

# NIH MedlinePlus

MAGAZINE

Trusted Health  
Information from the  
National Institutes  
of Health

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New NIH research on  
high-risk pregnancy

Mindfulness tackles  
pain and opioid use

How social media can  
impact teen vaping

Little-known health  
effects of bullying

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Tips for  
cold-weather  
wellness

## COVER STORY

Telemundo host and actress **Adamari López**  
embraces healthy living and 'laughing a lot' after

# BREAST CANCER



# NIH COVID-19 research addresses health disparities in testing

September 15 to October 15 is Hispanic Heritage Month, a time to honor and celebrate Hispanics and Latinos in the U.S. It also is a time to recognize health differences in these communities. Our cover celebrity, Adamari López, is a Telemundo host and breast cancer fighter who is working hard to educate other women about the importance of routine health screenings. While Hispanic and Latina women have a lower death rate from breast cancer than white women, breast cancer is still the leading cause of cancer deaths for those groups.

Now is also an important time to recognize National Institutes of Health research supporting Hispanic and other diverse communities. One such research initiative is the Rapid Acceleration of Diagnostics (RADx), in which scientists and researchers across the country are working to improve COVID-19 testing.

One of the four cornerstones of the RADx initiative is RADx Underserved Populations (RADx-UP). RADx-UP hopes to improve access to testing for populations who are disproportionately affected by health disparities. A health disparity is a higher burden of negative health outcomes—such as illness or death—that often affects specific populations. For COVID-19,



those include Hispanics and Latinos, as well as African Americans, American Indians, and Alaska Natives.

Through better testing, RADx-UP will help give researchers a clearer picture of how COVID-19 affects these populations and how to improve health outcomes around the virus. That could mean everything from creating more accessible testing locations to customizing COVID-19 resources to address concerns relevant to each community. Ultimately, researchers want to best serve these and other communities to keep them healthy and safe.

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## NIH MedlinePlus MAGAZINE

### WHO WE ARE

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Raising awareness about breast cancer has helped TV host Adamari López in her own healing process.

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# health

NEWS,  
NOTES,  
& TIPS  
FROM NIH

## The little-known health effects of bullying

*Learn how to spot it and what to do*

**HEALTH TIPS** Though bullying can happen at any age, it can be especially difficult for school-age children and teens. It can result in social and emotional distress, self-harm, and, in severe cases, even death. But bullying doesn't just happen at school. Cyberbullying can happen anywhere, at any time.

### Common types

Bullying comes in many forms:

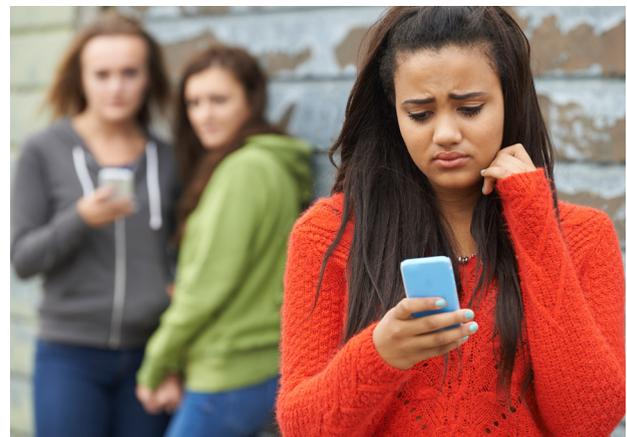
- **Physical:** Hitting, punching, kicking, pushing
- **Verbal:** Teasing, name-calling, making sexual comments or threats
- **Social:** Excluding others, spreading rumors, refusing to talk to someone, encouraging others to bully
- **Cyber:** Sending threatening messages online, posting content or information about others without their consent

Recently, cyberbullying has become especially common, expanding where and when kids can be bullied.

### Health effects

Students who are bullied are at increased risk of mental health issues. Those can take the form of anxiety, low self-esteem, depression, and even thoughts of suicide. Kids who are bullied can have physical problems like tiredness, headaches, and poor eating habits, too. Unexplained injuries can also be a sign of bullying.

Children and teens who are bullies are at increased risk



of substance use, academic problems, and violence against others later in life.

### Some other signs of bullying are:

- Missing school, disliking school, or having poorer school performance than usual
- Self-destructive behaviors like running away from home or self-harm
- Lost or destroyed clothing, books, electronics, or jewelry
- Difficulty sleeping or frequent nightmares
- Suddenly losing friends or avoiding social situations

### DID YOU KNOW?

**1 in 5** high school students reported being **bullied at school in the last year.**

National Center for Education Statistics

### What to do

Parents can identify signs of bullying, talk with their child, and notify a teacher or school administrator. They can also help teach children skills to deal with bullying through role-playing.

For children who may need more support, parents can consider referring the child to a school counselor, psychologist, or other mental health specialist. Additionally, leading by example can positively influence children who bully or are likely to bully.

### How the National Institutes of Health is addressing bullying

The *Eunice Kennedy Shriver* National Institute of Child Health and Human Development does research to better understand the social triggers of bullying and cyberbullying in general. Topics include the effects of bullying and being bullied on a person's health and well-being. ■

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

## Tooth and gum health

**BY THE NUMBERS** Keeping your teeth and gums healthy is essential to overall health and can help you avoid costly dental work down the line.

Make sure to brush twice a day with a fluoride toothpaste and use floss to clean between your teeth. These may seem like small steps, but they can go a long way. They help prevent cavities, also known as tooth decay, and gum disease, the leading cause of tooth loss.

In addition to brushing and flossing, avoid smoking and make smart food choices to keep your teeth and gums healthy. For example, limit snacking and save candy, cookies, and soda for special occasions. Finally, see a dentist for regular checkups and professional cleanings.

Tobacco use and diabetes are **two risk factors** for gum disease

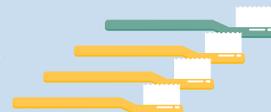


### In the United States:



**More than 84% of children** had a dental visit in the past year

**1 in 4 adults** currently has untreated tooth decay



**70.1% of adults age 65 and older** have gum disease

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



# Q+A What is palliative care?

*Helping patients and families manage serious illness*



Jeri Miller, Ph.D., leads research on palliative care at the National Institute of Nursing Research.

**RESEARCH** Palliative care offers care and support from a team of health providers such as doctors, nurses, and social workers. Palliative care isn't just for those who are nearing the end of life. In fact, it's for anyone at any age who has a serious illness—and their family caregivers. Jeri Miller, Ph.D., of the National Institute of Nursing Research answered a few questions about the basics of palliative care and how it can make a difference.

## How does palliative care work?

Palliative care is specialized care for people living with a serious illness. You can receive palliative care at the same time you are receiving treatments for your serious illness. What palliative care does is provide relief from symptoms such as pain, shortness of breath, fatigue, and others. It also helps you with practical needs, manage the medical treatments you are receiving, improve your quality of life, and provide help to your family.

## When do people get palliative care?

Some people receive palliative care for a long time; others do not. It's not based on your prognosis, but on your needs. Hospice is a special form of palliative care for individuals at the last stages of an illness or advanced disease. After someone passes away, palliative care

teams can help support family members who may be grieving that loss.

## Who provides palliative care?

It's provided by a specially trained team of doctors, nurses, social workers, and others, who work with you and your own doctor. They work together to make sure that your care is coordinated with your providers and that they listen to your preferences for care to help you understand your treatment options and choices. They make sure to provide expert symptom management when you are seriously ill.

## What current research areas are you focused on?

Much of our research centers on discovering better ways to manage pain and symptoms that occur in a serious illness. The focus is not just on the ill individual but also the impact of an illness on family caregivers who, together with their ill loved one, are experiencing the challenges of a serious illness. Researchers are also trying to understand the unique needs of palliative care in underserved and vulnerable populations. That is so important right now because palliative care is for everyone, everywhere. ■



Look out for more of our interview with Dr. Miller in our next issue.

# Cold-weather wellness: Tips for staying healthy this season

**HEALTH TIPS** Staying healthy during colder months is the first step in making sure you can enjoy all the activities the season brings.

When you are indoors more during the fall and winter, you may be closer to other people. This can increase your chances of catching viruses that cause colds, the flu, or COVID-19. Dry winter air can also weaken natural mucus barriers in the nose, mouth, and lungs, where viruses can enter the body.

## Get a flu shot

Each year, the seasonal flu sickens millions and causes thousands of hospitalizations and flu-related deaths in the U.S. The Centers for Disease Control and Prevention recommends a yearly flu vaccine for everyone 6 months of age and older. Flu vaccines are updated each year to best protect against new strains of the flu virus.

## Reduce the spread

To help reduce the spread of the flu, colds, and other viruses, including COVID-19, you should:

- Wash hands frequently. It is the best way to protect yourself from catching illnesses.
- Wipe down surfaces around you with a sanitizing cleaner.
- Keep your distance from those who are sick.
- Avoid touching your eyes, nose, and mouth.
- Stay hydrated, so you can flush toxins out of your system.
- Get enough sleep to keep your immune system strong.
- Follow Centers for Disease Control and Prevention mask-wearing guidelines.

## Make nutritious choices

Eating a diet full of vegetables, fruits, lean protein, and whole grains can also help you stay healthy during the colder months. Consider treats that will satisfy cravings but have less fat and added sugar. Also keep an eye on portion size. When making your food shopping list during the holidays, think about healthier alternatives to traditional comfort foods.

## Stay active

Shorter days and colder weather may lead you to exercise less. But even moderate exercise, like a brisk walk, raking leaves, or climbing stairs, can help. Physical activity can help you maintain or lose weight, reduce anxiety and blood pressure, and improve your quality of sleep. ■

**SOURCES:** Centers for Disease Control and Prevention; U.S. Physical Activity Guidelines; National Heart, Lung, and Blood Institute; National Institute of Diabetes and Digestive and Kidney Diseases



# From opioids to mindfulness

*Integrative treatment offers hope for reducing opioid dependence*

Twenty-six years. That's how long Eric Garland, Ph.D., LCSW, has practiced mindfulness, a complementary health practice that includes focused attention, acceptance, and staying in the present.

For the last 15 years, this passion has fueled Dr. Garland's practice as a clinical social worker. He's also applied mindfulness to his scientific research. A mindfulness technique he developed, known as Mindfulness-Oriented Recovery Enhancement, or MORE, has already shown promise for people with chronic pain who use opioids.

Dr. Garland and his team have researched MORE in a wide range of conditions, including low back pain, fibromyalgia, arthritis, headache, and gastrointestinal (GI) pain, as well as addiction. Over the past decade, their studies, supported by the National Institutes of Health, have focused on how mindfulness can help those with chronic pain reduce their dependence on opioids—and their feelings of pain.

## **MORE in practice**

MORE is usually combined with traditional treatment in community health and doctor's office settings. For

example, a patient with low back pain meets with a primary care provider to review medication needs, and then a social worker delivers the mindfulness treatment right in the primary care clinic. Results have already shown a 32% reduction in opioid dose and a 63% reduction in the number of patients who misuse opioids. There has also been a 50% reduction in opioid cravings, as well as a 22% decrease in pain-related impairment.

A key part of MORE is focusing on what patients actually want from their treatment.

"Our approach has always been, we don't preach to people and we don't try to push them," Dr. Garland says. "We meet them where they are at. If a person is ready to change the way they use opioids, then we want to support them."

## **'Zooming into' pain**

So how does mindfulness work to reduce pain? There are two techniques that Dr. Garland and his colleagues use as part of MORE.

"One is teaching patients how to use mindfulness to 'zoom into their pain,'" he notes. "For example, asking a patient to focus in and to break down the experience of



Eric Garland, Ph.D., LCSW, practices mindfulness with patients.



Eric Garland, Ph.D., LCSW, works with graduate students at the University of Utah.

“We also teach people how to use mindfulness to reclaim a sense of healthy pleasures, joy, and meaning in life, in spite of pain.”

– Eric Garland, Ph.D., LCSW

pain into sensations of heat, or tightness, or tingling. And then to notice whether the pain has edges, whether it has a center, and to notice the spaces in between the sensations.”

The other part includes focusing on a sense of pleasure and joy. For instance, savoring the beauty of a sunset, smell of a rose, joy of connection, or sense of purpose that comes from a job well done.

“We also teach people how to use mindfulness to

reclaim a sense of healthy pleasures, joy, and meaning in life, in spite of pain,” Dr. Garland says. “What the data show from multiple studies now is that this is actually happening in the brain and body.”

### A real picture of opioid use

Dr. Garland likes to remind his patients, and others who use opioids for chronic pain, not to feel embarrassed or nervous about getting support.

“The stigma is, taking opioids you must be an addict, and actually the picture with prescription opioids is much more complicated,” he says. “Patients are prescribed opioids from their physician, and the overwhelming majority are not setting out to abuse drugs or become addicted. They are just taking the medication as prescribed. But in some cases, patients can begin to develop the habit of not only using the opioids to alleviate physical pain but also to alleviate emotional pain, which can lead to future problems.” ■

## Could a complementary health treatment help you?

*For low back pain, acupuncture and yoga show promise*

Looking to add a complementary health treatment—like acupuncture or meditation—to your pain management approach? Before you dive in, make sure to check with your health care provider. Complementary health approaches are generally safe, but you have to make sure the approach you choose is safe for you and performed correctly.



**ACUPUNCTURE.** Acupuncture uses needles to stimulate specific areas of the body to reduce pain. As part of the National Institutes of Health’s HEAL Initiative, National Center for Complementary and Integrative Health (NCCIH)-supported researchers study how acupuncture can help older adults with chronic low back pain. Other research has found that acupuncture can help with fibromyalgia pain, knee pain, and headaches.



**YOGA.** Yoga is a series of poses, movements, and deep-breathing exercises. It often combines deep breathing and meditation. Studies show that yoga can be helpful for low back pain, with effects similar to those of exercise. Research on yoga for neck pain and arthritis has been limited, but some studies have had promising results, according to NCCIH.



**MEDITATION AND MINDFULNESS.** Meditation can involve focusing your mind on a particular sensation (such as breathing), a sound, a repeated word or phrase, or an image. Mindfulness helps you focus your attention or awareness on the present moment. Recent research supported by NCCIH has shown that using mindfulness to help patients with chronic pain and dependence on opioids has promise. ■

**SOURCE:** National Center for Complementary and Integrative Health

# Personal story: Selene Suarez

## *Daily mindfulness practice eases lupus pain*

Lupus is an autoimmune disease that affects 1.5 million people in the U.S. One of those people is Selene Suarez.

**LIFE WITH LUPUS:** Selene, who lives just outside Salt Lake City, Utah, has had lupus for 10 years. She has been dealing with symptoms like swollen joints, severe fatigue, and general inflammation and pain in her body while raising two young children and trying to take care of her family. “My main problem is I have lupus, so it leads to arthritis and swelling and hurts pretty much my whole body,” she says. To help with the pain, Selene’s doctor prescribed opioid medication, strong drugs that help some people reduce severe pain but that can be very addictive. Though opioids helped with her pain, Selene didn’t quite feel like herself when taking them and was open to other ways of feeling better.

**TRYING MINDFULNESS:** Selene had never heard of mindfulness before her doctor mentioned a local study, which was led by National Institutes of Health-supported researcher Eric Garland, Ph.D., LCSW. “That was the very first time I heard about it. The first time you go, you think it is not going to work, but something told me, just finish it, we’ll see what happens,” Selene says. “I had a really, really good experience.” Selene went to a local health clinic every Saturday for mindfulness treatment for two months. “First [the social worker] would talk and say to close your eyes and breathe, go here and go there, and when everything was done, she would ask, ‘How was this for you and your experience? How do you feel?’ and we would talk about it.” Selene’s provider gave her homework and different mindfulness strategies every week, so she could also practice by herself.



Selene Suarez and her daughters.

### EMBRACING DAILY

**MINDFULNESS:** Today, Selene practices mindfulness daily. “When I started the treatment, I was taking two to three pills a day,” Selene says. “Now, I’m taking two to three pills a month, and only when I really need it.” Mindfulness has had benefits for Selene beyond pain management and physical healing. It’s also helped her combat daily stress and find joy in the little things, instead of focusing on pain. “Every day is stressful and that [mindfulness] helped me a lot to relax,” Selene says. “Not to be thinking all the time, it hurts here and it hurts there. Instead, you’re changing your pain into something else, a good thought or a good memory.”

### A MESSAGE TO OTHERS WITH

**CHRONIC PAIN:** Selene hopes her story helps others with chronic pain. She wants them to know that there are other options out there. “When you take opioids, sometimes you get in a comfort zone,” Selene says. “Look around, try something else that could work if you’re open to it.” ■

## TERMS TO KNOW

**ACUTE PAIN** is a normal sensation triggered in the nervous system. It alerts you to possible injury and the need to take care of yourself. Acute pain tends to last a short amount of time.

**CHRONIC PAIN** means pain that lasts months, or even years. It may start with an initial condition, like a sprained back that has not healed properly, or an ongoing cause, like arthritis or cancer. Some people also have chronic pain without any past injury or ongoing cause.

**SOURCE:** National Center for Complementary and Integrative Health

# How integrative health research tackles the pain management crisis

*NIH centers and institutes work together to find new solutions*

**P**ain isn't simple or straightforward—and neither is treating it. Chronic pain is one of the most common reasons people seek medical care, according to the Centers for Disease Control and Prevention.

Recent data from the National Center for Complementary and Integrative Health (NCCIH), which helps advance pain research at the National Institutes of Health (NIH) with other centers and institutes, show that the use of strong opioids for pain management in adults with severe pain has more than doubled since 1998.

As part of the NIH HEAL (Helping to End Addiction Long-term) Initiative, NCCIH is studying how treatments such as mindfulness, acupuncture, and massage can help address chronic pain while reducing the need for opioids. NCCIH Director Helene Langevin, M.D., talks about the importance of this research and why a pain treatment plan often requires more than just a pill.

## What is complementary health?

Complementary treatments are not considered alternatives to conventional treatments. Rather, they are meant to “complement,” or to be used together as part of overall health care management. A lot of these treatments fall under the category that we call “mind and body.” Some treatments are primarily psychologically based, such as meditation. Others are more physically based, like manual therapy or acupuncture. Some are a mixture of both. For example, yoga has a strong mental component but also a

physical component with movement. At NCCIH, we are interested in how these complementary treatments are integrated, or used, with conventional treatments.

## What are some of NCCIH's current research priorities?

One is investigating nondrug approaches in the management of chronic pain. This is an extraordinarily important area, and we are very much engaged in several components of the HEAL Initiative. HEAL addresses the opioid crisis—but aims to end what we feel is also a pain management crisis.

“We look to research that essentially connects all those various parts of the pain experience together: physical, emotional, and behavioral.”

— Helene Langevin, M.D.

Right now, we need better options for patients to manage chronic pain other than drugs, like opioids, that may cause people to become addicted. And we know that nondrug options for pain, such as acupuncture, cognitive behavioral therapy, and mindfulness-based techniques, are recommended as the first line of treatment. The problem is that these types of treatments are not always implemented.



Helene Langevin, M.D.

## What is another key area?

NCCIH is also very interested in pain mechanisms. What are the relationships between the perception of pain and the emotions that people experience when they have pain? And how does pain perception relate to one's ability to function? We know that chronic pain can affect parts of the brain that control reasoning and emotional regulation. And that can affect behavior. We look to research that essentially connects all those various parts of the pain experience together: physical, emotional, and behavioral.

## What is a misconception about pain management?

A lot of people think that the main reason for concern about the use of opioids is the risk that these drugs are addictive. While that is true, there is another key issue: opioids do not actually work well for chronic pain in many patients. In some cases, research shows they can actually increase the feeling of pain. So, people need other pain management options not only for safer delivery, but also for more effective pain treatment, so they can get their pain under control. ■



# Breast cancer at 33:

Telemundo host Adamari López leads with laughter

**EVERY WEEKDAY MORNING, ADAMARI LÓPEZ** helps hundreds of thousands of viewers wake up on the Telemundo morning show, “Un Nuevo Día,” which she co-hosts. López is known for being bold, funny, and positive. Those traits have helped her on and off the air, especially during her battle against breast cancer, which she was diagnosed with at age 33.

Breast cancer is the most common cancer among Hispanic and Latina women, and López, who is Puerto Rican, has used her voice to raise awareness about early detection in those communities and beyond.

**You were diagnosed with breast cancer at a young age and are now a long-term survivor. How were you diagnosed and treated?**

I was 33 years old when I was diagnosed with breast cancer. I was at an excellent time in my career. I was in Mexico filming telenovelas and had just gotten engaged to my partner. One day I felt a little lump in one of my breasts. It surprised me. I went to the doctor. He thought that maybe it was just a normal occurrence during a period. He told me

if the lump didn’t go away, I should get an ultrasound. Days later, I felt a sudden pain. They found that I had a mass in my breast.

No one had previously had cancer in my family, so it was difficult and surprising to hear the news. But after consulting different doctors, I [chose to] have surgery to remove my breast and be able to continue with my life. I had the love and support of my family, which was vital and essential for me. After that, I received chemotherapy. But in between chemo I did a fertility treatment, which helped reassure me about still becoming a mother one day.

**You are a strong supporter of prevention and early detection.**

I’ve dedicated myself to helping organizations that are raising awareness about the importance of early breast cancer detection. I also help to serve as an example for other women that one can survive the disease and that an early diagnosis can save lives. That also helped me to heal. I felt like I was closer to people, and I understood the purpose that I felt was put on me to make a difference.

“Look for that which makes you stronger, that which keeps you positive, that which can help move you forward.”

– Adamari López

**What do you do to maintain a healthy lifestyle?**

Exercising, eating better, and spending time with nature are things that help me stay healthy. They are things that help me to be in good spirits and have a healthy body and mind. Laughing a lot, distracting myself with things that I like, and adding more water, fruits, and vegetables to my diet, as well as eliminating greasy foods, have helped too.

**Breast cancer is a leading killer of Hispanic and Latina women. What is your message to them?**

Stay strong. Keep getting regular medical checkups. Get to know your breasts in order to detect cancer or any nodules in time to get it checked out. We should dedicate time to ourselves and have a positive attitude toward any situation that life puts us through. That, to me, is vital when one has to face any diagnosis and any situation that life puts in our path. Look for that which makes you stronger, that which keeps you positive, that which can help move you forward.

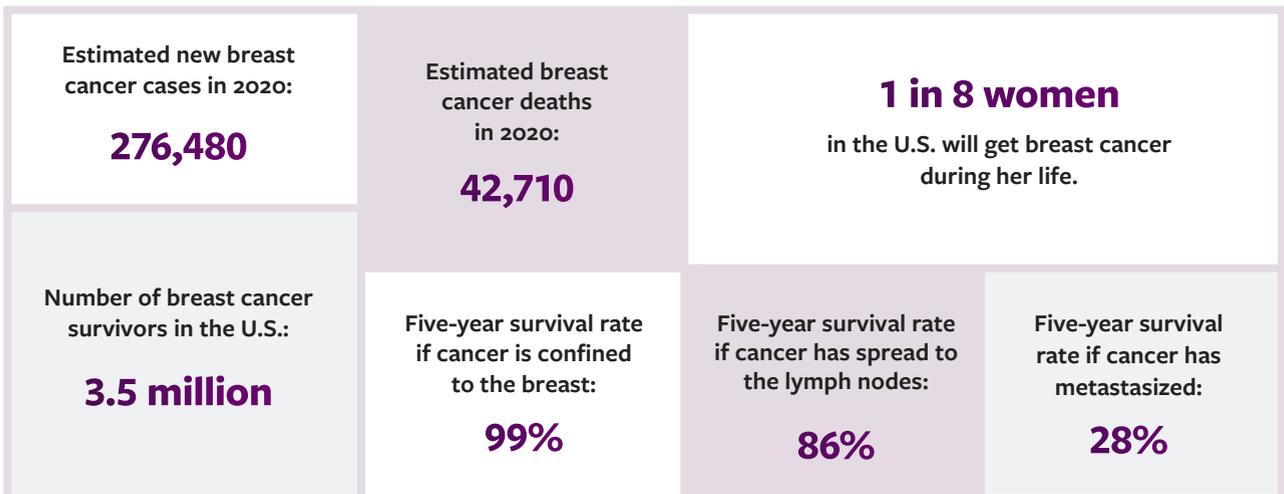
**Is there anything else you'd like to share with our readers about your life or career?**

A cancer diagnosis is not a synonym for death. It's a synonym for fighting, for seeking strength, and to learn to enjoy the things that life offers us. Keep fighting for the things you dream of, to have a better life, a healthier life, a life of beautiful moments that you can create throughout your path. ■



Left: Adamari López with her daughter, Alaïa. Above: López on the set of “Un Nuevo Día.”

**FAST FACTS:**



SOURCE: National Cancer Institute

IMAGES: COURTESY OF ADAMARI LÓPEZ



# Breast cancer: What you need to know

*Regular mammograms are key to early detection*

Breast cancer affects one in eight women in the U.S. and is the second most common type of cancer diagnosed in women, after skin cancer.

## How it happens

Breast cancer happens when cancerous cells form in the breast tissue. Health experts don't know exactly why cancerous cells form in the breast in some women but not others.

## Estimating risk

Some women who don't seem to have common risk factors may still develop the disease, while other women with a known risk factor may never develop it. This is why regular screening, such as mammograms, is key.

## Screening rates

Screening rates are increasing in some groups of women in the U.S. But for other groups, the rate is declining. According to the National Cancer Institute, screening rates have increased slightly among Hispanic women but dropped among other groups, including among Asian women, women in rural areas, and women with public health insurance or no health insurance.

## Who is more likely to get it?

- Breast cancer is most common in middle-aged and older women.
- Women aged 45 to 54 make up nearly 20% of new cases. Women aged 55 to 74 make up 51% of new cases.
- The rate of new cases of breast cancer is highest in white women, followed by African American women. Breast cancer death rates are highest for African American women—40% higher than for white women.

## How to lower your risk

The key is to get regular exams and screening. You can't do much about risk factors like age or family history of breast cancer. But there are other things you can do:

- Controlling your weight. Those who are obese have a 20%–40% higher risk of developing breast cancer.
- Limiting alcohol. Even one daily drink can raise your risk.
- Getting regular exercise.
- Quitting smoking. ■

## What is metastatic breast cancer?

*168,000 women in the U.S. live with advanced disease*

Metastatic breast cancer starts in the breast but then spreads to other parts of the body. For example, it could spread to the bones or the lungs. It's also referred to as stage 4 or advanced breast cancer. It is the most severe form of the disease.

A recent study from the National Cancer Institute found:

- In 2020, an estimated **168,000 women** in the U.S. are living with metastatic breast cancer.
- The **five-year survival rate** of women diagnosed with metastatic breast cancer is **increasing**, especially among women aged 15 to 39.
- **About one-third of women** diagnosed with metastatic breast cancer have **lived with it for five or more years**.

**SOURCE:** National Cancer Institute

# Improving outcomes for African American women with breast cancer

*Early and increased clinical trial participation can help*



**W**orta McCaskill-Stevens, M.D., M.S., has spent much of her career advancing research that supports women with breast cancer and the inclusion of underrepresented and underserved populations in clinical trials. At the National Cancer Institute (NCI), Dr. McCaskill-Stevens explores how race impacts cancer outcomes, especially in African American women, who are more likely to die from the disease.

As part of her work, Dr. McCaskill-Stevens helps oversee NCI breast cancer studies throughout the country. Most recently, she and her team at NCI helped launch a nationwide screening trial for breast cancer patients.

## **Why is this new screening trial so important?**

We haven't had a screening trial for decades. Women are being asked whether they want to have a new 3D mammogram instead of the older 2D one. We don't have the evidence that the more expensive [3D] technology is really better. This trial will help women make more informed decisions. It will look at whether 3D mammograms are better than 2D ones at finding advanced, life-threatening cancers over five years of screening. The trial will also provide us with more data to compare the risks of the two technologies. This includes whether a 3D mammogram's more complete view of the breast results in fewer or more false positives [when results say there is cancer when there actually isn't] than 2D does. If there's no difference, there would be limited data to support using the more costly screening procedure.

## **Why are there continued differences among racial groups in breast cancer outcomes?**

The racial disparity in terms of breast cancer death is continuing. African American women are about 40% more likely to die from breast cancer compared with white women, even though white women get breast cancer at a higher rate than Black women. Less access to medical care is a significant issue for African American women. They come into treatment very late in the disease, and their rate of aggressive, triple-negative breast cancer—the subtype with the poorest prognosis—is higher than in other racial groups.

“African American women are about 40% more likely to die from breast cancer compared with white women.”

– Worta McCaskill-Stevens, M.D., M.S.

## **More minorities are being represented in clinical trials of breast cancer treatments.**

### **Why is that important?**

It's very important. One of the reasons I came to NCI as a breast oncologist was to be able to look at racial disparities and see the differences in risk, screening, treatment, and survivorship. We are seeing that African American women's participation in breast cancer trials has increased. The trials have also changed. There are fewer very large trials and more focus on subtypes of cancer that are more aligned with higher incidence rates among African American women, especially triple-negative breast cancer. I am also encouraged that the women joining the trials are younger, because data suggest early treatment is more effective, especially for aggressive cancers. Hispanic and Latina women have a lower death rate from breast cancer than white women, but breast cancer is still the leading cause of cancer deaths for those groups. Knowledge about screening, language barriers, and access to care are important factors to consider when thinking of these groups.

*NCI note: NCI places a high priority on answering the questions about optimal breast cancer screening and management, and has a working group to review accrual to the trial mentioned in this article, Tomosynthesis Mammographic Imaging Screening Trial (TMIST). During this review, the trial is fully open, both for women who are already participating and those who are interested in enrolling. New screening sites continue to open. NCI thanks the women who are and will be enrolled in TMIST for their participation. ■*

# Diagnosed while pregnant: A young mom's breast cancer story

AT JUST 29, ASHLI BROWN HAD TO MAKE HARD DECISIONS QUICKLY

**A**shli Brown of Chicago was diagnosed with breast cancer in 2019 at age 29, when she was 6 months pregnant.

I was about 24 weeks pregnant when I felt a lump in my left breast. I figured it was just some weird pregnancy thing, but I mentioned it to my obstetrician [a doctor who focuses on pregnancy and childbirth] at my next checkup. She said I definitely needed an ultrasound. So, I got an ultrasound, a mammogram, and then a biopsy. I knew I had breast cancer from the reaction on the radiologist's face even before I got the call confirming it the next day.

The first two weeks, as we waited for further information, were pretty terrifying. None of my family has had cancer, so this was something we never expected.

**PERSONAL STORY** The doctor told me I had stage 2 invasive ductal carcinoma and DCIS [also known as ductal carcinoma in situ, meaning abnormal cells in the lining of the breast milk duct]. I had three tumors—one large and two very small. My first course of action was to go to Northwestern University, where they assembled a team of doctors for me.

Because I was so far along in my pregnancy, they didn't want to do surgery yet, but they did want me to do three rounds of chemotherapy. I didn't even realize you could do that, but my doctor said they had 20 years of research showing it was safe for the baby. By my ninth month I was bald—I looked like an alien experiment gone wrong—but I made it to 40 weeks, which was amazing. They induced labor, and 24 hours later I gave birth to a perfectly healthy little boy.

Two weeks later, I started five more rounds of chemo followed by a mastectomy of my left breast. To my doctor's surprise, I decided against breast reconstruction. I had spent so much time away from my baby, trying to recover, I just couldn't face any more surgery. For me, it was the right decision.



Ashli Brown with her husband and son.

## Ashli's advice for others:

**FIND A SUPPORT GROUP.** I joined a support group of other young cancer patients and survivors when I was still pregnant, and I swear it saved my life. I have a good support system from family and friends, which is a privilege a lot of people don't have, but cancer can still be a really lonely place to be.

**LET YOURSELF FEEL EVERYTHING.** Being diagnosed with cancer is emotionally complex. There are days when you'll feel happy, days when you're overwhelmed and it's hard to get out of bed, days when you're angry or grieving. All of this is normal. A fellow cancer survivor told me, "It's your right to feel mad, sad, or angry."

**SPEAK UP FOR YOURSELF.** Have the courage, even if it's hard, to speak up to your doctor about what you're feeling and make sure you're being listened to. For example, one medication gave me really bad neuropathy [nerve pain and muscle weakness] in my legs. When I first mentioned it, I was told it's to be expected. But by the last dose, I was having trouble walking.

**KEEP A SENSE OF HUMOR.** I know this isn't everyone's cup of tea, but being able to laugh at your cancer experience can help. ■

# Cheryll Plunkett never stops fighting

COUNSELING AND SELF-ADVOCACY GAVE PLUNKETT TOOLS TO MOVE FORWARD

**C**heryll Plunkett of Medway, Massachusetts, was diagnosed with breast cancer in 2002 and diagnosed with metastatic breast cancer in 2015.

I was diagnosed in 2002, 13 months after my second child was born. I was 34. The tumor was a pretty good size, and my lymph nodes were involved. I had a mastectomy of my left breast, followed by chemotherapy and radiation. I tolerated the medicines pretty well. I had hair loss and fatigue, but no nausea or bad side effects. They told me I shouldn't have any more kids because my cancer was hormone-positive, so I had a full hysterectomy to alleviate as much estrogen as possible.

For my poor husband, who was 29 at the time, imagine having a 1-year-old, a 2-year-old, and a wife with breast cancer. But he was wonderful and so was my whole amazing family, who helped with everything. I focused on having a positive attitude, working, and raising my children, and the years went by. I just assumed, pretty ignorantly, that you just get rid of this and life goes on.

But then in 2015, I had this cough that wouldn't go away. I thought maybe it was allergies or acid reflux, but my primary care doctor did tests and couldn't find the cause. So, I reached out to my oncologist, and he said to come in for some blood tests. Then he sent me for a scan. And then—I will never forget this—he called to tell me that I had metastatic breast cancer and I didn't even understand what that meant.

My doctor put me on palbociclib, which had just been FDA-approved for advanced cancer use four months earlier. Within two weeks, my cough was gone. I stayed on it for four years until it stopped working, then switched to a slightly older drug, everolimus. These drugs are precursors to chemotherapy. My doctor and I know everolimus won't last four years. It's like a wet towel—at some point you just can't squeeze out any more water. The next step likely will be daily pills of chemotherapy.

I know I'm treading water, but the more time that passes, the better the chance of new drugs being developed; of living to see my kids married, even grandchildren.

It's great that there's research on finding breast cancer sooner, but we need more money and resources toward helping metastatic breast cancer patients. We need more effort into finding ways to prolong life.



Cheryll Plunkett, middle, with her daughter, son, and husband.

## Cheryll's advice for others:

### CONTROL THE THINGS YOU CAN CONTROL.

That means your attitude, what you eat, getting exercise, how you live. I focus on being positive. In my opinion, a positive attitude goes a long way in getting through this. I also stay pretty active. I feel exercising and eating well help. For me, I eat protein, lots of greens, not a lot of junk, very little alcohol. I love bike riding and walking for exercise, although I know I probably should do more with weights for my bones.

**ADVOCATE FOR YOURSELF.** This is huge. Only you know your body, so tell your doctor what you're feeling, what your symptoms are, how they're affecting your life. If you feel you can't communicate your feelings clearly, take along someone who can help you. Ask your doctor a ton of questions. If you go on the internet for information, make sure it's only a well-known, reliable source.

**IF YOU'RE STRUGGLING, GET HELP.** Realize that this is a long-term journey with peaks and valleys, and sometimes you might need some help. I sought out a counselor, and she was amazing. She helped me learn how to deal with the elephant in the room. She gave me tools to cope and not feel overwhelmed and to learn how to live. ■



# Under the influence:

Teen nicotine or marijuana vaping can lead to addiction and may affect brain development

Vapes. E-cigarettes. E-hookahs. Mods. Vaporizer devices all have the same purpose: to heat liquids containing nicotine or marijuana that people can inhale or puff.

Vapes and e-liquids have often been touted as fun, fruit-flavored, and safe. But research shows a much different picture. One out of four high school seniors reported past-month nicotine use, according to a recent survey funded by the National Institute on Drug Abuse (NIDA). Also concerning is the near doubling of high school seniors reporting past-month marijuana vaping, from 7.5% in 2018 to 14% in 2019.

To address the increase in youth vaping, NIDA is leading the charge toward prevention efforts, understanding why young people vape and how vaping nicotine or marijuana may lead to addiction. NIDA is also supporting studies aimed at uncovering the long-term health effects of e-cigarettes in both teens and adults; the types of vape devices people use; and the health impact of the various

components used with vapes, including nicotine, marijuana, flavoring, and other chemicals.

Researchers are also studying the impact of advertising, social media, and peer pressure on teenagers. The results so far are concerning. Vaping devices are now the most common way for youth in the U.S. to use nicotine.

“The vaping studies have worried us enormously,” says NIDA Director Nora Volkow, M.D. “While teen smoking rates remain at historically low levels, more teenagers are embracing vaping and are being exposed to drugs that otherwise they may not have taken.”

## Targeting teens

TV and social media ads target teens with the appealing flavors and brightly colored packaging of vapes. For instance, vapes come in colors that match the fruity flavors they contain, such as blue for blueberry and green for mint.

And, on some social media channels, teens can see peers and others, like social



Common second- and third-generation vaping devices include tanks or mods, far left, and e-cigarettes.

TV and social media ads target teens with the appealing flavors and brightly colored packaging of vapes.



Pod mods (above) are a newer type of vape that has refillable cartridges (left).

influencers and celebrities, vaping.

“There’s a lot of social influencing going on,” says Lucy Popova, Ph.D., assistant professor at the School of Public Health at Georgia State University. “Much of it is the perception that the cool kids are using e-cigs.”

Dr. Popova is conducting National Institutes of Health-funded research that identifies worrisome trends seen in popular YouTube vaping videos, like how to modify or “hack” a prepackaged vape to include other substances or more marijuana or nicotine. She’s also researching the influence of advertising and e-cigarette prevention messages on teens and adults, including warning labels.

Dr. Popova says that many teens, like adults, think e-cigarettes are better for their health than traditional cigarettes. That’s in part because vape manufacturers don’t always make it clear which chemicals or drugs are actually in their vapes.

“What’s worrisome is that so many kids who would not normally use tobacco are using e-cigarettes,” says Dr. Popova. “Some teens don’t even know that e-cigs contain nicotine.”

To help address this problem, a federal law that prevents people under the age of 21 from buying vapes and tobacco products went into effect in January 2020. Previously, the minimum age was 18 in some states and 21 in others.

## Potential for long-term effects

Studies show that more than 30% of teens who vape are more likely to start smoking cigarettes than teens who don’t vape. And teens and their parents may not realize that vaping nicotine or marijuana can change the way the brain works and how it develops, now and in the future.

“Research has shown that teenagers who smoke marijuana are at much greater risk of becoming addicted to it,” says Dr. Volkow. “And becoming addicted as a teen increases the risk of becoming addicted to other drugs as

you get older.” She says there’s evidence that marijuana use may impair memory, attention, and motivation; affect school performance; and lead some teens to drop out.

## Changing social norms

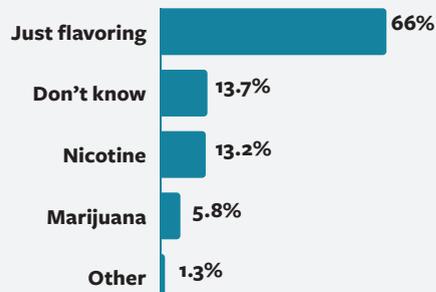
Dr. Popova says that changing social norms will be key to reducing teen vaping.

“We need to equate e-cigarettes with cigarettes so that teens don’t think e-cigs are more ‘cool,’” Dr. Popova says. “Years ago, we had ashtrays everywhere, and then we saw a complete switch in social norms. I think we can do that with nicotine, whether it’s inhaled using vapes or cigarettes.”

Another important part of reducing teen vaping: keeping parents informed, so they can talk to their teens about the real impacts of vaping.

“We recommend that parents speak with their children and be very open about it to make their child feel comfortable,” Dr. Volkow says. “Otherwise, if they feel their parents are angry at them and very judgmental about their behavior, they may shy away and become secretive.” ■

### What do teens say is in their e-cigarette?



SOURCE: NIDA 2019 Monitoring the Future Survey

# Vaping: What you need to know

*Vapes may increase risk of COVID-19 complications*

Vapes are battery-operated devices that heat liquid with nicotine, marijuana, or flavorings. Some vapes contain other unknown substances or chemicals. When heated, the liquid turns into aerosol, which people inhale or puff.

## What are other common names for vapes?

Common names include electronic nicotine delivery systems (ENDS), e-cigarettes, e-cigs, electronic cigarettes, e-hookahs, vape pens, and mods.

## What drugs are in vapes?

Common drugs include nicotine, a highly addictive drug found in tobacco products including cigarettes, and THC, the main mind-altering component of marijuana. Both can impact how a person's lungs and brain work, especially the developing brains of teenagers. Both drugs can put teens at risk of other drug use.

## Are vapes tested for safety?

Companies that sell vapes in the U.S. must apply to the Food and Drug Administration (FDA) for authorization. The FDA reviews the products to see if they meet regulatory guidelines. Because these products are new, the FDA is still in the process of determining which ones may continue to be sold. Another challenge is that many vaping products that can be purchased online are not regulated. This means they may contain dangerous ingredients or defective parts.

## Vapes vs. cigarettes

Some studies suggest that vaping nicotine may be less harmful than smoking traditional cigarettes and could be a way to wean adults off smoking. However, vapes are not currently an FDA-approved quit-aid. More research is needed to further test vape safety and effectiveness for this potential use.

## What are some of the dangers of e-cigarettes?

In mid-2019, the Centers for Disease Control and Prevention began reporting on cases of e-cigarette or vaping product use-associated lung injury, including deaths. These lung injuries are linked to vitamin E acetate, which is mostly found in vaping products containing THC, but some patients reported using a mixture of THC and nicotine or nicotine alone.

## COVID-19

People who smoke or vape may be at a higher risk of complications from COVID-19 since the disease affects the lungs. The National Institute on Drug Abuse is researching COVID-19 in people who vape nicotine and marijuana to better understand what risk factors can lead to worse disease outcomes. ■

**SOURCE:** National Institute on Drug Abuse

## Vaping Fast Facts

37% 

About **37% of 12th graders reported vaping** in 2018, compared with 28% in 2017.

2x 

About **twice as many boys** use vapes than girls.

1 in 4 

**1 in 4 high school seniors** say they vaped nicotine in the past month.

 #

**7 in 10 teens** are exposed to e-cigarette advertising.

**SOURCES:** National Institutes of Health; U.S. Dept. of Health and Human Services; NIDA 2019 Monitoring the Future Survey



**Try to  
establish real  
consequences  
for breaking  
drug and  
alcohol rules.**

## Tips for talking to your teen about vaping

*Set clear expectations and listen carefully*

Vaping nicotine or marijuana can cause long-lasting health problems for your child. So, it's important to talk with your young or teenage children about the potential dangers of vaping.

Here are some helpful tips:

- **Know the facts.** Be ready to answer questions your teen may have. Ask for help from your health care provider on how to talk to your teen or have your teen talk to a trusted adult.
- **Have a natural discussion.** Ask your teen what they think about vaping in a TV show, movie, or ad or about someone you both see vaping. Then see where the conversation goes.
- **Be a good listener.** Have open conversations about drug, alcohol, and tobacco/nicotine use. Talk with your teen often, but try not to lecture. Focus on how much you care about their health. Explain the potential harmful effects of tobacco/nicotine, marijuana, and vaping chemicals on the brain and lungs.
- **Set clear family rules and expectations.** For instance, try to establish real consequences for breaking drug and alcohol rules.
- **Get to know your teen's friends and their parents.** Help your teen deal with peer pressure to use vapes. Monitor and supervise your teen's activities. Talk with other parents to make sure you are on the same page about rules.
- **Lead by example.** If you vape or smoke traditional cigarettes, try to quit. ■

**SOURCE:** National Institute on Drug Abuse

Opening up about

# pregnancy & loss

*After difficult miscarriages, Alise Crutchman finds support through others*

**A**lise Crutchman had been trying to get pregnant for a few months when she finally conceived in 2017.

For Alise and her husband, Mike, the pregnancy experience was not straightforward. During a doctor's visit, she was told her hormone levels were very high and that she was carrying identical twins.

## PERSONAL STORY

Alise's twins were known as monochorionic-diamniotic twins, identical twins who shared the same placenta but different amniotic sacs. The placenta is the temporary organ that brings nutrients and oxygen to a baby during pregnancy and removes waste. That means identical twins are dependent on the same nutrient and oxygen source, which can sometimes be dangerous. Twin pregnancies are also more likely to lead to preeclampsia, or high blood pressure during pregnancy, low birth weight, and premature birth.

Alise had frequent appointments with her doctor to closely track her health. At the time, her doctor didn't seem concerned.

Alise doesn't recall her doctor explaining much about the risks she was facing other than the



**Above: Alise and Mike Crutchman remained dedicated to starting a family after their losses.**

**Right: Alise and Mike with their son, Connor.**

importance of staying healthy.

So, it was a shock to Alise when, at her 16-week appointment, her doctor discovered that one baby didn't have a heartbeat. In addition to losing one of the twins, Alise also had to deal with the health complications that came with the loss. The loss caused a surge of blood to pass through the shared placenta, resulting in an increased risk of mental and physical disabilities for the other baby and an increased risk of miscarriage and preterm labor.

"There were so many questions we didn't know to ask until it was unfolding before our eyes," Alise says.

Alise had to carry both babies to avoid risking one baby's health. But four weeks after her first miscarriage, she experienced another at five months. She underwent dilation and curettage, the surgical procedure that health

care providers use following a miscarriage.

A series of health tests following her miscarriage revealed that there was nothing specific that caused her first pregnancy to be so high risk. Because of this, her doctors determined it would be safe for her to get pregnant again. "There was a less than 1% chance that this would occur again, in a second pregnancy," Alise says.



### Moving forward despite loss

Despite the emotional and physical toll that came with this experience, Alise and Mike were still dedicated to trying to start a family. Four months after losing the twins, within days of their due date, Alise found out she was pregnant again.

While her doctor said that her second pregnancy was not high risk, she was still asked to come in for appointments more frequently, just to be safe.

Although she was excited, Alise says that she was also scared to tell anyone she was pregnant, and she hesitated to do much preparing. Alise's doctor helped comfort her and calm some of her remaining fears. While she still felt some anxiety from her first pregnancy experience, Alise knew she was in good hands.

“There were so many questions we didn’t know to ask until it was unfolding before our eyes.”

– Alise Crutchman

“We were excited but terrified at the same time,” Alise says. “Being positive was important.”

Nine months later, she gave birth to a healthy son, Connor.

“When he was born, there was an enormous lift off of our shoulders,” Alise says. “I felt like I could finally breathe.” Alise also says that Connor has brought a new level of love and appreciation into their family, especially after such a difficult experience.

“There’s something so special about finally getting your rainbow baby after such a traumatic journey with our losses,” Alise adds.

### Opening up to others

Through it all, Alise says that she learned how important it is to talk about her losses and share experiences to help heal. That can mean more formal experiences, like support groups or therapy. But it can also mean more informal discussion, for instance, talking to other women or families who have had a similar loss.

Alise hopes that as more people talk about their challenges with pregnancy, the stigma around it will be broken. She also wants expectant mothers, or those hoping to get pregnant, to know that they can—and should—ask their health care provider questions.

“You don’t have to suffer in silence,” Alise says. “It’s OK to not be OK.” ■

# The new role of artificial intelligence in NIH pregnancy research

*Studies spotlight health disparities, heart health, and obesity*

Pregnancy can be an exciting experience for many women. But it also can be difficult and confusing, especially for women with a high-risk pregnancy.

Factors like a woman's age, her lifestyle, and preexisting conditions can all contribute to a high-risk pregnancy. During a high-risk pregnancy, a woman and her unborn child are at increased risk of problems during pregnancy or labor, like early birth or miscarriage.

"In a wealthy nation like the U.S., a healthy pregnancy and childbirth should be the norm, but every 12 hours, a woman dies from complications from pregnancy or giving birth," says Diana Bianchi, M.D., director of the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD). "[African American], American Indian, and Alaska Native women are about three times as likely to die from a pregnancy-related cause, compared to white women. Research also shows that up to 60% of these deaths are preventable."

Dr. Bianchi and her colleagues at NICHD have worked to increase the focus on maternal health research and address these health disparities. One promising approach is to incorporate more data to better understand and address the pregnancy health issues of women of color.

"I am particularly excited about emerging technologies and big data analytic methods, such as artificial intelligence," says NICHD researcher Nahida Chakhtoura, M.D. "I hope this will help integrate genome data, [and] nutritional, social, and behavioral data so that we can learn more and inform prevention efforts and address health disparities."

NICHD also wants to better support pregnant women who have high-risk pregnancy conditions like gestational diabetes and obesity.



Recently, NICHD researchers launched a study to see whether drugs that treat heart disease might be effective for preventing preeclampsia. Preeclampsia is when a woman develops high blood pressure after her 20th week of pregnancy. The condition has many of the same risk factors as cardiovascular diseases, which could offer clues for treating pregnant women. NICHD-supported research is also testing whether drugs such as pravastatin—normally used to treat high cholesterol—can help prevent preeclampsia.

"One of the goals of our 2020 strategic plan is to improve pregnancy outcomes to maximize the lifelong health of women and their children," Dr. Chakhtoura says. "NICHD recently launched the Pregnancy for Every Body Initiative, since plus-size women are at a higher risk of pregnancy complications."

This online resource educates plus-size women and their providers on how to have open, nonjudgmental conversations about obesity during pregnancy. Its ultimate goal is to make sure that plus-size women know that pregnancy might affect them differently, so they can have healthy, safe pregnancies. ■

**"[African American], American Indian, and Alaska Native women are about three times as likely to die from a pregnancy-related cause."**

**– Diana Bianchi, M.D.**

# Healthy pregnancy for plus-size women

## *BMI a key risk factor for complications in pregnancy*

Obesity during pregnancy can increase the risk of birth defects and problems with pregnancy or delivery. Longer-term problems can include continuing issues with weight for the mother and an increased risk of asthma for the child. Even so, many plus-size women have healthy pregnancies and healthy babies.

The *Eunice Kennedy Shriver* National Institute of Child Health and Human Development's Pregnancy for Every Body Initiative emphasizes the need for respectful conversations between plus-size pregnant women and their providers to achieve healthy pregnancies and safe deliveries. Resources are available in English and Spanish for both women and their health care providers.

Body mass index (BMI), the ratio of a person's height to their weight, is a key factor when developing any healthy pregnancy plan. A BMI of 30 or higher before pregnancy can mean a higher risk of some complications, such as gestational diabetes, the development of diabetes during pregnancy, and stillbirth, the loss of the fetus after 20 weeks of pregnancy.

However, a pregnant woman's BMI is only one part of an overall healthy pregnancy plan. Her past and current health, family history, and lifestyle are also important. Plus-size pregnant women should work with their providers to control weight gain, keep chronic health conditions under control, and make a plan for delivery. The Pregnancy for Every Body Initiative helps pregnant women and health care providers come together to reach a common goal: healthy pregnancies and deliveries. ■

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

A BMI of 30 or higher before pregnancy can mean a higher risk of some complications.



## FAST FACTS

3x

African American, American Indian, and Alaska Native women are about **three times more likely to die from a pregnancy-related cause** compared with white women.

6%-9%

In the U.S., roughly **6% to 9% of pregnant women** develop gestational diabetes.

37 wks

A birth that occurs **before 37 weeks** of pregnancy is considered a preterm birth.

**SOURCES:** Centers for Disease Control and Prevention; *Eunice Kennedy Shriver* National Institute of Child Health and Human Development



# High-risk pregnancy: What you need to know

*Age, lifestyle, health conditions can increase risk*

High-risk pregnancy is when a woman or her unborn baby is at greater risk of problems during pregnancy or delivery.

## What causes it?

Many factors can make a pregnancy high risk. They include:

- **Age.** Pregnancy in teenagers and women over age 35.
- **Lifestyle.** Activities like smoking, drinking alcohol, and drug use. When a woman smokes, drinks alcohol, or uses drugs during pregnancy, the baby may also show the effects after birth.
- **Existing health conditions.** These include high blood pressure, obesity, diabetes, and polycystic ovary syndrome. Diseases like kidney disease, autoimmune disease, and thyroid disease can also cause problems during pregnancy. HIV/AIDS and Zika infection can result in a high-risk pregnancy, too.

Certain health conditions or factors that are specific to pregnancy may make it high risk. These include:

- **Gestational diabetes.** This is when a woman who did not previously have diabetes develops it during pregnancy.
- **Preeclampsia and eclampsia.** Preeclampsia is when a woman develops high blood pressure after her 20th week of pregnancy. Eclampsia, which is more severe, can result in seizures or a coma.
- **Multiple gestation.** The presence of more than one fetus (for example, twins or triplets) makes a pregnancy high risk.
- **Previous preterm birth.** If a woman previously gave birth before her 37th week of pregnancy, her current pregnancy is considered high risk.

## How can it be prevented?

In some cases, existing health conditions or lifestyle factors can be addressed to reduce risk before a woman becomes pregnant. For example, losing weight, lowering blood pressure, and stopping smoking are all steps that a woman can take before getting pregnant.

If you are considering getting pregnant, talk with your doctor to determine if you are in good health or have conditions or factors that may increase your risk. If you are pregnant, visit your doctor early in your pregnancy.

## How is it treated?

Some factors that cause high-risk pregnancy can be treated. For example, gestational diabetes can be managed with help from your doctor and changes to your diet. High-risk pregnancies may be treated differently, depending on the problems facing a woman and her unborn child.

Doctors often meet more frequently than usual with women experiencing high-risk pregnancy. This helps them detect any problems early. ■

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

## FAST FACT

About **12% of women ages 15 to 44** in the U.S. have difficulty getting pregnant or carrying a pregnancy to term.

**SOURCE:** Centers for Disease Control and Prevention

# A different path to starting a family

*Despite pregnancy challenges, Mary Lanzara now has her ‘undeniable love’*

**M**ary Lanzara was 25 years old when her 20-year journey to motherhood began. The New Jersey native became pregnant six months after stopping birth control, which she had used to treat a painful women’s health condition called endometriosis. Because of her condition, Mary’s pregnancy was considered high risk.

To keep a close eye on her, Mary’s doctor had appointments with her every two weeks. Mary also had blood work done frequently to check her hormone levels.

**PERSONAL STORY** Mary’s mother joined her for her five-month appointment. They were chatting with the ultrasound technician about their plans to decorate the nursery when the technician suddenly left to find Mary’s doctor. The doctor then told her that she had had a miscarriage.

## A difficult road

The following weeks were challenging. Mary had to go through dilation and curettage, a surgical procedure done after a miscarriage. It was a very painful, difficult experience for her.

“I remember my mother told me she yelled at the doctor because she could hear me screaming from the waiting room, and they wouldn’t let her in,” Mary, now 52, says. “I was by myself. It felt shameful.”

Following her miscarriage, Mary was still eager to do all she could to have a baby. After her first marriage ended, she met her current husband, Darryl. They began trying to get pregnant immediately, since her past experience had been difficult.

Mary spent the next 10 years trying hormone therapy and in vitro fertilization. Her emotions were high as she struggled with each attempt to get pregnant.

“No matter if they’re your natural-born child or not, once you see them, there is an undeniable love.”

– Mary Lanzara



The Lanzara family on a vacation.  
From top left: Mary, Darryl, Merita, and Luis.

“You begin to think of yourself as a failure,” she says. “You wonder, ‘What am I doing wrong?’” When her doctor discovered that she had fibroids (abnormal growths in the uterus), Mary and Darryl decided to stop trying to get pregnant.

## A different, but wonderful, path

Since Mary and Darryl wanted a child of their own, they had not discussed adoption. They were also facing debt from the fertility treatments, and many adoption agencies had high fees. Then, a friend of Darryl’s

mentioned that his wife was a social worker and suggested foster care as an option.

This became the silver lining to their long, challenging journey of starting a family.

Mary and Darryl became foster parents to twins, a girl and a boy. Merita and Luis were 4 years old when they came to live with Mary and Darryl and 6 when Mary and Darryl formally adopted them. Today, the twins are 15.

Mary and Darryl knew right away that their family was complete. “No matter if they’re your natural-born child or not, once you see them, there is an undeniable love,” Mary says. ■

from  
the

# lab

LATEST  
RESEARCH  
UPDATES  
FROM NIH

## Cancer medicine may help treat COVID-19 breathing problems

**EARLY DATA FROM A SMALL CLINICAL STUDY BY NATIONAL CANCER INSTITUTE** researchers found that a cancer medicine may help patients with trouble breathing caused by severe cases of COVID-19.

Though the immune system is designed to help fight off disease, sometimes it can work too hard and actually cause damage instead. In some patients with severe COVID-19, the immune system's extreme response to the virus can impair the function of the lungs, causing serious problems with breathing. Treatment including extra oxygen and ventilators can help people with these severe cases breathe more easily and sometimes stay alive.

The medicine, acalabrutinib, is normally used to treat certain blood cancers. It works by blocking a protein that plays a key role in the body's immune system. The study tested whether blocking that protein would help patients with severe COVID-19 breathe better.

The researchers found that the drug reduced an immune system overreaction to COVID-19, and significantly improved breathing in the majority of treated patients.

A 10-14 day course of acalabrutinib was given to 19 participants in the study, including 11 who were receiving extra oxygen and 8 who were on ventilators. Within a few days of taking the medicine, most of the people in the extra oxygen group had reduced inflammation and improved breathing. Eight of those 11 patients no longer needed extra oxygen and were discharged from the hospital.



*A cell (green) heavily infected with SARS-CoV-2 virus particles (purple).*

The benefits of the drug were less dramatic for the participants on ventilators. Four of the eight were able to be taken off the ventilator, and two were later discharged.

The findings should not be considered clinical advice, and acalabrutinib has not been formally approved as a treatment for COVID-19. This strategy is now being tested in a randomized, controlled clinical trial to help understand the best and safest treatment options for patients with severe COVID-19. ■

**SOURCE:** National Cancer Institute

## ER visits for drug overdose may raise risk of later death

**PEOPLE TREATED IN THE EMERGENCY ROOM (ER) FOR AN OPIOID OVERDOSE** are 100 times more likely to die by drug overdose within a year of the ER visit compared with the general population. They are also 18 times more likely to die by suicide in that time frame. Opioids are drugs that reduce pain and can be highly addictive.

These findings are from an analysis funded by the National Institute of Mental Health. The study also shows that people treated in the ER for a sedative overdose are at a higher risk of death by overdose or suicide, too. Sedatives are medicines that slow down brain activity. They're often prescribed to help with anxiety or sleep problems, but they can be dangerous if they aren't used correctly.

For the study, researchers analyzed data from emergency departments in California from 2009 to 2011 and on deaths in the state during that time period.

Their research highlights the need for preventive actions in the ER before patients are released. Actions like providing resources and referring people to mental health professionals can help reduce the risk of death by overdose or suicide. Study researchers say that these steps can help reduce risk, but they need to be more widely used by health care workers. ■

**SOURCE:** National Institute of Mental Health



IMAGES: ADOBE STOCK

## African Americans can significantly cut stroke risk by quitting smoking



**AFRICAN AMERICANS ARE ALREADY ALMOST TWICE AS LIKELY AS WHITES TO DIE FROM STROKE.** Now, new research

finds that African Americans who smoke have more than double the risk of stroke, compared with African Americans who have never smoked.

Numerous studies have shown a link between smoking and stroke. But this was the largest to focus just on the risk to African Americans.

"During a study period of over 10 years, current smokers who smoked up to 19 cigarettes per day had about 2.3 times increased risk of stroke while those who smoked 20 or more cigarettes per day had about 2.7 times (almost 3 times) increased risk of stroke," says Adebamike Oshunbade, M.D., M.P.H., the lead author on the study. There was no significant difference between former and never smokers in the findings.

"The bottom line is the more a person smokes, the greater their chance is of having a stroke," says Dr. Oshunbade. ■

**SOURCES:** National Heart, Lung, and Blood Institute; National Institute on Minority Health and Health Disparities

# NIH on the web



## Sign up for NIH's Native American health newsletter

➔➔ **AMERICAN INDIANS AND ALASKA NATIVES** are more likely to have conditions like heart disease, substance abuse, and cancer. An e-newsletter developed for those communities can help people learn more about their specific health needs.

The “Honoring Health: Resources for American Indians and Alaska Natives” e-newsletter features a different health topic in each issue. Recent ones have focused on alcohol use disorders, COVID-19, and healthy aging. In the newsletters, which are produced by the National Institutes of Health in collaboration with the Indian Health Service and the Administration for Community Living’s Administration on Aging, you can find health resources, upcoming events, and funding opportunities for researchers.



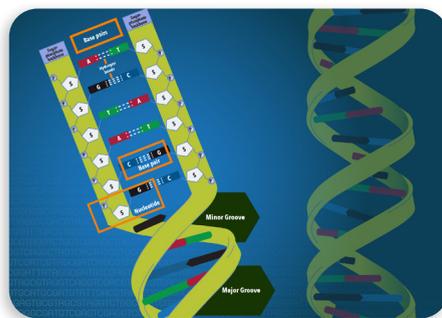
## Modernizing ClinicalTrials.gov

➔➔ **BEING PART OF MEDICAL DISCOVERY** through a clinical trial is an important and unique opportunity. ClinicalTrials.gov is a library of clinical trials from around the world. The site hosts a database where people can search for trials of interest and researchers can discover other research, while also sharing their research.

Currently, ClinicalTrials.gov is going through a multiyear modernization process to best meet the needs of its users. The National Library of Medicine (NLM) has gathered feedback from users and contributors and will release further plans this winter. Stay tuned for information by visiting ClinicalTrials.gov and following NLM on social media.

Find it all in one place!

[magazine.medlineplus.gov/otw](https://magazine.medlineplus.gov/otw)



## These fact sheets can help you learn about your genes

➔➔ **EVER WONDER** how certain traits or conditions are passed down from one generation to another? Or why some people get sick from certain diseases while others don't?

The National Human Genome Research Institute (NHGRI) has answers. You can find a series of easy-to-understand fact sheets on NHGRI's website that help explain how genetic research works—and why it's so important. Genetic research studies how our genes build and maintain cells and pass genetic information to future generations.

The fact sheets cover topics like chromosomes, DNA, and genetic mapping. They can help teachers or parents explain complex topics to kids.

# NIH is here to help

**The National Institutes of Health (NIH)**—the nation’s medical research agency—includes 27 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](http://www.nih.gov).

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## Institutes

### National Library of Medicine (NLM)

[www.nlm.nih.gov](http://www.nlm.nih.gov)  
888-FIND-NLM 888-346-3656

### National Cancer Institute (NCI)

[www.cancer.gov](http://www.cancer.gov)  
800-4-CANCER 800-422-6237

### National Eye Institute (NEI)

[www.nei.nih.gov](http://www.nei.nih.gov)  
301-496-5248

### National Heart, Lung, and Blood

**Institute (NHLBI)**  
[www.nhlbi.nih.gov](http://www.nhlbi.nih.gov)  
301-592-8573

### National Human Genome Research

**Institute (NHGRI)**  
[www.genome.gov](http://www.genome.gov)  
301-402-0911

### National Institute on Aging (NIA)

[www.nia.nih.gov](http://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](http://www.niaaa.nih.gov)  
301-443-3860

### National Institute of Allergy and

**Infectious Diseases (NIAID)**  
[www.niaid.nih.gov](http://www.niaid.nih.gov)  
301-496-5717

### National Institute of Arthritis and

**Musculoskeletal and Skin Diseases**  
**(NIAMS)**  
[www.niams.nih.gov](http://www.niams.nih.gov)  
877-22-NIAMS 877-226-4267

### National Institute of Biomedical

**Imaging and Bioengineering (NIBIB)**  
[www.nibib.nih.gov](http://www.nibib.nih.gov)  
301-451-6772

### Eunice Kennedy Shriver National

**Institute of Child Health and Human**  
**Development (NICHD)**  
[www.nichd.nih.gov](http://www.nichd.nih.gov)  
800-370-2943

### National Institute on Deafness and

**Other Communication Disorders**  
**(NIDCD)**  
[www.nidcd.nih.gov](http://www.nidcd.nih.gov)  
800-241-1044 (voice)  
800-241-1055 (TTY)

### National Institute of Dental and

**Craniofacial Research (NIDCR)**  
[www.nidcr.nih.gov](http://www.nidcr.nih.gov)  
301-480-4098

### National Institute of Diabetes and

**Digestive and Kidney Diseases**  
**(NIDDK)**  
[www.niddk.nih.gov](http://www.niddk.nih.gov)  
NIDDK Health Information Center  
1-800-860-8747

### National Institute on Drug Abuse

**(NIDA)**  
[www.nida.nih.gov](http://www.nida.nih.gov)  
301-443-1124

### National Institute of Environmental

**Health Sciences (NIEHS)**  
[www.niehs.nih.gov](http://www.niehs.nih.gov)  
919-541-3345

### National Institute of General Medical

**Sciences (NIGMS)**  
[www.nigms.nih.gov](http://www.nigms.nih.gov)  
301-496-7301

### National Institute of Mental Health

**(NIMH)**  
[www.nimh.nih.gov](http://www.nimh.nih.gov)  
866-615-6464

### National Institute on Minority Health

**and Health Disparities (NIMHD)**  
[www.nimhd.nih.gov](http://www.nimhd.nih.gov)  
301-402-1366

### National Institute of Neurological

**Disorders and Stroke (NINDS)**  
[www.ninds.nih.gov](http://www.ninds.nih.gov)  
800-352-9424

### National Institute of

**Nursing Research (NINR)**  
[www.ninr.nih.gov](http://www.ninr.nih.gov)  
301-496-0207

## Centers & Offices

### Fogarty International Center (FIC)

[www.fic.nih.gov](http://www.fic.nih.gov)  
301-496-2075

### National Center for Complementary and

**Integrative Health (NCCIH)**  
[www.nccih.nih.gov](http://www.nccih.nih.gov)  
888-644-6226

### National Center for Advancing Translational

**Sciences (NCATS)**  
[www.ncats.nih.gov](http://www.ncats.nih.gov)  
301-435-0888

### NIH Clinical Center (CC)

[clinicalcenter.nih.gov](http://clinicalcenter.nih.gov)  
301-496-2563

### Office of AIDS Research (OAR)

[www.oar.nih.gov](http://www.oar.nih.gov)  
301-496-0357

### Office of Behavioral and Social Sciences

**Research (OBSSR)**  
[www.obssr.od.nih.gov](http://www.obssr.od.nih.gov)  
301-402-1146

### Office of Communications & Public Liaison

**(OCPL)**  
[www.nih.gov/institutes-nih/nih-office-director/office-communications-public-liaison](http://www.nih.gov/institutes-nih/nih-office-director/office-communications-public-liaison)  
301-496-5787

### Office of Rare Diseases Research

**(ORDR)**  
[www.rarediseases.info.nih.gov](http://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](http://orwh.od.nih.gov)  
301-402-1770

## After drug addiction treatment, people may still need help to maintain recovery.

The National Institute on Drug Abuse (NIDA) offers the free *Drugs & the Brain Wallet Card*, a tool that can be customized to help people in recovery identify triggers that may prompt a drug relapse. It also includes information about resources and helplines.



Find this and other NIDA resources at

**DrugAbuse.gov**



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