

SPRING 2019

NIH MedlinePlus

MAGAZINE

Trusted Health
Information from the
National Institutes
of Health

IN THIS ISSUE

How Much Exercise
Do You Need?

Omega-3 for Dry Eye:
What Science Says

8 NIH Research
Highlights

Oral Health Tips
for Older Adults



What is CBD?
Health Claims and
New Research

COVER STORY

TV network news anchor **Norah O'Donnell**
on self-care, trusted health information, and

SKIN CANCER



Hello! Hola! MedlinePlus magazine website now bilingual

I AM EXCITED TO ANNOUNCE that in early May 2019, we will launch a fully bilingual NIH MedlinePlus magazine website with articles and information in English and Spanish.

Our bilingual expansion was driven by you—our readers. We want to continue to reach more people globally with trusted health content.

The NIH MedlinePlus magazine website will feature easy-to-navigate menus, social media sharing, and a mobile-friendly design that works seamlessly on your phone, tablet, or desktop. You will be able to search for magazine content in English or Spanish by health topic or by quarterly print issue.

We will bring you more types of health content—from quizzes to videos—more often. This also means more of the articles you already rely on, such as interviews with celebrities about how they deal with health issues.

Please visit us at magazine.medlineplus.gov.

PATRICIA FLATLEY BRENNAN, R.N., PH.D.
Director, National Library of Medicine

NIH MedlinePlus

MAGAZINE

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inside

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WHO WE ARE

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"CBS This Morning" anchor Norah O'Donnell (left, with co-host Gayle King after getting a flu shot) says early skin cancer detection saved her life.

FEATURES

08 Understanding dry eye

What new research says about treating the uncomfortable condition

12 Putting health first

Journalist Norah O'Donnell on overcoming skin cancer and the importance of prevention

18 How much physical activity do you need?

New guidelines offer daily or weekly recommendations by age

24 8 NIH research highlights

Takeaways include a blood test that can detect cancer and a wearable blood pressure monitor

DEPARTMENTS

04 To your health

News, notes, & tips from NIH

28 From the lab

Latest research updates from NIH

30 On the web

Find it all in one place!

31 Contact us

NIH Is here to help



Oral health care tips for older adults and caregivers

5



health

NEWS,
NOTES,
& TIPS
FROM NIH

Lifestyle changes key to delaying or preventing type 2 diabetes

HEALTH TIPS In the U.S., about 10 percent of the population has type 2 diabetes. Even more surprising? Nearly one in four people living with diabetes don't even know they have it.

These and other facts are included in a new report from the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). The third "Diabetes in America" report, released last summer, has information for everyone.

Do you think you or a family member could have type 2 diabetes? Read our overview below for information and lifestyle tips from the report and MedlinePlus.

Overview

Diabetes is a serious disease that occurs when your blood glucose, also called blood sugar, is too high. Having too much glucose in your blood affects how your body uses food for energy and growth.

With type 2 diabetes, your body doesn't make enough insulin, or use insulin effectively. Insulin—a hormone made by the pancreas—helps glucose move from your blood into your cells, where it is used for energy. Without enough insulin, not enough glucose reaches your cells, leaving glucose in your blood. Over time, having too much glucose in your blood can cause health problems.



Although diabetes has no cure, you can take steps to manage your diabetes with medication and lifestyle changes.

Symptoms of type 2 diabetes

Although people with diabetes usually have symptoms, too often those symptoms are ignored or dismissed. Some symptoms of diabetes include:

- Increased thirst and urination
- Increased hunger
- Feeling tired
- Blurred vision
- Numbness or tingling in the feet or hands
- Sores that do not heal
- Losing weight without trying

Causes

You can develop type 2 diabetes at any age, even during childhood. However, this type of diabetes occurs most often in middle-aged and older people. Type 2 is the most common type of diabetes. A family history of diabetes, high blood pressure, overweight or obesity, and being inactive can increase your chances of developing the disease. Women who have a history of gestational diabetes, which can develop during pregnancy, are also at increased risk.

It is more common in African Americans, Alaska Natives, American Indians, Asian Americans, Hispanic/Latinos, Native Hawaiians, and Pacific Islanders.

A primary care provider will often diagnose and treat type 2 diabetes. However, they may refer you to a diabetes specialist called an endocrinologist.

Complications

High blood glucose levels can have a severe effect on the body. Issues can include:

- Heart disease and stroke
- Kidney disease
- Vision problems
- Foot problems
- Nerve damage
- Sexual and bladder problems
- Gum disease and other dental problems

Prevention

There is good news for people at risk for type 2 diabetes. You can prevent or delay the disease with healthy lifestyle changes, according to findings from the NIDDK-supported Diabetes Prevention Program research study. That includes people with prediabetes, a condition where your blood glucose levels are higher than normal but not high enough to be diagnosed as diabetes.

Taking small steps, such as eating less and moving more to lose weight, can help you prevent or delay type 2 diabetes and related health problems. Asking your health care team about steps you can take to prevent type 2 is key.

- **Set a weight loss goal.** If you are overweight, set a weight loss goal that you can reach. Try to lose at least 5 to 10 percent of your current weight. For example, if you weigh 200 pounds, a 10 percent weight loss goal means that you will try to lose 20 pounds.
- **Follow a healthy eating plan for weight loss.** Research shows that you can prevent or delay type 2 by losing weight by following a reduced-calorie eating plan and being more active each day.
- **Move more.** Start slowly and add more activity until you get to at least 30 minutes of physical activity, like a brisk walk, five days a week. ■

SOURCES: MedlinePlus; National Institute of Diabetes and Digestive and Kidney Diseases

Oral health and older adults

BY THE NUMBERS Brushing your teeth may not be the most fun part of your daily routine, but it pays off, especially as you age. Combined with regular visits to the dentist, brushing and flossing help older adults prevent tooth loss and avoid pain.

Want to find out more? The National Institute of Dental and Craniofacial Research (NIDCR) has information online, titled “Older Adults and Oral Health,” to help you learn the facts about oral health and growing older.

If you’re a caregiver of an older adult, NIDCR has information for you too. Take a look at NIDCR’s “Oral Health & Aging: Information for Caregivers” series. These fact sheets offer practical caregiving tips about brushing and flossing, preventing dry mouth, and visiting the dentist.

About **96%** of adults aged 65 years or older **have had a cavity.**



1 in 5 adults aged 65 or older have untreated tooth decay.

About **3 in 5** adults aged 65 years or older **have gum disease.**



Cancers of the mouth are primarily found in older adults. The median age at diagnosis is **63 years.**

SOURCES: National Institute of Dental and Craniofacial Research; National Cancer Institute; Centers for Disease Control and Prevention



The ABCs of CBD: Separating fact from fiction

RESEARCH CBD, Cannabidiol. No matter what you call it, you may have heard health claims about this little-known part of the marijuana plant, which comes from the plant's flowers. Some say it treats muscle aches, anxiety, sleeping troubles, chronic pain, and more.

But what does the science say?

We spoke to NIH expert Susan Weiss, Ph.D., to learn more and find out why consumers should be careful. Dr. Weiss is the director of the division of extramural research at the National Institute on Drug Abuse (NIDA).

What is CBD?

CBD (or cannabidiol) comes from the cannabis (or marijuana) plant.

The chemical compound THC [tetrahydrocannabinol] is the part of the cannabis plant that most people are familiar with because that is the part that makes people "high." Most effects of marijuana that people think of are caused by THC.

Most recreational marijuana has very little CBD in it. CBD products are available through dispensaries, health food and convenience stores, and the internet. It's a widely used product that's not regulated—and is not legal to sell for its largely unproven health benefits.

How does CBD work?

Nobody really knows what is responsible for the mental and physical health benefits that have been attributed to it. CBD affects the body's serotonin system, which controls our moods. It also affects several other signaling pathways, but we really don't understand its mechanisms of action yet.

How much do we know about CBD as a potential treatment?

There are over 50 conditions that CBD is claimed to treat.

We do know that CBD can help control serious seizure disorders in some children (e.g., Dravet and Lennox-Gastaut syndromes) that don't respond well to other treatments.

Epidiolex is an FDA [Food and Drug Administration] approved medication containing CBD that can be used for this purpose.

There's also data to suggest the potential of CBD as a treatment for schizophrenia and for substance use disorders. But these potential uses are in extremely early stages of development.

Are there side effects?

We don't know of any severe side effects at this time. But there were mild side effects reported in the epilepsy studies, mostly gastrointestinal issues like diarrhea. There were also some reported drug-to-drug interactions. That's why, for safety reasons, it's important that CBD or any cannabis product go through the FDA review process.

Are there any specific CBD studies that you are focused on?

We are interested in CBD as a potential treatment of substance use disorders.

There is some research looking at it for opioid, tobacco, and alcohol use disorders. If CBD can help prevent relapse in those areas, that would be really interesting. We're also interested in it for pain management. Trying to find less addictive medications for pain would help a lot of people.



"It's important that CBD or any cannabis product go through the FDA review process."

- Susan Weiss, Ph.D.

What else would you like people to know?

Buyer beware.

We are concerned about the health claims being exaggerated or incorrect. The FDA issued warning letters to several companies because of untested health claims. And the CBD products themselves didn't always contain the amount of CBD that they were reported to have—some actually had THC in them.

Another concern is that people are using CBD to treat ailments for which we have FDA-approved medications. Thus, they may be missing out on better treatments. And when they're using CBD or other cannabis products for conditions we don't know very much about, that's worrisome. ■



125,000 and counting: One year of the All of Us Research Program

RESEARCH NIH's All of Us Research Program, launched nationally in May 2018, has collected health data from thousands of people around the U.S. The program hopes to understand how our individual differences affect health and disease. Stephanie Devaney, Ph.D., is deputy director of the program. She spoke to NIH MedlinePlus magazine about where All of Us is one year in—and what's next.

How many people are enrolled in All of Us?

More than 125,000 people have completed all of the initial steps of the program. Steps include agreeing to share their electronic health records, completing surveys, and providing physical measurements and biosamples (blood and urine samples). Thousands more have joined the program and are in the process.



We have participants from all 50 states and all types of backgrounds. More than 75 percent are in communities that haven't always been represented in biomedical research. Those include racial and ethnic minority groups, sexual and gender minorities, older adults, and rural residents.

We think everyone should have the opportunity to take part in research and share in its benefits. The more we learn about our individual differences, the more tailored our health care can become.

What have you learned in the first year of the program?

People have different opinions about taking part in research studies—different questions, concerns, and goals.

We've spent a lot of time in our first year talking to different communities about their views on research. That's something we'll continue to do as we go. We're working with participants to make the program something they're glad to be part of and want to stay involved with over the long term.

What is up for 2019?

This is a big year for us. While we continue enrolling participants, we're also preparing to release initial data. This data will help researchers learn about health risks—and what keeps people healthy.

And as we gather more data, we'll have more information to share. We will eventually have the full DNA sequence mapped for 1 million people that, coupled with information from health records and surveys, will be a rich resource.

How can people get involved?

People can visit JoinAllofUs.org to learn more about the program, subscribe for updates, and sign up. They can also find us on Facebook, Twitter, Instagram, and YouTube @AllofUsResearch. ■

DRY EYE



Dry Eye: An overview

What is dry eye?

Dry eye disease, or dry eye, occurs when the quantity or quality of tears fails to keep the surface of the eye wet.

Tears are a complex mix of fatty oils, water, mucus, and more than 1,500 different proteins. They keep the surface of the eye smooth and protected from the environment, and from bacteria or viruses that can cause disease.

Causes

Dry eye can happen when you produce fewer tears or when your tears dry up too fast. Some medications, getting older, rosacea, autoimmune disorders, and allergies can contribute to dry eye.

Who gets it?

Dry eye affects millions of people in the U.S. The risk of developing dry eye increases as we get older. Women are more likely to get it than men.

Symptoms

Dry eye causes a scratchy feeling, like something is in the eye. Other symptoms include stinging or burning, excessive tearing after periods of dryness, discharge, pain, and redness.

People with dry eye may even have blurred vision and feel like their eyelids are heavy.

Treatments



Over-the-counter medications:

You can treat mild dry eye symptoms with medications like artificial tears, gels, and ointments. These don't require a prescription.



Prescription dry eye medications:

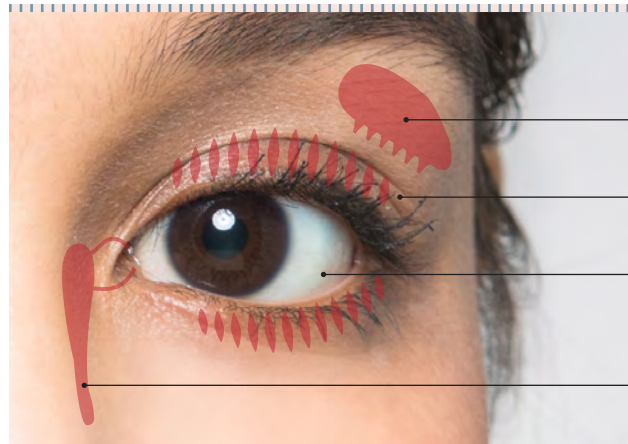
Cyclosporine and lifitegrast are the only prescription medications approved by the U.S. Food and Drug Administration (FDA) for treating dry eye. Eye doctors may also prescribe steroid eye drops on a short-term basis to reduce swelling.



Devices: The FDA has also approved devices that provide temporary relief from dry eye by stimulating glands and nerves that control tear production. These are prescribed by a doctor.



Surgical options: An eye doctor can put plugs into your tear ducts to help block or partially block them. This prevents liquid from draining out of the eye. In severe cases, your doctor may need to close the tear ducts permanently with surgery. ■



The anatomy of tears

Lacrimal gland (tear gland)

Makes tears.

Meibomian glands (tarsal glands)

Release oils onto the eye surface.

Conjunctiva

Clear, thin tissue covering the front surface of the eye and inner surface of the eyelids.

Lacrimal duct (tear duct)

Drains tears through the back of the nose.

IMAGES: ISTOCK

SOURCE: National Eye Institute

What the latest science says about **omega-3** for dry eye

Penny A. Asbell, M.D., led a study to see if omega-3 fatty acid supplements really help dry eye. The Dry Eye Assessment and Management (DREAM) study was funded by the National Eye Institute (NEI). She spoke to NIH MedlinePlus magazine about the study results.

Why did you study omega-3 and dry eye?

A lot of people—both medical professionals and the public—are interested in omega-3 fish oil supplements. They hear about how they do great things for many conditions. At the time we decided to do this study, omega-3 was being touted as something that could help treat dry eye disease.

As an academic and an ophthalmologist [eye doctor], I read everything I could about this, but there hadn't been very much research. And the information available was not very good. That's when I decided to conduct a clinical trial and find out if it's useful for dry eye disease.

What were the results?

Our study does not support use of omega-3 supplements for patients with moderate to severe dry eye disease.

We found that patients who received 3,000 mg of omega-3 for 12 months were not significantly better than patients who received an olive oil placebo.

What other research is going on?

A lot of researchers want to know what causes dry eye disease. And to see if we're wrongly putting a lot of people with dry eye into one group

when there are really different categories that would benefit from different treatments.

The analogy I use is that it's like arthritis. People with rheumatoid arthritis are not treated the same way they treat those with osteoarthritis.

They both have joint pain, but we treat them very differently because we know they have different reasons for that pain.

Many people who have dry eye self-treat with over-the-counter eye drops, rather than see an eye doctor. Is this a good idea?

That depends.

When you go to an eye doctor, he or she looks at many things. The doctor looks for glaucoma, cataracts, diabetes-related changes, blood pressure, and more.

An eye doctor can help you learn if you have any of these problems. The data suggest that one of the greatest reasons people go to an eye doctor is the presence of dry eye disease. They want to lessen the pain they're experiencing.

Lubricants—such as artificial tears, gels, and ointments—are available over the counter. So, many people do self-treat. Eye doctors usually see people when the over-the-counter treatments are not working well.



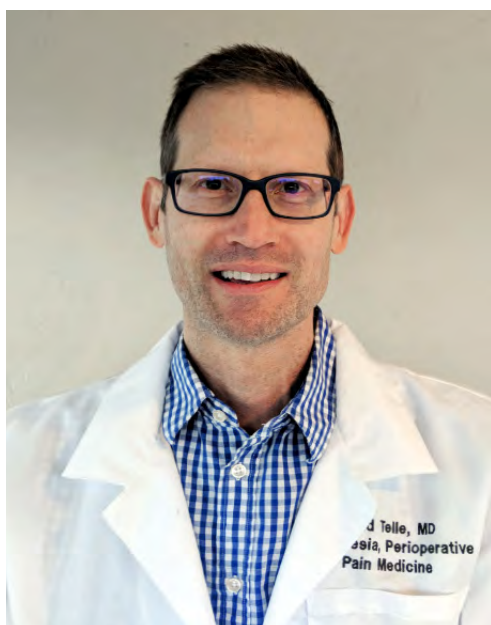
Penny A. Asbell, M.D., suggests going to an eye doctor if self-treatment for dry eye doesn't work.

In addition to the DREAM study, NEI supports other research studies related to dry eye. Here are a few:

- Some people with dry eye have **low levels of the protein lacritin** in their tears. A form of the protein has been developed into eye drops for initial testing as a possible treatment.
- Early-stage research is exploring **the role of stem cells**. One day, a patient's own cells could be used to develop stem cells that can then be used to rebuild or replace tear-producing lacrimal glands.
- Since **corneal nerves** (the nerves connected to the outermost eye layer) shrink in dry eye, another research goal is to come up with ways to promote their regrowth. They could also help people suffering from dry eye after cornea laser surgery. ■

A doctor's perspective: Living with dry eye

Dry eye can be frustrating and uncomfortable. Untreated, it can turn into a chronic condition. For Dr. Todd Telle, the onset was quick. The symptoms and complications were challenging for this San Diego resident who loves playing tennis, learning the guitar, and traveling abroad.



Dr. Todd Telle's dry eye condition started when he moved from the East Coast to the West Coast.

When I looked at my eye later in the day, it still looked fine.

But when I woke up the next day, my entire left eyelid was very swollen. I thought it might be cellulitis, a serious bacterial skin infection. I immediately was scared.

I asked a colleague, who is an eye doctor, to take a look. "I think you have blepharitis," she said.

Blepharitis is an inflammation of the eyelid. It can cause your eyelids to be red, irritated, and itchy. She said it could happen to anyone, but was especially common for people as they got older—and for people with dry eye.

Because my eyes were quite swollen, I was treated with an antibiotic and a steroid ointment.

Within four or five days, the swelling subsided. After that, my doctor told me to put warm compresses on my eyes twice a day and to keep my eyes completely clean.

Now, using a warm compress over my eyes every evening for about 10 minutes is part of my routine, just

"I recommend that anyone suffering from any type of serious eye irritation or dry eye ... get in touch with an eye doctor."

- Dr. Todd Telle

like brushing my teeth. If I do miss a day or two, my left eye is a little more swollen. I recommend that anyone suffering from any type of serious eye irritation or dry eye—especially chronic dry eye—get in touch with an eye doctor. Don't wait until the condition gets worse. ■

Find Out More

- ▶ **MedlinePlus: Tears**
<https://medlineplus.gov/tears.html>
- ▶ **National Eye Institute: Dry Eye**
<https://nei.nih.gov/health/dryeye/dryeye>
- ▶ **National Eye Institute: Omega-3 Study**
<https://nei.nih.gov/content/omega-3s-fish-oil-supplements-no-better-placebo-dry-eye>

When I moved from Boston to San Diego five years ago, I noticed that my eyes were more tired in this drier environment. Although I had suffered from dry eye before, I didn't notice any complications until recently.

About a year ago, I woke up one morning and saw that the inner portion of my left eyelid was swollen. It was irritating, but I ignored it.

PERSONAL STORY

IMAGE COURTESY OF TODD TELLE

SKIN CANCER



Norah O'Donnell on vacation with her children, Riley, Henry, and Grace, and husband Geoff.

Putting Health First

Journalist Norah O'Donnell on skin cancer, early detection, and why we need to rethink our approach to healthy living

EMMY AWARD-WINNING JOURNALIST Norah O'Donnell has spent decades reporting on major events on national TV networks. The “CBS This Morning” anchor also wears another hat—cancer survivor. She recently spoke with NIH MedlinePlus magazine about her melanoma and the importance of early detection, healthy living, and trusted health information.

What was your reaction to getting diagnosed with melanoma?

I never thought I would hear the words—“You have melanoma”—the deadliest form of skin cancer.

I admit, the first thing I did was cry.

It took some time, but eventually I realized that as a wife and a mother, I had to be strong.

It is incredibly difficult to be strong when one feels so vulnerable. My diagnosis was the first time I confronted my own mortality. I think it was the first time my children did as well.

How are you doing now?

My dermatologist [a doctor who focuses on skin] made the diagnosis early. I had surgery in January 2017, which included a three-inch cut and about 25 stitches. The scar has healed but is still visible. It is a reminder that early detection saves lives. I feel incredibly lucky.

I also feel healthier than ever. I get regular skin checks. I still enjoy many outdoor activities like golf, tennis, and swimming, with lots of sunscreen and often a long-sleeved shirt and a wide-brimmed hat.



O'Donnell had surgery in January 2017 for melanoma.

You've said that you probably could have prevented your cancer.

Yes. The hardest truth I've come to learn is that I probably could have prevented the cancer.

I grew up in San Antonio, Texas. With the temperature pushing 100 degrees in the summer, we spent countless hours in the pool, many times without sunscreen. In high school, I would visit a tanning salon during the winter.

I confessed this history to my dermatologist and she told me that more people develop skin cancer because of tanning than develop lung cancer because of smoking. She also said people who tan indoors before the age of 35 have a 75 percent increased chance of melanoma.

I know I made some bad choices. Those attempts to get a tan likely led to my cancer. But by sharing this with my children and others, I hope that my story can help us all learn some valuable lessons and have the strength to embrace prevention.



O'Donnell on the set of her show, "CBS This Morning."

Can you speak to the importance of research like that conducted and supported by NIH?

As the daughter of a doctor and the sister of a surgeon, I know there is no more important research institution in America than NIH. The discoveries emerging from NIH-funded research have led to countless new ways to treat, diagnose, and prevent disease.

I am so grateful to all the specialists who work at NIH who are improving our lives.

Let's focus on care! Let's focus on cures! And most importantly, let's focus on compassion! When we show compassion for ourselves and others, we get healthier.

As a journalist, I'm sure you did a good deal of research.

NIH and medlineplus.gov provided invaluable information. When researching your health, you need a trusted source. I'll admit I was frightened after my diagnosis, but as a journalist, I delved into the research.

“NIH and medlineplus.gov provided invaluable information. When researching your health, you need a trusted source.”

- Norah O'Donnell

Truth be told, there's a bunch of baloney and misinformation online. Luckily, I'm from a family of doctors. My dad is a preventative medicine specialist; my sister is a surgeon at Walter Reed National Military Medical Center. They helped me find trusted sources of information.

The NIH website had a useful guide about why melanoma is the most serious type of skin cancer and how to spot a potentially dangerous mole.

What message do you have for those who have been diagnosed with skin cancer? And for other readers?

Skin cancer is the most common form of cancer, but it is also the most preventable. We can take healthy steps to make sure we don't develop skin cancer. And even if we made poor choices in the past, regular visits to the dermatologist can lead to early detection and a cure. I find that incredibly encouraging.

Is there anything else you'd like to share with readers?

We need to completely rethink our entire approach to health and health care.

As women, we visit the hair salon more often than a nurse or doctor. I get my hair colored every six weeks. What if I visited a health care provider with the same regularity?

There's nothing more important than our health. Why don't we spend more time learning about healthy choices and disease prevention? Why isn't "health class" as important as English or history? I'm hoping to begin a national conversation about how much time we dedicate to healthy living. As my mom reminds me, "Your health is your wealth." ■

Spotting skin cancer

Tips from the National Cancer Institute

Skin cancer is the most common form of cancer in the U.S. It's also largely preventable. Here is information from the National Cancer Institute about common risk factors and types of skin cancer.

What causes it:

The disease forms in tissues of the skin and is usually caused by the sun or ultraviolet (UV) rays. UV rays are an invisible type of radiation that comes from the sun, tanning beds, and sun lamps. The rays can change skin cells if you are exposed to them too much.

Risk factors:

- Being exposed to natural or fake sunlight over long periods of time.
- Having a fair complexion. However, people of all skin colors can get skin cancer.
- A history of sunburns.
- Having a personal or family history of skin cancer.

Where it happens:

Skin cancer can happen anywhere on your body, but it is most common in skin that is often exposed to sunlight, such as the face, neck, and hands. When checking for skin cancer, your health care provider will look for moles or birthmarks that look abnormal in color, size, shape, or texture.

The “ABCDE” rule

The “ABCDE” rule is a good way to spot early melanoma. Look for changes in moles, birthmarks, and other areas of the skin:

- **Asymmetry.** The shape of one half does not match the other half.
- **Border** that is irregular. The edges are often ragged, notched, or blurred in outline. The color may spread into the surrounding skin.
- **Color** that is uneven. Shades of black, brown, and tan may be present. Areas of white, gray, red, pink, or blue may also be seen.
- **Diameter.** There is a change in size, usually an increase. Melanomas can be tiny, but most are larger than 6 millimeters (about 1/4 inch) wide.
- **Evolving.** The mole has changed over the past few weeks or months.

Common types of skin cancer:

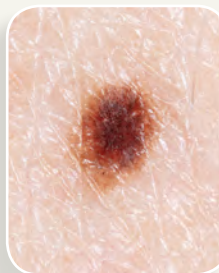
The three most common types are found on the top layer of the skin: basal cell, squamous cell, and melanoma. Exposure to the sun and ultraviolet rays are the leading cause of these types of cancer.



Basal cell cancer grows in areas of your body that are more exposed to the sun, such as your head and neck. They grow slowly, rarely spread, and are the least likely to cause death.

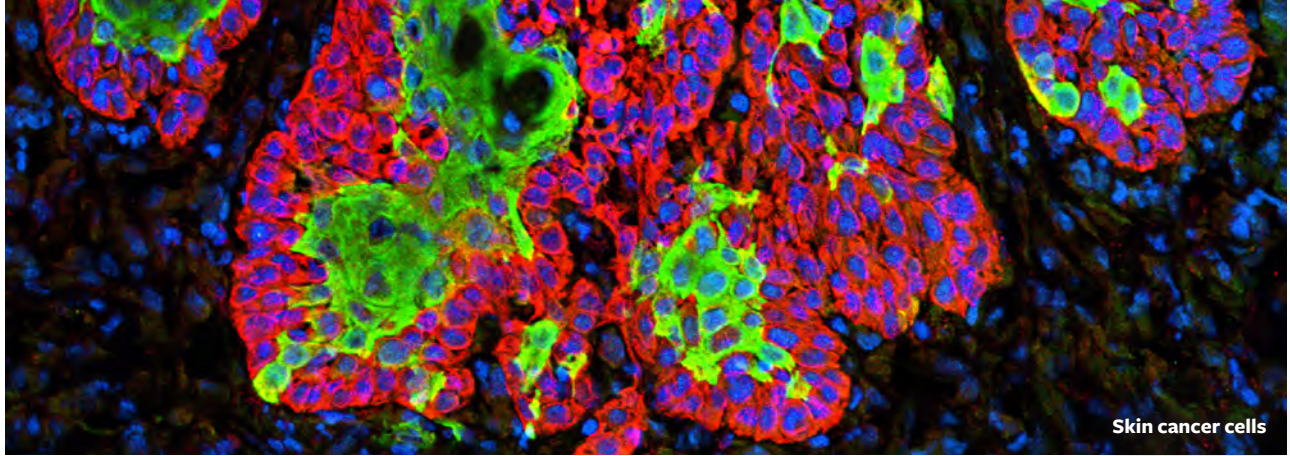


Squamous cell cancer is found on the outer layer of the skin, usually on your face, ears, neck, lips, and backs of your hands; the areas of your body that get the most sun. The cells can spread to other places in your body, but if caught in time, can be removed and are not deadly.



Melanoma cancer is much less common than basal cell and squamous cell cancers. However, the cancer cells are more likely to grow and spread if left untreated. Although it is the least common of skin cancers, it is the most deadly. ■

SOURCE: National Cancer Institute



Skin cancer cells

Researching melanoma at NIH: What's new?

More than 1 million people in the U.S. live with melanoma, a type of skin cancer. While there is no cure for melanoma, there are ways to treat it if caught early enough—and many ways to prevent it.

NIH MEDLINEPLUS MAGAZINE spoke with Larissa Korde, M.D., of the National Cancer Institute (NCI). She oversees clinical trials on melanoma research through NCI's Cancer Therapy Evaluation Program, part of the division of cancer treatment and diagnosis.

Why is melanoma so important right now?

Over the past few years, we've made significant progress in researching and treating melanoma—but there is still a long way to go.

Until recently, when effective drugs were discovered that target the human body's immune system, we didn't have many effective treatment options for melanoma.

We now have immune checkpoint inhibitors [drugs that help increase the body's immune response to cancer] which have changed our approach to treatment.

What's something most people don't know about melanoma?

There are many different types of melanoma and we are still trying to understand how to best treat each of them.

Most melanomas occur in the skin, and are caused by exposure to UV radiation from the sun. Melanoma can also rarely occur in the eye (uveal melanoma) or in the linings of the nose, sinuses, or other body parts (mucosal melanoma). One type of mole, known as a dysplastic nevus, can develop into melanoma.

Through NIH-sponsored research, we are able to explore how different types of melanoma respond to treatments. The NCI's National Clinical Trials Network coordinates and supports large clinical trials across the country that enroll hundreds of patients.

This gives us a wonderful opportunity to look at both common and rare skin cancers and find the most effective treatments.

How does someone get melanoma?

It is mostly caused from exposure to the sun and ultraviolet rays. Sunscreen and limiting your time in the sun can help prevent it.

Melanoma is genetically related, too. We have identified some genes, but that is more so if people develop melanoma at a young age or have multiple cancers in their families.

What research is being done to prevent or cure melanoma?

We have had major improvements in treatment if we target the cancer accurately.

We have known for a long time that melanoma is a cancer where the immune system is involved—so immunotherapy treatments [drugs that stimulate your immune system] tend to work.

Now we have a range of immunotherapy drugs [which use our own immune system to treat disease] so we can fight the cancer better. In the last five years, we have found that these drugs are very effective.

What improvements do you see in the future?

Like many cancers, melanoma is more difficult to cure when it has spread to advanced stages. We're getting more information on using drugs to treat early stage disease in order to prevent it from progressing to an incurable stage. We're also finding out how we can get the best combination of these drugs so that they are not too toxic in your body.

Every year we build on what we already know. It's baby steps—but over the past decade, we've moved much closer to having more effective therapies, and figuring out which is best for which patient. ■



Heather Quintal practiced yoga and meditation during her cancer treatment.

Young woman fights melanoma and gives back

Getting treatment

Doctors removed all of the lymph nodes—part of the immune system—under her arm, and she began treatment with one month of daily infusions and 11 months of self injections 3 times per week.

Heather faced serious side effects. She had liver issues, joint pain, weight gain, hair loss, and cellulitis (when the skin tissue becomes inflamed).

“My body needed to learn how to live without lymph nodes,” she says. “It was like having the flu for a year. I looked like I had aged 10 years.”

Fight, not flight

Heather was determined to stay active during treatment. She walked instead of running, improved her diet, and took up meditation and yoga.

“When I’m on my yoga mat, no one is looking at me with sad eyes. Yoga taught me a lot about who I am,” she says.

She left her high-stress job at the accounting firm. She became a controller at her family’s business and opened her own yoga studio.

“I wanted to create a place for people to go. Caregivers, survivors, or noncancer related. No one goes through life unscathed. I wanted to create a place where people could come and be comfortable,” she says.

Heather also found support through IMPACT Melanoma, a national nonprofit melanoma awareness and prevention group. She is also part of the group’s Buddies program, which mentors and supports melanoma survivors and caregivers.

Spreading the word

Through IMPACT Melanoma, Heather shares her cancer story with students in middle schools, high schools, and colleges.

“Prom is a popular time for girls to go to tanning beds. I love talking to students about the risks of tanning and why they should wear sunscreen and cover up in the sun,” she says.

Living cancer-free

Heather, who is now 29, has been cancer-free for more than six years.

She wants everyone to wear sunscreen and get skin checks regularly from a dermatologist.

Most of all, “Live your life. Do what you want to do. Life is short.”

Heather also has advice for loved ones of those with cancer: “As a bystander, you have this powerlessness—you wish you could fix it,” she says. “But the best thing you can do is be there. Be the person you were before your loved one had cancer.” ■

In May 2012, 22-year-old new college graduate Heather Quintal was excited to begin a career at an accounting firm in Boston.

But two weeks after graduation, before starting her job, Heather was diagnosed with advanced stage melanoma, the deadliest of all skin cancers.

PERSONAL STORY

“My dad was walking by my room one night and noticed I had a mole on my back,” she says.

After her dad noticed the mole, he and Heather went to the dermatologist (a doctor who focuses on skin). Her dermatologist removed the mole and had it examined.

A few days later, the dermatologist called and told Heather to come into the office and bring her parents.

The cancer had spread to her lymph nodes.

The news was terrifying. She was told she either had a 20 percent chance of living one year or a 50 percent chance of living five years.

Find Out More

► **MedlinePlus.gov: Skin Cancer**
<https://medlineplus.gov/skincancer.html>

► **National Cancer Institute: Skin Cancer**
<https://www.cancer.gov/types/skin>

► **National Cancer Institute: Skin Cancer Screening**
https://www.cancer.gov/types/skin/patient/skin-screening-pdq#_5

GET MOVING!

Key takeaways from the new physical activity guidelines

Spring is here, which means it's time to get outdoors and get active.

Read on to find out how much exercise you and your family need in a day. Learn new ways that being active can benefit your health now and in the future.





Move more, sit less

That’s the main message for adults from the 2018 Physical Activity Guidelines, from the U.S. Department of Health and Human Services.

We all know exercise and physical activity are important to our health. But the new guidelines tell how much activity we need to stay healthy, prevent or slow down chronic diseases, and improve our quality of life.

Most adults, for instance, need two to five hours per week. Kids ages 6 to 17 need about an hour a day. There are also recommendations for pregnant women, people with chronic diseases, and those with disabilities.

The guidelines are an update to those released in 2008. The overall message of “get moving” is similar to that of the 2008 guidelines. But here are some key updates:

General Exercise Recommendations by Age

Adults and older adults:	2 to 5 hours per week
Kids:	1 hour per day
Young children:	3 hours per day
Pregnant women:	2 hours and 30 minutes per week as able
Adults with chronic conditions or disabilities:	2 to 5 hours per week as able

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



GUIDELINES FOR YOUNG CHILDREN: The 2008 guidelines didn’t include activity recommendations for young children ages 3 to 5. So how much activity do your preschool-aged children need? They should be active throughout the day to enhance growth and development. Encourage your young ones to engage in active play for at least three hours a day.

IMMEDIATE HEALTH BENEFITS: Maintaining a healthy weight is one major plus of moving more. But there are other benefits. These include reducing anxiety, improving blood pressure, sleeping better, and helping with insulin sensitivity.

LONG-TERM BENEFITS: The guidelines review long-term benefits of exercise, like helping prevent some types of cancer. Exercise can reduce the risk of getting dementia and Alzheimer’s disease as we age. For children and teens, staying active contributes to brain function and better bone health.



FAST FACT

Wondering if you're doing moderate or vigorous exercise? Try talking! If you're breathing hard but can talk easily, it's moderate intensity activity. If you can only say a few words before you have to take a breath, it's vigorous intensity activity.

CHRONIC DISEASE MANAGEMENT: New evidence shows that physical activity can help manage existing health issues. For example, exercise can decrease the pain of arthritis and slow diseases like high blood pressure and type 2 diabetes. It can also improve brain functioning for those with multiple sclerosis and Parkinson's disease.

MOVE YOUR WAY!: Although the guidelines were written with health providers and scientists in mind, helpful information is available for everyone at the Move Your Way website in English and Spanish.



NOT SURE WHERE TO START? Review the brief fact sheets designed for your age group. Watch a video that tells you how to make working out part of your daily routine. Think raking leaves, taking the stairs, and even vacuuming!

TOOLS TO HELP YOU SUCCEED: Move Your Way has an easy-to-use online activity planner. Log activity hours and keep track of how much exercise you need to meet your weekly goals. Choose from 54 activities (like active video games, tai chi, gardening, or shoveling snow) or enter your own. ■

SOURCES: 2018 Physical Activity Guidelines; Move Your Way

NIH study tracks exercise with mobile apps to improve heart health

Tiffany Powell-Wiley, M.D., M.P.H., is dedicated to making Americans healthier.

She focuses on research related to heart health and the conditions that go with it. Those include obesity, high blood pressure, and diabetes.

In 2013, Dr. Powell-Wiley and her team started research on how to lower rates of these chronic conditions among African Americans and the racial and ethnic disparities that often go along with the conditions.

“We want to take some of the tools we’re developing—at least the mobile apps—to see if they’re effective in promoting heart health and then tailor these to other parts of the country.”

- Tiffany Powell-Wiley, M.D.

The studies are located in several Washington, D.C., communities, where data from the D.C. Department of Health indicates that obesity rates are high among African Americans.

“We work with community members to design and carry out our studies,” Dr. Powell-Wiley said.

The research is part of the Washington, D.C. Cardiovascular (CV) Health and Needs Assessment, a study that Dr. Powell-Wiley’s team leads. So far, 153 community members have participated in the Health and Needs Assessment.

Tracking health

One goal of the study is to understand how mobile health technology can help people better track their nutrition and exercise.

In the beginning of the study, participants used a physical activity monitoring wristband and mobile apps on their phones to track their exercise over 30 days. At the end of each week, they connected their wristbands to computers to upload data to Dr. Powell-Wiley’s team at NIH.

More than 80 percent of study participants used the wristbands over the full 30 days.

“This was one of the first studies to show the feasibility of wearable mobile health technology in a population most impacted by health disparities,” Dr. Powell-Wiley said.

Community barriers to health

Dr. Powell-Wiley adds that areas with lower income levels, like the ones she works with in D.C., can often have fewer resources. That means a lack of healthy food and grocery store options, parks, or recreation centers.

“Even when those resources are available, you may be limited in using them because of the perceived safety in the community,” she says.

Rural areas also pose challenges. They may not have sidewalks for walking or places to exercise.

Her team hopes that by using mobile apps, people in these communities can get the support they need—in their own neighborhoods.

“We want to take some of the tools we’re developing—at least the mobile apps—to see if they’re effective in promoting heart health and then tailor



Tiffany Powell-Wiley, M.D., M.P.H., is passionate about making physical activity and heart health a priority in U.S. communities.

these to other parts of the country,” she said.

Using the new guidelines

For those interested in improving their heart and overall health, Dr. Powell-Wiley says the new physical activity guidelines are a good place to start. They can help you understand how much exercise is right for you.

But she says it’s OK to start slowly.

“Even if you aren’t doing any exercise right now, you can still start with some sort of activity and ramp up as you’re able,” she says. “You don’t have to run marathons. Find what works for you and try to do that.” ■

The National Heart, Lung, and Blood Institute and the National Institute on Minority Health and Health Disparities support Dr. Powell-Wiley’s research.

One step at a time: D.C. resident walks for health and community

For Washington, D.C., resident Deborah Nix, walking connects her to the community and gives her confidence.

“A friend of mine saw me out walking recently, and said, ‘Girl, you’re looking good!’” Deborah says.

Walking has also helped Deborah and her fellow community members get healthier.

Walking with NIH

Deborah helps lead a community walking group as part of the Washington, D.C. Cardiovascular (CV) Health and Needs Assessment study. The program is led by NIH researcher Tiffany Powell-Wiley, M.D., M.P.H.

It aims to help people better track their nutrition and exercise, and ultimately improve their heart health.

PERSONAL STORY As part of the study, Deborah got a physical examination from Dr. Powell-Wiley at the NIH campus in Bethesda, Maryland.

They screened her for heart disease risk factors like high blood pressure, diabetes, and related chronic conditions.

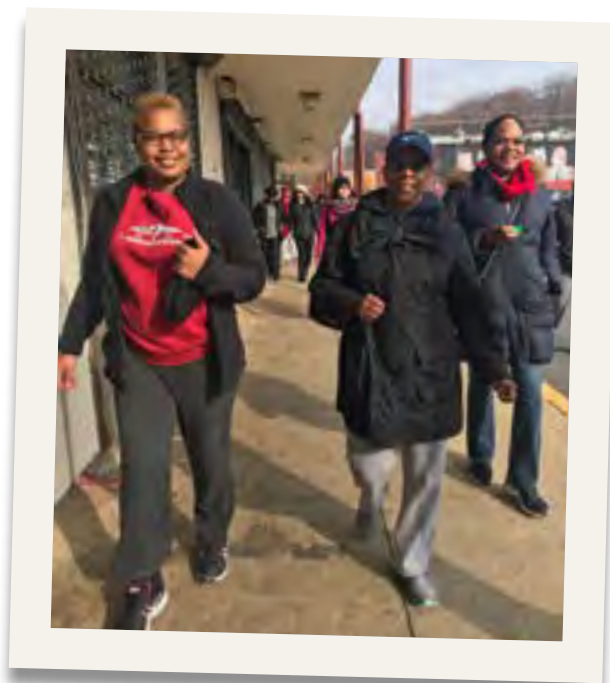
“They walked me through every step and explained everything to me,” Deborah says. “It has been a real eye-opener to be part of the program.”

Recruiting others

Deborah also recruits other community members to participate in NIH research.

Now, more than 100 D.C.-area residents have taken part in studies by Dr. Powell-Wiley’s group over the past six years. Many participants joined through cooperation from area churches.

“Working with Dr. Powell-Wiley has been a blessing,” Deborah says. “People, including me, have noticed that walking has lowered their blood pressure, their weight has dropped, and they have more energy.”



D.C. resident Deborah Nix, left, helps lead a walking program with NIH.

“People, including me, have noticed that walking has lowered their blood pressure, their weight has dropped, and they have more energy.”

- Deborah Nix

Looking forward

Deborah plans to keep walking and focusing on her health, even when she’s done with the study.

“I try to spread the word as much as possible,”

Deborah says. “If we can be healthier, we can help our communities be healthier.”

Her advice for others who are looking to follow a healthier lifestyle is to take time for themselves.

“As women, we often put other people first, and then forget about ourselves,” Deborah says. “Make sure to prioritize yourself.” ■

Find Out More

► **MedlinePlus: Exercise and Physical Fitness**

<https://medlineplus.gov/exerciseandphysicalfitness.html>

► **Move Your Way**

<https://health.gov/moveyourway/>

► **2018 Physical Activity Guidelines:**

<https://health.gov/paguidelines/second-edition/>

8 NIH Research Highlights

Highlights include CancerSEEK blood test, wearable blood pressure monitor, and more



What did we learn in 2018 that could help your health this year or in the future? NIH-supported researchers worked on a simple blood test that detects cancer and a wearable blood pressure monitor as small as a dime. Read on to learn about more exciting research and what it could mean for you.



1. Brain scan technology extends treatment window for stroke

Some stroke patients may be able to get treatment later than originally thought.

A recent study looked at treatment for ischemic stroke using brain scans. This is the most common type of stroke. The findings? In some patients, brain tissue could be saved with treatment up to 16 hours after a stroke. The gold standard in care for strokes has been to start treatment within about 5 hours of having one. Researchers emphasize that stroke is still an emergency and that patients should seek treatment immediately.

National Institute of Neurological Disorders and Stroke; Centers for Disease Control and Prevention

2. CancerSEEK: Blood test could detect cancer earlier

One step toward an earlier cancer diagnosis could be a liquid biopsy called CancerSEEK. CancerSEEK detects cancer from something we do all the time—giving a simple blood sample. CancerSEEK looks at genetic information from the patient’s blood to diagnose cancer, which may help or eventually replace tissue biopsies. Biomarkers are in our blood, tissues, and other fluids. They can be tracked to show if we have diseases like cancer.

National Cancer Institute; National Institute of General Medical Sciences



3. Weight, belly fat contribute to higher likelihood of type 2 diabetes



Why do some people get type 2 diabetes more than others?

In a study of 4,200 volunteers, researchers found that the disease occurs more in middle-aged and older people, those with a family history of diabetes, and African Americans. In fact, black adults in the U.S. were twice as likely as white adults to develop the disease. Researchers found the greatest common link to diabetes was obesity. Exercising and eating a healthy diet can reduce the chances of getting type 2 diabetes.

National Heart, Lung, and Blood Institute



4. Appendix linked to toxic Parkinson's protein

Could removing the appendix lessen chances of Parkinson's disease?

Maybe, according to a new study.

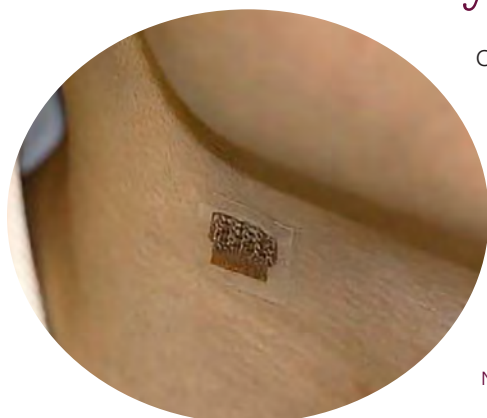
Researchers found people who had their appendix removed had a 19.3 percent lower chance of getting Parkinson's. Parkinson's is a serious brain disorder. It leads to shaking, walking, and balance problems.

A specific protein, alpha-synuclein, has been found in the brains and gut of many Parkinson's patients. In large quantities, the protein can be toxic. Researchers in the study wanted to investigate if the protein travels from the gut to the brain. They studied the appendix because it's part of the gut, but has been removed in a number of people.

The researchers found a buildup of the toxic form of alpha-synuclein in the appendixes of healthy volunteers. This suggests that the appendix may store the protein and could be involved in Parkinson's disease development.

National Institute on Deafness and Other Communication Disorders; National Institute of Neurological Disorders and Stroke

5. A wearable blood pressure monitor may be in our future



Could a sticker make checking your blood pressure easier and more accurate?

Researchers are testing a new wearable skin patch that monitors a patient's blood pressure from their neck.

The patch monitors a patient's blood pressure better than other methods, like an inflatable cuff around the arm. This is because it records blood pressure in the central arteries and veins in our necks. The experimental patch connects with wires, but the researchers hope to develop a wireless version.

National Institute of Biomedical Imaging and Bioengineering

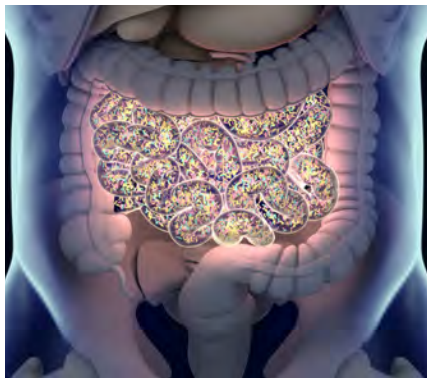
6. Treatment improves hand grip after spinal cord injury

More than 250,000 Americans live with spinal cord injuries.

A new treatment using electrical currents to stimulate the spinal cord helped patients with limited ability to use their arms and hands. After only a few training sessions, patients had better grip strength. Some even noticed improvements in their lower limb movement, and in daily activities such as holding a cup or turning a doorknob.

The study was small, so additional follow-up testing is needed.

National Institute of Biomedical Imaging and Bioengineering



7. Restoring ‘good’ gut bacteria in cancer patients

This process sounds strange—but it could be promising.

Fecal microbiota transplantation, also known as FMT, is a new way to replenish “good” bacteria in some cancer patients. The process uses a patient’s stool to counter the negative effects of antibiotic use. In a recent study, FMT returned “good” gut bacteria to almost normal levels within days. It usually takes weeks, leaving patients at risk of other infections.

National Institute of Allergy and Infectious Diseases

8. Bystanders save lives using defibrillator for cardiac arrest

People are more likely to survive cardiac arrest if someone near them uses a defibrillator.

Cardiac arrest happens when the heart suddenly stops beating. It must be treated within a few minutes to prevent death, which can happen before an ambulance arrives. A new study found that using a defibrillator saves 1,700 lives each year in the U.S. Defibrillators are portable devices that check and restore normal heart rhythm.

National Heart, Lung, and Blood Institute; National Institute of Neurological Disorders and Stroke ■



from
the

lab

LATEST
RESEARCH
UPDATES
FROM NIH

Untreated sleep apnea can lead to high blood pressure in African Americans

GETTING RESTFUL SLEEP is often hard. Sleep apnea can make it even harder.

New NIH-supported research finds that African Americans with more severe forms of sleep apnea are at greater risk of high blood pressure. An estimated one in four African Americans in the U.S. have a moderate or severe case of sleep apnea.

Sleep apnea happens when there is airflow reduction during sleep. Common signs are snoring or gasping.

The study researchers say that screening groups at high risk for sleep apnea can help reduce their risk of high blood pressure and heart disease.

Untreated sleep apnea can lead to heart attack, diabetes, cancer, or glaucoma.

If you have a heart condition, snore loudly, or feel that excessive daytime sleepiness gets in the way of your daily activities, discuss your symptoms with a doctor. They can help you determine how these problems might be managed. ■



Untreated sleep apnea can lead to heart attack, diabetes, cancer, or glaucoma.

SOURCE: National Heart, Lung, and Blood Institute

Study connects dots between vaginal birth, pelvic floor disorder

A RECENT NIH STUDY found that women who gave birth through cesarean section (c-section) were at lower risk of developing pelvic floor conditions than those who gave birth vaginally.

To learn more, researchers followed 1,500 first-time mothers over nine years.

A vaginal delivery can weaken a new mother's pelvic area through stretching and tearing. A c-section happens through the abdomen and causes less strain on the area.

Pelvic floor disorders can lead to leakage of urine associated with laugh, cough, sneeze, or they can weaken support of the vaginal walls and cause bowel movement problems.

According to NIH-funded research, almost one in four women have some type of pelvic floor disorder. Obesity, aging, and chronic medical problems that cause strain on the pelvic floor can also contribute to pelvic floor issues. ■

SOURCE: Eunice Kennedy Shriver National Institute of Child Health and Human Development

FAST FACT

“Almost one in four women have some type of pelvic floor disorder.”

NIH-FUNDED RESEARCH



Red meat and the risk of heart disease

TO BEEF OR NOT TO BEEF? With so many heart-healthy food choices, that is the question.

Lean red meat in moderation is a great source of protein, iron, vitamin B12, and zinc. But too much red meat can negatively affect our health.

New research supported by NIH links daily consumption of a diet rich in red meat to increased blood levels of a chemical associated with heart disease. It suggests that the chemical—trimethylamine N-oxide (TMAO)—significantly increases with a diet rich in red meat. Past studies have linked TMAO to an increased risk of heart attack and stroke.

Heart disease develops when the blood vessels to the heart become clogged with fatty deposits, or plaque. This also increases the potential for clot formation and development of a heart attack.

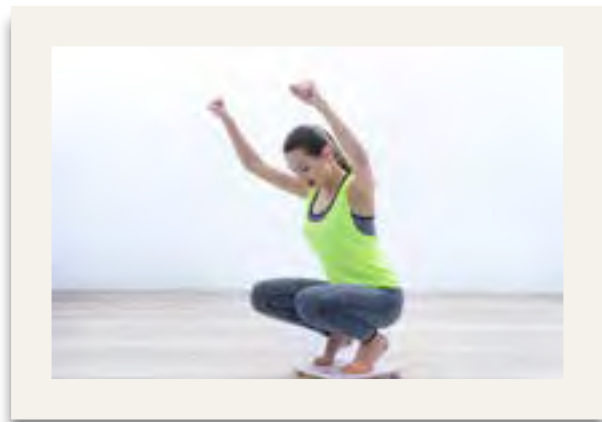
Researchers also found that when the people they studied stopped eating red meat and changed to either a poultry or vegetarian diet for a month, their TMAO levels dropped significantly.

Before removing red meat from your diet, talk to your health care provider. ■

SOURCES: MedlinePlus; National Heart, Lung, and Blood Institute

NIH
on
the

web



➔ Set healthy goals with NIDDK's body weight planner

UNDERSTANDING HOW MANY calories you need per day is tricky. NIH is here to help.

The National Institute of Diabetes and Digestive and Kidney Diseases has an easy-to-use, online body weight planner.

Enter basic information—like your height, weight, and physical activity level. Then answer questions about your goal weight and desired changes in physical activity.

The planner tells you how many calories you should eat per day in order to meet your goal weight—and maintain it.



➔ Test your stroke knowledge

NUMBNESS. CONFUSION. Trouble seeing or walking. These are all signs of stroke, one of the leading causes of death and serious long-term disabilities.

An online quiz from the National Institute of Neurological Disorders and Stroke (NINDS) can teach you more about signs, symptoms, and risk factors of stroke.

The quiz is part of NINDS' Know Stroke initiative, which has information in English and Spanish. Other resources include links to stroke clinical trials, a quick video, and toolkits for teachers.

Find it all in one place!
magazine.medlineplus.gov



➔ Social media corner: NIH hearts heart health

ON FEB. 8, staff from the National Library of Medicine (NLM) joined together to raise awareness about heart health.

NLM Director Patricia Brennan, R.N., Ph.D., and about 70 staff members got their blood pumping during a walk on the NIH campus in Bethesda, Maryland. The group walk was part of the NIH-led #OurHearts campaign.

National Heart, Lung, and Blood Institute Director Gary Gibbons, M.D., also participated. He encouraged staff to spread the #OurHearts message of heart health and support in families, communities, and beyond.

NIH is here to help

The National Institutes of Health (NIH)—the nation’s medical research agency—includes 30 Institutes and Centers and is a part of the U.S. Department of Health and Human Services. It is the primary federal agency for conducting and supporting basic, clinical, and translational medical research, and it investigates the causes, treatments, and cures for both common and rare diseases. For more information about NIH and its programs, visit www.nih.gov.

Institutes

National Library of Medicine (NLM)

www.nlm.nih.gov
888-FIND-NLM 888-346-3656

National Cancer Institute (NCI)

www.cancer.gov
800-4-CANCER 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 800-222-2225
Alzheimer’s information 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 (NIAMS)

www.niams.nih.gov
877-22-NIAMS 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
800-370-2943

National Institute on Deafness and Other Communication Disorders (NIDCD)

www.nidcd.nih.gov
800-241-1044 (voice)
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
NIDDK Health Information Center
1-800-860-8747

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
866-615-6464

National Institute on Minority Health and Health Disparities (NIMHD)

www.nimhd.nih.gov
301-402-1366

National Institute of Neurological Disorders and Stroke (NINDS)

www.ninds.nih.gov
800-352-9424

National Institute of Nursing Research (NINR)

www.ninr.nih.gov
301-496-0207

Centers & Offices

Fogarty International Center (FIC)

www.fic.nih.gov
301-402-8614

National Center for Complementary and Integrative Health (NCCIH)

www.nccih.nih.gov
888-644-6226

National Center for Advancing Translational Sciences (NCATS)

www.ncats.nih.gov
301-435-0888

NIH Clinical Center (CC)

clinicalcenter.nih.gov
301-496-2563

Office of AIDS Research (OAR)

www.oar.nih.gov
301-496-0357

Office of Behavioral and Social Sciences Research (OBSSR)

www.obsr.od.nih.gov
301-402-1146

Office of Rare Diseases Research (ORDR)

www.rarediseases.info.nih.gov
Genetic and Rare Disease
Information Center
888-205-2311

Office of Research on Women’s Health (ORWH)

orwh.od.nih.gov
301-402-1770

NOT JUST ANOTHER 1-800 NUMBER.

Cancer isn't just another disease, and not just anyone can help. The trained specialists at NCI's Cancer Information Service provide the latest information and compassionate support, with services that are free and confidential. Help—and hope—is just a phone call away.

1-800-4-CANCER

cancer.gov/contact



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