, a French physician, invents the stethoscope.

1903

Willem Einthoven, a Dutch physiologist, develops the electrocardiograph.

1938

Robert E. Gross, an American surgeon, performs first heart surgery.

1952

F. John Lewis, an American surgeon, performs first successful open heart surgery.

1628

William Harvey, an English physician, first describes blood circulation.

1733

Stephen Hales, an English clergyman and scientist, first measures blood pressure.

1912

James B. Herrick, an American physician, first describes heart disease resulting from hardening of the arteries.

1951

Charles Hufnagel, an American surgeon, develops a plastic valve to repair an aortic valve.



Dr. Michael E. DeBakey, shown with his surgical team in the mid-1960s, has operated on more than 60,000 patients, including Russian President Boris Yeltsin, who called him a “magician of the heart.”

otherwise have been amputated. For many years, the DeBakey Dacron Graft has been used around the world to replace or repair blood vessels. In 1963, he made history by installing an artificial pump to assist a patient’s damaged heart.

On December 31, 2005, at age 97, Dr. DeBakey suffered an aortic dissection—a tear in the inner layer of the body’s largest artery. This was the very condition that his pioneering procedure was designed to treat. He was hospitalized at The Methodist Hospital in Houston. Dr. DeBakey initially resisted the surgical option, but as his health deteriorated, his operation was approved and on February 10, 2006, he became the oldest patient ever to undergo the surgery for which he was

responsible. The operation lasted seven hours and required a complicated postoperative course, including eight months in the hospital. But in September he was released, returned to good health and able to participate at the October ground-breaking of Baylor’s new Michael E. DeBakey Library and Museum. In a lengthy Christmas Day interview that year about his operation, he told *The New York Times*, “I feel very good. I’m getting back into the swing of things.”

On September 7 of this year, Dr. DeBakey will celebrate his 100th birthday. His contributions to the field of medicine have spanned more than 75 years.

1961 J. R. Jude, an American cardiologist, leads a team performing the first external cardiac massage to restart a heart.

1964 Michael DeBakey repairs an abdominal aneurysm in the Duke of Windsor.

1967 Christiaan Barnard, a South African surgeon, performs the first whole heart transplant from one person to another.

1986 Jacques Puel and Ulrich Sigwart insert the first stent into a human coronary artery.

1997 Over 1 million angioplasties are performed, making angioplasty the most common medical intervention worldwide.

1953 John H. Gibbon, an American surgeon, first uses a mechanical heart and blood purifier.

1965 Michael DeBakey and Adrian Kantrowitz, American surgeons, implant mechanical devices to help a diseased heart.

1982 Willem DeVries, an American surgeon, implants a permanent artificial heart, designed by Robert Jarvik, an American physician, into a patient.

1994 Coronary stents are approved by the FDA.

Source: The Franklin Institute; MedNets

What Makes a Healthy Pregnancy?

Whether you are already pregnant or are just starting to plan for a pregnancy,

there are many things you can do to give your baby a healthy start in life. Follow these suggestions from the National Institute of Child Health and Human Development (NICHD).

Get Started Early

If you're thinking about becoming pregnant, you should see your health care provider to make sure you are in good "preconception" health. Before actually getting pregnant, there are steps you can take to have a healthy pregnancy down the road, notes Catherine Spong, M.D., chief of the Pregnancy and Perinatology Branch at NICHD. Improving your health even before conception means that you don't have to get started when you're already pregnant.

"Eat right, get on an exercise regimen, and get to a healthy weight," she says. "This takes you into pregnancy with the ideal situation." (You will find more than two dozen tips on healthy pregnancy habits in HealthLines on pages 25-27.)

Another way to create the best possible outcome is to practice what Dr. Spong, a mother of three, calls good "dating." She advises getting an ultrasound as soon as possible, preferably during the first three months of your pregnancy. "This allows you to know when you will deliver, but also lets you identify growth complications," she adds. First trimester babies are all about the same size. That first trimester ultrasound helps identify any growth problems that may occur later.



Photo: Patricia Carson

Jennifer Vyskocil, in her second trimester of pregnancy, knows that healthy eating is one of the keys to a healthy pregnancy.

Dr. Spong also recommends taking vitamins and folic acid before you start to try to conceive. "It is something everyone can do," she explains. "And there is no harm in getting as healthy as you can."

The U.S. Centers for Disease Control and Prevention (CDC) recommends that all women of childbearing age—and especially those who are planning a pregnancy—consume about 400 micrograms (0.4 milligrams) of folic acid every day. Adequate folic acid intake is very important one month before conception and at least three months afterward to help reduce the risk of having a fetus with a neural tube defect.

Prenatal Care Is Important

Getting early and regular prenatal care is important for both you and the developing baby. Your health care professional may discuss many issues, such as nutrition and physical activity, what to expect during the birth process, and basic skills for caring for your newborn.

You will be given a schedule for your prenatal visits. You can expect to see your health care provider more often as your due date gets closer. A typical schedule includes visiting your provider:

- about once each month during your first six months of pregnancy
- every two weeks during the seventh and eighth month of pregnancy
- weekly in the ninth month of pregnancy
- if you are over 35 years old or your pregnancy is high risk because you have certain health problems like diabetes or high

blood pressure, your doctor will probably want to see you more often. Your health care professional may also suggest prenatal testing.

Prenatal Testing

Prenatal testing provides information about your baby's health before he or she is born. Testing is available to pregnant women ...

- who are aged 35 or older, because they are at higher risk for having a child with abnormal chromosomes;
- who have a family history of an inherited condition, such as Duchenne muscular dystrophy;
- when their ancestry or ethnic background means that they might have a higher chance of an inherited disorder, such as sickle cell anemia, thalassemia, or Tay-Sachs disease;
- to screen for common genetic disorders, such as spina bifida and Down syndrome.

Always Meant to be a Mom...

By Christopher Klose

"I always felt I was meant to be a mom!" smiles Erica Hobby, proud mother of soon-to-be-one year old toddler Sophie. But it was a long wait for Hobby, 35, and husband, Jay, 42, of Pikesville, Md.

"We needed to be ready; to devote time to our careers and our relationship so that we could be better parents," she explains. And like so many thousands of would-be parents these days, they'd suffered the tragedy of a prior miscarriage.

Finding a Down-to-Earth Doctor

An admitted "worry wart," one of the keys for Hobby was to find an obstetrician with whom she could feel comfortable during her pregnancy, and who had privileges in a good hospital with strong backup from other physicians. "We needed someone down-to-earth, someone approachable, who would hold my hand a bit and answer our questions—we had a list at every appointment! We were fortunate to find the doctor and the practice that was right for us."

Seeking Helpful Information

Also in preparation, Hobby read and recommends *What to Expect When You're Expecting*, which she found an especially reader-friendly, helpful reference book. "There is a lot to learn about how your body works."

"I was very conscious of what I was eating, for example, because I wanted Sophie to have the best chance to grow and thrive." Because of what had happened before, Hobby was concerned throughout the first trimester about complications or another miscarriage.

"I wanted to understand how my body—and Sophie's—were changing at each stage of

her development. So I turned to the Internet and MedlinePlus to educate myself." For practical advice about the normal aches and changes during pregnancy, she turned to her mother and friends. "My mom and I are very close, so I'd ask her," Hobby says, "And many of our friends have kids, so they provided great guidance and support as well."

Bonding and Sharing

One of the best things expectant mothers can and should do, Hobby advises, is to include their husbands as much as possible in the pregnancy. "Being pregnant is such an amazing experience. My husband and I would talk together to the baby, read books, listen to music with her. The talking, the bonding, and experiencing it all together was incredibly meaningful."

New mom Erica Hobby enjoys time spent with her daughter Sophie.



Understanding Pregnancy and Birth Issues

What is a High-Risk Pregnancy?

All pregnancies involve a certain degree of risk to both mother and baby. But factors present before pregnancy or that develop during pregnancy can place the mother and baby at higher risk for problems. Women with high-risk pregnancies may need care from specialists or a team of health care providers to help promote healthy pregnancy and birth.

Factors present before pregnancy that can increase risk may include:

- Being very young or old
- Being overweight or underweight
- Having had problems in previous pregnancies, such as miscarriage, stillbirth, or preterm labor or birth
- Pre-existing health conditions, such as high blood pressure or diabetes
- During pregnancy, problems may also develop even in a woman who was previously healthy. These may include such conditions as gestational diabetes or preeclampsia/eclampsia

Understanding Prenatal Tests

Prior to the birth of your baby, your health care professional may recommend one or more of the following tests. Ask your health care professional if any of these tests are right for you:

Amniocentesis	This test takes a small sample of the amniotic fluid surrounding the baby.	This test can be given after 14 weeks or during the third trimester. The former checks for genetic defects like Downs Syndrome; the latter checks for abnormal lung development.
Chorionic Villus Sampling (CVS)	This test withdraws a small sample of tissue from just outside the amniotic sac in which the baby grows.	Taken between 10 and 12 weeks, this test checks for the possibility of such genetic diseases as Huntington's Disease and Duchenne muscular dystrophy.
Quad-Screen Test	This is a blood test taken from the mother that checks several different components.	This test is usually performed in the second trimester (15-20 weeks). The screening looks for several things, particularly the risk of Down Syndrome.
Rh Incompatibility	This test determines whether the mother and baby have incompatible blood types.	This test can be done before pregnancy or at the first prenatal visit. If there is Rh incompatibility, treatments can help prevent later complications.
Ultrasound	This test uses high-frequency sound waves to show internal organs and the growing baby within the womb.	Ultrasound can be used during the first, second, and third trimesters to show the gender, status, position, health, and growth of the baby.



(dangerously high blood pressure). (Read more about gestational diabetes on page 10.)

What Is Preeclampsia?

Preeclampsia is the development of high blood pressure, and protein in the urine of pregnant women. Preeclampsia is estimated to complicate from three to five percent of all pregnancies. Untreated, severe preeclampsia can lead to eclampsia. Eclampsia is dangerously high blood pressure and convulsions, which may result in disability or death for the mother. The only treatment for severe preeclampsia is immediate delivery of the baby.

In the United States, where treatments are available, few women die from preeclampsia itself. But, complications (such as kidney failure, hemorrhage, and stroke) from preeclampsia can lead to ongoing health problems. (Read about NICHD preeclampsia research in the sidebar.)

Preterm Birth

Preterm (premature) birth is birth before the baby is 37 weeks old. In 2003, one out of every eight infants born was preterm. (You may have heard them referred to as “preemies.”)

Preterm infants are at high risk for a variety of disorders, including mental retardation, cerebral palsy, and vision impairment. These infants are also at high risk for long-term health issues, including heart attack, stroke, high blood pressure, and diabetes.

C-sections

A C-section, also called a Cesarean delivery, is the birth of a baby through a surgical incision in the abdomen. The surgery is performed electively, or when a vaginal birth is not possible or is not safe for the mother or child.

Due to a variety of medical and social factors, C-sections have become fairly common. About 30 percent of all births in the United States in 2005 were C-sections.

Recently, there has been a lot of interest in C-sections to prevent complications that may arise with childbirth, notes NICHD’s Dr. Spong. She explains that while the data clearly support an uncomplicated vaginal delivery as the safest way to give birth, it is important for women to know the risks and benefits of having a C-section. “The difficulty is that you don’t know who is going to have an uncomplicated delivery,” she adds.

Some of the main reasons for C-section instead of vaginal delivery include such conditions as abnormal development, abnormal positioning in the uterus, multiple babies, extreme

Pregnancy Research at NICHD

NICHD conducts and supports research on topics related to the health of children, adults, families, and various populations. Among them are the following:

Preeclampsia

NICHD has been conducting and supporting research on preeclampsia, trying to zero in on the condition’s cause. Finding the cause could help lead to a cure or to preventing preeclampsia from occurring in the first place.

A team of researchers from NIH and Beth Israel Deaconess Medical Center conducted recent studies on preeclampsia. The researchers found high levels of two proteins in the blood of pregnant women that appear to point to the later development of preeclampsia. The proteins also suggest the development of high blood pressure during pregnancy.

Preterm Birth

Among the main goals of NICHD research is finding a way to prevent births from occurring before an infant is strong enough to survive outside the womb. Women who have one preterm birth are considered to be at high risk for another preterm birth. Investigators have focused their attention on trying to prevent preterm birth among these high-risk women.

Researchers have had success using a treatment of a specific type of progesterone—called 17P. Progesterone is a hormone that the body makes to support pregnancy. An NICHD Maternal-Fetal Medicine Units (MFMU) Network study found that for women carrying one baby and with a history of preterm delivery, injections of 17P reduced preterm birth by one-third.

maternal illness, and other situations that may threaten the welfare of the mother or baby.

Nowadays, C-sections are very safe procedures. Dr. Spong stresses that for women electing to have a C-section it is especially important to understand the risks and impacts a C-section may have on future pregnancies and the long-term health of the mother and child. This discussion is less critical for women who need a Cesarean delivery for maternal or fetal reasons. “Doctors should have a critical discussion with their patients about why they are interested in a C-section, what their concerns are, and what they are hoping to prevent.”

Pregnancy Quiz



True or False—Learn more about what you should do to promote a healthy pregnancy

- 1. True or False?** I should not drink any alcoholic beverages while I am pregnant.
- 2. True or False?** Now that I am pregnant I must eat twice as much to provide my baby with the vitamins and minerals that it needs.
- 3. True or False?** I have a disability, but that does not mean that my baby will have a disability.
- 4. True or False?** Exercise is dangerous for pregnant women.
- 5. True or False?** Folic acid is important during pregnancy and pregnant women need more than non-pregnant women.
- 6. True or False?** What I eat during pregnancy is just as important as how much I eat.
- 7. True or False?** Overweight women should restrict how much weight they gain during pregnancy.
- 8. True or False?** Because I am healthy and in good shape, I do not need to make any changes now that I am pregnant.
- 9. True or False?** There is nothing that can be done about morning sickness.

ANSWERS

1. True. Drinking anything that contains alcohol can cause problems for your baby. Fetal Alcohol Syndrome (FAS), caused by drinking alcohol while pregnant, is a preventable cause of mental retardation and birth defects. There is NO safe amount of alcohol you can drink during pregnancy. It is advised that pregnant women avoid all types of alcohol throughout their entire pregnancy.
2. False. It is true that during pregnancy your body needs more nutrients to provide your baby with what it needs to grow and be healthy. However, it is recommended that pregnant women only need to consume 300 extra calories per day. The extra nutrients needed during pregnancy are easily obtained through a healthy diet.
3. True. More than 90% of women who have some type of disability go on to have babies without disabilities. With all pregnancies, make sure to visit your doctor regularly to discuss any questions or concerns.
4. False. Exercising, or being physically active, throughout your pregnancy is not dangerous and doctors recommend it. If you exercised before you became pregnant, keep it up. If you didn't, you can still become active, but start slowly. Try walking at first, then build up to more. Talk to your doctor about which activities are good for you. Exercise during pregnancy helps you in many ways. It prevents a lot of extra weight gain, helps you sleep better, and helps you have a shorter, easier labor.
5. True. All women who are able to get pregnant should get 400 micrograms of folic acid per day. Folic acid helps a baby's spine and brain form the right way, and can prevent some serious types of birth defects. Pregnant women need 600 micrograms of folic acid per day. Your doctor will prescribe a daily vitamin that has it, or you can buy folic acid pills. Keep eating foods high in folic acid like orange juice, other citrus fruits, leafy green vegetables, beans, peanuts, peas, and whole-grain products.
6. True. When you are pregnant, your body is working harder than ever to fuel the growth of a precious new life. While you only need 300 extra calories each day, the kind of food you eat is very important because it affects how your baby can build and maintain cells, tissues, and organs. Healthy food choices like fruits, vegetables, whole-grain breads and pastas, non-fat or low-fat milk products, and low-fat protein sources, such as lean red meat, poultry without the skin, and beans will help your body do a good job of keeping both you and your baby healthy. You also should take a prenatal vitamin that contains folic acid every day. Talk to your doctor to ensure all of your diet meets the nutritional needs of pregnancy.
7. True. During the first trimester of pregnancy, it is normal to gain only a small amount of weight, about one pound per month. According to the American College of Obstetricians and Gynecologists (ACOG): if you were underweight before becoming pregnant, you should gain between 28 and 40 pounds; if you were overweight, between 15 and 25 pounds. Recent research shows that women who gain more than the recommended amount during pregnancy and who fail to lose this weight within six months after giving birth are at much higher risk of being obese nearly 10 years later. Check with your doctor to find out how much weight gain during pregnancy is healthy for you.
8. False. Even before you become pregnant, good health and nutrition are important to the well being of both mother and baby. But, there are some changes that need to be made to accommodate pregnancy. Pregnant women need more of certain vitamins, minerals, and proteins including calcium, folic acid, and iron. Rest and try not to over do it. While you are pregnant, you might not be able to do everything you did before you became pregnant. If you already have a healthy diet, you might only need to make a few adjustments to ensure you are receiving everything you need during pregnancy. Talk to your doctor to make sure you are getting everything you need for a healthy pregnancy.
9. False. In some cases you can help control morning sickness. The types of food you eat, the amount you eat, and the time of day you eat can affect morning sickness. By avoiding greasy, fried, or spicy foods, you might be able to manage your nausea. You can also try to eat frequent small meals (six to eight per day instead of three large meals). Try eating starchy foods such as toast, saltines or Cheerios when you feel nauseous. Also make sure to rest and avoid stress when you are tired.

Source: The National Women's Health Information Center,
U.S. Department of Health and Human Services

HEALTHLINES for PREGNANCY

...healthy eating, exercising, and 10 more handy sources of information

Tips for Healthy Eating

To meet your body's needs and help avoid the common discomforts of pregnancy:

- **Eat breakfast every day.** If you feel sick to your stomach when you first wake up, choose dry whole-wheat or whole-grain toast—even before you get out of bed. Eat the rest of breakfast (fruit, oatmeal, cereal, milk, yogurt, or other foods) later in the morning.
- **Eat high-fiber foods.** Whole-grain cereals, vegetables, fruits, beans, whole-wheat breads, and brown rice, along with drinking plenty of water and daily physical activity can help prevent the constipation that many women have during pregnancy.
- **Keep healthy foods on hand.** A bowl of apples, bananas, peaches, oranges, and grapes makes it easy to grab a healthy snack. Fresh, frozen, and canned fruits and vegetables make healthy and quick additions to meals, as do canned beans.
- **If you have heartburn during pregnancy, eat small meals more often.** Also, eat slowly, avoid spicy and fatty foods (such as hot peppers or fried chicken), drink beverages between instead of with meals, and do not lie down right after eating.
- **If you have “morning sickness” (hyperemesis), talk with your health care provider.** You may need to adjust the way you eat and drink, such as by eating smaller meals more frequently and drinking plenty of fluids. Your health care provider can help you deal with morning sickness while keeping your healthy eating habits on track.



Certain foods and beverages can harm your baby if you eat or drink them while you are pregnant. Ask your health care provider for a complete list of foods and beverages to avoid. Generally, you should not consume:

- **Alcohol.** Instead of wine, beer, or liquor, drink apple cider, tomato juice, sparkling water, or other nonalcoholic beverage.
- **Fish that may have high levels of mercury** (a substance that can build up in fish and harm an unborn baby). Do not eat shark, swordfish, king mackerel, and tilefish during pregnancy. Eat no more than 12 ounces of any fish per week (equal to four 3-ounce servings—each about the size of a deck of cards).
- **Soft cheeses** such as feta, Brie, and goat cheese and **ready-to-eat meats** including lunch meats, hot dogs, and deli meats. These foods may contain bacteria called listeria that are harmful to unborn babies. Cooking hot dogs, lunch, and deli meats until steaming hot can kill the bacteria and make these meats safe to eat.
- **Raw fish such as sushi, sashimi, or ceviche and raw or undercooked meat and poultry.** These foods can contain harmful bacteria. Cook fish, meat, and poultry thoroughly before eating.
- **Large amounts of caffeine-containing beverages.** If you drink lots of coffee, tea, or soda, check with your health care provider about cutting back on caffeine. Instead, try decaffeinated versions of your favorite beverage, or warm low-fat or fat-free milk, or sparkling mineral water.
- **Anything that is not food.** Sometimes pregnant women crave something that is not food, such as laundry starch or clay. Talk to your health care provider if you have such a craving.

Should I Exercise During My Pregnancy?

Almost all women can and should be physically active during pregnancy. First talk to your health care provider, particularly if you have high blood pressure, diabetes, anemia, bleeding, or other disorders, or if you are obese or underweight. Whether or not you were active before you were pregnant, ask about a safe level of exercise for you. Aim for at least 30 minutes of moderate-intensity physical activity (one in which you breathe harder but do not overwork or overheat) on most, if not every day of the week.

7 benefits of regular, moderate physical activity during pregnancy:

1. Helps you and your baby gain the proper amounts of weight.
2. Reduces the discomforts of pregnancy, such as backaches, leg cramps, constipation, bloating, and swelling.
3. Lowers the risk of gestational diabetes (diabetes found for the first time when a woman is pregnant).
4. Boosts mood and energy level.
5. Improves sleep.
6. Helps with an easier, shorter labor.
7. Assists faster recovery from delivery and return to a healthy weight.

5 steps for safe exercise during pregnancy:

1. Choose moderate activities unlikely to injure, such as walking, water aerobics, swimming, yoga, or using a stationary bike.
2. Stop exercising when you start to feel tired and never exercise until you are exhausted or overheated.
3. Drink plenty of water.
4. Wear comfortable clothing that fits well and supports and protects your breasts.
5. Stop exercising if you feel dizzy, become short of breath, feel pain in your back, experience swelling or numbness, feel sick to your stomach, or your heart beats too fast or at an uneven rate.

5 Tips for Getting going!

1. Go for a walk around the block or through a shopping mall with your spouse or a friend.
2. Join a prenatal yoga, water aerobics, or fitness class, letting the instructor know you are pregnant before beginning.
3. Follow an exercise video for pregnant women.
4. At your gym, community center, YMCA or YWCA, sign up for a fitness session for the pregnant.
5. Stand up, stretch, and move at least once an hour if you sit most of the day, as well as during commercials when watching TV.

What shouldn't I do?

For you and your baby's health and safety, it is best to avoid:

- Being active outside during hot weather.
- Steam rooms, hot tubs, and saunas.
- Certain yoga poses or other activities that call for lying flat on your back after the twentieth week of pregnancy.
- Contact sports such as football and boxing that might injure you.
- Sports like tennis or basketball that make you jump or change directions quickly.
- Horseback riding, in-line skating, downhill skiing, and other activities that can result in falls.



10 Great Information Sources About Baby and You

1. **www.medlineplus.gov**—“Teenage Pregnancy” and a vast array of other accessible information on pregnancy from the National Library of Medicine.
2. **www.clevelandclinic.org**—“Coping with the Physical Changes and Discomforts of Pregnancy,” “Nutrition During Pregnancy for Vegetarians” and other consumer-friendly pieces.
3. **www.kidshealth.org**—“Exercising During Pregnancy” and, just for kids, “Things to Expect When Your Mom is Pregnant” from the Nemours Foundation.
4. **www.acog.org**—“Later Childbearing” and “You and Your Baby: Prenatal Care, Labor and Delivery, and Postpartum Care” from the American College of Obstetricians and Gynecologists
5. **www.americanpregnancy.org**—Comprehensive, well-organized, and easy-to-access pregnancy information from the American Pregnancy Association.
6. **www.marchofdimess.com**—“Just for Dads: Helping Out,” an extensive “to do” list for expectant fathers to help them prepare for baby’s arrival.
7. **www.familydoctor.org**—Printer-friendly Q&A’s such as “Pregnancy: Should I use a Seat belt” and “Pregnancy and Exercise: What You Can Do for a Healthy Pregnancy” from the American Academy of Physicians.
8. **www.womenshealth.gov**—In-depth pregnancy information from The National Women’s Health Information Center, Office on Women’s Health, U.S. Department of Health and Human Services.
9. **www.cdc.gov**—“ABC’s ... Pregnancy Tips,” an easy-to-use alphabet soup of good tips and links to many other public and private agencies from the U.S. Centers for Disease Control and Prevention.
10. **www.niddk.nih.gov**—“Fit for Two: Tips for Pregnancy” and much more from the National Institute for Diabetes and Digestive and Kidney Diseases.



This Just In...

The Latest Research Findings

Understanding and Controlling MRSA

MRSA (pron. *MUHR-suh*) is a type of “staph” bacterium that can cause infections in humans that are difficult to treat with several common antibiotics. MRSA stands for Methicillin-resistant *Staphylococcus aureus*. It’s sometimes called a “super bug” because of its resistance to some antibiotics.

Most serious staph infections occur in people with weak immune systems, such as patients in hospitals and long-term care facilities. These are known as healthcare-associated MRSA (HA-MRSA). Over the past several years, MRSA infections in people not considered high-risk have increased. These infections, known as community-associated MRSA (CA-MRSA), occur in otherwise healthy people who have no history of hospitalization in the last year. Many such infections have occurred among athletes who share equipment or personal items (such as towels or razors) and children in daycare facilities.

Staph skin infections normally cause a red, swollen, and painful area on the skin. More serious staph infections can have symptoms that include rash, fever, chills, chest pain, muscle aches, and fatigue.

To help prevent community-associated MRSA, you should:

- Practice good hygiene
- Keep cuts and scrapes clean and covered with a bandage until healed
- Avoid contact with other people’s wounds or bandages
- Avoid sharing personal items, such as towels, washcloths, razors, or clothes
- Wash soiled sheets, towels, and clothes in hot water with bleach and dry in a hot dryer.

In February, researchers supported by the National Institutes of Health reported a promising approach to blocking staph infections. The researchers used a drug that had been tested in clinical trials for lowering cholesterol.

“Although the results are still very preliminary, they offer a promising new lead for developing drugs to treat a very timely and medically important

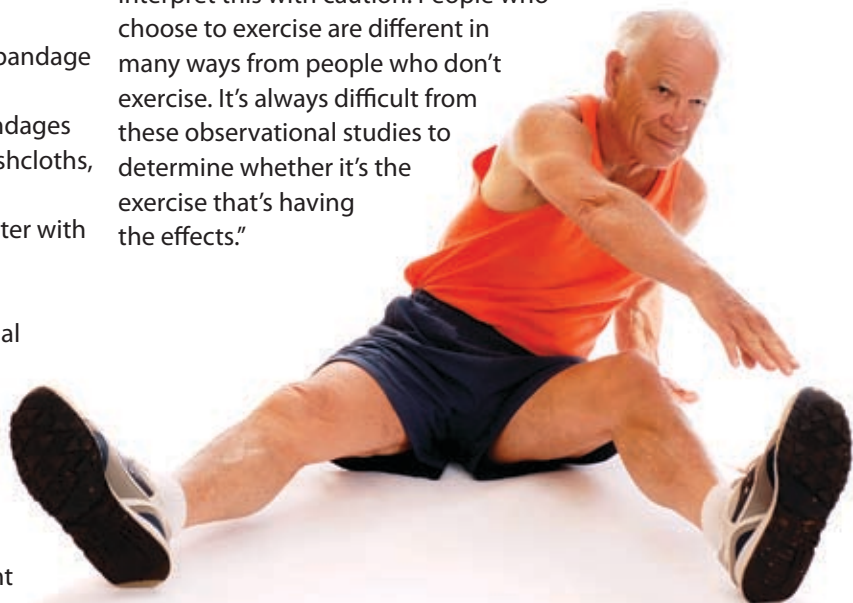
health concern,” says NIH Director Elias A. Zerhouni, M.D.

To find out more, go to www.medlineplus.gov and type “MRSA” into the Search box.

Exercise: Fountain of Youth?

A recent research study of 2,000 sets of twins by researchers at King’s College in London shows that people who exercise have longer leukocyte telomeres. Telomeres are the ends of chromosomes. As cells go through normal rounds of division, the telomeres shrink, and eventually the cell can no longer divide and dies. Telomeres are biological markers of age. Normally, they shorten over time. The study authors found that the relationship between telomere length and the rate of exercise remained significant even after adjusting for body mass index, smoking, socioeconomic status, and physical activity at work.

“It’s a fairly strong and very interesting association,” said Jack M. Guralnik of the National Institute on Aging, in an editorial accompanying the research. “But we have to interpret this with caution. People who choose to exercise are different in many ways from people who don’t exercise. It’s always difficult from these observational studies to determine whether it’s the exercise that’s having the effects.”



NIH Quickfinder

For more information or to contact any of the following NIH institutes, centers, and offices directly, please call or go online as noted below:

Institutes

- **National Library of Medicine (NLM)**
www.nlm.nih.gov 1-888-FIND-NLM
- **National Cancer Institute (NCI)** www.cancer.gov
1-800-4-CANCER (1-800-422-6237)
- **National Eye Institute (NEI)** www.nei.nih.gov
(301) 496-5248
- **National Heart, Lung, and Blood Institute (NHLBI)**
www.nhlbi.nih.gov (301) 592-8573
- **National Human Genome Research Institute (NHGRI)** www.genome.gov (301) 402-0911
- **National Institute on Aging (NIA)** www.nia.nih.gov
Aging information 1-800-222-2225
Alzheimer's information 1-800-438-4380
- **National Institute on Alcohol Abuse and Alcoholism (NIAAA)** www.niaaa.nih.gov
(301) 443-3860
- **National Institute of Allergy and Infectious Diseases (NIAID)** www.niaid.nih.gov
(301) 496-5717
- **National Institute of Arthritis and Musculoskeletal and Skin Diseases** www.niams.nih.gov
1-877-22NIAMS (1-877-226-4267)
- **National Institute of Biological Imaging and Bioengineering (NIBIB)** www.nibib.nih.gov
(301) 451-6772
- **National Institute of Child Health and Human Development (NICHD)** www.nichd.nih.gov
1-800-370-2943
- **National Institute on Deafness and Other Communication Disorders (NIDCD)**
www.nidcd.nih.gov 1-800-241-1044 (voice)
1-800-241-1055 (TTY)
- **National Institute of Dental and Craniofacial Research (NIDCR)** www.nidcr.nih.gov
(301) 480-4098
- **National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)** www.niddk.nih.gov
Diabetes 1-800-860-8747
Digestive disorders 1-800-891-5389

Overweight and obesity 1-877-946-4627
Kidney and urologic diseases 1-800-891-5390

- **National Institute on Drug Abuse (NIDA)**
www.nida.nih.gov (301) 443-1124
- **National Institute of Environmental Health Sciences (NIEHS)** www.niehs.nih.gov
(919) 541-3345
- **National Institute of General Medical Sciences (NIGMS)** www.nigms.nih.gov
(301) 496-7301
- **National Institute of Mental Health (NIMH)**
www.nimh.nih.gov niminfo@nih.gov
1-866-615-6464
- **National Institute of Neurological Disorders and Stroke (NINDS)** www.ninds.nih.gov
braininfo@ninds.nih.gov 1-800-352-9424
- **National Institute of Nursing Research (NINR)**
www.ninr.nih.gov (301) 496-0207

Centers & Offices

- **Center for Information Technology (CIT)**
www.cit.nih.gov (301) 594-6248
- **Center for Scientific Review (CSR)**
www.csr.nih.gov (301) 435-1115
- **Fogarty International Center (FIC)**
www.fic.nih.gov
- **National Center for Complementary and Alternative Medicine (NCCAM)**
www.nccam.nih.gov 1-888-644-6226
- **National Center on Minority Health and Health Disparities (NCMHD)** www.ncmhd.nih.gov
(301) 402-1366
- **National Center for Research Resources (NCRR)**
www.ncrr.nih.gov (301) 435-0888
- **NIH Clinical Center (CC)**
www.cc.nih.gov (301) 996-4000
- **Office of Research on Women's Health (ORWH)**
http://orwh.od.nih.gov (301) 402-1770

NIH MedlinePlus Advisory Group

Marin P. Allen, Ph.D., Office of Communications and Public Liaison, NIH

Janet Austin, National Institute of Arthritis and Musculoskeletal and Skin Diseases

Christine Bruske, National Institute of Environmental Health Sciences

Vicky Cahan, National Institute on Aging

Kym Collins-Lee, National Eye Institute

Kate Egan, National Institute of Mental Health

Marian Emr, National Institute of Neurological Disorders and Stroke

Susan Johnson, National Institute of Dental and Craniofacial Research

Mary Beth Kester, National Institute of Biomedical Imaging and Bioengineering

Kathy Kranzfelder, National Institute of Diabetes and Digestive and Kidney Diseases

Carol Krause, National Institute on Drug Abuse

Lonnie Lisle, National Institute on Deafness and Other Communications Disorders

Ann London, National Institute of Allergy and Infectious Diseases

Richard E. Manrow, Ph.D., National Cancer Institute

John McGrath, Ph.D., National Institute of Child Health and Human Development

Gregory Roa, National Institute of Alcohol Abuse and Alcoholism

Dennis Rodrigues, Office of Communications and Public Liaison, NIH

Diane Striar, National Heart, Lung, and Blood Institute

Chris Thomsen, National Center for Complementary and Alternative Medicine

Larry Thompson, National Human Genome Research Institute

Anne Thurn, Ph.D., Office of Dietary Supplements



A Free Subscription to
NIH MedlinePlus, the Magazine



To Your Health in 2008!

Make this the year you take charge of health information for you and your family. A free subscription to *NIH MedlinePlus*, the Magazine, is your guide to the health care Web site your doctor prescribes—www.medlineplus.gov.

Millions of Americans have already taken advantage of the free **MedlinePlus.gov** Web site for trusted, up-to-date health information—and so should you. **MedlinePlus.gov** comes from the world's largest medical library, the National Library of Medicine (NLM), a part of the National Institutes of Health (NIH), the nation's premier medical research agency.



U.S. DEPARTMENT OF HEALTH
AND HUMAN SERVICES

MedlinePlus.gov



To receive your free subscription, fill out a subscription card from this issue (or write your name and full mailing address on a piece of paper) and mail to Friends of the National Library of Medicine, 2801 M Street, N.W., Washington, DC 20007 or, fax the information to (336) 547-0768 or e-mail to Traci.Marsh@vitality.com or find a subscription form at www.fnlm.org/join.pdf.