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a Global Ambassador in
the fight against lupus.**

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Medical Movies on the Web Debuts with Gene Kelly's "Combat Fatigue Irritability" 1945 Film

One of the treasures preserved by the National Library of Medicine (NLM) is a World War II U.S. Navy training film directed by and starring Gene Kelly, who was then a rising Hollywood star. *Combat Fatigue Irritability* is a historically significant, yet largely unknown, work.



▲ Actor Gene Kelly in the 1945 film, *Combat Fatigue Irritability*, now available to the public at NLM's Medical Movies on the Web.

Now, NLM's History of Medicine Division (HMD) is making the film available to a wide audience, with supplementary materials from NLM historians. That includes a unique interview with Kelly's daughter, Kerry Kelly Novick.

Novick, a developmental psychoanalyst who studied under Anna Freud, was a guest speaker during NLM's February Board of Regents' Dinner.

The History of Medicine Division has added both her talk and her interview to its Medical Movies on the Web portal. The site features a full-length version of *Combat Fatigue Irritability*. Along with the film is a valuable research tool, a searchable transcript, plus written commentary by NLM historian Michael Sappol, Ph.D.

Speaking as a daughter and a mental health professional, Novick talked about her father and messages in the film that are still relevant for service men and women and their families.

Novick's interview with Sappol and HMD Chief Jeffrey S. Reznick, Ph.D., is also a recent feature of the HMD blog, *Circulating Now*:

<http://circulatingnow.nlm.nih.gov/tag/gene-kelly/>

"The interview will be appreciated alongside the film by generations of researchers, health professionals, educators, and students," says Reznick.

Sincerely,
Glen P. Campbell, Chairman
Friends of the National Library of Medicine

To view Medical Movies on the Web, go to:

www.nlm.nih.gov/hmd/collections/films/medicalmoviesontheweb/



▲ Actor Gene Kelly's daughter, Kerry Kelly Novick, talked about her father and his "combat fatigue" film at February's NLM Board of Regents/FNLM Dinner.



▲ FNLM Chairman Glen Campbell addresses the attendees at February's NLM Board of Regents/FNLM Board of Directors Dinner.

Photos: Michael Spencer, NIH

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Palliative care improves patients' quality of life at any stage of a disease.

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NIAAA's "Rethinking Drinking" offers a wealth of good information to better understand alcohol and your health.

Photos: (Cover) Deborah Anderson, (Top) National Institute of Nursing Research, (Center) Fedora Braverman, (Bottom) ThinkStock

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The National Institutes of Health (NIH)—the Nation's Medical Research Agency—includes 27 Institutes and Centers and is a component 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.



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NIH Research

NIH Director Dr. Francis S. Collins

Identifying the Right Disease Targets to Develop Better Drugs, Faster

The National Institutes of Health (NIH), 10 biopharmaceutical companies, and several nonprofit organizations have launched an unprecedented partnership to speed validation of disease targets so that new, more-targeted drugs can be developed faster than traditionally has been the case. Initially, the Accelerating Medicines Partnership (AMP) aims to identify the most likely targets, or biomarkers, of Alzheimer's disease, type 2 diabetes, and the autoimmune disorders rheumatoid arthritis and lupus erythematosus (lupus). NIH Director Francis S. Collins, M.D., Ph.D., recently discussed with *NIH MedlinePlus* how more than \$230 million will be invested in this public-private effort over the next five years.

Why such a project now?

There's never been a better time. Recent advances in genomics, proteomics, imaging, and other technologies are helping to uncover many, many promising biological changes as potential targets for new diagnostic and drug development. The challenge has been finding the meaningful biological targets.

What's been the problem?

If a drug is aimed at the wrong target, it won't work. This wastes untold time and precious resources. Patients and their loved ones can't wait.

Aren't there enough drugs already?

No. Drug development is a terribly difficult, costly business. The vast majority of drugs entering the drug development pipeline fall by the wayside—after years of work and millions of dollars.

Why is this happening?

One major reason is that we're not selecting the right biological changes to target from the start.



Photo: NIH

▲ NIH Director Francis S. Collins, M.D., Ph.D., recently announced the Accelerating Medicines Partnership.

How will the new partnership change the situation?

After more than two years in the making, with hundreds of hours of intense discussions among creative minds who left their affiliations at the door, the AMP partners recognize you can't change the world—or in this case, drug development—overnight.

“Patients and their loved ones can't wait!”

— Dr. Francis S. Collins

So that's why we are starting with three- to five-year pilot projects in Alzheimer's disease, type 2 diabetes, and the autoimmune disorders lupus erythematosus and rheumatoid arthritis. These will set the stage for broadening this effort to other diseases and conditions.

Accelerating Medicines Partnership (AMP)

Alzheimer's Disease

The Partners

Government

- NIH

Industry

- AbbVie
- Biogen Idec
- GlaxoSmithKline
- Lilly

Non-Profit Organizations

- Alzheimer's Association
- Foundation for the NIH
- Geoffrey Beene Foundation
- USAgainst Alzheimers

Type 2 Diabetes

The Partners

Government

- NIH

Industry

- Johnson & Johnson
- Lilly
- Merck
- Pfizer
- Sanofi

Non-Profit Organizations

- American Diabetes Association
- Foundation for the NIH

Rheumatoid Arthritis and Lupus

The Partners

Government

- NIH

Industry

- AbbVie
- Bristol-Myers Squibb
- Merck
- Pfizer
- Sanofi
- Takeda

Non-Profit Organizations

- Alliance for Lupus Research
- Foundation for HIH
- Lupus Research Institute
- Rheumatology Research Foundation

Has such an approach ever worked?

Yes. Recently, researchers identified a protein, called PCSK9, as a drug target. People with a rare gene variant that greatly reduces PCSK9 have very low levels of cholesterol, along with dramatically decreased risk of heart disease. Half-a-dozen pharmaceutical companies are now racing to develop drugs that lower cholesterol by blocking PCSK9.

Are there more opportunities like this?

I think there are a whole lot more PCSK9s out there. More than 1,000 new biological targets for drug development have emerged in the last five years from the study of human DNA. But no single entity can sift through and pick out the real home runs. We just need the right teams to help us find the right targets—and AMP has the right stuff to do that. Once the right targets are identified and validated, the companies can go after them with all their competitive juices to make something happen.

How is this different from other public-private partnerships?

The data generated from this partnership will be open access. The scientists from both sectors will sit at the same table, working together to make this happen in a fully open, accessible manner. This is not where everybody goes off and plays alone in the lab. We are very serious about making real progress.

Who is going to pay for the partnership?

It is a full 50/50, public/private collaboration, with about half of the initial \$230 million invested by NIH through the Foundation for the NIH, and half coming from the 10 participating companies.

How might work from the pilot broaden to other diseases?

Rather than tackling every disease, the partners agreed to focus on an initial set of diseases that seemed ripe for this effort to test the model. Each of the pilots has clear milestones to measure success. If the model proves effective for these diseases, then other diseases will be added.



Photo: National Institute of Nursing Research (NINR)

Palliative Care: Increasing the quality of life for patients and families...



▲ The "Conversations Matter" logo is part of a palliative care educational campaign.

Dr. Patricia A. Grady is Director of the National Institute of Nursing Research (NINR). An internationally recognized researcher, Dr. Grady's scientific focus has primarily been in stroke, with emphasis on arterial stenosis and cerebral ischemia. She was elected to the Institute of Medicine in 1999 and is a member of several scientific organizations, including the Society for Neuroscience, the American Academy of Nursing, and the American Neurological Association. She is also a fellow of the American Stroke Association.

The NINR promotes and improves the health of individuals and families through research in chronic and acute diseases, health promotion and maintenance, symptom management, health disparities, caregiving, self-management, and the end of life. It also supports the training of new researchers.

What is palliative care?

Palliative care refers to the supportive care of patients with serious illnesses, as well as the supportive care that is available for family members. The goal is to increase the quality of life for the patient. It does not necessarily mean end of life or hospice care, although palliative care may be offered as part of these, too.

How does it work?

It is a comprehensive team approach that entails pain and symptom management, emotional support and counseling, and advanced care planning. A broad team of health professionals, from doctors and nurses to counselors, chaplains and social workers, provides the support.

Does palliative care replace normal treatment for a cure?

No. It augments the patient's clinical treatment.

Can I be treated at home?

Palliative care can be available in a variety of settings, even in the home. A number of team members may be involved.

Is palliative care only for old people?

Palliative care is important for all people who are dealing with serious and life-threatening illnesses. Much of the focus has been on the older population, but palliative care is very important for children and their families, too. Part of our goal is to raise awareness about that.

How are you spreading the word about palliative care for the young?

We have begun a national public awareness campaign called "Palliative Care: Conversations Matter™" (see accompanying article). The aim is to spark increased and continued awareness about the availability of palliative care throughout the course of serious illness among health professionals, pediatric patients, and their families.

Palliative Care: Conversations Matter™ for Sick Children

"Palliative Care: Conversations Matter™" is a new National Institute of Nursing Research (NINR) campaign that aims to increase the use of palliative care for children living with a serious illness

Research shows that palliative care can reduce a child's pain, help manage other distressing symptoms, and provide emotional support. Yet, many healthcare providers hesitate to recommend palliative care for their youngest patients, and parents and caregivers are often unaware of its benefits.

"Initiating palliative care conversations is often hard for both providers and families," notes Dr. Patricia A. Grady, NINR director. "While it may not be easy, recommending palliative care to patients and families early can improve patient outcomes."

"Palliative Care: Conversations Matter™" offers helpful videos and a tear-off pad, which includes tips for healthcare providers, answers to common questions about palliative care, and customizable patient education sheets designed to guide the healthcare provider's discussion with the patient and his/her parent or caregiver. These sheets can be tailored to individual patient needs. For more information and to download materials, please go to: www.ninr.nih.gov/conversationsmatter.

Palliative Care Is Different from Hospice Care

Palliative care is available to you at any time during illness. You can receive palliative care while you receive treatment for your illness, whether or not you can be cured. The goal is to make you as comfortable as possible and improve your quality of life.

You don't have to be in hospice or at the end of life to receive palliative care. People in hospice always receive palliative care, but hospice focuses on a person's final months of life. To qualify for some hospice programs, patients must no longer be receiving treatments to cure their illness.



Photo: ThinkStock

Video Tells a Mother's Story of Caring Support

The video *Rachel's Mom* discusses the wonderful support the family received from her daughter's palliative care team at www.ninr.nih.gov. "The day my daughter Rachel was diagnosed with neuroblastoma was very difficult, probably the worst of my life. We didn't have palliative care, and I had to fight with her every day to take her medication ... she didn't like to see the nurses and doctors because she was afraid.

"When we were introduced to palliative care, she actually fell in love with her doctor and ran to see him because she was a happy child. And that's what we want our children to be—happy.

"Palliative care really created a huge difference in Rachel's life. You had your oncologists, your palliative care doctors, your nurses, the social workers. You also had the alternative therapy doctors very involved. The best part was that I became part of the team.

"I was amazed at the difference in the quality of care the family received, especially the other siblings: the emotional care through the social workers, the child life specialists. Even the doctors visited with the children to answer their questions. No matter what the diagnosis it is so important to be introduced from the beginning. Palliative was central to the treatment ..."

Frequently Asked Questions

What is palliative care, and when is it provided?

Palliative care combines pain and symptom management with spiritual support, counseling, and social services. It can help prevent or manage the symptoms of your child's illness, and the side effects of treatment. By relieving physical discomfort and emotional distress, it can enhance the quality of life. It can be helpful across a range of serious illnesses or conditions, is available at any time during an illness, and does not depend on whether your child's condition is curable.



National Institute of Nursing Research

▲ The video *Rachel's Mom* discusses the wonderful support the family received from her daughter's caring palliative care. See it at www.youtube.com/watch?v=-hOBYFS_Z68.

Does my child have to be in hospice care to receive palliative care?

No, your child can receive palliative care in any setting (at the hospital, in an outpatient center, or in your home) and at any time during their illness.

How can palliative care help my child and our family?

Palliative care is meant to help ease pain, breathing difficulties, nausea, and any other distressing symptoms your child may have. It also includes planning for your child's future needs, support for family members, including other siblings, and coordination of your child's care with all of their healthcare providers. Your child's primary healthcare provider can help you include palliative care services.

Who provides palliative care?

Members of a palliative care team designed to meet your child's specific needs. The team may include doctors, nurses, social workers, pharmacists, chaplains, counselors, and nutritionists. They manage physical symptoms, such as pain, as well as provide emotional, psychosocial, and spiritual support. Team members spend time with you and your child to fully understand your needs.

Palliative Care Eases Symptoms, Enhances Lives

Dealing with the symptoms of a serious or life-threatening illness is difficult for pediatric patients and their families. However, there is special care available that can reduce a child's pain, help manage other distressing symptoms, and provide important emotional support to the child and family throughout the course of an illness. It is called palliative care, and it is a central part of treatment.

Patient-centered, comprehensive, and caring

Palliative care works along with other treatments to enhance quality of life for children of any age living with a broad range of serious illnesses. It is patient-centered and works together with primary treatments to ease suffering and improve quality of life for the patient and family. Palliative care is provided by a team of specialists that may include doctors, nurses, social workers, chaplains, pharmacists, nutritionists, and others.

When do I need palliative care?

Many adults and children living with serious diseases or conditions, such as cancer, heart disease, lung disease, kidney failure, AIDS, cystic fibrosis and other diseases, experience physical symptoms and emotional distress. Sometimes these are related to the patient's medical treatment. You may want to consider palliative care if you or your loved one:

- Suffers from pain or other symptoms due to ANY serious illness
- Experiences uncontrolled physical or emotional distress, or
- Needs help understanding and coordinating care

Start palliative care as soon as you need it. You can receive palliative care at the same time you receive treatments that are meant to cure your illness. Its availability does not depend upon whether or not your condition can be cured. The goal is to make the patient as comfortable as possible and improve his or her quality of life.

Research shows that patients who receive palliative care report improvement in their pain and symptoms, better communication with their healthcare providers and families, and more emotional support.



Photo: ThinkStock

To Find Out More

- ✓ American Academy of Pediatrics: Palliative Care for Children
pediatrics.aappublications.org/content/106/2/351.full
- ✓ Children's Hospice and Palliative Care Coalition
www.chpcc.org
- ✓ Initiative for Pediatric Palliative Care (IPPC)
ippcweb.org
- ✓ The National Hospice and Palliative Care Organization's (NHPCO) Children's Project on Palliative/Hospice Services (ChiPPS)
<http://www.nhpco.org/resources/pediatric-hospice-and-palliative-care>
- ✓ The Center to Advance Palliative Care's (CAPC) Pediatric Palliative Care
<http://www.capc.org/palliative-care-across-the-continuum/pediatric-palliative-care>
- ✓ Find palliative care providers by state
<http://www.getpalliativecare.org>
- ✓ National Cancer Institute Pediatric Supportive Care for Children with Cancer www.nci.nih.gov

Lupus

When the Body Attacks Itself

Lupus is one of many disorders of the immune system known as autoimmune diseases. In autoimmune diseases, the immune system turns against parts of the body it is designed to protect. This leads to inflammation and damage to various body tissues. Lupus can affect many parts of the body, including the joints, skin, kidneys, heart, lungs, blood vessels, and brain. Although people with the disease may have many different symptoms, some of the most common ones include extreme fatigue, painful or swollen joints (arthritis), unexplained fever, skin rashes, and kidney problems.

At present, there is no cure for lupus. However, lupus can be effectively treated, and most people with the disease can lead active, healthy lives. Typically, people with lupus have periods of illness, called flares, and periods of wellness, or remission. Scientists funded by the NIH are continuing to make great strides in understanding the disease, which may ultimately lead to a cure.

Lucy Vodden was the subject of a drawing Julian Lennon created that inspired his father, John, to write the classic Beatles song, "Lucy in the Sky with Diamonds."

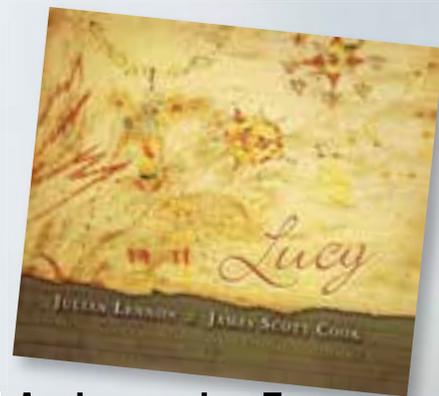


Photo: Courtesy theRevolution/Julian Lennon



▲ Lucy Vodden, who died from lupus at the age of 46 in 2009. Lucy was the inspiration for the John Lennon song, "Lucy in the Sky with Diamonds," sparked by Julian Lennon's childhood drawing (above right) that also became an album cover. 8 Spring 2014 *NIH MedlinePlus*

Julian Lennon Is Global Ambassador For the Lupus Foundation of America

Q. Tell us about how you came to be an advocate for those with lupus.

My work with lupus organizations came about because of my dear friend Lucy Vodden from "Lucy In The Sky With Diamonds," who passed away a few years ago from lupus. I decided to write a little song. I had a friend named James Scott Cook whose grandmother is named Lucy, who is still alive I believe, and she had lupus, too. We wrote a song together called "Lucy" and donated a good portion of the earnings to the Lupus Foundation of America (LFA) and Saint Thomas' Lupus Trust in the UK.

LFA asked me to become an ambassador to promote lupus awareness, and I said absolutely. I've been gung ho now supporting them and promoting their cause as much as possible, and I'm generally at most of their events and galas. I took Whoopi Goldberg with me last year. She was honored, as she's been an advocate for lupus, too. The older I get, the more involved I tend to become. We're talking to MusicCares and a whole host of other foundations with which we could work together and mutually benefit each foundation.



Q. What messages do you want the public to hear about lupus and lupus research?

There is still much work to be done, but with education and research, and just a bit of everyone's help, we can make a difference and change the course of most with this painful disease.

Q. You mentioned you are now serving as Global Ambassador for the Lupus Foundation of America. What do you hope to achieve with this effort?

I hope to raise awareness on a global level ... Lucy was such an inspiration on so many levels, including to me as a young child. I hope her memory will help others in their fight and inspire compassion—no matter how little (because every little bit helps)—anything anybody can do is usually important. It's something that should be at the forefront of everybody's day and mind.

Q. What does the future hold for Julian Lennon as a musician and philanthropist?

I just continue to move forward and be as happy as I can doing so, and to help people along the way. That's my goal. That's all that matters to me, really. I'm fortunate enough to have a healthy life, so far. I'm fortunate enough that I'm being able to do the things that I love to do, whether it's music, photography, or the foundation. For me, it's just a constant growth in all those areas and just trying to be a better person all around—that's the most important thing for me.

Since 2011, musician and philanthropist Julian Lennon has been the Global Ambassador for the Lupus Foundation of America. The role of Global Ambassador is to elevate lupus on the world's health agenda, and increase awareness of the needs of the more than 5 million people living with lupus and their families around the world.

As Global Ambassador, Lennon supports public awareness initiatives to observe World Lupus Day on May 10 and Lupus Awareness Month throughout May. Lennon helps to raise funds for lupus research, including the Lucy Vodden Research Grant Award, which was established in 2010 by the LFA and Julian Lennon.

The grant is named in memory of Lucy Vodden, Lennon's child-

hood friend, who lost her battle with lupus in 2009 at the age of 46. Lucy was the subject of a drawing Lennon created, that inspired his father, John, to write the classic Beatles song, "Lucy in the Sky with Diamonds."

Lennon has been a long-time supporter of raising awareness and funds for lupus research. In 2009, he and musician James Scott Cook released the song "Lucy" in honor of Vodden. Proceeds from the song benefited the LFA and the Saint Thomas' Lupus Trust in London.

Julian Lennon agreed to answer questions for this issue of *NIH MedlinePlus* magazine.

Symptoms

The most common symptoms of lupus include the following:

- Painful or swollen joints and muscle pain
- Unexplained fever
- Red rashes, most commonly on the face
- Chest pain upon deep breathing
- Unusual loss of hair
- Pale or purple fingers or toes from cold or stress (Raynaud's phenomenon)
- Sensitivity to the sun
- Swelling (edema) in legs or around eyes
- Mouth ulcers
- Swollen glands
- Extreme fatigue.



Photo: BSIP/Science Source

▲ A woman with a characteristic lupus skin rash — the so-called butterfly rash — across her nose and cheeks.

- 1 Lupus occurs when the body's immune system attacks the body itself. It can affect almost every organ in the body.
- 2 There is currently no cure for lupus, but there are effective treatments.
- 3 More women than men have lupus. Lupus is two to three times more common in African American women than in Caucasian women. It is also more common in women of Hispanic, Asian, and Native American descent.
- 4 Lupus can run in families, but the risk that a child or a brother or sister of a patient will also have lupus is still quite low.
- 5 It is difficult to estimate how many people in the United States have the disease, because its symptoms vary widely and its onset is often hard to pinpoint.

Each person with lupus has slightly different symptoms that can range from mild to severe and may come and go over time. A red skin rash—the so-called butterfly or malar rash—may appear across the nose and cheeks. Rashes may also occur on the face and ears, upper arms, shoulders, chest, and hands and other areas exposed to the sun. Because many people with lupus are sensitive to sunlight, skin rashes often first develop or worsen after sun exposure.

New symptoms may continue to appear years after the initial diagnosis, and different symptoms can occur at different times. In some people with lupus, only one system of the body, such as the skin or joints, is affected. Other people experience symptoms in many parts of their body. Just how seriously a body system is affected varies from person to person.

Progress Made in Lupus Diagnosis and Treatment

Mariana Kaplan, M.D., is Chief of the Systemic Autoimmunity Branch of the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS). Dr. Kaplan answers questions related to ongoing research into lupus.

For our readers who have lupus or are the loved ones of someone with lupus, what can you say about the progress of research to cure or slow down the ravages of this illness?

Significant progress in the diagnosis and treatment of lupus has been made over the last several decades. Discoveries have been recently accelerated due to exciting advances in molecular biology, new technologies, etc. There has been a significant improvement in understanding potential mechanisms that lead to lupus and its associated complications and, for the first time in decades, a drug was specifically approved by the FDA for the treatment of lupus. We also understand better how chronic complications of lupus develop and we are becoming more aware of the variables that need to be monitored in patients to diagnose and prevent these complications more effectively. There are still many challenges and many questions that remain to be answered and that is why it is so important to continue to support research efforts that are focusing on answering these problems.

Is lupus being diagnosed among women and men in greater numbers today than in the past? If so, why?

Although this is not entirely clear, there is recent evidence indicating that the incidence of lupus (diagnosis of new cases) has remained stable over the last decade. On the other hand, data obtained through epidemiologic studies funded by the CDC suggest that the ratio of prevalent (existing cases) to incident cases (new cases) seems to be higher than before, which may suggest that survival has increased in lupus, thereby increasing overall number of cases in the population. There may be significant variation by region of the world, ethnicity, etc.

In what ways can lupus accelerate the challenges of cardiovascular disease in many patients?

Lupus patients have significant increases in the risk of developing vascular complications such as myocardial infarction, angina, stroke, etc. It appears that having lupus poses by itself a significant risk for these complications. Many patients with lupus also have other risk factors for vascular disease such as smoking, hypertension, diabetes, etc. As such, management of

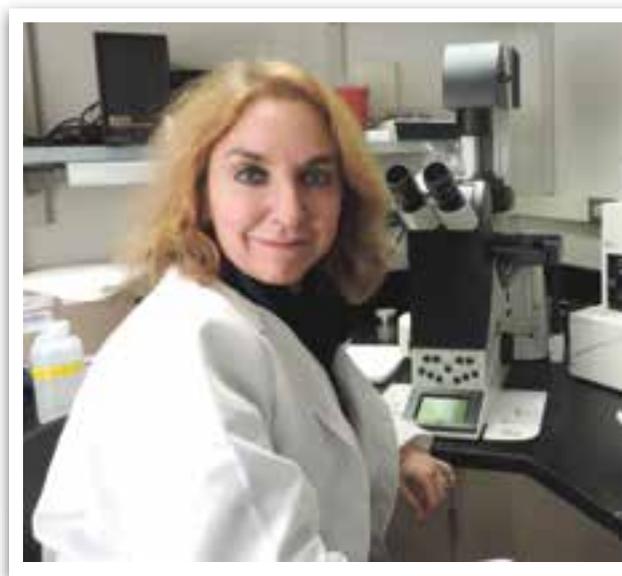


Photo: Richard W. Clark/NIAMS

▲ As chief of the Systemic Autoimmunity Branch at NIAMS, Dr. Mariana Kaplan heads a research program focusing on adult rheumatic diseases.

these patients needs to include measures for improving vascular health and proper control of disease activity. We need to identify what the best cardiovascular preventive strategies are for these patients and we need to establish clear preventive guidelines. As many patients develop lupus when they are young, these strategies should ideally be implemented early on during the course of the disease to have the chance of higher impact to prevent devastating consequences due to vascular disease.

Can you describe your current research focus?

My research focuses on studying how the immune system contributes to the development of chronic complications of lupus, with emphasis on cardiovascular complications. In addition, we are trying to understand how the innate immune system (the part of the immune system that functions as first line of defense) may contribute to the development of lupus, flares, and associated organ damage. We are hoping to identify novel treatments that target these complications.

Causes

Lupus is a complex disease, and its cause is not fully understood. Although there are several kinds of lupus, systemic lupus erythematosus (SLE) is the form of the disease that most people are referring to when they say “lupus.” The word “systemic” means the disease can affect many parts of the body. Although SLE usually first affects people between the ages of 15 and 45 years, it can occur in childhood or later in life, as well.

Research suggests that genetics plays an important role in developing lupus. Other factors also play a role. Some of the factors scientists are studying include sunlight, stress, hormones, cigarette smoke, certain drugs, and infectious agents, such as viruses. Studies have confirmed that one virus, Epstein-Barr virus (EBV), which causes mononucleosis, is a cause of lupus in genetically susceptible people.

In lupus, the body’s immune system does not work as it should. A healthy immune system produces proteins called antibodies and specific cells called lymphocytes that help fight and destroy viruses, bacteria, and other foreign substances that invade the body. In lupus, the immune system produces antibodies against the body’s healthy cells and tissues. These antibodies, called autoantibodies, contribute to the inflammation of various parts of the body and can cause damage to organs and tissues.

Diagnosis

Diagnosing lupus can be difficult. It may take months or even years for doctors to piece together the symptoms to diagnose this complex disease accurately. Making a correct diagnosis of lupus requires knowledge and awareness on the part of the doctor and good communication on the part of the patient.

Treatment

Most people will see a rheumatologist for their lupus treatment. A rheumatologist is a doctor who specializes in rheumatic diseases (arthritis and other inflammatory disorders, often involving the immune system). Clinical immunologists (doctors specializing in immune system disorders) may also treat people with lupus. As treatment progresses, other professionals often help. These may

include nurses, psychologists, social workers, nephrologists (doctors who treat kidney disease), cardiologists (doctors specializing in the heart and blood vessels), hematologists (doctors specializing in blood disorders), endocrinologists (doctors specializing in problems related to the glands and hormones), dermatologists (doctors who treat skin disease), and neurologists (doctors specializing in disorders of the nervous system). It is also important for people with lupus to have a primary care doctor—usually a family physician or internist (internal medicine specialist)—who can coordinate care between their different health providers and treat other problems as they arise.

The range and effectiveness of treatments for lupus have increased dramatically in recent decades.

The range and effectiveness of treatments for lupus have increased dramatically in recent decades, giving doctors more choices in how to manage the disease. Medications used in the treatment of lupus include the following:

- **NSAIDs:** For people with joint or chest pain or fever, drugs that decrease inflammation, called nonsteroidal anti-inflammatory drugs (NSAIDs), are often used.
- **Antimalarials:** These drugs were originally used to treat malaria, but doctors have found that they also are useful for lupus.
- **Corticosteroids:** Corticosteroids, such as prednisone, hydrocortisone, methylprednisolone, and dexamethasone, are related to cortisol, which is a natural anti-inflammatory hormone.
- **Immunosuppressives:** Immunosuppressives, such as cyclophosphamide and mycophenolate mofetil, restrain the overactive immune system by blocking the production of immune cells.
- **Biologics:** Belimumab, a type of agent referred to as a B-lymphocyte stimulator (BLyS) protein inhibitor, was approved by the U.S. Food and Drug Administration (FDA) in March 2011 for patients with lupus who are receiving other standard therapies, including those listed above.

There are other, less common, therapies that are used, depending on the symptoms and parts of the body affected.



Lupus is among the first diseases included in the groundbreaking Accelerating Medicines Partnership. (See page 2.)

Research

Lupus is the focus of intense research as scientists try to determine what causes the disease and how it can best be treated. The National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) has a major focus on lupus research in its program on the NIH campus in Bethesda, Maryland.

For example, researchers determined that treatment with immunosuppressive drugs (cyclophosphamide and prednisone) can prevent or delay kidney failure due to nephritis, one of the most serious and life-threatening complications of lupus.

Hydroxychloroquine, an antimalarial medication, is also used in the treatment of lupus and other autoimmune diseases, and is associated with a reduced risk of overall tissue damage. NIAMS-supported research has shown that lupus patients treated with hydroxychloroquine were less likely to develop severe kidney disease, had lower disease activity, and used less steroid medication.

A number of genes associated with lupus risk and severity have also been discovered. Some are linked to patient pop-

ulations at high risk for lupus, including African American and Hispanic individuals.

Most recently, NIAMS has been included in the Accelerating Medicines Partnership (AMP), a bold new venture between the NIH, 10 biopharmaceutical companies, and several non-profit organizations to transform the current model for developing new diagnostics and treatments by jointly identifying and validating promising biological targets of disease. The ultimate goal is to increase the number of new diagnostics and therapies for patients and reduce the time and cost of developing them.

AMP will begin with three - to - five-year pilot projects in three disease areas, including autoimmune disorders of rheumatoid arthritis and systemic lupus erythematosus (lupus). For each pilot, scientists from NIH and industry have developed research plans aimed at characterizing effective molecular indicators of disease called biomarkers and distinguishing biological targets most likely to respond to new therapies.

To Find Out More

- ✓ National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) Information Clearinghouse
<http://www.niams.nih.gov>
- ✓ MedlinePlus
www.medlineplus.gov
Enter "lupus" in the Search box
- ✓ NIH Accelerating Medicines Partnership
www.nih.gov/science/amp/index.htm
- ✓ Lupus Foundation of America (LFA) and Julian Lennon
www.lupus.org
www.lupus.org/lennon
- ✓ American College of Rheumatology
www.rheumatology.org
- ✓ Alliance for Lupus Research, Inc
www.lupusresearch.org
- ✓ Lupus Clinical Trials Consortium, Inc. (LCTC)
www.lupusclinicaltrials.org

Causes of ADHD

Scientists are not sure what causes ADHD, although many studies suggest that genes play a large role. Like many other illnesses, ADHD probably results from a combination of factors. In addition to genetics, researchers are looking at possible environmental factors. They are also studying how brain injuries, nutrition, and the social environment might contribute to ADHD.

Genes. Inherited from our parents, genes are the “blueprints” for who we are. Results from several international studies of twins show that ADHD often runs in families. Researchers are looking at several genes that may make people more likely to develop the disorder.

Environmental factors. Studies suggest a potential link between a pregnant woman’s cigarette smoking and alcohol use during pregnancy and ADHD in children. In addition, preschoolers who are exposed to high levels of lead, which can sometimes be found in plumbing fixtures or paint in old buildings, have a higher risk of developing ADHD.

Brain injuries. Children who have suffered a brain injury may show some behaviors similar to those of ADHD. However, only a small percentage of children with ADHD have suffered a traumatic brain injury.

Sugar. The idea that refined sugar causes ADHD or makes symptoms worse is popular, but more research discounts this theory than supports it.

Diagnosing ADHD

Children mature at different rates and have different personalities, temperaments, and energy levels. Most children get distracted, act impulsively, and struggle to concentrate at one time or another. Sometimes, these normal factors may be mistaken for ADHD.

ADHD symptoms usually appear early in life, often between the ages of 3 and 6. Since symptoms vary from

person to person, the disorder can be hard to diagnose. Parents may first notice that their child loses interest in things sooner than other children, or seems constantly “unfocused” or “out of control.” Often, teachers notice the symptoms first, when a child has trouble following rules, or frequently “spaces out” in the classroom or on the playground.

No single test can diagnose a child as having ADHD. Instead, a licensed health professional needs to gather information about the child and his or her behavior and environment.

fast facts

- 1 Treatments include medication, various types of psychotherapy, education and training, or a combination of treatments.
- 2 ADHD currently has no cure, but there are effective treatments for both children and adults with ADHD.
- 3 Costs associated with childhood ADHD have been conservatively estimated at \$38 billion or more, annually, states the CDC.
- 4 About 1 in 10 children in the United States, 4-17 years of age, have been diagnosed with ADHD, according to the Centers for Disease Control and Prevention (CDC).

Symptoms in Children

Inattention, hyperactivity, and impulsivity are the key behaviors of ADHD. It is normal for all children to be inattentive, hyperactive, or impulsive sometimes, but for children with ADHD, these behaviors are more severe and occur more often. To be diagnosed with the disorder, a child must have symptoms for six or more months and to a degree that is greater than other children of the same age.



Photo: ThinkStock

Children who have symptoms of inattention may:

- Be easily distracted, miss details, forget things, and frequently switch from one activity to another
- Have difficulty focusing on one thing
- Become bored with a task after only a few minutes, unless they are doing something enjoyable
- Have difficulty focusing attention on organizing and completing a task or learning something new
- Have trouble completing or turning in homework assignments, often losing things (e.g., pencils, toys, assignments) needed to complete tasks or activities
- Not seem to listen when spoken to
- Daydream, become easily confused, and move slowly
- Have difficulty processing information as quickly and accurately as others
- Struggle to follow instructions

Children who have symptoms of hyperactivity may:

- Fidget and squirm in their seats
- Talk nonstop
- Dash around, touching or playing with anything and everything in sight
- Have trouble sitting still during dinner, school, and story time
- Be constantly in motion
- Have difficulty doing quiet tasks or activities

Children who have symptoms of impulsivity may:

- Be very impatient
- Blur out inappropriate comments, show their emotions without restraint, and act without regard for consequences
- Have difficulty waiting for things they want or waiting their turns in games
- Often interrupt conversations or others' activities

Treating ADHD

Currently available treatments aim at reducing the symptoms of ADHD and improving functioning. Treatments include medication, various types of psychotherapy, education and training, or a combination of treatments.

Medications

Stimulants, such as methylphenidate and amphetamines, are the most common type of medication used for treating ADHD. Although it may seem counterintuitive to treat hyperactivity with a stimulant, these medications actually activate brain circuits that support attention and focused behavior, thus reducing hyperactivity. In addition, a few non-stimulant medications, such as atomoxetine, guanfacine, and clonidine, are also available. For many children, ADHD medications reduce hyperactivity and impulsivity and improve their ability to focus, work, and learn. Medications also may improve physical coordination.

Do medications cure ADHD?

Current medications do not cure ADHD. They control the symptoms for as long as they are taken. Medications can help a child pay attention and complete schoolwork. NIMH-funded research has shown that medication works best when the prescribing doctor regularly monitors treatment and the dose is adjusted based on the child's needs.

Psychotherapy

Different types of psychotherapy are used for ADHD. Behavioral therapy aims to help a child change his or her behavior. It might involve practical assistance, such as help organizing tasks or completing schoolwork, or working through emotionally difficult events. Behavioral therapy also teaches a child how to monitor his or her own behavior. Therapists may



Photo: ThinkStock

teach children social skills, such as how to wait their turn, share toys, ask for help, or respond to teasing. Learning to read facial expressions and the tone of voice in others, and how to respond appropriately can also be part of social skills training.

How can parents help?

Children with ADHD need guidance and understanding from their parents and teachers to reach their full potential and to succeed in school. Before a child is diagnosed, frustration, blame, and anger may have built up within a family. Parents and children may need special help to overcome bad feelings. Mental health professionals can educate parents about ADHD and how it impacts a family. They also will help the child and his or her parents develop new skills, attitudes, and ways of relating to each other.

Brain Imaging Studies Reveal Clues to ADHD

Attention deficit hyperactivity disorder (ADHD) is one of the most common childhood brain disorders and can continue through adolescence and adulthood. Symptoms include difficulty staying focused and paying attention, difficulty controlling behavior, and hyperactivity (over-activity). These symptoms can make it difficult for a child with ADHD to succeed in school, get along with other children or adults, or finish tasks at home.

Brain imaging studies have revealed that, in youths with ADHD, the brain matures in a normal pattern but is delayed, on average, by about three years. The delay is most pronounced in brain regions involved in thinking, paying attention, and planning. More recent studies have found that the outermost layer of the brain, the cortex, shows delayed maturity overall. Studies also reveal that brain structure important for

proper communications between the two halves of the brain shows an abnormal growth pattern. These delays and abnormalities may underlie the hallmark symptoms of ADHD and help to explain how the disorder may develop.

Treatments can relieve many symptoms of ADHD, but there is currently no cure for the disorder. With treatment, most people with ADHD can be successful in school and lead productive lives. Researchers are developing more effective treatments and interventions, and using new tools such as brain imaging, to better understand ADHD and to find more effective ways to treat and prevent it.

The National Institute of Mental Health (NIMH) is the National Institutes of Health's (NIH) lead agency in the research on ADHD.

Adults with ADHD

Some children with ADHD continue to have it as adults. And many adults who have the disorder don't know it. They may feel that it is impossible to get organized, stick to a job, or remember and keep appointments. Daily tasks, such as getting up in the morning, preparing to leave the house for work, arriving at work on time, and being productive on the job, can be especially challenging for adults with ADHD.

Diagnosing Adults—Like children, adults who suspect they have ADHD should be evaluated by a licensed mental health professional. But the professional may need to consider a wider range of symptoms when assessing adults for ADHD because their symptoms tend to be more varied and possibly not as clear cut as symptoms seen in children.

ADHD Research

The expansion of knowledge in genetics, brain imaging, and behavioral research is leading to a better understanding of the causes of ADHD, how to prevent it, and how to develop more effective treatments for all age groups.

- NIMH-funded researchers studied ADHD treatments for school-aged children in a large-scale, long-term study called the Multimodal Treatment Study of Children with ADHD (MTA study). Though the study has been completed, a recent follow-up found that, over a 10-year period, children with ADHD who were treated with methylphenidate had, on average, higher heart rates compared to children who received other treatments. That this effect on heart rate could be detected even after years of use, suggests that the body does not get completely used to stimulants. Children taking stimulants over the long-term should be monitored regularly for potential cardiovascular complications.
- NIMH also funded the Preschoolers with ADHD Treatment Study (PATS), which involved more than 300 preschoolers who had been diagnosed with ADHD. The study found that low doses of the stimulant methylphenidate are safe and effective for preschoolers. Preschoolers diagnosed with ADHD are less likely to respond to methylphenidate treatment if they also have three or more coexisting disorders, highlighting the need for new and better treatments.
- NIMH-sponsored scientists continue to look for the biological basis of ADHD, and how differences in genes and brain structure and function may combine with life experiences to produce the disorder.

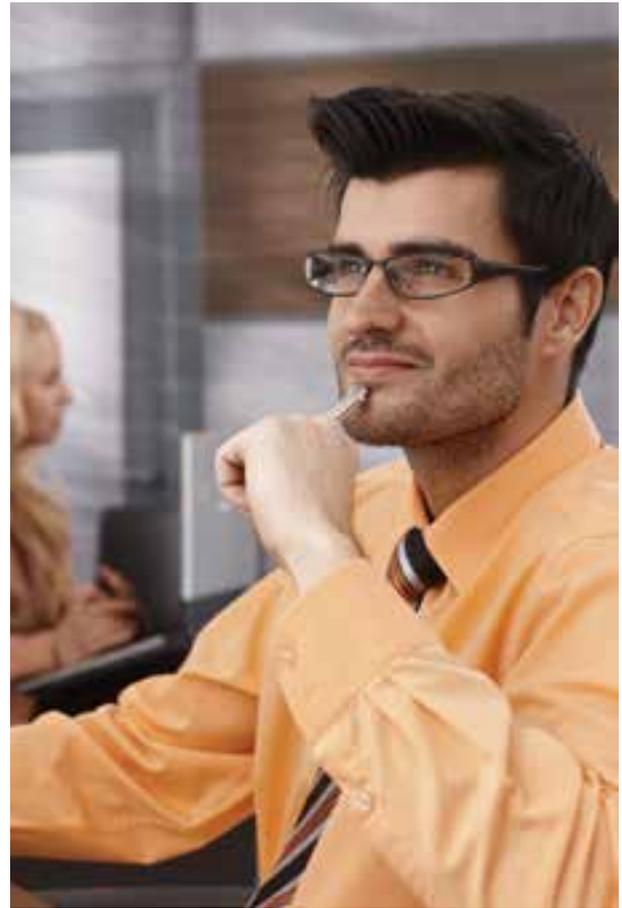


Photo: ThinkStock

To Find Out More

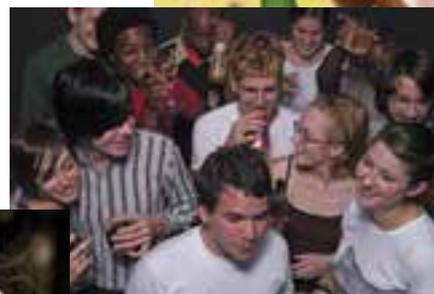
- ✓ National Library of Medicine's MedlinePlus
www.medlineplus.gov
Type "ADHD" in the Search box.
- ✓ National Institute of Mental Health
www.nimh.nih.gov/health/publications/attention-deficit-hyperactivity-disorder
- ✓ NIMH Clinical Trials
Research studies for patients, loved ones, and the general public
www.nimh.nih.gov/health/trials

Rethinking Drinking

Do you enjoy a drink now and then? Many of us do, often when socializing with friends and family. Drinking can be beneficial or harmful, depending on your age and health status, and, of course, how much you drink. For anyone who drinks, Rethinking Drinking is for you. And your loved ones.

Rethinking Drinking is an easy-to-use Web site (www.RethinkingDrinking.niaa.nih.gov) and publication from the National Institute on Alcohol Abuse and Alcoholism (NIAAA). It is designed to help people reduce their risk for alcohol problems. Rethinking Drinking helps you analyze your own drinking and offers the latest, research-based information on the most effective ways to cut down, if necessary.

Why not take a look now at your drinking habits and how they may affect your health? Rethinking Drinking can help you get started.



Photos: ThinkStock



Alcohol and your health

Most adults who drink alcohol drink moderately and responsibly without complications. At the same time, alcohol-related problems—which result from drinking too much, too fast, or too often—are among the most significant public issues in the United States and worldwide. An estimated 17 million Americans have an alcohol use disorder, a term that includes both alcoholism and harmful drinking that has not reached the level of dependence.

Short-term, alcohol causes someone to feel high, relaxed, or sleepy. Long-term, excessive use can change brain circuits, so that the urge to drink becomes as compelling as hunger. Genetic makeup and environment contribute to the risk for severe alcohol use disorder, which is characterized by:

- Craving—a strong need, or compulsion, to drink
- Loss of control—inability to stop once drinking has begun
- Dependence—withdrawal symptoms, such as nausea, sweating, shakiness, and negative emotional states, such as anxiety, after periods of heavy drinking
- Tolerance—need for increasing amounts of alcohol to get “high”

However severe the disorder, many people can benefit from treatment. Talk with your doctor to determine the best course of action for you.

The Importance of Drinking Patterns

The effects of alcohol, harmful or otherwise, depend largely on an individual's drinking pattern—how often he or she drinks alcohol, and how much alcohol is consumed per drinking occasion.

Low-risk drinking limits		MEN	WOMEN
	On any single DAY	No more than 4  drinks on any day	No more than 3  drinks on any day
	Per WEEK	No more than 14  drinks per week	No more than 7  drinks per week

To stay low risk, keep with BOTH the single-day AND weekly limits

Infographic: NIAAA

“Low-risk” is not “no risk.” Even within these limits, drinkers can have problems if they drink too quickly, have health problems, or are older. Based on your health and how alcohol affects you, you may need to drink less or not at all.

Heavy or “at-risk” drinking. Generally for healthy adults, heavy drinking means more than the single-day or weekly amounts listed above. About one in four people who drink more already have an alcohol use disorder.

Binge drinking. Binge drinking means consuming so much alcohol within about two hours that blood alcohol concentration (BAC) reaches 0.08g/dL. This usually occurs after about four drinks for women, and five for men. Binge drinking poses health and safety risks, including car crashes, injuries, and, long-term, liver and organ damage.

Symptoms: Alcohol's Impact on the Human Body

Too much drinking (see box left)—on a single occasion or over time—can take a serious toll. Most people recognize that drinking too much can lead to accidents and dependence. But that's only part of the story.

- **Brain**—Mood and behavior change; thinking clearly and coordinated movement are impaired.
- **Heart**—Cardiomyopathy (stretching and drooping of the heart muscle), arrhythmia (irregular heart beat), stroke, and high blood pressure.
- **Liver**—Steatosis (fatty liver), alcoholic hepatitis, fibrosis, and cirrhosis.
- **Pancreas**—Pancreatitis, a dangerous inflammation and swelling that prevents proper digestion.
- **Cancer**—Increased risk of mouth, throat, esophagus, liver and breast cancers.
- **Immune System**—Reduced ability to ward off infections; chronic drinkers more likely than non-drinkers to contract pneumonia, tuberculosis, and other diseases.

Do You Have a Problem with Drinking?

- Ever felt you should cut down on your drinking?
- Have people annoyed you by criticizing your drinking?
- Feel bad or guilty about your drinking?
- First thing, have you drunk to steady your nerves or get rid of a hangover?

If you answer “yes” to any question, you should see your healthcare provider right away. Even if you answered “no,” if you are having drinking-related problems with your job, relationships, health, or the law, you should still seek help.

Dr. George Koob: “Alcohol use disorders are a major problem . . .”

Research suggests that the transition from alcohol use to alcohol use disorder involves an alcohol-induced imbalance in the brain’s reward and stress systems. Moderate alcohol use initially leads to the pleasant feelings associated with mild intoxication. With excessive alcohol use, over time brain changes occur that lead to tolerance, the need for greater amounts of alcohol to experience the same pleasurable effects.

At the same time, still other brain adaptations occur that lead to unpleasant feelings—those associated with withdrawal and depressed mood, for example—when alcohol is no longer present in the brain. These brain changes lead individuals to crave alcohol and drink excessively to ease these stressful feelings.

Research shows that pharmaceutical and behavioral therapies can help people who have alcohol problems.

Ongoing and planned research by NIAAA scientists and grantees will continue to improve our understanding of the unique molecular and cellular actions of alcohol, and how those actions change the brain in ways that lead to excessive drinking and alcohol use disorders. This expanding research knowledge will aid the development of new evidence-based prevention and treatment strategies for alcohol problems across the lifespan, including the diverse alcohol-related diseases that occur throughout the body, and help find better ways to deliver health services for alcohol problems. Another crucial aspect of addressing alcohol problems is increasing our understanding of underage drinking, particularly how high risk drinking by college students and other underage populations can be prevented.



Photo: NIAAA

George Koob, Ph.D., is Director of the NIH’s National Institute on Alcohol Abuse and Alcoholism. A renowned expert on how alcohol affects the human brain, he oversees NIAAA’s diverse program of research on the genetics, neuroscience, epidemiology, prevention, and treatment of alcohol problems.

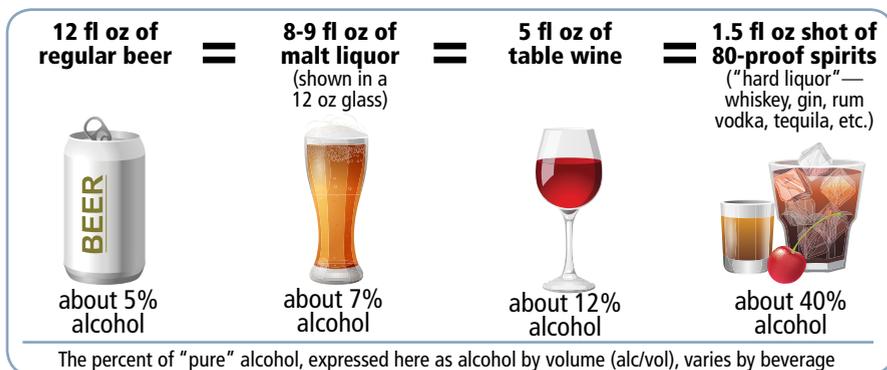
Treatment and Support

In addition to Alcohol Anonymous and other mutual support groups, alcohol use disorders can be treated with medications, behavioral therapies, and combinations of treatments. Email and the Internet have opened new avenues for diagnosis and treatment. Researchers continue to develop alternate treatment strategies, as well as multimedia support materials for the public, such as Rethinking Drinking.

For treatment and support in your area, please contact, toll-free: National Drug and Alcohol Treatment Referral Routing Service: 1-800-662-HELP (4357) or the Substance Abuse Treatment Facility Locator, an online, searchable directory of alcohol and drug abuse programs located around the country.

What’s a “standard” drink?

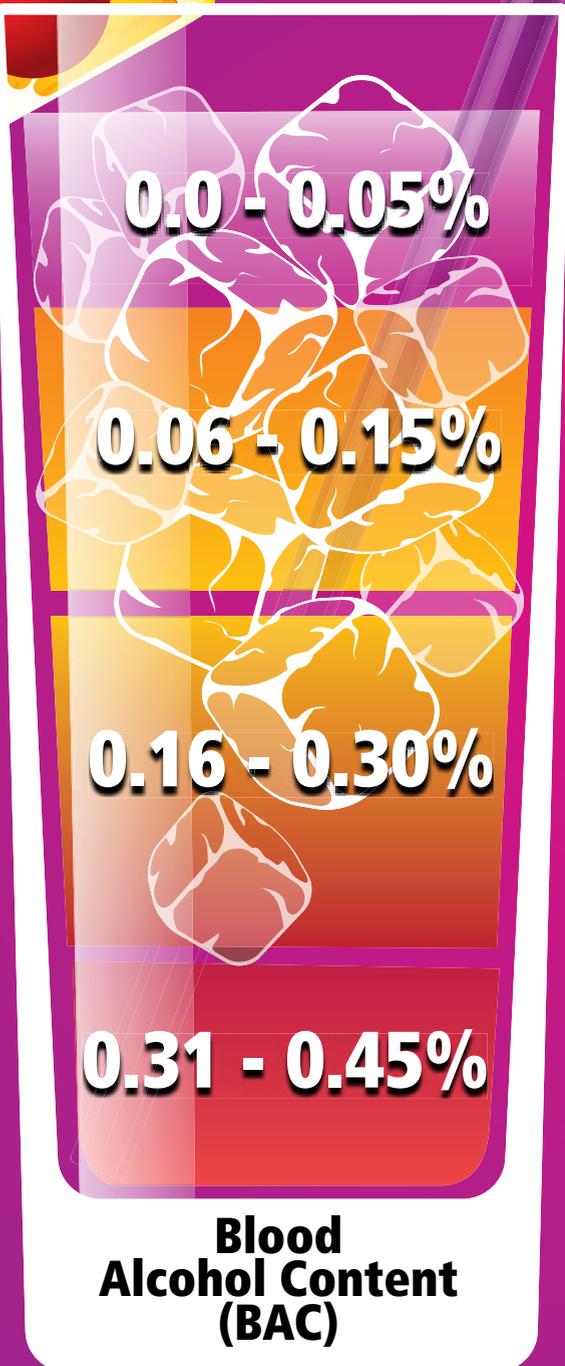
A “standard” drink (below) contains about 0.6 fluid ounces or 14 grams of “pure” alcohol. Although the “standard” amounts are helpful for following health guidelines, they may not reflect customary serving sizes. For example, a single mixed drink can contain 1 to 3 or more standard drinks, depending on the type of spirits and the recipe.



Infographic: NIAAA

As Blood Alcohol Content (BAC) Increases, So Does Impairment

For purposes of law enforcement, blood alcohol content (BAC) is used to define intoxication and provides a rough measure of impairment.



Mild Impairment

- Mild speech, memory, attention, coordination, balance impairments
- Perceived beneficial effects, such as relaxation
- Sleepiness can begin

Increased Impairment

- Perceived beneficial effects of alcohol, such as relaxation, give way to increasing intoxication
- Increased risk of aggression in some people
- Speech, memory, attention, coordination, balance further impaired
- Significant impairments in all driving skills
- Increased risk of injury to self and others
- Moderate memory impairments

Severe Impairment

- Speech, memory, coordination, attention, reaction time, balance significantly impaired
- All driving-related skills dangerously impaired
- Judgement and decision making dangerously impaired
- Blackouts (amnesia)
- Vomiting and other signs of alcohol poisoning common
- Loss of consciousness

Life Threatening

- Loss of consciousness
- Danger of life-threatening alcohol poisoning
- Significant risk of death in most drinkers due to suppression of vital life functions

Women and Alcohol

Women react differently than men to alcohol and face higher risks from it. Pound for pound, they have less water in their bodies.

Since alcohol resides primarily in body water, women develop alcohol-related problems at lower drinking levels. Their drinking patterns—especially how much and how often they drink—differ, too.

Women drinkers are more likely to develop liver inflammation and are more susceptible to alcohol-related heart disease.



Pregnancy and Drinking

Any drinking during pregnancy is risky. Heavy drinking can put a fetus at increased risk for learning, behavioral, and other problems.

fastfacts

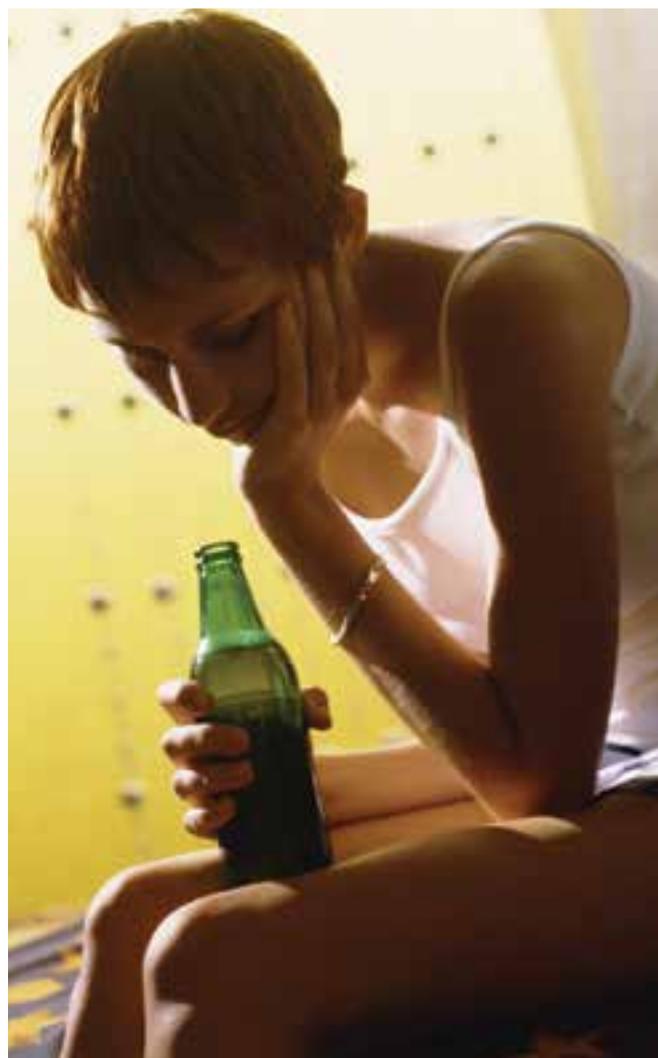


Photo: ThinkStock

Are you at risk?

Research suggests that a woman is more likely to drink excessively if she has:

- Parents and siblings (or other blood relatives) with alcohol problems
- A partner who drinks heavily
- The ability to “hold her liquor”
- A history of depression
- A history of childhood physical or sexual abuse.



Photo: ThinkStock

Underage Drinking

Underage drinking is when anyone under the minimum legal drinking age of 21 drinks alcohol. Aside from being illegal, it is a widespread public health problem that poses many risks.

Underage drinking attracts many adolescents and teens. Research shows that the brain continues to develop well into a person's twenties. Alcohol can seriously impact the developing brain. Young people often don't realize the damage drinking can have on themselves, their families, and communities.

fast facts

- 1 As kids get older, they drink more. By age 15, half of teens have had at least one drink; by 18, more than 70 percent have had at least one drink.
- 2 Binge Drinking—Young people average about 5 drinks on a single occasion.
- 3 Death—5,000 people under 21 die each year from alcohol-related car crashes, homicides, suicides, alcohol poisoning, and falls, burns, drowning, and other accidents.
- 4 Violence—Young drinkers are more likely to commit or be the victim of physical or sexual assault.

Underage Drinking Warning Signs

- Academic and/or behavioral problems
- Changing groups of friends
- Less interest in activities and/or appearance
- Alcohol on a young person's breath
- Slurred speech
- Coordination problems
- Memory and/or concentration problems

The Role Parents Play

Parents can help their children avoid alcohol problems by:

- Discussing the dangers of drinking
- Drinking responsibly, if they choose to drink
- Serving as positive role models, in general
- Not making alcohol available
- Getting to know their children's friends
- Having regular conversations about life, in general
- Connecting with other parents about sending clear messages about the importance of not drinking
- Supervising all parties to make sure there is no alcohol
- Encouraging kids to participate in healthy activities that do not involve alcohol

Research shows that children whose parents are actively involved in their lives are less likely to drink. A child with a parent who binge drinks is much more likely to binge than a child whose parents don't.

College Drinking

Abusive and underage college drinking are significant public health problems.

Although the majority of students come to college with some experience with alcohol, certain aspects of college life, such as unstructured time, the widespread availability of alcohol, inconsistent enforcement of underage drinking laws, and limited interactions with parents and other adults, can intensify the problem. In fact, college students binge drink and drunk drive more than their non-college peers. Whether they drink or not, virtually all college students experience the effects of college drinking.



Photo: ThinkStock

The Transition to College—A Time of Risk

The first six weeks of freshman year are an especially vulnerable time for heavy drinking and alcohol-related consequences because of student expectations and social pressures. Heavy drinking is highest among fraternity and sorority students, lowest among commuters living at home.

fast facts

1 Death—Each year an estimated 1,825 college students between the ages of 18 and 24 die from alcohol-related unintentional injuries, including motor vehicle crashes.

2 Assault—Each year an estimated 696,000 students between 18 and 24 are assaulted by other students who have been drinking.

3 Sex—Each year an estimated 400,000 students between 18 and 24 have unprotected sex; more than 100,000 report being too intoxicated to know if they consented or not.

4 Sexual Abuse—An estimated 97,000 students between 18 and 24 are victims of alcohol related sexual assault or date rape each year.

Alcohol Poisoning Among College Students

Thousands of college students end up in emergency rooms each year due to alcohol poisoning, which suppresses the nervous and respiratory systems. Signs include:

- Mental confusion, stupor, coma, or the person cannot be roused
- Vomiting
- Slow or irregular breathing
- Hypothermia or low body temperature, bluish or pale skin

Alcohol poisoning can lead to permanent brain damage. If someone shows any of these signs: Don't wait! Call 911.

Research shows that students who choose not to drink often do so because their parents discussed alcohol use and its adverse consequences with them. Nighttime restrictions on young drivers and strict license suspension policies, interventions focused on partnerships between colleges and the community, and routine screening by physicians to identify and counsel underage drinkers help reduce college drinking.



Older Adults

Generally, aging lowers the body's tolerance for alcohol. People experience the effects of alcohol more quickly than when they were younger.

Drinking puts older adults at greater risk for falls, car crashes, and other unintentional injuries. Adults over 65 who are healthy and do not take medications should not have more than three drinks a day and seven in a week. Drinking more than this increases the risk of serious alcohol problems.

Heavy drinking makes certain health problems worse, too, including diabetes, high blood pressure, congestive heart failure, liver problems, osteoporosis, memory problems, and mood disorders.

Drinking and Medications

Many medications, such as the ones listed here, can interact badly with alcohol:

- Aspirin
- Acetaminophen
- Cold and allergy medicine
- Cough syrup
- Sleeping pills
- Pain medication
- Anxiety or depression medicine

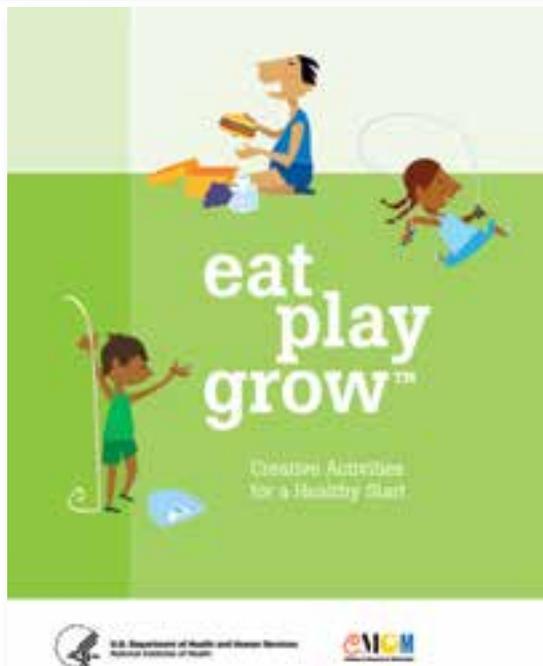
If you have a health problem or take certain medications, you may need to drink less or stop. Ask your healthcare provider if you have questions about alcohol and medications.

fast facts

- 1 About 40 percent of adults ages 65 and older drink alcohol.
- 2 Older adults who take certain medications, have health problems or drink heavily can experience a variety of problems from alcohol.
- 3 Many prescription, over-the-counter medications, and herbal remedies can be dangerous or even deadly when mixed with alcohol.

To Find Out More

- ✓ MedlinePlus www.medlineplus.gov
- ✓ National Institute on Alcohol Abuse and Alcoholism (NIAAA) www.niaaa.nih.gov
- ✓ Alcoholics Anonymous (AA) World Services www.aa.org
- ✓ Al-Anon Family Group Headquarters www.al-anon.alateen.org
- ✓ National Association for Children of Alcoholics (NACoA) www.nacoa.net
- ✓ National Council on Alcoholism and Drug Dependence (NCADD): www.ncadd.org
- ✓ Substance Abuse Treatment Facility Locator www.findtreatment.samhsa.gov



▲ *EatPlayGrow™: Creative Activities for a Healthy Start* is a health curriculum for families with children 2 to 5 years old. It was developed through a partnership between the National Institutes of Health and the Children's Museum of Manhattan.

EatPlayGrow™: Helping Families Create Healthier Futures

A new, science-based health education program offers fun and easy ways to teach young children healthy habits.

EatPlayGrow™: Creative Activities for a Healthy Start is a health curriculum for families with children 2 to 5 years old. Lessons use art, storytelling, music, and dance to teach kids about healthy eating and getting enough physical activity and sleep. Childcare providers, community and faith-based leaders, librarians, etc.— anyone interested in working with young children—can teach parents, caregivers, and children using the lessons.

EatPlayGrow was developed through a partnership between the National Institutes of Health and the Children's Museum of Manhattan.

EatPlayGrow was adapted from NIH's *We Can!® Energize Our Families* curriculum, which was originally designed to teach parents/caregivers of children ages 8 to 13 years old how to help their children stay at a healthy weight. *EatPlayGrow* and *We Can!* materials are available for free at www.nih.gov/wecan.

NIH Diets Get High Marks

Two NIH diets top the *2014 Best Diets Best Diets Overall* list produced by *U.S. News and World Report*. The news organization enlisted the help of health experts to evaluate 32 diets. DASH (Dietary Approaches to Stop

Hypertension) earned best overall diet for the fourth straight year. The TLC (Therapeutic Lifestyle Changes) diet captured the number two spot, for the second year. To be top-rated, according to *U.S. News*, "a diet had to be relatively easy to follow, nutritious, safe and effective for weight loss and against diabetes and heart disease." Both diets can result in weight loss if calories are reduced.

DASH is a flexible and balanced eating plan that's shown to lower blood pressure and blood cholesterol. TLC is designed to reduce blood cholesterol by combining diet, physical activity, and weight management. In addition to best overall, DASH and TLC also ranked first and second as the "Best Diets For Healthy Eating" and DASH tied for first among Best Diabetes Diets.

NIH's National Heart, Lung, and Blood Institute developed both DASH and TLC. To learn more about the plans visit: DASH Health Topic: <http://www.nhlbi.nih.gov/health/health-topics/topics/dash/> and Your Guide to Lowering Cholesterol with Therapeutic Lifestyle Changes (TLC): www.nhlbi.nih.gov/health/public/heart/cholesterol_tlc.htm

Keep Your Eyes on the Road: The Dangers of Distracted Driving

Drivers are doing something else—like eating or texting—about 10 percent of the time they're behind the wheel. The distractions are particularly dangerous for new, teenaged drivers. That's according to a recent study in which participants agreed to have cameras and sensors installed in their cars for observation.

Compared to when they were focused solely on the road, new drivers were eight times more likely to crash or nearly crash while dialing a cell phone; almost four times more likely when texting; and three times more likely when eating. For experienced drivers, only dialing a cell phone was associated with an increased risk.

"Anything that takes a driver's eyes off the road can be dangerous," says Bruce Simons-Morton, EdD, MPH, a study co-author. "But our study shows these distracting practices are especially risky for novice drivers, who haven't developed sound safety judgment behind the wheel." Simons-Morton is a researcher with NIH's *Eunice Kennedy Shriver* National Institute of Child Health and Human Development. He collaborated with researchers from Virginia Tech.

Info to Know

NIH Quickfinder

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

Institutes

- **National Library of Medicine (NLM)**
www.nlm.nih.gov
1-888-FIND-NLM (1-888-346-3656)
- **National Cancer Institute (NCI)** www.cancer.gov
1-800-4-CANCER (1-800-422-6237)
- **National Eye Institute (NEI)** www.nei.nih.gov
(301) 496-5248
- **National Heart, Lung, and Blood Institute (NHLBI)**
www.nhlbi.nih.gov (301) 592-8573
- **National Human Genome Research Institute (NHGRI)** www.genome.gov (301) 402-0911
- **National Institute on Aging (NIA)** www.nia.nih.gov
Aging information 1-800-222-2225
Alzheimer's information 1-800-438-4380
- **National Institute on Alcohol Abuse and Alcoholism (NIAAA)** www.niaaa.nih.gov
(301) 443-3860
- **National Institute of Allergy and Infectious Diseases (NIAID)** www.niaid.nih.gov
(301) 496-5717
- **National Institute of Arthritis and Musculoskeletal and Skin Diseases** www.niams.nih.gov
1-877-22NIAMS (1-877-226-4267)
- **National Institute of Biomedical Imaging and Bioengineering (NIBIB)** www.nibib.nih.gov
(301) 451-6772
- **Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD)**
www.nichd.nih.gov 1-800-370-2943
- **National Institute on Deafness and Other Communication Disorders (NIDCD)**
www.nidcd.nih.gov 1-800-241-1044 (voice)
1-800-241-1055 (TTY)
- **National Institute of Dental and Craniofacial Research (NIDCR)** www.nidcr.nih.gov
(301) 480-4098
- **National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)** www.niddk.nih.gov
Diabetes 1-800-860-8747
Digestive disorders 1-800-891-5389
Overweight and obesity 1-877-946-4627
Kidney and urologic diseases 1-800-891-5390

- **National Institute on Drug Abuse (NIDA)**
www.nida.nih.gov (301) 443-1124
- **National Institute of Environmental Health Sciences (NIEHS)** www.niehs.nih.gov
(919) 541-3345
- **National Institute of General Medical Sciences (NIGMS)** www.nigms.nih.gov
(301) 496-7301
- **National Institute of Mental Health (NIMH)**
www.nimh.nih.gov 1-866-615-6464
- **National Institute 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
1-800-352-9424
- **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 Alternative Medicine (NCCAM)**
www.nccam.nih.gov 1-888-644-6226
- **National Center for Advancing Translational Research (NCATS)**
www.ncats.nih.gov (301) 435-0888
- **NIH Clinical Center (CC)**
www.cc.nih.gov (301) 496-2563
- **Office of AIDS Research (OAR)**
<http://www.oar.nih.gov> (301) 496-0357
- **Office of Behavioral and Social Sciences Research (OBSSR)**
<http://obssr.od.nih.gov> (301) 402-1146
- **Office of Rare Diseases Research (ORDR)**
<http://rarediseases.info.nih.gov>
Genetic and Rare Disease Information Center
1-888-205-2311
- **Office of Research on Women's Health (ORWH)**
<http://orwh.od.nih.gov> (301) 402-1770

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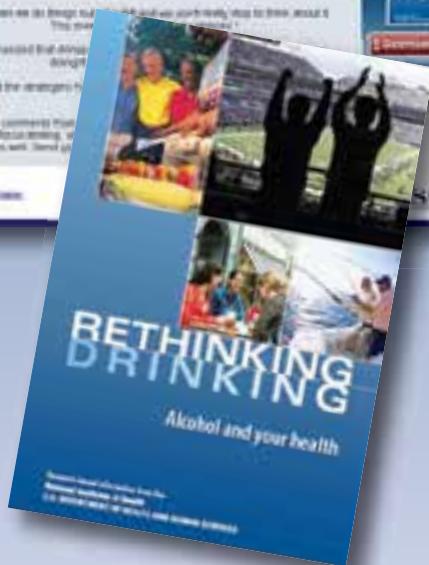
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RethinkingDrinking.niaaa.nih.gov

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National Institute on Alcohol Abuse and Alcoholism, Publications Distribution Center,
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