

NIH MedlinePlus

MAGAZINE

Trusted Health
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of Health

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talks mental health stigma and her son's

BIPOLAR DISORDER

IN THIS ISSUE



NIH researchers share early results from NIH's Adolescent Brain Cognitive Development study, which is looking at how screen time and other factors affect brain development.

WELCOME TO THE LATEST ISSUE of NIH MedlinePlus magazine!

In this issue, we dive into a number of key health topics—from spotting signs of binge drinking to understanding how too much screen time affects our brains.

Our cover feature is on bipolar disorder. Actress, director, and mental health advocate Mädchen Amick shares her family's difficult journey with the disorder and why she wants people to talk more openly about mental health.

We also look at the latest NIH-supported research on the measles mumps rubella (MMR) vaccine and alopecia areata. Alopecia areata is an autoimmune disease that can cause partial or complete hair loss.

Visit us online to read our interview with Pittsburgh Steelers quarterback Josh Dobbs, who has had alopecia for more than a decade. His main message is one of self-empowerment: "I like to say, 'I have alopecia. Alopecia doesn't have me.'"

We hope you enjoy this issue and look forward to seeing you online on our bilingual website—where content is available in English and Spanish.

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NIH MedlinePlus magazine is published by Friends of the NLM in conjunction with



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SUMMER 2019
Volume 14
Number 2

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Actress Mädchen Amick—who stars in the CW TV series “Riverdale”—is fast becoming a leading advocate for millions of Americans who have bipolar disorder.

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NEWS,
NOTES,
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FROM NIH

New treatment approved for postpartum depression

Postpartum depression is a mood disorder that affects one in nine new mothers



What are some signs?

Postpartum depression can start during pregnancy. But it usually begins one week to one month after delivery. In some women, it may begin up to six weeks or three months after delivery.

The main symptoms are ongoing sadness, inability to enjoy otherwise happy or rewarding experiences, distressing anxiety or irritability, and constantly thinking about your baby's well-being. You may also try to isolate yourself.

Other symptoms include changes in eating habits, headaches, stomach problems, and muscle pain.

HEALTH UPDATE If you or a loved one has postpartum depression, you're not alone. The condition, which causes new mothers to feel extremely hopeless and sad, affects one in nine new mothers.

The National Institutes of Health helped develop a new treatment that has been approved for the condition, to go along with existing treatments like talk therapy and antidepressants.

Is it postpartum depression or something else?

The stress of recovering from childbirth, taking care of a new baby, and hormone changes can cause you to feel sad and worried. That's normal and is known as the "baby blues."

But if those feelings start to feel overwhelming and last more than two weeks, you might have postpartum depression.

What are some risk factors?

You may be at a greater risk for postpartum depression if you've had a prior postpartum depression, depression, or bipolar disorder. Having a stressful life event, like the death of a loved one, can also make you more likely to have the condition.

IMAGE: ISTOCK

How is it diagnosed?

If you are worried you might have postpartum depression, make sure to see a health care provider. They can help you determine if it's postpartum depression or something else.

They may ask you questions about your sadness, worry, and anxiety. They will also do blood tests to find out if another disorder, such as a thyroid disease, may be causing your depression.

How is it treated?

Talk therapy and medication can help you feel more like yourself.

During talk therapy, you will speak one-on-one with a mental health professional about how you're feeling, sleeping, and eating. You will also talk about your relationship and feelings toward your baby.

Antidepressants may also help you feel better. You should speak with your health care provider about the risks and benefits to you and your baby before taking them.

What new treatment options are there?

NIH is committed to improving treatment for postpartum depression.

The National Institute of Mental Health supported early research on a drug that was recently approved for mothers with the condition. The medication, called brexanolone, is the first drug specifically approved for postpartum depression.

To take the medicine, women must be supervised by a medical professional who gives the medicine intravenously, or through your veins. Women must stay in the hospital for about three days. ■

SOURCES: National Institute of Mental Health; MedlinePlus; Food and Drug Administration

Tips for older drivers

Vision and hearing checks may help prevent crashes

BY THE NUMBERS Whether you are 17 or 87, being a safe driver is important. But aging may make driving more challenging, putting older adults and others on the road at risk.

Why can driving get harder as we age?

Our muscles weaken and reflexes slow, making it harder to react quickly and brake safely. Age-related eye problems, like cataracts or gradual vision loss, can make it more difficult to see road signs or recognize familiar places. Additionally, hearing loss makes it harder to hear other drivers or emergency vehicles.

But older adults can take some important steps to stay safer on the road:

- Try to drive during daylight and in good weather.
- If you have to drive at night, use well-lit routes.
- Leave more space between you and the car in front of you.
- Plan your route ahead of time.
- Always wear your seatbelt.
- Never drive if you do not feel well, or are stressed or tired.

There are more than
**41 million licensed drivers
age 65 and older** on the road.

That's up from 26 million 20 years ago.



Drivers **age 65 and older** should get their **eyes checked at least once a year.**

Drivers **over age 50** should get their **hearing checked every three years.**



SOURCES: National Institute on Aging; Federal Highway Administration



How much is too much? 5 things you need to know about binge drinking

Binge drinking can lead to bigger substance abuse and health problems

HEALTH TIPS The National Institute on Alcohol Abuse and Alcoholism (NIAAA) defines binge drinking as drinking enough alcohol to raise one's blood alcohol concentration (BAC) to 0.08% or above.

Women typically reach this level after about four drinks, and men after about five drinks in two hours.

But this is just an average, says George Koob, Ph.D. Dr. Koob is director of NIAAA.

"These numbers can vary based on the person's metabolism, size, and weight," he says. Smaller people, for instance, could reach the threshold with fewer drinks.

Reaching a BAC of 0.08% or higher leads to significant impairments in judgment, impulse control, and motor coordination, all of which increase the likelihood of injuries and other harms.

The Centers for Disease Control and Prevention estimates that more than half of all deaths involving alcohol each year are caused by binge drinking.

1. Binge drinking can affect anyone

Binge drinking isn't unique to one age group or gender.

About 17% of U.S. adults report binge drinking in the past year. Binge drinking frequency decreases with age but remains common among older adults. More than 1 in 10 people aged 65 and older binge drink at least once a month.

Men (28.8%) are more likely to binge drink than women (20.4%), but the difference is getting smaller.

2. More women binge drink today

The number of women who binge drink has steadily increased over the past decade, Dr. Koob says.

"It's more socially acceptable for women to drink excessively today than it used to be," he says. "Recent increases in binge drinking among women are troubling given growing evidence that women are more susceptible to some of the risks linked to excessive alcohol use, including liver disease, heart disease, blackouts, hangovers, and certain cancers."

3. The effects of binge drinking are serious

Binge drinking puts a person at risk of short- and long-term health problems. These problems include hangovers, injuries, overdoses, alcohol use disorder, heart and liver disease, and cancer.

Binge drinking can also lead to risky decision-making and result in a range of physical and social consequences, including violence and unsafe sexual behavior.

4. Binge drinking and alcohol use disorder are different

While many people binge drink on occasion, adults with mild-to-severe alcohol use disorder are unable to limit their intake. They often drink to avoid the negative emotional effects of not drinking and may obsess over when they can drink next.

Alcohol use disorder is considered a long-term disorder.

"People who binge drink are more likely to develop alcohol use disorder, particularly if they continue to binge drink even if it causes them problems," Dr. Koob says.

5. Binge drinking—and its effects—are preventable

The U.S. Dietary Guidelines recommend that if people consume alcohol, they do so in moderation. This means women should drink no more than one drink a day, while men should drink no more than two. Some people should never drink.

Following these guidelines will reduce the potential effects that alcohol has on your health.

“Because alcohol use and especially binge drinking can result in a range of both short-term and long-term consequences, moderation is something anyone who drinks should aim for,” Dr. Koob says. ■

SOURCES: National Institute on Alcohol Abuse and Alcoholism; MedlinePlus



Rethinking Drinking

For someone who binge drinks and wants to stop, NIAAA’s Rethinking Drinking website outlines strategies including:

- **Keep track.** Carrying a drinking tracker card, making check marks on a calendar, or making notes on a mobile phone or notepad can help people trying to stop binge drinking. Understanding how much alcohol counts as a “standard” drink may also help.
- **Set goals.** People should decide how many days a week they want to drink and how many drinks to have on those days. For instance, maybe they decide to only drink on a Friday night and have two beers total.
- **Avoid “triggers.”** If certain people, places, or activities cause people to drink even when they don’t want to, they should avoid them. For example, skip a happy hour event with co-workers or a wine tasting with friends.

If someone needs more help, the NIAAA Alcohol Treatment Navigator can help. This website provides information about the often-complicated process of choosing treatment for alcohol problems.

SOURCE: National Institute on Alcohol Abuse and Alcoholism

New maps feature makes drug disposal easier and safer

Tool was developed as part of national opioid code-a-thon

TECHNOLOGY If you have unused or expired prescriptions, where should you get rid of them?

Look to your phone or other mobile device. A new pilot Google Maps feature makes it quick and easy to find approved drug disposal sites near you. Those include government facilities, hospitals, and pharmacies.

The feature was developed last year as part of a U.S. Department of Health and Human Services Opioid Code-a-Thon. The competition asked developers to find ways that technology could help fight the opioid crisis.

Prescription drug misuse and lack of proper disposal heavily contributes to the opioid crisis. In fact, 70% of people who have misused prescription painkillers reported getting them from friends or relatives.

How to locate a drop-off site

If you already use Google Maps, type “drug disposal near me” in the search bar. The tool will show you nearby government, health care facility, and pharmacy drop-off locations.

Don’t have or use Google Maps?

- On your computer, visit google.com/maps
- On your phone or tablet, download the app.

Additional drug disposal options

The U.S. Drug Enforcement Administration holds national prescription drug take-back events twice per year. Your local police department or other law enforcement agency may also have information on take-back events in your community.

Fighting the crisis at NIH

NIH is leading an aggressive effort with other government agencies to develop ways to better treat pain and help people with opioid addiction. The HEAL (Helping to End Addiction Long-term) Initiative uses research to address the issue and has made patients the focus of their efforts.

Getting help

If you or someone you know is abusing opioids or other prescription medication, call the Substance Abuse and Mental Health Services Administration’s National Helpline: 1-800-662-HELP (4357).

The National Institute on Drug Abuse also offers information on treatment options.

SOURCES: National Institute on Drug Abuse; U.S. Department of Health and Human Services; The National Safety Council



What is all that Screen Time doing to your child's brain?

A landmark 10-year NIH study hopes to have the answers

Here's a surefire conversation starter: Tell a group of parents that you're studying whether too much screen time affects the brain development of children.

Then stand back and wait for the avalanche of questions.

"I can't tell you how many times I'm asked if too much screen time is bad or how to set limits. The most frustrating part is, everyone wants an answer and I don't have one yet," says Gaya Dowling, Ph.D.

But some answers may be coming soon.

The ABCD study

Dr. Dowling is the director of NIH's landmark 10-year study looking at how environmental, social, genetic, and other factors may affect a child's brain and cognitive development and influence their life. One of the components of this study is the effect of screen time on brain development and health from age 9 into young adulthood.

The ABCD (Adolescent Brain Cognitive Development) study is the largest long-term investigation into, among many other things, how scrolling, texting, game-playing, and other screen time affects kids' behavioral development and mental health.

It's led by the National Institute on Drug Abuse and the National Institute on Alcohol Abuse and Alcoholism and supported by eight other NIH institutes.

The study started enrolling participants in 2016 and is tracking nearly 12,000 children at 21 research sites across the country.



The project is particularly significant because, as one researcher explained it, "these kids are really the first of the screen time generation. Their births were announced on social media. Their first memories of screens were in the home. They're fully digitally immersed."

Tracking brain development

The youngsters will undergo MRI scans every two years to track their brain development and will have yearly questionnaires and interviews. This will track how factors like technology use impact their mental health and success in school.

"We're asking about things like substance use, sports and arts participation, depression, family conflict, and sleep problems," Dr. Dowling says.

A close-up photograph of a child's hands holding a white tablet. The tablet screen displays white text on a dark blue background. The text reads: "These kids are really the first of the screen time generation. Their births were announced on social media. Their first memories of screens were in the home. They're fully digitally immersed." The child's face is partially visible in the background, looking at the screen.

These kids are really the first of the screen time generation.

Their births were announced on social media. Their first memories of screens were in the home. They're fully digitally immersed.

Researchers are asking kids exactly how they use their screen time—multiplayer video games, solo games, or social networking, for example. This will help the researchers determine if some types of digital media are better than others.

At the moment, the data on how much screen time kids get is based on what they and their parents tell researchers.

But, as Martin Paulus, M.D., points out, “there’s almost no correlation between what parents report about kids’ screen use and what the kids report.” Dr. Paulus is studying initial screen time data from the ABCD study.

Researchers are hoping, with permission from the kids and their parents, to log screen time automatically on smartphones and other devices.

Looking ahead

Will this bring us closer to knowing if too much screen time is bad for kids?

“I do think the longitudinal aspect of ABCD will help us make more reasonable recommendations,” says Dr. Paulus, but much depends on what the study finds over the long run.

After all, the way kids use screen time when they’re 9 or 10 may change when they hit puberty. And every child is different.

“Some kids say it’s easy for them to spend a couple of hours on their phone and then go do something else, while others see it as an escape and feel bad or get angry if they’re not spending that screen time,” he says.

The findings will likely interest many parents.

That includes Dr. Dowling herself, who admits she’s struggling to set reasonable screen limits for her 12-year-old daughter and 13-year-old son.

“They often spend time on their digital devices when I would rather they were doing other things,” she adds. ■



TIPS FOR SETTING SCREEN TIME LIMITS

Feel like your screen time may be eating into family time? Limiting bedtime screen time and setting a good example can help. Here are some tips for setting screen time limits.

Make family time a no-screen time

Mealtime and family gatherings should be screen-free. Gaya Dowling, Ph.D., NIH's director of the ABCD study, says her kids might be glued to their phones at other times, but not at dinner. A no-screens-at-meals rule encourages everyone to make eye contact—instead of looking down at their phone—and to actually talk to each other.

Keep the bedroom screen-free

Don't put a TV or computer in your child's bedroom—it can disrupt sleep, increase screen usage, and isolate kids from the rest of the family.

Set a good example

Parents should be a good role model and set limits on their own screen time. "Parental screen usage is a factor that comes up a lot" when looking at the effects of children's screen use, says ABCD researcher Florence Breslin.

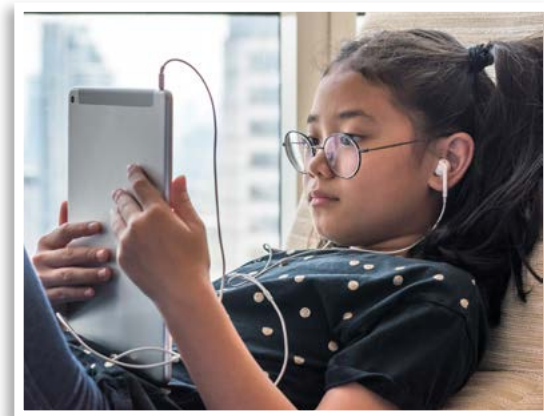
Get kids involved in other activities

"Emphasize physical activity. It's extremely helpful and preventive for mental health problems," says Martin Paulus, M.D., who oversees the ABCD study at the Laureate Institute for Brain Research in Tulsa, Oklahoma. The study is also looking at the effects of music and arts participation. ■

News from the field:

What we know about screen time so far

Early data from 4,500 participants provides clues



NIH's Adolescent Brain Cognitive Development (ABCD) study wants to know what—if any—impact screen time, among many other factors, has on children's brain development. Researchers are releasing data from the 10-year study each year so scientists can analyze it as the project progresses.

What does the early data from roughly 4,500 participants say so far?

Basically, there's good news and worrisome news, says Martin Paulus, M.D.

Dr. Paulus is studying initial screen time data from the ABCD study at the Laureate Institute for Brain Research in Tulsa, Oklahoma.

Social screen time

The good news: More social media use seems to be associated with some positive effects among 9- to 10-year-olds.

The youngsters who spent more time texting or video chatting with friends than playing video games or scrolling

the internet were more engaged with family and community.

They were also more involved in sports and other physical activities and had less family conflict.

"We can't just say all screen time is bad," says Dr. Paulus. "At least at this age, those engaged in more social media may be ahead of the curve to some degree, doing a little better, with fewer outside problems."

"We can't just say all screen time is bad."

- Martin Paulus, M.D.

Screen time and aggressive behavior

The bad news: More video games and traditional types of screen time—like watching TV—were linked to more aggressive behavior in some children. Specifically, this behavior was found in those whose brain scans showed a less developed frontal lobe.

The frontal lobe is the part of our brains that controls how we express ourselves, problem solve, and communicate. Less developed frontal lobes are linked to aggression and bullying, Dr. Paulus explains.

These children also reported more sleep problems and higher family conflict.

However, Dr. Paulus cautions that we can't assume one thing caused

the other. The data simply reports links and does not prove that the screen time causes bad outcomes.

Advice for parents

"What I would say to parents is that if their children are spending a lot of screen time at home and teachers or others are reporting problems with disruptive behavior at school, then it might be time to think about what else they can do," he notes. "Maybe more physical activity, or music or art."

So is screen time bad for kids across the board? Based on the data so far, no.

"Screen media use is not uniformly bad for the brain or the child," Dr. Paulus says. Of course, there's still more data and more research to come—nearly nine years of it. ■

Find Out More

► **MedlinePlus: Children's Health**

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

► **National Institute on Drug Abuse: ABCD Study**

<https://www.drugabuse.gov/related-topics/adolescent-brain/longitudinal-study-adolescent-brain-cognitive-development-abcd-study>

► **NIH News Releases: ABCD Study**

<https://www.nih.gov/news-events/news-releases/abcd-study-completes-enrollment-announces-opportunities-scientific-engagement>

BIPOLAR DISORDER



Highs & Lows:

Understanding bipolar disorder

When you have bipolar disorder, you experience frequent mood swings—from extreme lows to extreme highs. Sometimes you feel both at the same time.

You may brush off these changes as “just being moody.” But, in reality, you or someone you know could have a serious mental illness.

Bipolar disorder can ruin relationships with spouses, family members, friends, or co-workers. People with the disorder may also think about hurting themselves.

While bipolar disorder is a lifelong illness, medication and talk therapy can help people manage it and lead healthy lives.

Who does it affect?

Bipolar disorder affects 1% to 2% of the U.S. population. About 10% to 15% of people with bipolar disorder die of suicide.

What are the symptoms?

There are four basic types of bipolar disorder. All of them involve clear changes in mood, energy, and activity levels. The moods are known as manic and depressive episodes.

- **Bipolar I Disorder** includes manic episodes that last at least seven days or are so severe that the person needs immediate hospital care. Depressive episodes usually happen too, typically lasting at least two weeks. Episodes of depression with manic symptoms are also possible.
- **Bipolar II Disorder** has depressive episodes and hypomanic episodes, but not the full-blown manic episodes described above.
- **Cyclothymic Disorder** (also called cyclothymia) has numerous periods of hypomanic symptoms and depressive symptoms that last for at least two years in adults, and one year in children and adolescents.
- **Other Specified and Unspecified Bipolar and Related Disorders** include bipolar disorder symptoms that do not match the three categories above.

What is a depressive episode?

People with bipolar disorder experience severe depression or have low energy for several days or weeks. This is known as a depressive episode. Other symptoms include sleeping too much or too little, worrying a lot, forgetting things, and feeling sad or empty. In severe episodes, suicidal thoughts or behavior may arise. Sufferers may also experience psychotic symptoms, such as delusions.

What is a manic episode?

During a manic episode, people with bipolar disorder find it hard to focus at home, school, or work. They may feel like their mind is racing. People may also feel jumpy or “high,” talk fast, and do risky things. Psychotic symptoms are common with manic episodes, and may lead to a misdiagnosis of schizophrenia.

How is bipolar disorder diagnosed?

If you think you or a loved one may have bipolar disorder, speak to your doctor or a mental health care provider. The provider will review your medical history and ask you about your physical and mental health.

How is bipolar disorder treated?

A psychiatrist (doctor who specializes in treating mental illness) can prescribe medication to help you manage your moods and feel like yourself again.

Medications include mood stabilizers, antidepressants, and sleep medicines.

Talk therapy also helps many people with bipolar disorder. You and your provider will decide what treatment plan works best for you. ■

SOURCE: National Institute of Mental Health

If you or someone you know is having thoughts about suicide, call the National Suicide Prevention Line at 1-800-273-8255. It is open 24 hours, 7 days a week. Calls are private.

BIPOLAR DISORDER

“Don’t be afraid.
Don’t be ashamed.
It can be very scary,
but you can get help
and you can be OK.”

- Mädchen Amick

Removing Stigma

TV star Mädchen Amick on bipolar disorder
and moving mental health forward



Actress Mädchen Amick stars in the CW TV series “Riverdale.” While she’s best known as a star of the hit series “Twin Peaks,” she is fast becoming a leading advocate for millions of Americans like her son Sylvester who have bipolar disorder. She spoke with NIH MedlinePlus magazine about her family’s journey and her mental health advocacy.

Tell us about your son’s journey to getting the right diagnosis.

It was a long journey! Sylvester went off to college in 2010. About halfway through his freshman year, he witnessed a traumatic event and that seemed to be a trigger. We started getting reports from his friends and coaches that he was acting differently.

At first it seemed like addiction. But then he was admitted to a mental health hospital and we were told Sylvester might have bipolar disorder. As parents, hearing this was like a kick in the gut. Initially, it felt as if we were mourning the loss of our son’s future.

It took about two years of seeing different health professionals to get a clear diagnosis of bipolar disorder. It turns out he was self-medicating with alcohol and drugs without knowing it.

Once he was sober and drug-free, it was clear we were witnessing manic and depressive episodes. That is when things started turning around for him.

How is he doing now?

After a long, hard road, Sylvester is doing great. He has dedicated himself to good lifestyle habits: his diet, his sleep, and sobriety. He takes a combination of medications (lithium and an antipsychotic) that work and keep him stable. And he’s a songwriter and lyricist, which is a great creative outlet for him.

He’s also dedicating himself to being an advocate and helping others. I’m proud that he’s a counselor at a treatment center now.

You have been focused on the stigma associated with bipolar and mental illness.

There are so many people who successfully manage bipolar disorder. Yet, there are many negative stereotypes in movies and TV. People with mental illness are often portrayed as one-dimensional, evil characters. This feeds the stigma.

I’m trying to lead the charge in destigmatizing bipolar disorder by being open about it—by saying this is what it looks like and here is what a family dealing with it looks like. With the right treatment and support, you can live a wonderful, productive life with any mental illness. Collectively as a community, we can change the landscape.

What message do you have for people who need help but haven’t gotten it?

Don’t be afraid. Don’t be ashamed. It can be very scary, but you can get help and you can be OK. There are treatments. Reach out and talk to someone you feel safe with. It might be a friend, a teacher, or a loved one. Tell them that you are struggling and you need help. You will be surprised at how many people will be able to relate to how you are feeling and encourage you to get help.

I want other parents to know that it is scary at first, but there can be a beautiful, bright future for the entire family.

How does the research supported by NIH fit in?

Research is so important. We need to push for more research that will help us understand the brain and mental illness much better. And we need more research to improve treatment options.

The great information from NIH about bipolar disorder helped us. We were able to understand what was happening with the chemical imbalances in Sylvester’s brain. That helped us separate the disease from our loved one, which I mentioned is so important.

What does the future hold for Mädchen Amick?

My whole family is working with Glenn Close’s mental health advocacy organization, Bring Change to Mind, to combat stereotypes. We are raising awareness and starting open conversations in high schools about mental illness. It is important to get to kids early with this information.

I’m also excited to move behind the camera in addition to acting. I’ll be directing some episodes of “Riverdale” next season and I’m the executive producer and creator of “Behind the Curtain,” a new talk show about mental health. We need to move the conversation on mental health forward. ■



Mädchen Amick, second from left, with the rest of the cast of the CW TV series “Riverdale.”

Large families may hold answers to bipolar disorder

Research investigates genetic links by studying Amish and Mennonites

Researchers are looking to certain U.S. states, including Ohio and Pennsylvania, to better understand bipolar disorder—a mental illness that is often passed down through our genes.

Why look there? That’s where many Amish and Mennonite families in the U.S. live. These families tend to have similar genes because they trace their families back to relatively few ancestors and traditionally marry and have children with one another.

Researchers at NIH’s National Institute of Mental Health (NIMH) hope that studying these families will explain how—and which—genes carry the disease.

Genetic answers

“Bipolar disorder is one of the most strongly inherited mental illnesses, so we want to understand why people inherit these genes and come up with better ways to treat the disorder,” says Francis McMahon, M.D.

Dr. McMahon is chief of the Human Genetics Branch at NIMH’s Intramural Research Program. He helps oversee bipolar research at NIH.

Bipolar disorder causes people to have intense mood changes. These moods are stronger than just feeling happy or sad.

Many people are diagnosed with bipolar disorder as adults. But researchers now believe bipolar disorder can start before people are even born.

“We’ve always known that the risk was linked to genes, but we didn’t know what kind of genes caused it,” Dr. McMahon says.

Researching stem cells

By studying the genetic material (DNA) in Amish and Mennonite study participants, researchers can track differences in their genes and find which particular genes increase the risk for bipolar disorder.



Francis McMahon, M.D., helps oversee bipolar research at NIH.

But that’s just the first step.

Dr. McMahon and his team then use special human cells (stem cells) from these high-risk participants and turn them into brain cells.

While it sounds almost futuristic, the process could have a major impact on future research and treatment.

“Through this research, it’s then possible to discover how bipolar genes actually change the brain,” Dr. McMahon says. “These changes could show how genes carry the risk of bipolar disorder.”

This research will also help us understand why a treatment may work for one patient—but not another.

While improving treatment is key, Dr. McMahon says finding a way to stop bipolar disorder in its tracks is the ultimate goal.

“Medication can reduce the amount of bipolar episodes, but we also want to cure it,” he says.

Getting involved

For people with bipolar disorder or those who just want to help improve research, Dr. McMahon encourages signing up for clinical studies.

“People need to be treated and need to be involved. Those are the best ways to keep a positive attitude about living with mental illness,” he says.

A study called the Amish-Mennonite Bipolar Disorder Genetics Study (AMBiGen) needs volunteers.

The study will look at genetic differences that put us at risk for developing mental health issues, like bipolar disorder. Family members with and without mental health challenges are welcome to participate.

Interested in signing up? Call 1-866-644-4363 or send an email to bipolargenes@mail.nih.gov. ■

Life on a roller coaster

Managing bipolar disorder

Bev Miller relies on faith, family, and perseverance to stay healthy

Imagine your life as a roller coaster: the excitement of climbing to the top and the terrifying feeling when the roller coaster drops down at lightning-fast speed.

That's what life was like for Bev Miller of Wauseon, Ohio. More than 40 years ago, she was diagnosed with bipolar disorder at the age of 23.

The extreme highs and lows she felt were the symptoms of the disorder, which she now manages with medication.

Highs and lows

At times, she felt energized and on top of the world. She convinced herself that she only needed four hours of sleep.

"My mind was always racing like a video on fast-forward," Bev recalls. "Busy, busy, busy. Plans, plans, plans."

Then, she would spiral down into a deep depression.

"You enjoy the climb up a roller coaster so much that you go off into the clouds and remain there until your thoughts come back to reality," Bev says. "But then, you fall from the clouds into a deep, dark hole."

In her 20s, Bev was hospitalized twice because of mania and once for a suicide attempt. Her mood instability and depression would have made it hard to keep a steady job, but Bev was lucky. She worked for her family business and was able to get support when she needed it.

"My life has more purpose by helping other people. I wouldn't change that."

- Bev Miller

Since then, the stability of living near family, professional counseling, and medication has helped her manage the disease.

Mennonite community

When her pastor told her about an ad in a local magazine seeking people for an NIH clinical study, Bev signed up.

Because they traditionally marry one another, Mennonites have more similar genes than people in the general population. By studying these similar genes, researchers hope to find better treatments for bipolar disorder.

Bev's siblings and many others in her Mennonite community were also tested for bipolar disorder.

Staying mindful

Today, Bev shares her story with others. Her openness gives others with mental illness the support they need to get counseling and medication.

"My life has more purpose by helping other people. I wouldn't change that," she says.



Bev Miller participated in an NIH clinical trial to help others with bipolar disorder.

If you know someone who may be suffering from mental illness, Bev advises you to be mindful of what that person might be going through.

"Instead of saying 'How are you?' try saying, 'Hey, good to see you!'" Bev says. ■

Find Out **More**

► **MedlinePlus: Bipolar Disorder**
<https://medlineplus.gov/bipolar-disorder.html>

► **National Institute of Mental Health: Bipolar Disorder Fact Sheet**
<https://www.nimh.nih.gov/health/publications/bipolar-disorder/index.shtml>

► **Clinicaltrials.gov: Bipolar Disorder**
<https://clinicaltrials.gov/ct2/results?cond=Bipolar+Disorder&term=&cntry=&state=&city=&dist>



'It doesn't define you':

Living with alopecia areata

Brittney Hammond lifts up others through cheerleading and sharing her alopecia areata story.



“This is a condition that really tests you. You have to become strong and develop self-love and self-motivation in order to get through it.”

- Brittney Hammond

College student shares her story and tips for others with hair loss

Brittney Hammond was 8 years old when her hair started falling out.

Her cousin was the first one to see the bald, coin-size patches when she was braiding Brittney’s hair.

A visit to the dermatologist with her mother gave them the answer. Brittney had alopecia areata, a skin disorder that causes hair to suddenly fall out in small patches.

Some people experience cycles of hair regrowth, followed by hair loss, for years. It’s not painful, but it can affect a person’s self-image.

For Brittney, bald spots weren’t such a big deal when she was in elementary school. But things changed in middle school.

“I was always worried about who would notice it, to the point where I would flat iron my hair every day,” Brittney said.

By flat ironing her hair, Brittney could cover the bald patches on her neck and hide her condition.

High school demands

In high school, her cheerleading coach expected everyone on the team to wear their hair in a high ponytail.

Brittney was worried this would expose her bald patches, so she covered them with spray-on black hair dye. She also tried a weave, a hair extension sewn into her natural hair. But this caused more hair loss.

Brittney finally asked her coach if she could wear her hair differently to cover her bald patches.

When a teammate with short hair asked if she could do the same, the coach replied by sarcastically asking if she had alopecia, too.

“Things like that didn’t make the coping easier,” Brittney said.

Brittney is now a senior at Georgia State University and a member of the cheerleading team.

She uses a special shampoo to keep her natural hair healthy. She also wears wigs and uses makeup to draw her eyebrows.

“Wigs have become a big part of my life,” Brittney explained. “And if you lose your eyebrows like I have, makeup is your best friend.”

Family support

Brittney’s family has supported her through her alopecia experience.

“They were the only people who saw my hair in its natural state at its worst,” she said.

Her father, who also has alopecia, has been especially supportive. Alopecia is a genetic disease, meaning people can inherit it from a relative, such as a parent.

Ups and downs

Despite a strong support system, Brittney still feels pressure.

“In the black community, our hair is important and we get judged on it,” she said.

To help herself and others, Brittney started a YouTube channel where she talks about alopecia and how to cope.

Her main message is one of self-love and determination. “It doesn’t define you,” Brittney says. “This is a condition that tests you. You have to become strong and develop self-love and self-motivation to get through it.”

Earlier this summer, for instance, all of her hair fell out in a few short weeks and she’s currently bald. But Brittney pushes on. She’s excitedly preparing for her final year of college and the future that lies beyond it.

“Though it is still an uphill battle, I have not lost faith. I still know that I am beautiful!” she says.

“And as long as you are comfortable with yourself, that’s all that matters.” ■

Close to home:

NIH researcher and alopecia patient seeks a cure

Patient registry helps researchers find genetic links, develop medicine

Angela Christiano, Ph.D., is not a typical researcher. Dr. Christiano studies a hair loss disease called alopecia areata. She also has it. Alopecia areata makes people lose their hair, usually in small patches. While it is not painful, the condition can cause serious confidence and self-image issues.

Dr. Christiano's story

Dr. Christiano was already doing research in dermatology, which focuses on skin, hair, and nails, when her hairdresser noticed bald patches on her head.

Dr. Christiano suspected alopecia areata and confirmed it with a fellow doctor.

After her diagnosis in 1995, Dr. Christiano wanted to learn as much as she could about the condition and other types of hair loss.

She found there wasn't much research out there.

"I thought, 'maybe this is fate directing me to a topic,'"

Dr. Christiano says.

Dr. Christiano has been researching alopecia areata

for 20 years at Columbia University. Her work, which is funded by NIH, has led to major breakthroughs over the last 10 years.

Genetic research

Dr. Christiano focuses on how people inherit alopecia areata. People are more likely to get alopecia areata if a close family member has it.

To better understand this, the National Institute of Arthritis and Musculoskeletal and Skin Diseases funded a registry for people with the condition to learn about their medical history, symptoms, and experiences. Dr. Christiano's group was one of five research sites that contributed to the registry.

People filled out questionnaires and gave blood samples.

"That registry provided the samples that allowed us to study alopecia areata genetics," Dr. Christiano says.

Improving understanding

Researchers used to think alopecia areata was closely related to skin autoimmune diseases, since hair is part of our skin.

But through her team's research, Dr. Christiano learned that alopecia areata is more similar to other types of autoimmune diseases like thyroid diseases, celiac disease, rheumatoid arthritis, and type 1 diabetes.



Angela Christiano, Ph.D., has studied alopecia for decades.

“With the support of NIH, this research and the development of new treatments can help change the lives of those people with alopecia areata.”

- Angela Christiano, Ph.D.

This breakthrough has helped researchers understand the disease and get closer to a treatment. Up until now, there hasn't been a specifically approved treatment for alopecia areata.

Treatment breakthroughs

Dr. Christiano and her team of researchers found a connection between alopecia areata and a group of molecules called Janus Kinases, or JAKs.

Using drugs that inhibit these molecules, her team is helping people with the disease regrow hair. But not all people.

“Most patients are responding to the JAK inhibitors, but there are still some who are not,” Dr. Christiano says. “We’ve got more work to do to find out the rest of the story.”

Environmental factors

In addition to genetics, researchers want to understand how environmental factors can impact alopecia.

For example, is it possible too much stress or a poor diet can make hair loss worse?

“One of the last frontiers for alopecia is identifying the environmental triggers,” Dr. Christiano explains.

A bright future

Dr. Christiano is hopeful for a future where patients—including herself—have better treatment options.

“With the support of NIH, this research and the development of new treatments can help change the lives of those people with alopecia areata,” Dr. Christiano says. “When people grow their hair back, it changes their lives.” ■

5 tips for living with alopecia areata

Talking to others and protecting your skin in the sun can help



Alopecia areata is a difficult disease to cope with, but there are ways for people to feel better.

The condition causes your hair to fall out. Some people lose all of their hair, but most people lose hair in small, round patches.

While it isn't painful, the condition can cause serious confidence and self-image issues.

Your genes and the environment work together to determine if you get alopecia areata.

While there isn't a cure, researchers like Angela Christiano, Ph.D., and others supported by NIH, are working to improve medicines to help hair grow back. Talk to your doctor about which medicines could help you.

There are also ways to cope with the mental hurdles that come with alopecia areata.

Alopecia areata affects 1 in every 500 to 1,000 people in the U.S.

SOURCE: Genetics Home Reference

Find creative ways to feel confident—Try wearing a wig, hairpiece, scarf, or cap. Cover small patches of hair loss with a hair-colored powder, cream, or crayon.

4
Find

5
Seek

Seek help from a professional—If you notice increasing feelings of depression or anxiety, try talking to a licensed therapist or counselor. They can offer support, ideas for coping with stress or anxiety, ways to relax, and more.



IMAGES: ADOBE STOCK, ISTOCK

Find Out **More**

- ▶ **MedlinePlus: Alopecia Areata**
<https://medlineplus.gov/hairloss.html>
- ▶ **National Institute of Arthritis and Musculoskeletal and Skin Diseases: Alopecia Areata**
<https://www.niams.nih.gov/health-topics/alopecia-areata>
- ▶ **Clinicaltrials.gov: Alopecia Areata**
<https://clinicaltrials.gov/ct2/results?cond=alopecia+areata>

||||| W H A T I S |||||

Community Immunity?

How vaccines help you and others stay healthy

In 2000, measles had all but stopped spreading in the U.S. That's because vaccination rates were high enough to keep people from getting the disease.

But the virus spreads so easily that, when the first new measles case since 2000 was reported in 2005, it was linked to one unvaccinated U.S. resident. He was infected during a visit to Europe, which has lower vaccination rates.

The returning traveler infected American children who hadn't been vaccinated.

Luckily, a major outbreak didn't happen at that time. That's because enough people in surrounding communities were vaccinated against measles.

This type of protection is known as "community immunity" or "herd immunity."

When enough people in a community are protected against a contagious disease, it's hard for it to spread.

Newborns, pregnant women, or people with weak immune systems aren't able to get certain vaccines. Yet, with community immunity, even they will get some protection because the spread of a contagious disease is contained.

NIH MedlinePlus magazine talked to Anthony Fauci, M.D., director of NIH's National Institute of Allergy and Infectious Diseases. Dr. Fauci explained how vaccines work to protect us.

What is a vaccine?

Most vaccines are made from either a killed (inactivated) or live attenuated virus. The measles mumps rubella (MMR) vaccine is a live attenuated virus vaccine. This means the three viruses in the vaccine are not completely killed, but they are no longer able to cause the disease. They can alert your immune system to develop a response that can fight off these three diseases.

How is a vaccine developed?

After working on a potential vaccine in the lab, researchers start with a small Phase 1 clinical trial in healthy people to determine if the candidate vaccine is safe. If it proves to be safe, they then can move it into a larger Phase 2 clinical trial, which tests safety in more people and determines whether

the candidate vaccine induces an immune response that likely will protect people from the virus, and helps us learn what the proper vaccine dosage is. After that, the potential vaccine can be moved into a large Phase 3 clinical trial, which tests safety in more people and determines whether the candidate vaccine can protect people against the disease.

When enough people in a community are protected against a contagious disease, it's hard for it to spread.

Why do we wait to give the MMR vaccine to babies?

You generally do not want to vaccinate children before 1 year of age because their immune systems are not fully developed. However, if children between 6 and 11 months old are going to be traveling abroad or to an area in the United States with a measles outbreak, they should talk to their pediatrician about getting a dose of the vaccine before they travel.

You usually want to start somewhere between 12 and 15 months for the first injection. Even then, not all babies respond, so you want to boost it with a second injection when they are between 4 and 6 years old. This will make sure they are fully protected against these three viruses.

MMR is one of the most effective vaccines available. It is about 97% effective when you give two doses.

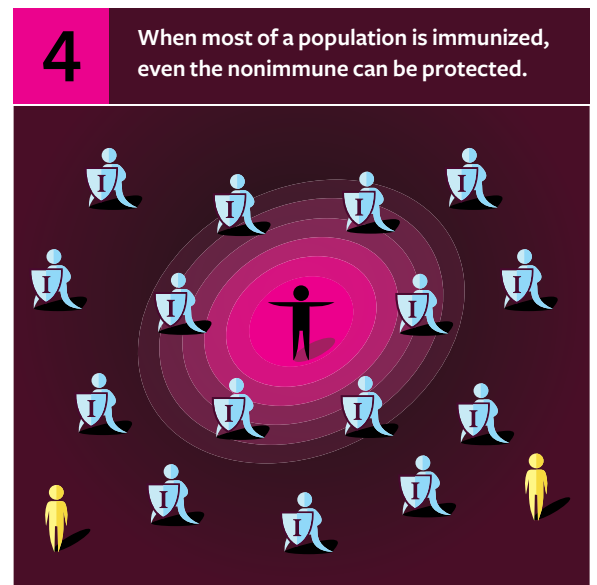
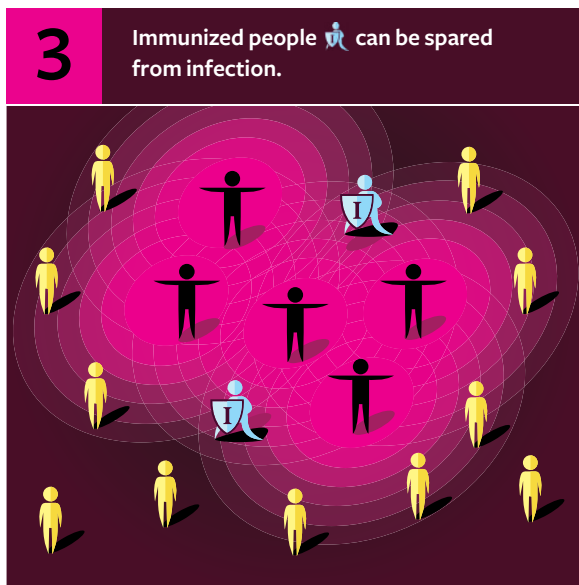
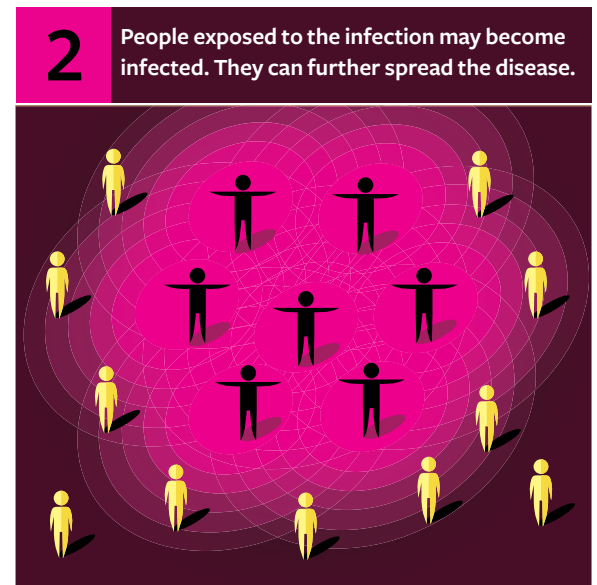
Along with MedlinePlus, what resources would you recommend for someone who wants to learn more about vaccines?

One of the best resources for specific vaccine information is the Centers for Disease Control and Prevention. Visit CDC.gov to learn about all vaccines, including the MMR vaccine.

What advice do you have about vaccine safety?

My advice is that if you look at the science, as opposed to rumors or misinformation, it shows that the vaccines that are used now are very safe and highly effective, particularly the MMR vaccine.

Because measles is one of the most contagious viruses around and can sometimes have very bad outcomes, my message for parents is to get their children vaccinated against it and other vaccine-preventable diseases. ■



IMAGES: JEFF DAY, M.D.

Measles:

What you need to know

Trademark symptoms include a red rash, fever, and cough

Measles is a highly contagious disease, meaning it spreads easily. The trademark symptom is a blotchy, red rash.

Measles is so contagious that if one person has it, up to 90% of the people close to that person who are not immune (meaning they haven't been vaccinated or haven't had the disease) will also become infected.

While measles usually has symptoms for a short period of time, there are complications that can cause serious health issues.

Symptoms

Before you get the rash, you usually have a fever, which turns into a cough, runny nose, and pink or red eyes. Then the rash of tiny red spots breaks out and spreads. It often starts near your head and moves down the body.

Other symptoms include feeling achy and run down and having tiny white spots inside your mouth. Measles is not the same as German measles, which is also known as rubella.

Timeframe

Measles symptoms typically last five to six days.

People with measles can spread the disease to others four days before the trademark rash appears and four days after it goes away.

Complications

Measles can cause more serious health issues, especially in those who are too young for the vaccine. It can also harm people who have weak immune systems and are not well enough to get the vaccine, like cancer and transplant patients, or older adults.

Complications include ear infections that can result in permanent hearing loss, pneumonia, and brain swelling.

Another complication, subacute sclerosing panencephalitis (SSPE), is a very rare but deadly central nervous system disease. SSPE generally develops 7 to 10 years after a person has measles



Treatment

There is no treatment for measles, but there is a vaccine that helps prevent it.

The measles vaccine is combined with two other vaccines, which prevent mumps and rubella and is collectively known as the MMR vaccine. MMR usually is given to children in two doses, the first at about age 1, and the second at age 4 to 6.

The second dose helps make sure we've developed immunity against measles, mumps, and rubella. For most people, one dose is enough, but to get enough people immune to protect others, the Centers for Disease Control and Prevention recommend that everyone get what's known as a "booster" vaccine.

Getting the vaccine

If you haven't been vaccinated against measles or aren't sure if you've been vaccinated, you can get the vaccine at any age. Check with your health care provider to determine the best path for you and your loved ones. ■

From virus to vaccine: Studying measles immunity

Latest NIH research works to improve already strong vaccines

The measles mumps rubella (MMR) vaccine is one of the most effective around. It is 97% effective against the viruses when two doses are given.

But Diane Griffin, M.D., Ph.D., a researcher at Johns Hopkins University's Center for Global Health, is working to improve that already high rate for this and other vaccines.

She's doing that by studying the measles virus, with help from NIH's National Institute of Allergy and Infectious Diseases.

Lifelong immunity

Dr. Griffin and her team want to understand how people who've had measles are protected from the virus for the rest of their lives.

"If you get measles when you're 6, you're still immune to it at 85," Dr. Griffin says. "That is something that a lot of vaccines would like to accomplish."

They're looking at the vaccine and the actual virus side by side to better understand this.

Dr. Griffin cautions that while immunity can lessen over time in vaccines like MMR, it's still high enough to protect most people for life. Her research wants to close that already narrow gap.

All in the antibodies?

As part of their research, Dr. Griffin's team is studying antibody production.

Antibodies are proteins in our blood that fight off infection and disease. More antibody production against a virus like measles means better immunity or protection.

By researching antibody production against the measles virus, Dr. Griffin and her team want to see if they can identify which genes help make the antibodies better.

Once they identify those genes, they can work to improve antibody production by the vaccine to provide similar lifelong immunity.

Reducing complications

One of the main reasons behind Dr. Griffin's work to improve vaccines is to stop potential complications that come with diseases like measles.

"The natural disease is a nasty one," Dr. Griffin notes.

Most people with measles are sick for about a week. But it actually takes months or years for peoples' bodies to clear the virus and completely recover.

While that helps give them strong immunity from getting the virus again, it can also be dangerous. Some patients can have long-term symptoms or complications, leading to serious health issues.

"Other infections like bacterial pneumonia are quite common after measles," Dr. Griffin adds.

"This is why access to medical care makes such a big difference," Dr. Griffin says. "Most people who die of measles die of related infections, usually a month or two after having measles."

A particularly serious complication is postinfectious encephalomyelitis, which is rare, but can cause seizures and brain damage that lasts for years after a case of the measles.

"If you get measles when you're 6, you're still immune to it at 85. That is something that a lot of vaccines would like to accomplish."

- Diane Griffin, M.D., Ph.D.

As Dr. Griffin works to improve future vaccine immunity, she says that current vaccines are essential for staying healthy and keeping others healthy.

"We have to keep the rate of immunity greater than 90% in order to prevent outbreaks and protect those who can't get vaccinated," she adds. ■

Find Out **More**

► **NIH News in Health**

<https://newsinhealth.nih.gov/2011/10/community-immunity>

► **MedlinePlus: Measles**

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

► **Centers for Disease Control and Prevention: Measles**

<https://www.cdc.gov/measles/index.html>

from
the

lab

LATEST
RESEARCH
UPDATES
FROM NIH

Just 30 minutes of daily exercise can help correct a day of sitting

Any kind of physical activity helps lower the risk of death

AMERICANS SPEND A LOT OF TIME

SITTING—at their desk, in the car, and on the couch. This can take a toll on their health.

In fact, research has shown that long periods of sitting can increase the risk of heart disease and death.

So how much daily exercise could help counteract the negative effects of sitting? Not that much, it turns out, according to new research funded in part by the National Institutes of Health.

The study of nearly 8,000 participants, age 45 and older, found that for less active individuals, replacing as little as 30 minutes a day of sitting with bouts of light activity—walking or doing chores, for example—lowered the risk of death by 17%.

Replacing sitting with 30 minutes of moderate to vigorous activity, such as biking, jogging, and playing sports, dropped that risk by 35%.

Even better, the researchers found that people could break up that 30 minutes into short, one- to five-minute bursts of movement during the day and still offset the bad effects of sitting.

These benefits were not seen for individuals who already had an active lifestyle. But, as lead researcher Keith Diaz, Ph.D., says, “If you have a job or lifestyle that involves a lot of sitting, you can lower your risk of early death by moving more often.” ■

SOURCE: The National Institute of Neurological Disorders and Stroke



IMAGE: ISTOCK



Brain ripples could hold clues to memory

NIH study looks at how we find the right memory

YOU'RE TRYING TO REMEMBER A WORD.

You're thinking, thinking ... and suddenly, it pops into your head. NIH researchers wanted to know just what happens in the brain at this moment.

As it turns out, a split second before a person calls up a memory, fast waves of activity ripple across key parts of the brain that help store our memories.

This discovery comes from a study of epilepsy patients enrolled in a trial at NIH's Clinical Center.

Researchers recorded their brain activity to find out what was causing the seizures related to their disorder.

The recordings also provided a chance for scientists to study how the brain stores memories.

The patients were asked to remember pairs of words. Later, they were told one word and asked to remember its partner. A few milliseconds before they correctly remembered the word, there was a ripple of activity in their brain.

If they couldn't remember or answered incorrectly, there wasn't a ripple.

These ripples could help us better understand how the brain processes and retrieves memories, says NIH lead researcher Kareem Zaghloul, M.D., Ph.D.

"Our results suggest that coordinated ripple activity may play a critical role in replaying the neural codes behind our memories," Dr. Zaghloul says. ■

SOURCE: The National Institute of Neurological Disorders and Stroke

Irregular sleep schedules can lead to bigger health issues

THERE'S BAD NEWS for those of us who have inconsistent sleep schedules, such as sleeping too little during the week and then trying to make up for it on the weekend.

A new study finds that irregular sleeping patterns, including catch-up sleep, can negatively affect the body's metabolism, which controls how we function and use energy. It also puts us at a higher risk for chronic diseases like diabetes.

In the study, supported in part by NIH, 36 people were divided into three groups. One group slept up to nine hours a night. Another group was allowed only five hours of sleep nightly. The third group slept five hours nightly during the week, then slept late on the weekend.

The findings after two weeks were telling. Both the sleep restriction group and the weekend recovery group gained weight and had reduced insulin sensitivity—meaning their ability to process sugar was impaired.

The key takeaway, say the study's researchers, is that "weekend recovery sleep does not appear to be an effective countermeasure" to the negative effects of sleep loss on the body's metabolism. In fact, sleep was disturbed even more in the weekend recovery group when they went back to the restricted sleep pattern. ■

SOURCES: National Heart, Lung, and Blood Institute; National Institute of Diabetes and Digestive and Kidney Diseases



NIH on the web

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

➔ Teach your kids about eye health the fun way

What are eyelids for? Why can't you see colors in the dark?

How your eyes work can be a mystery, but the National Eye Institute has answers.

The NEI for Kids website teaches kids—and people of any age—all about their eyes.

Children can learn all about their vision, eye health, and safety through fun videos, animations, and quick tips. They can also print free learning materials.

August is Children's Eye Health and Safety Month, so it's a good time for kids and their families to learn more about eye health.



➔ Three minutes to a super summer smoothie

Looking for a quick, heart-healthy snack? Got three minutes?

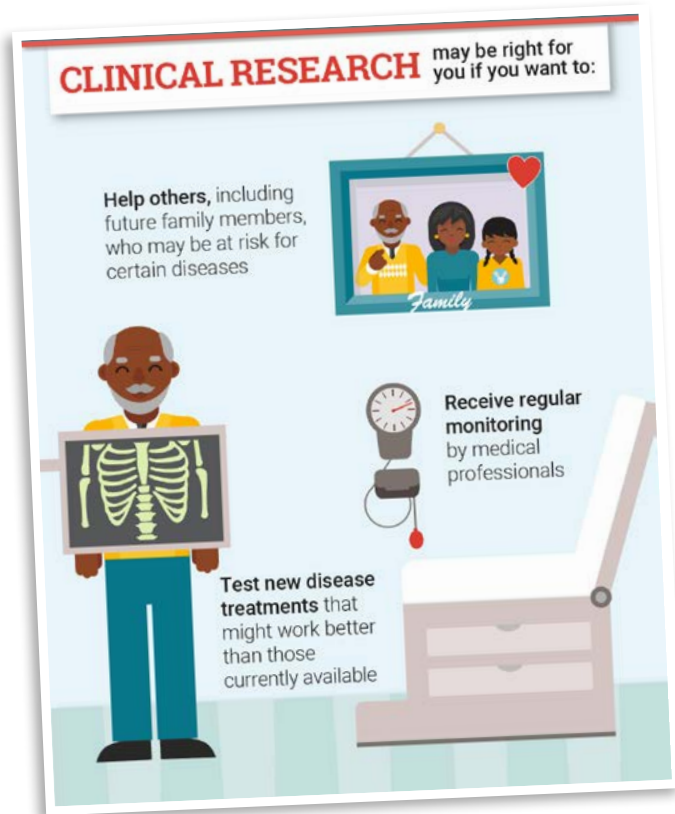
Grab your blender. Throw in a cup of nonfat, plain yogurt; 6 strawberries; a cup of crushed pineapple (canned, with juice); a banana; and a few ice cubes.

Add a dash of vanilla extract if you like, and if you're looking for an extra boost, toss in a few tablespoons of protein powder. Puree until smooth. Find a spot in the sun or shade, and enjoy!

For more healthy recipes, check out the recipes page on MedlinePlus.



IMAGE: ADOBE STOCK, NIA



➔ 65 or older? Clinical trials need you

Clinical trials that help test future treatments depend on a diverse group of participants. This means people of different ages, sexes, races, backgrounds, and more. Participants ages 65 and older are especially key.

Many older adults have special health needs. They may react differently to certain drugs or need different doses. They're also more likely to have age-related diseases like Alzheimer's, cataracts, and arthritis.

The National Institute on Aging has a chart on the benefits of participating in clinical trials for older adults. Find more information about clinical trials and where to find one near you.

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.obssr.od.nih.gov
301-402-1146

Office of Communications & Public Liaison (OCPL)

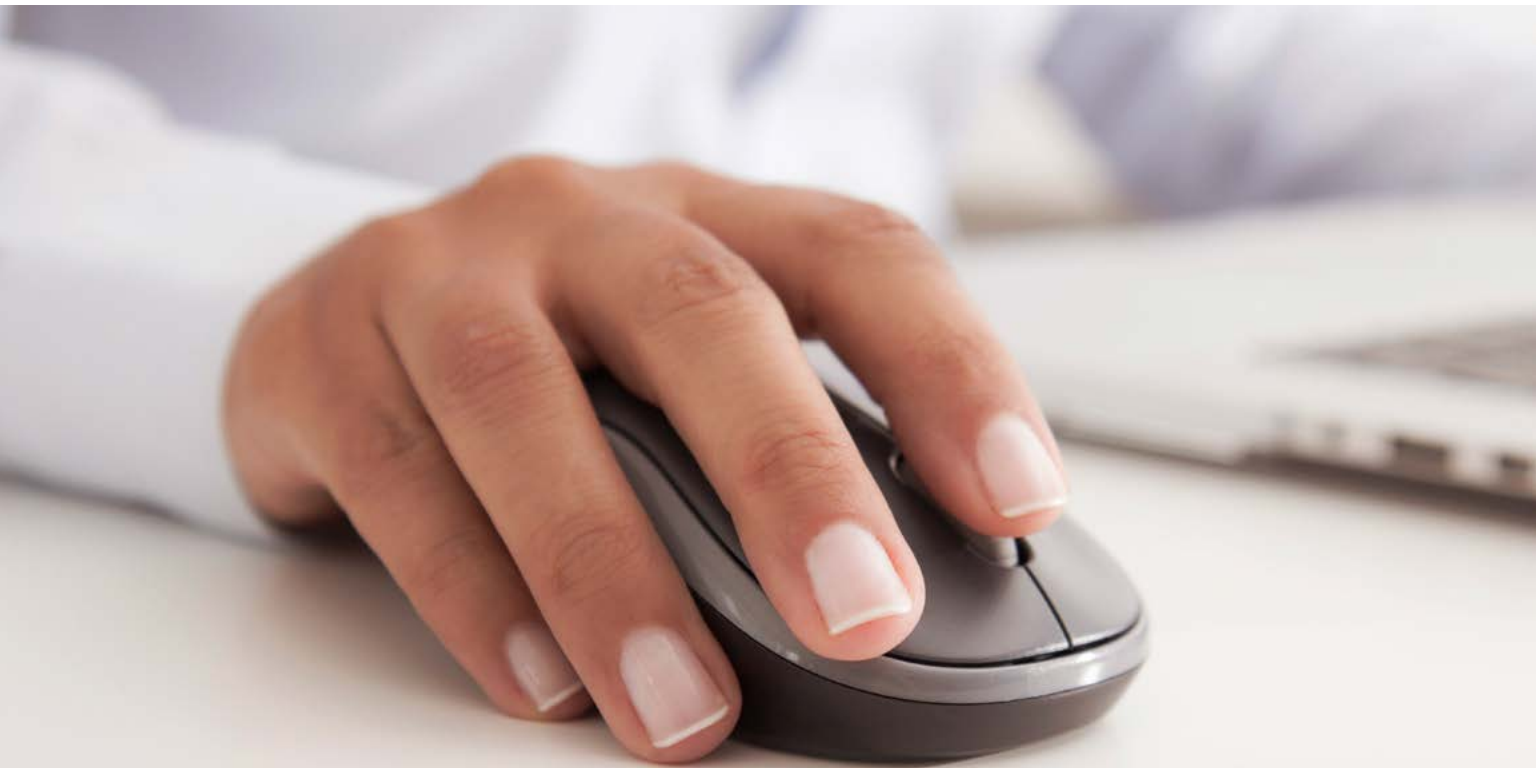
www.nlm.nih.gov/ocpl/ocpl.html
301-496-5787

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
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