

NIH News in Health

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HIV and AIDS: Know the Facts

Treatments Work, but Prevention Is Key

It's been more than 30 years since a disease now called AIDS was first recognized in the United States. Back then, it was considered a death sentence. No treatments were available, its cause was unknown, and people often died within a few months after being diagnosed. Today, people infected with HIV—the virus that causes AIDS—can live full, healthy lives, in large part because of medicines and other discoveries made with NIH support.

The terms HIV and AIDS can be confusing, because they're related but different. HIV is a virus that harms your **immune system** by invading and then destroying your infection-fighting white blood cells. AIDS is the final stage of an untreated HIV infection. People with AIDS can have a range of symptoms, because their weakened immune systems put them at risk for life-threatening infections and cancers.

HIV virus passes from one person to another through certain body fluids, such as blood and semen. About 90% of new HIV infections in the U.S. occur during sex. Shared needles and injection drug use is the second most common route of infection. HIV can also spread from an infected

mother to her newborn. HIV isn't spread through casual contact, such as shaking hands, hugging, sneezing, sharing utensils, or using bathrooms.

Today, by taking a combination of HIV-fighting medicines (called antiretroviral therapy), fewer Americans with HIV are developing AIDS. And some HIV infections can now be prevented by taking daily medications (called PrEP).

Because of these advances, some people may think that there's little need to be concerned about HIV and AIDS. But nothing could be further from the truth. Nationwide, more than 1 million people are infected with HIV, and each year over 50,000 more become newly infected. About 1 in 7 Americans who have HIV don't even realize they're infected, so they may be unknowingly spreading the virus to others. The problem is even more severe in developing nations, especially in parts of Africa.

Even though treatments and prevention strategies can keep HIV in check, there's still no cure and no vaccine to prevent HIV infections. That's why NIH-funded scientists continue to search for new, more effective ways to halt HIV infections.

"If you get a diagnosis of HIV infection, and you begin antiretroviral therapy in a timely fashion, before your immune system becomes substantially compromised, your **prognosis** is excellent," says Dr. Anthony S. Fauci, NIH's infectious



disease chief, who first began treating AIDS patients in the early 1980s. Studies show that with early treatment, HIV levels may become so low that the virus becomes undetectable in the blood. That lengthens life and reduces the risk of spreading HIV to others. "If those who are infected stay on therapy, they can save their own lives and also help keep HIV from infecting their sexual partners," Fauci says.

Keeping HIV infections in check requires early diagnosis and taking daily HIV medications for life. Even if it's undetectable in the blood, once a person's been infected with HIV, it remains forever hidden in the body. "HIV has the ability to integrate itself

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Definitions

Immune System

The cells and tissues that protect your body from invading viruses, bacteria, and other microscopic threats.

Prognosis

The likely outcome of a disease, including your chances for survival.

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into your cells and hide in an inactive form, called a reservoir," says Fauci. Although medicines can keep virus levels low, they don't clear out the viral reservoir. So if treatment lapses, HIV comes out of hiding and rushes back into the bloodstream.



Wise Choices Should You Get an HIV Test?

HIV tests involve a simple cheek swab, finger prick, or urine sample. Experts recommend that you get tested for HIV if you answer yes to any of these questions:

- Have you had sex with someone who is HIV-positive or whose HIV status you didn't know since your last HIV test?
- Have you injected drugs and shared equipment (such as needles or syringes) with others?
- Have you exchanged sex for food, shelter, drugs, or money?
- Have you been diagnosed with, or sought treatment for a sexually transmitted disease, like syphilis?
- Have you been diagnosed with hepatitis or tuberculosis (TB)?
- Have you had sex with anyone who has any of the risk factors listed above or whose history you don't know?

To find HIV testing and care locations, visit <https://locator.aids.gov/>.

Adapted from U.S. Centers for Disease Control and Prevention

For some people, keeping up with this daily health regimen can be a challenge. Nationwide, fewer than 1 in 3 people with HIV takes antiretroviral medicines regularly enough to reduce the virus to undetectable levels. That's why ongoing NIH-funded studies are creating and evaluating medications that might be taken less often, such as once a month. This approach will be tested in a large clinical trial expected to begin in Africa later this year. Other approaches that don't depend on daily anti-HIV drugs are also being tested.

Research over the past few decades has identified preventive strategies that work: limit your number of sexual partners, never share needles, and use condoms correctly and regularly. NIH is also exploring new ways to prevent HIV infections, including experimental vaccines.

One preventive approach for people at risk for HIV infection involves taking a daily dose of an antiretroviral drug. "In terms of prevention, a game-changer that we've got right now is pre-exposure prophylaxis, or PrEP," says Dr. Carl W. Dieffenbach, who heads NIH's global research efforts in HIV/AIDS. "This strategy protects you from getting infected with HIV if you take the medication daily."



Definitions

Stigma

Being viewed in a negative way because of a medical condition or other characteristic.



Web Links

For more about HIV and AIDS, click the "Links" tab at:
<http://newsinhealth.nih.gov/issue/Jun2015/Feature1>

A pill form of PrEP (called Truvada) is approved by the U.S. Food and Drug Administration for people at high risk of getting HIV. Truvada combines 2 antiretroviral drugs already used to treat HIV infections.

When it comes to treatment and prevention, Dieffenbach says, "the most important activity that you can engage in is first getting an HIV test." Your health care provider, community health clinic, and others may offer quick HIV tests, often at no cost to you. The U.S. Centers for Disease Control and Prevention recommends at least a yearly HIV screening for people considered at high risk for infection. Testing is especially important for young people from ages 13 to 24, because more than half in that age group who tested positive for HIV didn't know they'd been infected.

Some people avoid getting tested because they're afraid of the possibility of being HIV-positive. Others may feel embarrassed or uncomfortable talking about sexual issues, and so they don't get tested. But the earlier HIV is diagnosed and treated, the better the outcome.

"The **stigma** associated with HIV infection makes it difficult for some people who are at risk to come forward and either be counseled about how to avoid infection, or if they are infected, to get into a health care system and stay in the health care system," Fauci says. But studies show that open communication can help people treat and prevent HIV.

"The stigma problem can only be solved one person or one family at a time, because each person's situation is unique," Dieffenbach says. "It's about continuing a conversation with openness and acceptance in communities. As hard as that is, it does really matter." ■

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Talking With Your Doctor

Make the Most of Your Appointment

Patients and health care providers share a very personal relationship. Doctors need to know a lot about you, your family, and your lifestyle to give you the best medical care. And you need to speak up and share your concerns and questions. Clear and honest communication between you and your physician can help you both make smart choices about your health.

Begin with some preparation. Before your health exam, make a list of any concerns and questions you have. Bring this list to your appointment, so you won't forget anything.

Do you have a new symptom? Have you noticed side effects from your medicines? Do you want to know the meaning of a certain word? Don't wait for the doctor to bring up a certain topic, because he or she may not know what's important to you. Speak up with your concerns.

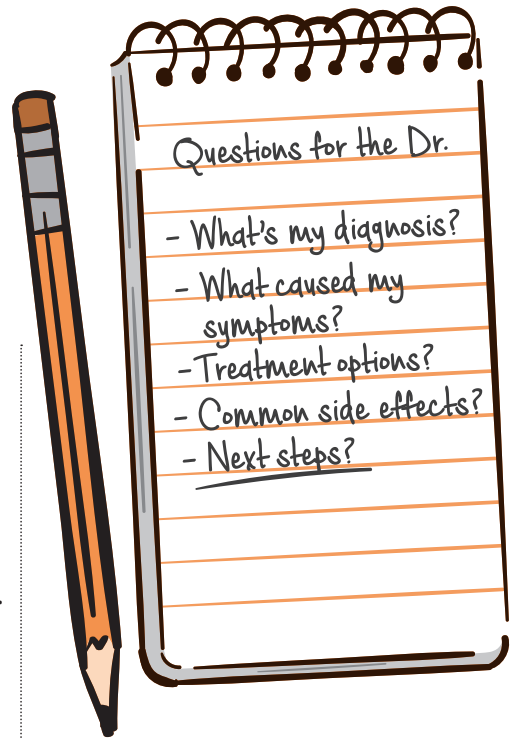
"There's no such thing as a dumb question in the doctor's office," says Dr. Matthew Memoli, an infectious disease doctor at NIH. "I try very hard to make my patients feel comfortable so that they feel comfortable asking questions, no matter how dumb they think the question is."

Even if the topic seems sensitive or embarrassing, it's best to be honest and upfront with your health care provider. You may feel uncomfortable talking about sexual problems, memory loss, or bowel issues, but these are all important to your health. It's better to be thorough and share a lot of information than to be quiet or shy about what you're thinking or feeling. Remember, your doctor is used to talking about all kinds of personal matters.

Consider taking along a family member or friend when you visit the doctor. Your companion can help if there are language or cultural differences between you and your doctor. If you feel unsure about a topic, the other person can help you describe your feelings or ask questions on your behalf. It also helps to have someone else's perspective. Your friend may think of questions or raise concerns that you hadn't considered.

Many people search online for health information. They use Web-based tools to research symptoms and learn about different illnesses. But you can't diagnose your own condition or someone else's based on a Web search.

"As a physician, I personally have no problem with people looking on the Web for information, but they should use that information not as a way to self-diagnose or make decisions, but as a way to plan their visit with the doctor," says Memoli. Ask your doctor to recommend specific websites or resources, so you know you're getting your facts from a trusted source. Federal agencies are



among the most reliable sources of online health information.

Many health care providers now use electronic health records. Ask your doctor how to access your records, so you can keep track of test results, diagnoses, treatment plans, and medicines. These records can also help you prepare for your next appointment.

After your appointment, if you're uncertain about any instructions or have other questions, call or email your health care provider. Don't wait until your next visit to make sure you understand your diagnosis, treatment plan, or anything else that might affect your health.

Your body is complicated and there's a lot to consider, so make sure you do everything you can to get the most out of your medical visits. ■



Wise Choices Tips for Your Doctor Visit

- Write down a list of questions and concerns before your exam.
- Consider bringing a close friend or family member with you.
- Speak your mind. Tell your doctor how you feel, including things that may seem unimportant or embarrassing.
- If you don't understand something, ask questions until you do.
- Take notes about what the doctor says, or ask a friend or family member to take notes for you.
- Ask about the best way to contact the doctor (by phone, email, etc.).
- Remember that other members of your health care team, such as nurses and pharmacists, can be good sources of information.



Web Links



For more about talking with your doctor, scan this QR code for links and videos.

Or click the "Links" tab at: <http://newsinhealth.nih.gov/issue/Jun2015/Feature2>



Health Capsules

For links to more information, see these stories online:
<http://newsinhealth.nih.gov/issue/Jun2015/Capsule1>

Mapping Language Problems in the Brain

We often use language to communicate our knowledge and beliefs. But such communication can be challenging for up to 8 million people nationwide who have some form of language impairment.

To learn more about how language is organized in the brain, an NIH-funded research team studied people with a type of language impairment known as aphasia. Aphasia can arise after injury to the brain regions that help people express and understand language. The condition can occur suddenly—for example, from stroke or head injury. It can also develop slowly, from a brain tumor, an infection, or dementia.

The scientists studied 99 volunteers who had aphasia after a stroke to the left side of the brain. A wide range of tests helped to assess participants' language functions. For

instance, they were asked whether 2 spoken words rhymed, to name items shown in pictures, to indicate whether spoken words were real English words, and to repeat lists of one-syllable words.

The scientists found 2 major divisions in the way the language system is organized, resulting in 4 factors: the meaning vs. the form of words, and speech recognition vs. production.

The team examined brain scans to compare people's symptoms with the damaged areas in their brains. The researchers found that the 4 factors were tied to various brain regions. Speech production and speech recognition were associated with damage to neighboring brain regions. In contrast, the meanings of words and pictures were processed by a more distributed network of brain regions, with the connections between re-

gions being especially important.

"By studying language in people with aphasia, we can try to accomplish 2 goals at once: We can improve our clinical understanding of aphasia and get new insights into how language is organized in the mind and brain," says Dr. Daniel Mirman at Drexel University in Philadelphia.

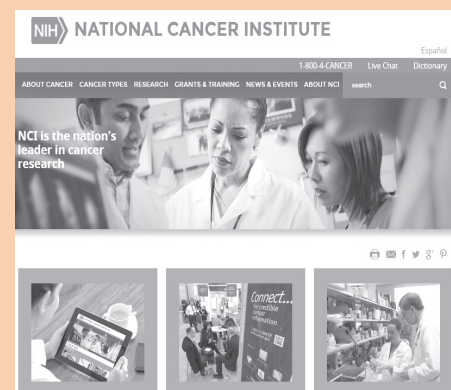
The findings shed light on language processing in the brain. They might also lead to better diagnosis and treatment strategies for language impairments. ■



Featured Website NIH's National Cancer Institute

www.cancer.gov

This newly redesigned site can help you quickly find trusted information about cancer prevention and screening, diagnosis and treatment, research, clinical trials, and more—whether on your computer, tablet, or smartphone. The site is also available in Spanish at www.cancer.gov/espanol.



Healthy and Fun Family Recipes

As parents and caregivers, you make a big difference in what your kids think and do. When children see you making healthy choices—such as eating right and being active—there's a good chance they'll do the same.

Nutritious food doesn't have to be bland or take a long time to prepare. Get the whole family to help slice, dice, and chop, and learn how to cut fat and calories.

To reduce fat content in meals, try these tips: Choose fat-free or low-fat milk products; add salsa on a baked potato instead of butter; try baking,

broiling, boiling, or microwaving instead of frying; choose lean cuts of meat; and remove and don't eat the skin from cooked chicken or turkey.

For inspiration, NIH offers a series of more than 60 healthy and fun family recipes—including oatmeal pecan waffles, pita pizza, barbecue chicken, and oven french fries—at www.nhlbi.nih.gov/health/educational/wecan/eat-right/fun-family-recipes.htm. Download free 4-by-6-inch recipes cards or full-page PDFs of healthy options for breakfast, lunch, dinner, and snacks. ■

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