

NIH MedlinePlus[®]

Trusted Health Information
from the National
Institutes of Health

FALL 2009

the magazine



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Haywood Bostic, PE Teacher



Sorcy Apostol, College Teacher



Jay Cutler, NFL Quarterback



Nick Jonas, Singer

The Faces of Diabetes



Brenda Ferreira, Office Manager



Maddie Kuhn, College Student



Rudy Clark, HR Director



Patti LaBelle, Entertainer



Jeremy Williamson, Spokesmodel

PLUS

**Avoiding
the Flu**

**Dealing with
Depression**

**Curbing College
Drinking**

NIH Loses a Friend



Photo: NLM

Donald West King, M.D.
FNLN Chairman

Let Us Hear From You!

We want your feedback on the magazine, ideas for future issues, as well as questions and suggestions. E-mail your letters to Managing Editor Selby Bateman (selby.bateman@vitality.com) or send mail to Editor, *NIH MedlinePlus Magazine*, P.O. Box 18427, Greensboro, NC 27419-8427. We will feature some of your letters in upcoming issues.

Since our last issue, two champions of American health care have died: Senator Edward M. Kennedy (see page 26) and Ruth L. Kirschstein, M.D. They dedicated their lives to improving people's health.

Dr. Kirschstein was an outstanding scientist, mentor, and health administrator. She and her husband, Alan Rabson, M.D., now a deputy director at the National Cancer Institute, came to NIH in the 1950s to work as pathology researchers. They made a tremendous team, providing NIH with outstanding competence, integrity, and vision for over 50 years. She held the most important leadership posts in recent NIH history.

As director of the National Institute of General Medical Sciences from 1974 to 1993, Dr. Kirschstein was the first woman institute director at the National Institutes of Health. Then she became director of the newly established Office of Research on Women's Health, during which time she served for a critical period as Acting Director of the NIH. Despite poor health, she kept working until the week before she died.

For more about Dr. Kirschstein and other remarkable women physicians, please see the wonderful NLM exhibit "Changing the Face of Medicine" at: www.nlm.nih.gov/changingthefaceofmedicine/.

Sincerely,
Donald West King, M.D., Chairman
Friends of the National Library of Medicine



Photo: NIH

Dr. Ruth Kirschstein is featured in the Library's "Changing the Face of Medicine" exhibit about women medical pioneers and leaders. The Library created the exhibit to help inspire future generations of women doctors.

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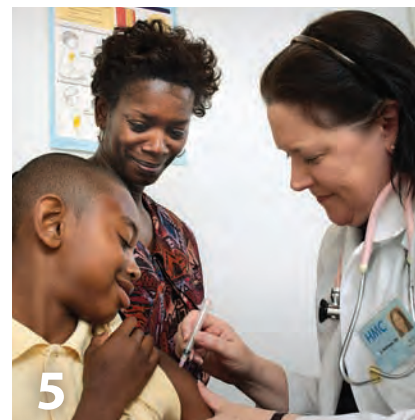
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Photos: (top of page) CDC;
(center) Getty Images;
(bottom) Mayada Akii, M.D.;
(cover) NIDDK, AP, Christopher Klose,
Jeremy Williamson



New NIH Director Dr. Francis Collins on

Medical Research That Benefits Everyone's Health

As Director of the National Institutes of Health, Dr. Francis S. Collins, M.D., Ph.D., oversees more than 18,000 employees. With the support of the American people, the NIH annually invests over \$28 billion in medical research. More than 83 percent of the NIH's funding is awarded through almost 50,000 competitive grants to more than 325,000 researchers at over 3,000 universities, medical schools, and other research institutions in every state and around the world. About 10 percent of the NIH's budget supports projects conducted by nearly 6,000 scientists in its own laboratories, most of which are on the NIH campus in Bethesda, Md.

also happened to be a geneticist brought some patients for us to interact with and interview. We met a young man with sickle cell disease, a child with Down syndrome, and others—all examples of how one small glitch in the genome can have great impact. That helped me to see how scientific investigation of the most basic aspects of life, of DNA, RNA, and protein, could have fundamental consequences for human beings. If I was

“Science is not a 100-yard dash. It's a marathon. Our goal is to advance biomedical research in new, innovative ways that will benefit everyone's health.”

— NIH Director Dr. Francis Collins

What is your primary goal for NIH as Director?

Our most basic mission at NIH is to extend the knowledge of the nature and behavior of living systems. Our most fundamental human goal is to reduce the burdens of illness and disability on people and their families.

What inspired you to a life of research?

During my first year as a medical student, a pediatrician who

going to be in medicine, I wouldn't be satisfied leaving those problems to someone else to figure out. That was 35 years ago.

Could you describe the state of NIH research today?

Investigator-initiated research has been the bedrock of NIH breakthroughs over the decades. Today, the number and variety of research activities and the depth of molecular understanding of how life works are breathtaking. Such basic information is critical to understanding what goes wrong when disease strikes.



Photo: NIH

NIH Director, Dr. Francis S. Collins, was Director of the NIH's National Human Genome Research Institute from 1993 to 2008. The U.S. Senate unanimously confirmed Dr. Collins as the new Director.

NIH is currently supporting, down to the individual research grant. We believe this is transparency for the benefit of all.

What areas will you be emphasizing for NIH over the next few years?

We see five fairly broad opportunities that hold great promise.

New Technologies—Today's high-throughput technologies can help to break down the boundaries limiting our understanding of disease; for example, that what we thought we were doing to study cancer turns out to tell us something crucial about heart disease. Or that investigating a rare disorder affecting only a few hundred people has profound implications for millions of people with high blood pressure or asthma. The notion that medical research could be compartmentalized is turning out to be wrong. There is all the more reason to work together to understand scientifically how we're connected.

Genomics is one of those technologies that is changing our understanding of brain cancer, for instance. In a new pilot project, it is being used to look at the genetic script to identify and catalog the glitches that make a good cell go bad. This can be expanded to other cancers as well, changing forever what cancer is all about and how to prevent and treat it.

Discovery into Practice—I am particularly passionate about translating basic discoveries about the causes of disease into effective treatments, whether the disease is common or rare. We need to bridge the gap between discovery and development as quickly as possible.

Healthcare Reform—We can put science to work to better understand how to rein in costs and improve outcomes. For instance, in the area of comparative effectiveness, NIH has been studying various clinical problems to see which treatment approaches are most effective and thereby less costly. In the same vein, various payment incentive models could be compared in a

There is also “big science”—projects like the Human Genome Project and others—that enables researchers to get answers more quickly, and use their resources more efficiently. The challenge is to decide how to support everything, with an emphasis on releasing the data from the big projects immediately, so that everyone can begin to take advantage of those discoveries.

How is NIH sharing what it learns?

President Obama continues to emphasize the importance of transparency, open government, public engagement, and collaboration. NIH uses a wide variety of programs and techniques to make as much information as widely available as possible. It's a matter of public trust.

We are committed to getting out the latest research about prevention, diagnosis, and treatment. One of our latest advances is a long-anticipated upgrade to the popular CRISP (Computer Retrieval of Information on Scientific Projects) Web site. Through the upgrade, called REPORT (Research Portfolio Online Reporting Tool <http://report.nih.gov>), anyone can see what

Francis S. Collins, M.D. (left), was sworn in as the 16th Director of the National Institutes of Health by Katherine Sebelius (right), Secretary of the Department of Health and Human Services, on August 17. With Dr. Collins is his wife, Diane L. Baker (center).



Photo: U.S. Department of Health and Human Services

research environment to answer some of the questions floating out there.

We also must invest more in learning how drugs work differently in different people, and the personalized medicine agenda needs to be moved forward. We need to better understand the causes of health disparities and what can be done to dispel them. This is going to require social and behavioral research to clarify how people absorb information and actually alter their own health behaviors.

Global Health Focus—Partnering with the World Health Organization, the Gates Foundation, and other philanthropies, the opportunity has never been better for NIH to apply what we know therapeutically around the world. We have come quite a distance in understanding many of the diseases common to the developing world, but much more remains to be accomplished.

Supporting Scientists—We could do everything possible to come up with new ideas and new technologies, but if we don't have the people to do the research, then we're going to continue to lose out in terms of our standing in the world. Tomorrow's researchers must see that it is possible to have careers that support innovation and creativity. So we need to focus on supporting the scientific community the best way we can. At the same time, we need to make the case for the value of medical research, and use the resources we are given by the American taxpayer creatively. One particularly relevant project here is the NIH Roadmap for Medical Research, launched in September, 2004, to transform

biomedical research by overcoming specific hurdles or filling defined knowledge gaps.

Do you have the funding to do all of this?

Under the American Recovery and Reinvestment Act, NIH has received \$10 billion in stimulus funding, which represents an extraordinary opportunity. In addition, we have been given another \$400 million for comparative effectiveness research.

What impact will this have, do you think?

Every grant we give out creates about seven jobs, and every research dollar generates more than two dollars in goods and services in less than a year. In terms of stimulating the economy, NIH is near the top of the list. But science is not a 100-yard dash. It's a marathon. Our goal is to advance biomedical research in new, innovative ways that will benefit everyone's health.

Watch Videos of Dr. Collins

To see online videos of Dr. Collins speaking about health and the NIH, appearing on *The Colbert Report*, and related appearances, visit www.nih.gov/about/director/ and look under the "Multimedia" heading.

Avoiding the Flu

Each year, from late fall through early spring, there are outbreaks of seasonal flu. In addition to this year's seasonal flu, there is the 2009 H1N1 flu virus. This is causing a more dangerous flu season. More people than usual are getting sick, being hospitalized, and dying than during a typical flu season. Vaccines for seasonal flu and 2009 H1N1 flu are available to help people prevent coming down with them. Here's what you need to know to help avoid getting and passing on the flu.



Photo: James Gathany, Centers for Disease Control and Prevention

Children from six months of age and young people up to 24 years of age are particularly at risk this year from the 2009 H1N1 flu. They are among the groups being given priority to receive the H1N1 vaccine (either shot or mist).

Influenza (Seasonal)

The flu is a contagious respiratory illness caused by influenza viruses. It causes mild to severe illness and can sometimes lead to death. The best way to prevent seasonal flu is by getting a flu shot each year. In the U.S. each year on average,

- 5 to 20 percent of the population gets the flu,
- more than 200,000 people are hospitalized from flu-related complications, and
- about 36,000 people die from flu-related causes.

Older people, young children, and people with asthma, diabetes, heart disease, and other conditions are at high risk for serious flu complications.

2009 H1N1 Influenza

The 2009 H1N1 flu is caused by a different virus than the seasonal flu. Its symptoms are similar to those of seasonal flu, including fever, cough, sore throat, body aches, headache, chills, and fatigue. But those most at risk for 2009 H1N1 are different from those most vulnerable to the seasonal flu. Although sometimes incorrectly called “swine” flu, 2009 H1N1 is not the 1976 swine flu virus. People vaccinated against swine flu in 1976 should still get the 2009 H1N1 vaccine.

H1N1 Flu: Who Should Be Vaccinated First

The Centers for Disease Control and Prevention (CDC) is urging everyone to get both the seasonal and H1N1 vaccines. The 2009 H1N1 vaccine, either by injection or nasal spray, does not replace the seasonal flu shot. It is intended to be used with it.

People most at risk from 2009 H1N1 flu and being given priority to receive the first doses of H1N1 flu vaccine include:

- Pregnant women;
- People caring for infants six months or younger, because younger infants are at higher risk of influenza-related

complications and cannot be vaccinated;

- Healthcare and emergency medical services personnel, who can be a potential source of infection for vulnerable patients;
- Everyone from 6 months through 24 years of age; and
- People aged 25 through 64 years with asthma, diabetes, heart disease, and other health conditions associated with high risk from flu complications.

—Centers for Disease Control and Prevention (CDC)



Photo: iStock

2009 H1N1 Flu Vaccine Facts

2 Pregnant women should definitely get the 2009 H1N1 flu vaccine.

Changes to a pregnant woman's immune system can make her more sensitive to the flu and result in serious complications if she is infected with H1N1. If you are pregnant, you should get vaccinated against H1N1 as soon as possible. Your vaccination can potentially protect your unborn child from infection.

3 You need only one dose of the H1N1 vaccine.

Good news from our clinical trials being run by the National Institutes of Health and the flu vaccine manufacturers: The H1N1 vaccine is a really good match with the H1N1 virus currently circulating across the country. Healthy adults and children 10 and older will need only one dose of vaccine.

It's also fine to get the seasonal flu shot and the H1N1 shot at the same time. But if you get the nasal spray form of the vaccine, you need to wait three to four weeks before getting another nasal spray vaccine.

4 Flu shots are vaccines from dead or inactivated forms of the flu virus.

Both the seasonal and 2009 H1N1 flu shots are vaccines that contain killed/inactivated influenza virus. The nasal spray H1N1 vaccine contains a live, but weakened, form of the virus that does not cause flu illness.

5 Healthy people are in danger from the new 2009 H1N1 virus, and they should get vaccinated.

Both healthy people and people with underlying health conditions, such as asthma and diabetes and other chronic diseases, are at risk from the 2009 H1N1 flu. In CDC studies, about 70 percent of people who have been hospitalized with this 2009 H1N1 virus have had one or more medical conditions that place them at "high risk" of serious seasonal flu-related complications. Thirty percent of those hospitalized were previously healthy.

The 2009 H1N1 flu has especially affected young people ages 5 to 24. A recent study in the *New England Journal of Medicine* of 272 hospitalized H1N1 patients showed that 60 percent of the children who were hospitalized had an underlying condition. The remaining 40 percent had no underlying condition.

The Centers for Disease Control and Prevention (CDC) and the National Institute of Allergy and Infectious Diseases (NIAID) offer these flu facts to help the American people understand the safety and effectiveness of the H1N1 flu vaccine.

1 The 2009 H1N1 flu vaccine is safe and well tested.

Clinical trials conducted by the National Institutes of Health and the vaccine manufacturers have shown that the new H1N1 vaccine is both safe and effective. The FDA has licensed it. There have been no safety shortcuts.

It is produced exactly the same way the seasonal flu vaccine is produced every year. It is simply a new virus strain. In fact, had H1N1 struck this country earlier than this spring, the H1N1 strain probably would have been included as part of this year's seasonal flu shot.

Millions of Americans get the seasonal flu vaccine each year without any problems. Still, since some Americans have concerns about "new" vaccines, the NIH and the vaccine manufacturers have conducted more thorough tests on the H1N1 vaccine than they do on other flu vaccines. There have been no red flags from these clinical trials.

The risk of the flu, especially for pregnant women, children, and people with underlying health conditions, is higher than any risk that might come from the H1N1 vaccine.



Photo: iStock

What You Can Do to Stop the Flu

To reduce chances of getting or spreading the flu:

- Cover nose and mouth with a tissue when you cough or sneeze. Dispose of the tissue after use.
- Wash hands often with soap and water or alcohol-based hand cleaners after coughing or sneezing.
- Avoid touching your eyes, nose, or mouth.
- Avoid close contact with sick people.
- Stay home from work or school if you are sick.

—Centers for Disease Control and Prevention (CDC)

To Find Out More

MedlinePlus:

- www.nlm.nih.gov/medlineplus/flu.html
- www.nlm.nih.gov/medlineplus/h1n1fluswineflu.html

National Institute of Allergy and Infectious Diseases:

- www.niaid.nih.gov/topics/Flu

U.S. Department of Health and Human Services:

- <http://flu.gov>

NIH Flu Research to Results

Scientists at the National Institute of Allergy and Infectious Diseases (NIAID) and researchers supported by NIAID worldwide are collaborating to prevent, diagnose, and treat seasonal and pandemic influenza, including 2009 H1N1 flu.

Clinical Trials for Flu

NIH has started several clinical trials to determine what dosages of the 2009 H1N1 influenza vaccine can best protect healthy and high-risk groups, especially pregnant women, children, young people, and those with asthma.

“These trials are being conducted through our longstanding vaccine clinical trials infrastructure, which includes the Vaccine and Treatment Evaluation Units,” says Anthony S. Fauci, M.D., NIAID Director. “This is a network of medical centers that can quickly test vaccines in response to emerging threats to public health, like 2009 H1N1 influenza.”

For more of what you need to know about the flu, go to the NIAID Web site (www.niaid.nih.gov) and to <http://ClinicalTrials.gov>.

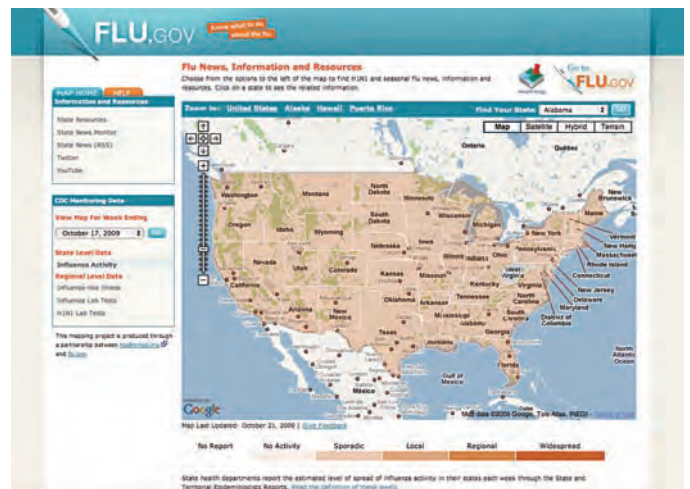
Flu News, Information, and Resources

To find a flu shot location near you:

www.flu.gov/individualfamily/vaccination/locator.html

To find state, regional, and national flu resources:

www.flu.gov/whereyoulive/healthmap/



Facing Diabetes: What You Need to Know

November is National Diabetes Awareness Month—The National Institutes of Health, with the Centers for Disease Control and the American Diabetes Association, have launched new educational campaigns to alert all Americans to the dangers of diabetes. The following special section covers what you need to know to protect you and your loved ones.



FASTFACTS

- There are three main types of diabetes: type 1, usually first diagnosed in children, teens, or young adults; type 2, once called adult-onset and now among the fastest-growing conditions in Americans of all ages; and gestational diabetes, occurring in some women during pregnancy.
- With diabetes, the body does not produce or properly use insulin, the hormone that converts sugar, starches, and other foods into the energy for daily living.
- Diabetes can lead to many complications. The disease can severely damage the heart, kidneys, eyes, skin, legs and feet, nerves, and teeth and gums. It can result in premature death.
- 23.6 million Americans have diabetes—7.8 percent of the U.S. population. Nearly one in four of those don't know they have it.
- About 57 million adults aged 20 and older have pre-diabetes. This is a condition where blood glucose (sugar) levels are higher than normal but not high enough to be called diabetes. Pre-diabetes puts you at risk for type 2 diabetes and cardiovascular disease.

The Faces of Diabetes

Diabetes strikes millions of Americans, young and old, rich and poor, famous or not. Here are four role models who are successfully controlling their disease. You will find stories about others with diabetes in this section.

(Clockwise from top left)

Nick Jonas: Teen singing sensation Nick Jonas, leader of the Jonas Brothers band, was diagnosed with type 1 diabetes in 2005. A role model for other teens with diabetes and a champion of good diabetes management, he speaks out for more research.

Jay Cutler: Diagnosed with type 1 diabetes in 2008, the Chicago Bears quarterback wears an insulin pump to help control his diabetes. Off the gridiron, he raises funds for children with diabetes.

Sonia Sotomayor: The new U.S. Supreme Court Justice has had type 1 diabetes since childhood. With the help of her mother, a registered nurse, she has always made sure to control her disease.

Patti LaBelle: It was only after collapsing on stage during a performance that the popular songstress learned she had type 2 diabetes. Since then, she exercises regularly to help control it and has authored healthy-eating cookbooks.

“Control Your Diabetes. For Life”

The “Control Your Diabetes. For Life” educational campaign kicks off this month. The National Diabetes Education Program (NDEP) developed the campaign, jointly sponsored by the National Institutes of Health (NIH) and the Centers for Disease Control and Prevention (CDC), with the support of more than 200 partner organizations.

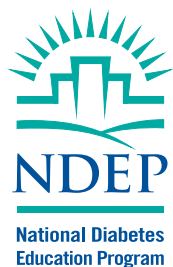
The message is: People with diabetes who keep their blood glucose (sugar) as close to normal as possible soon after they are diagnosed have fewer problems with their eyes, nerves, and kidneys. They also have fewer heart attacks later in life.

Glucose levels are measured by a blood test—called the A1C test—that averages a person’s glucose range over the past two to three months.

“This is very important for people with diabetes to know,” says Griffin P. Rodgers, M.D., Director of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). “Diabetes is a serious disease. Managing it is not easy, but the benefits are worth the effort. Keeping your blood sugar in a target range that is safe for you reduces the chances of serious health problems later on.”

“Everyone’s target range is different, so talk with your healthcare team about the best target goal for you,” says NDEP

Director Joanne Gallivan, M.S., R.D. “Also, controlling blood pressure and cholesterol can lower your risk for heart attacks and other diabetes complications.”



For information about “Control Your Diabetes. For Life” campaign, visit www.YourDiabetesInfo.org or call toll-free 1-888-693-NDEP (6337).

“Stop Diabetes Now!”

This month, the American Diabetes Association is launching an educational campaign, “Stop Diabetes,” to persuade more Americans to understand and take action to prevent and treat the disease. The Association is spreading its message to families, volunteers, businesses, the scientific and medical communities, and the general public, notes American Diabetes Association Chair of the Board George J. Huntley.

“The goal is to motivate one million new people to take action to stop diabetes in the next 12 months,” he says, “and to grow that number to three million people in three years. This will take steadfast courage, unflinching commitment, and patience.”

Diabetes has reached crisis proportions. It affects all Americans, either directly or indirectly. The Association is to recruit people from all walks of life to:

- Learn more about diabetes
- Raise awareness among their families, friends, and communities
- Promote more diabetes research
- Volunteer to help spread the message of good health

“The Stop Diabetes movement is saying that we can no longer dismiss or ignore this disease,” says Huntley. “It is time to do whatever it takes to confront and stop it.”

To find out more about Stop Diabetes, visit stopdiabetes.com or call the American Diabetes Association’s toll-free number, 1-800-DIABETES.

Tips for Seniors at Risk for Type 2 Diabetes

Lifestyle changes that lead to weight loss—such as making healthy food choices and getting more exercise—are effective in helping to reduce the development of diabetes. These lifestyle changes are especially effective in people aged 60 and older, who can reduce their risk of developing type 2 diabetes by 50 percent over 10 years.

—NIDDK

Diabetes Stories

Maddie Kuhn, 19
Washington, DC
Type 1



Photo: Christopher Klose

“Diabetes has instant consequences...”

Diagnosed with type 1 diabetes in the third grade, Madeleine “Maddie” Kuhn doesn’t let the disease inhibit her. The American University sophomore belongs to a sorority, plays doubles on the tennis team, co-produces a popular campus TV talk show, does public relations for an environmental group, helps her local Model United Nations chapter—and keeps up with her courses.

Diabetes is not something that should get you down, although it is hard when you’re a kid.

My parents, both doctors, saw the signs and admitted me for early treatment and training in managing the disease. I thought I’d just get better. But after two weeks of injecting myself with insulin, I didn’t want to do it any more.

You never grow out of diabetes. Insulin pumps make it easier. But you can’t anticipate what your body’s going to do, so you have to constantly monitor. The more you monitor, the easier it gets. If my blood sugar goes low in class, for instance, I have to snack even though it still embarrasses me a little.

Diabetes becomes a part of you. If they find a cure, who would I be without it?

Diabetes makes me a strong person. There are times when you want to chuck it all. But diabetes has instant consequences. You learn to be responsible pretty quickly, or else.

My advice for others with diabetes is to be aware of their condition; to see it as a part of life than can help to make you stronger. There are also opportunities with diabetes, so be aware and take advantage of them.

“Small Steps, Big Rewards”: Preventing Type 2 Diabetes

The good news is type 2 diabetes can be delayed and possibly prevented by:

- losing a modest amount of weight
- exercising 30 minutes a day five times a week
- choosing healthy foods and reducing calories and fat in the diet

These are the plain facts in “Small Steps, Big Rewards: Prevent Type 2 Diabetes,” an education campaign of the National Diabetes Education Program (NDEP) to stem the growing epidemic of diabetes. The program is a beacon of hope to millions of Americans with pre-diabetes (higher than normal blood glucose levels but not yet diabetes).

“Fifty-seven 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). “They can delay or possibly prevent it. It boils down to following a healthy lifestyle by taking small steps that can lead to a big reward, such as eating smaller portions and walking upstairs instead of taking the elevator.”

The NDEP campaign stems from findings of 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 delay or possibly prevent its onset if they lose five to seven percent of their body weight through a combination of increased physical activity and a reduced-fat, lower-calorie diet. For a 200-pound person, it means losing about 10 pounds.

The DPP and its follow-up study proved that modest weight loss could effectively delay or possibly prevent type 2 diabetes in all high-risk groups.

“People should share this important information with their families, especially if they already have diabetes,” Gallivan urges.

NIH Research to Results

- The NDEP developed an education campaign, Small Steps, Big Rewards: Prevent Type 2 Diabetes, to help people at high risk take the necessary steps to prevent the disease (www.ndep.nih.gov). Over 200 private partners have joined this effort.
- Minority populations are disproportionately affected by diabetes (African Americans, Hispanics, American Indians, Alaska Natives, Asian Americans, and Pacific Islanders). For example, African Americans are 1.8 times more likely to develop type 2 diabetes compared to non-Hispanic whites. Research is under way to study the biological, cultural, and socioeconomic factors that may influence the development of diabetes.
- The SEARCH for Diabetes in Youth Study has provided the first national data on prevalence of diabetes in youth: 1 of every 523 youth had physician-diagnosed diabetes in 2001 (this number included both type 1 and type 2 diabetes). SEARCH has also provided the first data on the rate of development of new cases of childhood diabetes and will continue to monitor trends in the future.

To Find Out More

- Learn more at medlineplus.gov; type “diabetes” in the Search box.
- Visit the NIH’s National Diabetes Education Program Web site: www.YourDiabetesInfo.org
- Visit stopdiabetes.com or call the American Diabetes Association at 1-800-DIABETES.
- Go to the American Diabetes Association site at diabetes.org.

Diabetes Stories

Brenda Ferreira, 36
Frederick, Md.
Type 2



Photo: NIDDK

“My biggest challenge with diabetes...”

My biggest challenge managing diabetes is exercising. It used to be easy to lose weight and stay in shape. After being diagnosed, it’s been very difficult. People who don’t have diabetes don’t understand.

About a year ago, my husband and I decided to have a baby. And I wanted to lose weight before giving birth. I’ve had my ups and downs. I walk for exercise. Instead of taking elevators, I take stairs. It’s not much, but it’s something.

My husband and I haven’t changed 100 percent, but we have made changes in our eating habits. For example, because I don’t like sugar-free foods and I usually buy regular, I try to eat less.

As Latino people, our main dish is usually rice and beans — the rest are just add-ons. But we know it’s better to eat fewer carbohydrates when you have diabetes. So we have changed to whole-wheat pasta. We still eat rice and beans, but then the next day we’ll have salads and chicken, for protein.

I was surprised to be diagnosed with diabetes, and started eating everything that wasn’t good for me. But you get more conscious of what and how much you eat. Also, my mom helped me. And my old roommate, who is a nurse practitioner, gave me information about diabetes. Now they watch me. If I order french fries, they’ll ask, “Don’t you think it would be better to eat veggies?”

My advice for someone newly diagnosed with diabetes is to live as normally as possible, but try to make your life healthier.

Haywood Bostic, 50
Midlothian, Va.
Type 2

For Men, Ignoring Diabetes Can Be Deadly

Research statistics show that when it comes to their own health, men have fewer checkups with a regular healthcare provider than do women. They remain unaware of the often hidden dangers of obesity, high blood pressure, depression, sexual dysfunction, and diabetes.

Historically, men have not been forthcoming about their health, particularly conditions like diabetes, depression, or sexual dysfunction. But today, many men are waking up to the fact that good health and longer life demand positive, consistent action. The National Diabetes Education Program (NDEP) advocates that every person diagnosed with diabetes should learn all they can about their disease and how to manage it.

Adopting a “modern man” approach, the American Diabetes Association is encouraging men to get a strong grip on their diabetes and related conditions, actively engage their healthcare providers, and manage their health. By doing so, they can improve and lengthen their lives in three major, related areas that diabetes impacts:

- **Physical Health:** Diabetes causes heart disease, and damages the nerves and kidneys. If not properly diagnosed or treated, it can lead to amputation, blindness, and even death.
- **Mental Health:** To feel “down” once in a while is normal. But to feel this way for two or more weeks is a sign of serious depression. And studies show that people with diabetes are at greater risk for depression than those without it.
- **Sexual Health:** Diabetes can affect sexual function. Some men with diabetes suffer from erectile dysfunction (ED). Low testosterone, which is twice as common in men with type 2 diabetes as those without, can trigger ED and a diminished interest in sex. It can also lead to reduced muscle mass, mood swings, and fatigue.

Fortunately, men can overcome these challenges from diabetes with the support

and resources available from such organizations as the National Diabetes Education Program (NDEP) and the American Diabetes Association, which makes available a free 36-page booklet, *The Modern Man’s Guide to Living Well with Diabetes*.

Simpler Diabetes Care: Estimated Average Glucose (eAG)

The American Diabetes Association has a new way to understand blood glucose (sugar) levels over time. It is called “eAG,” for estimated average glucose. Like the standard A1C blood test that has been used for many years, it measures average blood glucose over the past two to three months. But it reports the results in a format that is easier for many patients and their healthcare professionals to understand. To discover your eAG, visit the American Diabetes Association’s eAG Converter at www.diabetes.org/eag or call 1-800-DIABETES.

Clinical Trials and Diabetes

Clinical trials are research studies that test how well new medical approaches work in people. Volunteers are an important part of clinical trials, including healthy people and those with diseases, such as diabetes. For information on diabetes clinical trials, visit <http://clinicaltrials.gov/> and search under the term “diabetes.”



Photo: NIDDK

“Don’t take diabetes for granted.”

As a physical education teacher, I was shocked when I was diagnosed with type 2 diabetes. I thought I was eating right, exercising enough—and was too young to get diabetes.

After I was diagnosed, I went to a nutritionist. She explained what portions I should be eating at every meal, and how I should have more green vegetables than meat on my plate.

I’ve become more aware of what I need to stay away from. If I eat two pieces of pizza, or cornbread, my sugar shoots up. I stay away from fried foods, eat lots of salads, and grill my food—it tastes better, and it’s better for you. I watch the portions on my plate, and I’ve become a label reader.

I stick to a morning routine to manage my diabetes. As soon as I wake up, I test my sugar, and then take my medicines. My family is part of my routine, as well. They make sure that I take my medicines and have diet drinks or water.

My job helps me manage my diabetes, too. When the kids are running, I run. When they exercise, I exercise. I also tell them how important it is to eat the right foods to avoid becoming overweight and diabetic.

My advice for others with diabetes is to stay on top of it, go to the doctor regularly, and take your medicines on time. Don’t take diabetes for granted!

A Diabetes-Friendly Meal Everyone Can Enjoy

From the National Diabetes Education Program (NDEP)

Knowing what to serve and eat for dinner can sometimes be a challenge—especially for people with diabetes. While eating healthy foods is important for everyone, it's essential for people with diabetes. Diabetes is a disease that results in high glucose, or sugar levels in the blood, which can lead to serious complications. For the 23.6 million people with diabetes in this country, making healthy food choices and being physically active are crucial.

Whether you are a person with diabetes or a family member or friend, you can prepare a meal that is healthy and tastes great. Look for recipes that are low in saturated fats, trans fats, cholesterol, salt (sodium), and added sugars. Experiment with recipes that include fruits and vegetables, fish, lean meats, chicken or turkey without the skin, dried peas or beans, and low-fat or nonfat milk and cheese. Other healthy ingredients are foods high in fiber, such as whole grain cereals, breads, crackers, rice, and pasta.

What's For Dinner?

When planning a meal, start with a salad appetizer. Baby spinach leaves with seasonal fresh vegetables or fruits like sugar snap peas or sliced pears go nicely with a low-fat vinaigrette dressing.

For the main course, stick with lean meats or fish. Here is a recipe for baked salmon. It takes about half an hour to prepare. Nutrition information, including carbohydrate grams, is provided.

A great side dish to serve with salmon is brown rice. Cook the rice with garlic, ginger, or green onions to give it more flavor. For dessert, serve a selection of fresh fruits of the season or a small scoop of fat-free or low-fat frozen yogurt or sorbet instead of regular ice cream.

Entree: Baked Salmon Dijon*

Serves 6

Ingredients:

1 cup fat-free sour cream

2 tsp dried dill

3 Tbsp finely chopped scallions

2 Tbsp Dijon mustard

2 Tbsp lemon juice

1 ½ lb salmon fillet with skin (cut in center)

½ tsp garlic powder

½ tsp black pepper

Fat-free cooking spray as needed

Photo: iStock



Instructions: Preheat oven to 400 °F.

Whisk sour cream, dill, onion, mustard, and lemon juice in small bowl to blend. Lightly oil baking sheet with cooking spray. Place salmon, skin side down, on prepared sheet. Sprinkle with garlic powder and pepper, then spread with the sauce. Bake salmon until just opaque in center, about 20 minutes.

Nutrition Information Per Serving:

Calories 196, Total Fat 7 g, Saturated Fat 2 g, Cholesterol 76 mg, Sodium 229 mg, Fiber less than 1 g, Protein 27 g, Carbohydrates 5 g

* Recipe taken from *Keep the Beat: Heart Healthy Recipes from the National Heart, Lung, and Blood Institute*

Jeremy Williamson, 33
Augusta, Ga.
Type 1



Photo: Jeremy Williamson

"Diabetes is beatable!"

Jeremy Williamson was diagnosed with type 1 diabetes at the age of 13. It almost killed him. Since then, the award-winning fitness model and motivational speaker has been on a mission to defeat America's No. 1 "silent killer." He is passionate about educating children about the disease:

When I was diagnosed with diabetes, I wanted to hide it! I wanted to be like everyone else. I was going into high school and that was tough.

Fortunately, my family backed me 100 percent. My mom was really over-protective that first year. But even though I hid it, I made sure I took care of myself. I carried my insulin and took it when I needed it. I played football, and the team looked out for me. They knew.

When I graduated, I promised myself that I would take care. I wanted to understand diabetes. This is the key to controlling the disease. The lesson is simple: Diabetes won't kill you unless you let it! Type 2 is beatable most of the time.

But Type 1, which I have, is different. You have to study to defeat it—every day. If diabetics don't learn that, they're defeating themselves. I tell kids that if they take the time to learn, they can beat diabetes.

The most important thing is to stabilize your blood sugar. Check your blood sugar regularly. Take your insulin. Learn about the foods you eat, when to eat them, and how much or little to eat.

I tell kids they can do this, if they take the time. To learn, be positive, keep clean, and keep going! We can find a cure for diabetes. It's exciting, especially what's going on at the Juvenile Diabetes Research Foundation, the American Diabetes Association, and the National Institutes of Health.

Rudy Clark, 54, Hualapai Tribe, Peach Springs, Az. Type 2

Discussing Diabetes with Your Healthcare Provider

Diabetes Medicines—Always Discuss Them with Your Healthcare Provider

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 2008. 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 healthcare providers,” says Judith Fradkin, 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 were important, but did 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.

Ways You Can Help Stop Diabetes

To Prevent Diabetes For Yourself:

- **Make healthy lifestyle choices.** Stay physically active, eat nutritious, well-

balanced meals, and lose weight if you are overweight.

- **Learn about diabetes.** People who understand more about the disease have a better chance of avoiding it later on.
- **Use My Food Advisor** at diabetes.org/mfa to get recipes, learn about healthy food substitutions, and plan healthful meals.
- **Take the quick and easy Diabetes Risk Test** at diabetes.org/risktest to determine your risk for pre-diabetes or type 2 diabetes.
- **Get a check-up.** Screening for diabetes is an important step in preventing the disease.

To Help Others:

- **Volunteer.** Get involved in the fight against diabetes.
- **Help Diabetes Research.** Take part in clinical trials (www.clinicaltrials.gov).

Learn More: Tutorials, E-mails, & Local Info

Diabetes – Introduction

www.nlm.nih.gov/medlineplus/tutorials/diabetesintroduction/htm/index.htm

To learn if you are at risk for type 2 diabetes, visit:

<http://ndep.nih.gov/am-i-at-risk/>

NIH Senior Health: Diabetes

<http://nihseniorhealth.gov/diabetes/toc.html>

Weekly email updates:

MEDLINEPLUS-DIABETES:

Subscribe from

<https://list.nih.gov/archives/medlineplus-diabetes.html>

Find diabetes services in your area:

www.nlm.nih.gov/medlineplus/golocal/

National Diabetes

Eduation Program:

www.YourDiabetesInfo.org



Photo: NIDDK

“As a native nation, we must fight diabetes...”

I didn't know a thing about diabetes when I was diagnosed, but I have since come to understand its full impact. My father, who died when I was young, had his leg amputated. What he went through motivates me. I am trying to keep my life available to my children and grandchildren.

Maintaining a steady weight and keeping a vigorous exercise schedule has been challenging. I used to eat eggs, bacon, and fried bread. Now I eat blue corn tortillas and ground buffalo meat. I bake my foods rather than fry them. I took classes on heart health and managing diabetes, and learned to read labels to pick which foods to eat. I eat my vegetables first, then my protein. I snack on nuts and fruit to maintain my sugar throughout the day.

I have a good support group, including three sons and 14 grandchildren. My children respect what I need. I have two sisters and two brothers who are living with diabetes. We give each other support. If I stray, my family and friends remind me, which is good.

My advice to others with diabetes is that you are in control of your life and must do what is right. Watch what you eat and exercise. Listen to your doctor. As a native nation, we need to fight diabetes, using our cultural and traditional methods.

Teen Diabetes Quiz



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. Teens with diabetes can eat sugar, sweets, and desserts.
 - a. True
 - b. False
5. 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
6. 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
7. 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
8. 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
9. Teens with diabetes should not eat at fast food restaurants.
 - a. True
 - b. False
10. 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

Answers

1. Answer: B

Diabetes is a disease in which your blood glucose (sugar) levels are too high. Glucose comes from the food you eat. 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 may also need to take medicines (including insulin) and check your blood glucose.

4. 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 healthcare team about how sweet foods can fit into your meal plan.

Source: National Diabetes Education Program (NDEP)

Sorcy Apostol, 63 Elk Grove, Calif. Type 2



When Your Child Is Diagnosed with Diabetes: Parents' Questions for the Healthcare Team

- What are the different types of diabetes? Which type does our child have? Will it ever go away?
- What does this mean for members of our family? Does it mean our other children will get diabetes, too?
- What are my child's treatment goals? How can we help our child meet these goals? How often will our child need to visit you each year?
- What other healthcare team members can help care for our child's diabetes? How do we contact them?
- How can we work together as a family to help our child?
- What emotional issues might our child and family face?
- Should we tell friends and family about our child's diabetes?
- Who can help us if we don't have medical insurance?
- What resources are there to help our child in school?
- What research is going on?

—www.ndep.nih.gov/teens/ParentsQuestions.aspx

5. Answer: B

Some carbs are better for you than others. Choose fiber-rich carbs like whole grain foods and fresh fruits and vegetables. 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.

6. 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. Pick something you like—riding a bike, roller blading, or dancing. Slowly work up to at least 60 minutes every day. 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.

7. Answer: C

Some types of fats are better for you than others. 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.

8. 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. 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.

9. 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.

10. 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.

"With diabetes, it's always a continuous education and a continuous struggle."

Having diabetes is really challenging for my lifestyle—especially controlling carbohydrates. I am a Filipina, and our basic food staple is rice, which is high in carbohydrates. We eat rice with a passion.

My older sister also has diabetes, and I'm very scared for my daughter. Educating myself and my family is very important. My husband and I have 10 brothers and sisters, and we get together on weekends. We used to cook 30 cups of rice, but now we only cook 10 cups. That means everyone eats less rice. My husband helps me manage my diabetes, too. When I wake up at night, he takes my blood sugar and fixes something for me to eat.

I teach at Sacramento City College. At the beginning of each semester, I tell my classes that I am diabetic and will always take a break halfway through class to check my blood sugar and have a snack. My classes understand, and they support me, too.

With diabetes, it's always a continuous education and a continuous struggle.

“Depression Can Disguise Itself...” —But There Is Help

Depression is a common but serious medical illness. It’s more than just a feeling of being “down in the dumps” or “blue” for a few days. Depression, in all its forms, affects as many as 20 million Americans. Most who experience it need treatment to get better. Although help is available, many depressed people never seek it.

“I can remember it started with a loss of interest in basically everything that I like doing. I just didn’t feel like doing anything. I just felt like giving up. Sometimes I didn’t even want to get out of bed.”

—Rene R., retired police officer

“You don’t have any interest in thinking about the future, because you don’t feel that there is going to be any future.”

—Shawn C., competitive diver

“Your tendency is just to wait it out, you know, let it get better. You don’t want to go to the doctor. You don’t want to admit to how bad you’re really feeling.”

—Paul Gottlieb, publisher

Mayada Akil, M.D., is a professor of Psychiatry at Georgetown University, in Washington, DC, and a Senior Advisor to the Director of the National Institute of Mental Health (NIMH), part of the National Institutes of Health, in Bethesda, Md. She spoke with *NIH MedlinePlus* Magazine Coordinator Christopher Klose about the need to recognize and be treated for depression. The disorder affects over 20 million Americans.

What are the signs of depression?

Sadness or inability to enjoy things are hallmarks of depression. It also affects sleep, appetite, and concentration. But depression can disguise itself. It is common for people to go to their healthcare providers complaining of insomnia, fatigue, and various aches and pains. These are very real symptoms but the underlying cause can be depression.

What is depression and how does it affect us?

Depression is a brain disorder that shows itself in both psychological and physiological ways. It affects our emotions, thinking, and behavior. It impacts our relationships, at home and at work, our happiness, well being, and health. It is a major cause of disability, and the increased risk of suicide, of course, is a big concern.

What’s the difference between feeling “blue” and being depressed?

Everyone feels “blue” or down in the dumps at times. That’s normal. Clinical depression is marked by longer duration, severity, and it affects function. It is important to learn more about depression if you suspect that you or a loved one may have it.



Mayada Akil, M.D., directs the Mood and Anxiety Disorders Clinic at Georgetown University.

When Medication Is Prescribed

You or a family member should ask the following questions when a medication is prescribed:

- What is the medication supposed to do?
- How and when should I take it?
- What should I do if I miss a dose?
- When and how should I stop taking it?
- Will it interact with other medications I take?
- Do I need to avoid any types of food or drink while taking the medication?
- Is it safe to drink alcohol while taking this medication?
- What are the side effects?

After taking the medication for a short time, tell your doctor how you feel and any concerns you have about the medicine.

— NIMH

How can someone learn about depression?

A good place to start is the National Institute of Mental Health. I give my patients very informative, easy-to-read pamphlets on depression from NIMH. They have an excellent Web site (www.nimh.nih.gov), with information in English and Spanish.

What should people with depression do?

Seek treatment. Don't wait. Depression is very treatable. So often, people blame themselves for feeling the way they do. And they worry about the social stigma attached to depression. Studies show that people wait far too long before seeking help; an average of eight years! Seeking treatment can prevent a great deal of unnecessary suffering and disability.

What should people tell their doctors?

People need to talk to their primary healthcare providers about all their symptoms, physical and emotional. They need to make sure that the provider takes the time to listen. Sometimes there are medical conditions that cause depression, such as hypothyroidism, and those should be ruled out. If depression is diagnosed, the healthcare provider may choose to treat the patient or send the patient to a specialist, depending on the situation.

Are you hopeful that a cure for depression may be found some day?

I am very hopeful that there will be breakthroughs in the treatment of depression in my lifetime. Many of the medicines we've been using were discovered to be effective for depression by chance. Now we're seeking new, more targeted treatments thanks to research into what happens in the brains of people with depression. Some of these treatments are showing great promise. I am also excited about research that will help us select the right treatment for each individual. This is an exciting time in brain research, and it can only benefit our patients.

Symptoms of Depression

Not everyone who is depressed or manic experiences every symptom. The severity of symptoms varies among individuals and also over time.

- Persistent sad, anxious, or "empty" mood.
- Feelings of hopelessness or pessimism.
- Feelings of guilt, worthlessness, or helplessness.
- Loss of interest or pleasure in hobbies and activities that were once enjoyable, including sex.
- Decreased energy, fatigue; feeling "slowed down."
- Difficulty concentrating, remembering, or making decisions.
- Trouble sleeping, early morning awakening, or oversleeping.
- Changes in appetite and/or weight.
- Thoughts of death or suicide, or suicide attempts.
- Restlessness or irritability.
- Persistent physical symptoms, such as headaches, digestive disorders, and chronic pain that do not respond to routine treatment.

Working It Out

A specific kind of “talk” psychotherapy called cognitive behavioral therapy (CBT) can help relieve depression.



Few people may have heard of cognitive behavioral therapy (CBT)—but people with depression and their doctors should take notice of this technique. Especially when combined with medications, it can help relieve depression. Research shows that it even helps reduce the likelihood of the most tragic outcome of extreme depression: suicide.

Unlike some other kinds of psychotherapy, CBT is meant to be short-term, usually 10 to 20 sessions with a health professional. The health professionals who provide CBT help patients work through the thoughts and emotions that are troubling them now, rather than trying to work through emotions and circumstances of the distant past.

CBT is based on the idea that changing thought patterns and the behaviors that result from them can help change emotional reactions—including the negative emotional aspects of depression.

Thinking of Depression as a Major Illness

Thomas R. Insel, M.D., Director of the National Institute of Mental Health (NIMH), suggests thinking about treating depression the same way you would think about treating other major illnesses. For example, with mild high blood pressure, he says, your healthcare provider might start by prescribing lifestyle changes, like diet and exercise. But if your blood pressure was very high when you were diagnosed, you'd probably have to take a medication, and you might have to try different ones to find the one or drug combinations that worked best for you.

“Depression follows the same principle,” Dr. Insel says. “If you have mild depression, your health professional might want to start with cognitive behavioral therapy. But if you're diagnosed with more severe depression, it's more likely that you'll get a medication, and you'll probably need to try a few before you find the one that's right for you. For some people, a combination of CBT and medication will be the best treatment.”

Do You Have Major Depression?

Simple screening questions can detect about half of depressed patients in clinical care settings, such as your health provider's office. A “yes” response to the following two questions will detect the possibility of major depression:

- Over the past two weeks, have you felt down, depressed, or hopeless?
- Have you felt little interest or pleasure in doing things?

If a patient says, “yes” to these two questions, to be diagnosed as having major depression, the healthcare provider would look to see if there are at least four of the following additional symptoms:

- Significant weight loss or gain, or decrease or increase in appetite
- Disturbances in sleep pattern
- Noticeable agitation or slowness
- Fatigue or loss of energy
- Inappropriate feelings of worthlessness or guilt
- Diminished ability to concentrate or make decisions
- Recurrent thoughts of death or suicide.

These symptoms must persist for at least two weeks and must be accompanied by noticeable impairment in social relationships and work functioning. Talk to your healthcare provider about these questions and symptoms, if you feel that you or a family member may have major depression.

—NIMH

Types of Depression

Just like other illnesses, such as heart disease, depression comes in different forms. And within these, there are variations in the number of symptoms, their severity, and persistence.

- **Major depression** can have a combination of symptoms (see accompanying symptoms list) that interferes with the ability to work, study, sleep, eat, and enjoy previously pleasurable activities. A major depressive episode may occur only once; but more commonly, several episodes may occur in a lifetime.
- **Dysthymia**, a less severe type of depression, involves long-lasting, chronic symptoms that do not seriously disable, but keep you from functioning well or feeling good.
- **Bipolar disorder** (or *manic depressive illness*) is characterized by cycling mood changes: severe highs (mania) and lows (depression), often with periods of normal mood in between.
- **Postpartum depression** can make new mothers feel restless, anxious, fatigued, and worthless. Some new moms worry they will hurt themselves or their babies. Unlike the “baby blues,” postpartum depression does not go away quickly. Researchers think that changes in a woman’s hormone levels during and after pregnancy may lead to postpartum depression.
- **Seasonal affective disorder (SAD)** has been linked to a biochemical imbalance in the brain prompted by shorter daylight hours and a lack of sunlight in winter. Some people may sleep too much, have little energy, and crave sweets and starchy foods. They may also feel depressed.

To Find Out More

- **MedlinePlus.gov:**
www.medlineplus.gov (Type “depression” in search box.)
- **National Institute of Mental Health:**
www.nimh.nih.gov/health/topics/depression/
www.nimh.nih.gov/health/topics/getting-help-locate-services/

Types of Medications

There are several types of medications used to treat depression. These include newer antidepressant medications—chiefly what are called selective serotonin reuptake inhibitors (SSRIs) and serotonin and norepinephrine reuptake inhibitors (SNRIs)—and older ones, called tricyclics and monoamine oxidase inhibitors (MAOIs). In addition to medications, a type of psychotherapy called cognitive behavioral therapy (CBT) can help relieve depression. (See accompanying article, “Working It Out.”)

Sometimes, a doctor will try a variety of antidepressants before finding the most effective medication or combination of medications for the patient.

Selective serotonin reuptake inhibitors (SSRIs):

- citalopram (brand name: Celexa)
- escitalopram (brand name: Lexapro)
- fluoxetine (brand name: Prozac)
- paroxetine (brand names: Paxil, Pexeva)
- sertraline (brand name: Zoloft)

Serotonin and norepinephrine reuptake inhibitors (SNRIs):

- venlafaxine (brand name: Effexor)
- duloxetine (brand name: Cymbalta)

Another antidepressant that is commonly used is bupropion (brand name: Wellbutrin). Bupropion works on the neurotransmitter dopamine. It is unique in that it does not fit into any specific drug type.

Tricyclics:

- amitriptyline (brand name: Elavil)
- desipramine (brand name: Norpramin)
- imipramine (brand name: Tofranil)
- nortriptyline (brand name: Aventyl, Pamelor)

The Holidays Are Coming!
Time to Start Planning for

Healthy Holiday Meals

Holidays don't have to be a time when your healthy eating habits have to stop. One good way to stay on target with heart-healthy eating is the DASH Diet, developed by the National Heart, Lung, and Blood Institute. DASH, which stands for Dietary Approaches to Stop Hypertension, follows heart-healthy guidelines to limit salt or sodium, saturated fat, trans fat, and cholesterol, and focuses on increasing intake of fruits, vegetables, and fat-free or low-fat milk products. It is also rich in whole grain products, fish, poultry, and nuts. Try these tips during the holidays to stay on track with healthy eating:

- If you eat only one or two servings of vegetables per day, try adding one serving at lunch and another at dinner.
- Gradually switch to fat-free or low-fat milk and reduce servings of soda or other sweetened beverages.
- Choose whole grain foods, such as whole wheat bread or whole grain cereals to get added nutrients, such as minerals and fiber.
- When shopping, read the Nutrition Facts label on foods to find sodium content, and choose items lowest in salt or sodium.
- Start with a simple 15-minute walk during your favorite time of day and slowly build up.
- Don't worry about a slip. Start again, and be sure to celebrate successes.

The DASH guide is available for ordering through the NHLBI Information Center, (301) 592-8573 or (240) 629-3255 (TTY) or online at <http://hp2010.nhlbihin.net/yourguide/>.

For Seniors, Eat with Caution

Holidays mean lots of new seasonal foods with celebrations. To reduce risks of illness from bacteria in food, seniors (and others who face special risks of illness) are advised not to eat:

- Raw fin fish and shellfish, including oysters, clams, mussels, and scallops.
- Hot dogs and luncheon meats, unless they are reheated until steaming hot.
- Raw or unpasteurized milk or soft cheeses (such as Feta, Brie, Camembert, blue-veined, and Mexican-style cheese) unless they are labeled "made with pasteurized milk".
- Refrigerated patés or meat spreads. Canned or shelf-stable patés and meat spreads may be eaten.
- Refrigerated smoked seafood unless it is contained in a cooked dish, such as a casserole. Refrigerated smoked seafood, such as salmon, trout, whitefish, cod, tuna, or mackerel, is often labeled as "nova-style," "lox," "kippered," "smoked," or "jerky." These products are found in the refrigerated section or sold at deli counters of grocery stores and delicatessens. Canned or shelf-stable smoked seafood may be eaten.
- Raw or lightly cooked egg or egg products containing raw eggs such as salad dressings, cookie or cake batter, sauces, and beverages such as egg nog. (Foods made from commercially pasteurized eggs are safe to eat.)
- Raw meat or poultry.
- Raw sprouts (alfalfa, clover, and radish)
- Unpasteurized or untreated fruit or vegetable juice (These juices will carry a warning label.)

— FDA

Holiday Recipes:

Fresh Cranberry Relish

- 1 package (12 oz.) fresh or frozen cranberries
- 1 medium orange, quartered and seeds removed
- 1 apple, cored
- ¾ cup to 1 cup sugar (or substitute non-sugar sweetener)

Put berries, orange and apple through food processor, blender or food mill until evenly chopped. Stir in sugar to desired sweetness. Mix well and refrigerate several hours before serving. May be frozen.

Pumpkin Bread

(15 servings per loaf; 173 calories per slice)

- 2 ½ - 3 cups sugar
- 3 ½ cups flour
- 2 teaspoons cinnamon
- 2 teaspoons nutmeg
- ½ teaspoon salt
- 2 teaspoons baking soda
- 1 cup canola oil
- 2/3 cup water
- One 15-ounce can pumpkin puree
- 2 eggs, beaten
- 6-12 ounces semisweet chocolate chips

Photo: iStock



Preheat oven to 350 degrees. Lightly grease three 8x4 inch loaf pans or 2 12-compartment muffin pans (or use paper cupcake liners.)

In a large bowl, combine the sugar, flour, spices, salt and baking soda.

In a medium bowl, combine the oil, water, pumpkin puree and eggs.

Add the liquid mixture to the flour mixture and combine thoroughly, making sure no unblended dry ingredients linger at the bottom of the bowl. Add the chocolate chips and stir to combine.

Divide the batter equally among the pans; muffin cups should be two-thirds full. Bake the loaves for 45-50 minutes or until a toothpick inserted in the center comes out clean. Muffins will take about 40 minutes. Let cool completely before cutting and storing.

4 Steps to Food Safety

The U.S. Food and Drug Administration (FDA) encourages consumers to pay special attention to holiday food handling and preparation. Most at risk from food borne illnesses are the elderly, people with weakened immune systems from cancer and other causes, pregnant women, and children. To reduce the risk, the FDA advises the following steps:

Keep Clean: Frequently wash hands and all surfaces touching food. Bacteria can spread throughout the kitchen onto cutting boards, knives, counter tops, sponges, and brushes.

Separate Foods: Don't cross-contaminate by letting bacteria spread from one food to another. Especially keep raw meat, poultry, seafood, and their juices away from fresh vegetables, such as carrots, and other foods that are ready to eat.

Cook Thoroughly: Food is properly cooked when it is brought to an internal temperature long enough to kill the harmful bacteria which cause food borne illness. Use a food thermometer to measure internal temperature of foods.

Chill Properly: Refrigerate foods promptly to prevent most harmful bacteria from multiplying. Refrigerators should be set at 37 degrees Fahrenheit, freezers at 0 degrees Fahrenheit. Occasionally check settings with a thermometer.

Top Info Sources for Holiday Courses

Gateway to all government food safety programs
www.foodsafety.gov

In-depth information on preventing food-borne illnesses
www.cfsan.fda.gov

Healthy holiday eating for people with diabetes
www.ndep.nih.gov

Trusted, consumer-friendly health information
www.medlineplus.gov

Glaucoma is a leading cause of blindness, with no cure; but early detection can help control its advance.

Get Tested for Glaucoma!

“Could you read the chart, please?”

“What chart?”

“The one on the wall.”

“What wall?”

For Taylor Klose, 72, those questions are no joke. Klose has been fighting glaucoma for more than 40 years. He talked recently with his brother, NIH MedlinePlus Magazine Coordinator Christopher Klose, about the impact of the disease and how important it is to be diagnosed as early as possible. Four of the six Klose siblings have been diagnosed with glaucoma.

When did you discover you had a problem?

I was diagnosed with extreme nearsightedness in eighth grade, in 1949; but glasses took care of that. Every year, I'd get a new pair, and the world around me would turn clear as a bell. Until I went for my Army physical 10 years later, that is.

What happened?

As ordered, I closed my right eye to start the eye exam. The doctor said, “Read the chart please.” I said, “What chart?” “The one on the wall,” he said. “What wall?” I asked! I was losing my field of vision and didn't know it. That's the way glaucoma



Taylor Klose continues to battle the effects of glaucoma.

Photo: Christopher Klose

works, and why it is so important to get tested.

When were you finally diagnosed with glaucoma?

Not until 1969, after a game of basketball. My right eye was pulsing and there was a halo around the lights. So, I went quickly for an exam and was told, “Mr. Klose, you have severe glaucoma.” Since then, I've been through every possible treatment, including some of the first surgeries to relieve the fluid pressure. They worked for a while, but by 1985 I'd lost the sight in my left eye.

And since then?

It was devastating at first, but I hardly notice the left eye is gone now. I still have about half the vision in my right eye, so I can read and get around. But no more ball sports, I'm afraid.

What is your message to our readers?

Get screened! Glaucoma is a silent blinder. Fortunately, most people are never going to get it. But everyone needs to be tested. Especially if they have a family history of it—a parent or grandparent, brother or sister. That's the clarion call.

Glaucoma: Screening Can Save Your Sight!



Photo: NEI Photo

People with glaucoma see the world through a tunnel.

Glaucoma is a group of diseases that can damage the eye's optic nerve, resulting in vision loss and blindness. While it can strike anyone, the risk is much greater for people over 60. About 2.3 million Americans suffer from glaucoma; another two million have it, but don't know it.

There is no cure for glaucoma. Vision lost from the disease cannot be restored. However, there are treatments that may save remaining sight. That is why early diagnosis is important. Studies have shown that early detection and treatment are the best way to control the disease. If you fall into one of the high-risk groups for glaucoma, make sure to have your eyes examined at least every two years by an eye care professional.

Potential risk factors are severe nearsightedness, diabetes, eye injury or surgery, high blood pressure, and use of corticosteroids (eye drops, pills, inhalers, and creams). People at risk include, especially:

- African Americans over age 40
- People over age 60, especially Hispanics
- People with a family history of glaucoma

To Find Out More

- **MedlinePlus:** www.medlineplus.gov
- **National Eye Institute:** www.nei.nih.gov/health/glaucoma
- **The Glaucoma Foundation:** www.glaucomafoundation.org/
- **The Glaucoma Research Foundation:** www.glaucoma.org/
- **American Optometric Association:** www.aoa.org/

Symptoms and Diagnosis

Glaucoma can develop in one or both eyes. Often there are no symptoms at first, but a comprehensive eye exam can detect it. The most common type, open-angle glaucoma, causes no pain, and vision seems normal. Without treatment, however, people will slowly lose their peripheral, or side vision. They seem to be looking through a tunnel. Over time, straight-ahead vision may decrease until no vision remains.

Treatment

The most common treatments for glaucoma are medication and surgery. Although open-angle glaucoma cannot be cured, it can usually be controlled. Treatment may save remaining vision. Medications for glaucoma may be either eye drops or pills. Some drugs reduce pressure by slowing the flow of fluid into the eye. Others help to improve fluid drainage. For most people with glaucoma, regular use of medications will control the increased fluid pressure. But, these drugs may stop working over time. Or, they may cause side effects. If a problem occurs, the eye care professional may select other drugs, change the dose, or suggest other ways to deal with the problem.

Laser surgery may also be used to ease the exit of fluid from the eye, lessening pressure on the optic nerve. Over time, the effect may wear off and patients may need to keep taking drugs.

Latest Research

Researchers are studying the causes of glaucoma, looking for ways to improve its diagnosis and treatment. For instance, the National Eye Institute is funding a number of studies to find out what causes fluid pressure to increase in the eye. The NEI also supports clinical trials of new drugs and promising surgical techniques. There has been progress in understanding the genetics of glaucoma in the last few years, including the discovery of genes found to be associated with many of the disease's forms.

College Students and Alcohol Abuse: New Resources Can Help

From curbing binge drinking to reducing drunk driving, NIH research is developing new intervention tools and techniques to help colleges, students, and their parents cope more effectively with alcohol abuse.

FASTFACTS

Research funded by the NIH's National Institute on Alcohol Abuse and Alcoholism (NIAAA) found that over a recent seven-year stretch, alcohol-related deaths among U.S. college students, as well as heavy drinking and drunk driving, all rose. Drinking-related deaths increased, particularly among 18-to-24-year-olds. Most of these deaths were from traffic injuries, and the increases were primarily from alcohol-related poisonings.

"These are tragic, unacceptably high rates," says Ralph W. Hingson, Sc.D., director of the NIAAA Division of Epidemiology and Prevention Research. "There is an urgent need for colleges and college communities to put in place prevention and counseling programs that focus on underage and young-adult drinking."

NIAAA has created "rapid-response grants" to explore and demonstrate the wide range of individual, group, and community-level approaches that "can influence student behavior and challenge the culture of college drinking," adds Dr. Hingson.

Through the grants, NIAAA researchers worked with 15 colleges facing alcohol-related crises, pairing them with five research teams of prevention and intervention experts.

"The challenge is to make sure the public is aware that there are measures that work," Dr. Hingson says. "We also have to change the entire culture: Who are the kids getting the alcohol from at such early ages? Parents? Siblings? Friends? Drinkers who start young are not only more likely to develop dependence, but at a faster pace."

On the positive side, Dr. Hingson notes that progress is being made in support and intervention programs in colleges across the country. He believes that the same kind of public pressure and support that brought about seatbelt laws eventually will help to curb college alcohol abuse.

- About four out of five college students drink, including nearly 60 percent of students between 18 and 20.
- More than 40 percent of all college students report engaging in binge drinking at least once during the previous two weeks.
- About 1,825 college students between the ages of 18 and 24 die each year from alcohol-related injuries, including motor vehicle crashes.
- Almost 700,000 students ages 18 to 24 are assaulted each year by another student who has been drinking. More than 97,000 are victims of alcohol-related sexual assault or date rape.
- New NIH research is helping colleges and college students reduce these grim statistics.

To Find Out More

- **MedlinePlus:**
(Type "alcohol abuse" in the Search box)
www.medlineplus.gov
- **National Institute on Alcohol Abuse and Alcoholism (NIAAA):**
www.niaaa.nih.gov

NIAAA Tools You Can Use

The National Institute on Alcohol Abuse and Alcoholism (NIAAA) has developed two free, online Web sites that provide people with information on all aspects of alcohol and drinking.

- **Rethinking Drinking: Alcohol and Your Health site:**
<http://rethinkingdrinking.niaaa.nih.gov>

For anyone who drinks alcohol, this Web site offers valuable, research-based information. Using interactive tools, it can help you take a look at your drinking habits and how they may affect your health? It covers everything, from learning what counts as a drink to finding out whether your own drinking pattern may be risky.

- **NIAAA's College Drinking Prevention site:**
www.collegedrinkingprevention.gov

CollegeDrinkingPrevention.gov is your one-stop resource for comprehensive research-based information on issues related to alcohol abuse and binge drinking among college students.

Comments from Social Drinkers

Social drinkers who used the resources and information from NIAAA's "Rethinking Drinking" Web site offered these and other comments:

"Sometimes we do things out of habit and we don't really stop to think about it. This made me think about my choices."

"It emphasized that drinking is not bad in and of itself—it's how much you're doing it and how it's affecting your life."

"I thought the strategies for cutting down were really good. It gives you tools to help yourself."



Photo: iStock

In Tribute: Senator Edward M. Kennedy, Friend of NIH

“... deep compassion for those in need.”

Senator Edward M. Kennedy (D-MA) died of brain cancer on August 25, 2009. Throughout his 47 years in the Senate he battled for the disabled, the poor, the uninsured, and medically and emotionally disadvantaged.

Paying tribute to Kennedy, NIH Director Francis S. Collins said, “Sen. Kennedy was an amazing man—a genuine force of nature. His deep compassion for those in need, and his commitment to improving people’s health, are reflected in the innumerable legislative acts that he championed throughout his long, distinguished career in the Senate. He was one of the strongest, most effective advocates for biomedical research.”

Kennedy was a champion for cancer research early in his career. In 1971, he was the first member of Congress to introduce legislation that came to be known as the War on Cancer. Through the years, he continued to support cancer research legislation. He had been working with others on renewing the War on Cancer before he was struck down with it himself in May 2008.

In 1987, Kennedy held the first-ever congressional hearing on AIDS. He called it “nothing less than a plague for our times” and a “global epidemic that has already strained the capacity ... to respond with common sense, let alone compassion.”

He was also a cosponsor of the Genetic Information Nondiscrimination Act (GINA). It became a law in 2008 after a legislative battle lasting 13 years. Kennedy was a tireless supporter and activist for this bill, which he described as the “first major new civil rights bill of the new century.”

Shown (from left) are Sen. Kennedy’s sister, Jean Kennedy Smith, wife, Vicki Kennedy, Sen. Kennedy and his sister, Eunice Kennedy Shriver, at last year’s ceremony renaming the National Institute of Child Health and Human Development (NICHD) in Shriver’s honor.



Sen. Edward Kennedy (r) confers with Dr. Francis Collins, who was then director of the National Center for Human Genome Research, at a December 2006 meeting.



By Shana Potash, NLM Staff Writer

Seasons Change, Moods Change

For some people, changes of the seasons can trigger a change in mood, including the onset of a form of depression called seasonal affective disorder (SAD). Most commonly, SAD usually occurs during the fall and winter, when the days are shorter, and usually goes away in the spring and summer, when the days get longer. Some experts think the shorter days, with less sunlight, upset the body's internal clock.

Symptoms can include:

- loss of energy
- sleeping too much
- lack of interest in activities you once enjoyed
- craving for sweet or starchy foods

Among the therapies used to treat SAD is light therapy, which involves sitting in front of a "light box" for periods of time. Others include: medicines, changes in diet, and stress management. If you think SAD has you down, contact your healthcare provider. (Read more on depression, starting on page 16).

What, Me Worried?

Researchers at Purdue University have found that people who are extremely worried and anxious may be shortening their lives, in part because they are more likely to smoke. Analyzing the records of nearly 1,800 men who were part of a long-term Veterans Administration study, they established that smoking explains part of the connection between a neurotic personality and shorter life. A better understanding of how personality impacts engagement in poor health behaviors could help improve the design of smoking cessation and prevention programs, say the researchers, who were funded by the NIH National Institute on Aging.



Photo: iStock

Tell NIH How You Search for Information

The National Institutes of Health, the nation's medical research agency, seeks your help with a current project. We're doing a survey to find out about your health information needs and how you get this information.

This request comes from the NIH Office of Communication and Public Liaison (OCPL) and the NIH Director's Council of Public Representatives. It's in response to President Obama's directive for all federal agencies to provide greater transparency, public participation, and collaboration.

To participate, visit <http://nihhealthinforfi.nih.gov>. You can provide your comments online or download a PDF to fill out and send back. Your answers will help us do a better job of providing health information for you, your friends and family.

Is Your Drinking Water Well?

If your water comes from a private well, and children drink it, you should have the water tested every year, recommends the American Academy of Pediatrics (AAP). Children are especially vulnerable to the illnesses that stem from contaminated wells. Water from a properly maintained well is safe. But wells can become contaminated, most commonly by nitrate from either fertilizer or sewage. About one in six U.S. households draws its water from a private well; which is typically the responsibility of the owner. The National Institute of Environmental Health Sciences (NIEHS) at NIH worked with the AAP to develop the new well testing recommendations.

Experimental HIV/AIDS Vaccine Shows Encouraging Results

An investigational vaccine tested in Thailand is the first to show some ability to protect people from the HIV virus that causes AIDS. The vaccine is safe and reduced the risk of infection by almost one-third. According to Dr. Anthony S. Fauci, director of the National Institute of Allergy and Infectious Diseases (NIAID), while modest, the results are an important step forward in HIV vaccine research. He says more research is needed to discover why this vaccine worked to some extent, while others have not.

The Thai study involved more than 16,000 men and women between the ages of 18 and 30. It was sponsored by the U.S. Army, in collaboration with NIAID and two companies that make the vaccines that were tested.

Palliative Care Eases Pain, Improves Quality of Life

If you or a loved one has a serious illness, a special type of care known as palliative (PAL-ee-uh-tiv) can help. Serious illnesses and their treatments can cause pain, nausea, fatigue, trouble sleeping, anxiety, and depression. Palliative



Photo: iStock

care seeks to relieve these symptoms, making patients more comfortable and improving their quality of life. It is available at any age and at any time during an illness.

A new brochure, called *Palliative Care: The Relief You Need When You're Experiencing the Symptoms of Serious Illness*, has been developed by the NIH National Institute of Nursing Research (NINR). It explores the multiple benefits of palliative care, noting how it differs from hospice care, and explains how to request palliative care during a hospital stay. To download an electronic version of the brochure, visit www.ninr.nih.gov/PalliativeCareBrochure. To order free print copies (up to 25), email info@ninr.nih.gov or call 301-496-0207.

Info to Know

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 (1-888-346-3656)
- **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 Biomedical Imaging and Bioengineering (NIBIB)** www.nibib.nih.gov
(301) 451-6772
- **Eunice Kennedy Shriver 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 1-866-615-6464
- **National Institute of Neurological Disorders and Stroke (NINDS)** www.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) 496-2563
- **Office of Research on Women's Health (ORWH)**
http://orwh.od.nih.gov (301) 402-1770

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MedlinePlus.gov on Twitter

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twitter.com/medlineplus4you

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