

NIH News in Health

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A Loved One's Substance Abuse Problem What You Can Do

Your brother has been irritable, angry and anxious. Sometimes he acts depressed. You've noticed he can't seem to concentrate when you're talking to him. You start to suspect he may be on drugs. You feel helpless, but you can't just watch while your brother continues to hurt himself and those around him. What can you do?

The best way to start is to learn the facts. There are a lot of misconceptions about drug abuse and addiction. Many people can't understand how anyone could become addicted to drugs. They mistakenly view it as strictly a social problem and think those who take drugs are morally weak.

Research has revealed that drug addiction is a disease of the brain. "We now have incontrovertible evidence that repeated exposure to drugs changes the brain—in structure and in function," says Dr. Susan Weiss, an expert on addiction research at NIH's National Institute on Drug Abuse (NIDA). "It's true that for most people, the initial decision

to take drugs is voluntary. Over time, however, the brain changes that occur with drug abuse erode a person's self-control and ability to make sound decisions, while prompting intense urges to take drugs."

to self-medicate problems," Weiss says. "Drugs affect the brain in some of the same ways as natural rewards like eating a good meal or spending time with loved ones—but drugs can be even more potent, and in those who are vulnerable, drug abuse can lead to addiction."

It's hard to predict whether or not a person will become addicted after starting to use a drug. Scientists estimate that **genetic** factors account for about half of a person's vulnerability to addiction. Other factors include the influence of the home environment, friends and acquaintances, and the age when drug use begins.

Many cultural factors affect drug abuse trends. Research has shown that addiction often begins in childhood or adolescence. NIH-funded studies have found that prevention programs targeting this time of life are effective in reducing drug abuse. Successful prevention involves families, schools, communities and the media.

Despite these efforts, people still try drugs, and some become addicted. How do you know when

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The brain controls how our bodies function through a far-reaching communications network of chemical message transmissions between nerve cells. Research has shown that when the brain is exposed to drugs, these brain control systems become altered, compromising the ability to make healthy decisions.

Why do people start taking drugs in the first place? "Drugs make people feel good, or make them feel better. Some use drugs to get high or to feel different and others attempt



Definitions

Genetic

Having to do with genes, stretches of DNA you inherit from your parents. Genes define characteristics like height and eye color, and influence behaviors, like how susceptible you are to become addicted to a drug.

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someone you love has become addicted to a drug? If that person is compulsively seeking and using a drug despite negative consequences—such as job loss, debt or physical, mental or family problems brought on by drug abuse—then he or she is probably addicted.

“The actual signs of abuse or addiction can vary depending on the person and the drug being abused,” Weiss says. Drug abuse can show itself physically—for example, loss of appetite, slurred speech or problems sleeping. It can also cause changes in behavior, such as a general attitude change, difficulty paying attention or a drop in school grades or work performance. See the sidebar for a list of

things to watch out for.

If you suspect your brother is addicted, find a way to gently ask him about it and suggest that he seek professional help. “It is a myth that an addict must hit ‘rock bottom’ to be ready for treatment,” Weiss says. “The reality is, treatment works regardless of whether a person has hit rock bottom, and catching a person earlier in the addiction cycle may mean fewer accompanying problems and a better overall prognosis for long-term recovery.”

It’s important to realize that drug addiction can be treated. Research has revealed several basic principles that underlie effective drug addiction therapies. No single treatment is appropriate for everyone. The



Web Links

For links to more information about drug abuse and addiction, see this story online:

<http://newsinhealth.nih.gov/2009/March/feature1.htm>

treatment course depends on both the drug and the needs of the individual. The process often begins with detoxification, in which the person is systematically withdrawn from the drug under the care of a physician.

Studies have found that the best way to ensure success is to combine appropriate treatment medications, when available, with behavioral therapy. Behavioral therapy helps people modify their attitudes and behaviors. It teaches them skills for handling stress and the environmental cues that may lead to relapse.

Treatment may last for an extended period of time, and multiple courses of treatment may be needed to ensure success.

NIH scientists continue to study what makes people more or less vulnerable to addiction. They are also exploring how to use that information to design effective prevention programs to reach people before they start abusing drugs. These programs involve schools, families, sports teams, faith-based organizations and the broader community. NIH is also working hard to engage the medical community to help catch drug problems early, before they develop into addictions.

“If you think a loved one is in need of treatment,” Weiss says, “do everything in your power to help them find the courage, determination and means to seek treatment as early as possible. Express your concern and then provide the person with resources, or make the call yourself.”

An addicted person needs medical help from trained professionals. Of course, if someone is in immediate danger, call 9-1-1. To find a treatment center in your state, call 1-800-662-HELP or visit www.findtreatment.samhsa.gov. ■



Wise Choices Spotting Addiction

The symptoms of drug abuse and addiction vary depending on the person and the drug being abused. Look for these warning signs of drug use:

Physical changes:

- Difficulty sitting still
- Excessive sweating
- Inability to sleep
- Change in appetite
- Drowsiness and slurred speech
- Chronic cough or worsening of asthmatic conditions, such as wheezing, chest tightness and trouble breathing

- Runny nose, chronic nasal/sinus problems

Behavior changes:

- Overall attitude or personality change with no other identifiable cause
- Change in personal grooming habits
- Excessive need for privacy
- Change in friends, hobbies or activities
- Difficulty in paying attention or forgetfulness
- Drop in school grades or work performance
- Chronic dishonesty
- An unexplained need for money

NIH News in Health (ISSN 1556-3898)

National Institutes of Health

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Too Hot to Handle?

Facts About Fevers

You know the feeling. You're achy and run down. Something's not quite right. When you finally get home and reach for the thermometer, you soon find that your temperature's above normal. You have a fever—a sign that something is out of balance in your body.

Fevers aren't necessarily bad. In fact, by turning up the heat, a fever can help you fight off disease-causing bacteria and viruses, which tend to grow and flourish at the body's normal temperature. Fever also activates your body's **immune system**, which protects you against infection.

Normal body temperature is considered to be 98.6 degrees Fahrenheit. "But in reality there's a lot of individual variation in the 'normal' temperature," says Dr. Fred Gill, chief of the internal medicine consult service at NIH's Clinical Center. "Body temperature often fluctuates

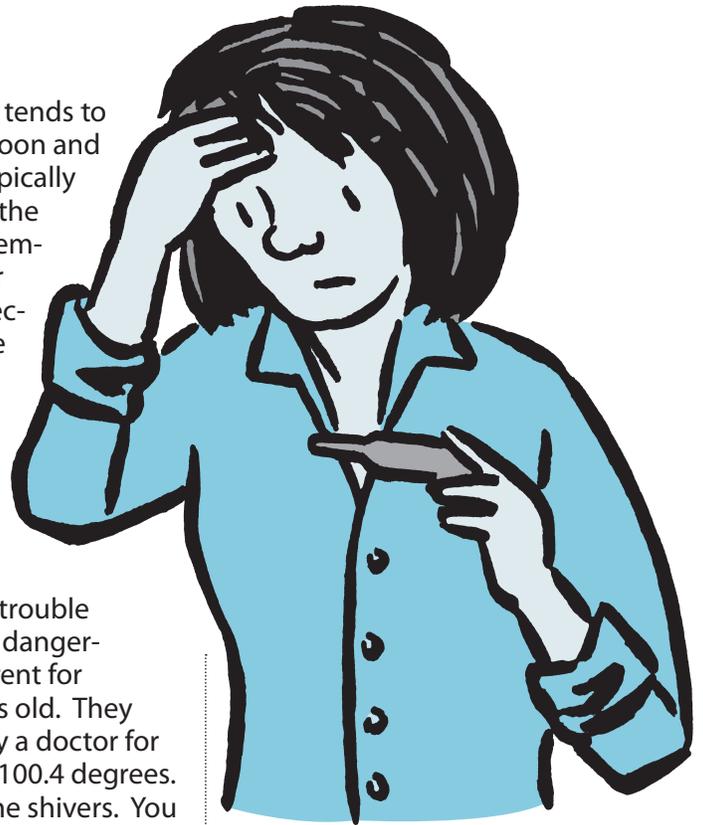
throughout the day. It tends to be higher in the afternoon and early evening and is typically lower in the middle of the night. A slight rise in temperature without other symptoms does not necessarily mean you have a fever."

In general, doctors don't consider you to have a fever until your temperature reaches 100.4 degrees. Fever can make you feel uncomfortable and have trouble sleeping, but it's rarely dangerous in adults. It's different for infants under 3 months old. They should be evaluated by a doctor for any fever that reaches 100.4 degrees.

Fever often brings the shivers. You feel chilled because blood vessels in your skin tighten and shrink, keeping warm blood deeper within your body and making your skin feel cold. As a result, your muscles contract and you shiver. Fevers often start to subside when you begin to sweat. Sweating is good because it helps your body cool down and return your temperature to normal.

Infections are the most common cause of fever, but there are many other triggers. Toxins, certain medications, cancer and diseases that weaken the immune system are a few of the things that can cause your temperature to rise.

Fever in children between 6 months and 5 years of age can sometimes cause febrile (fever-induced) seizures. During a febrile seizure, a child often loses consciousness and shakes. Most seizures last just a min-



ute or 2. Although they can be frightening to parents, febrile seizures are usually harmless.

In general, if a fever is mild and you have no other major symptoms, simply drink fluids and get plenty of rest. If a child with a fever is comfortable, drinking liquids and sleeping well, no treatment is needed.

Over-the-counter medicines like ibuprofen or acetaminophen can help to control discomfort. Adults can generally take aspirin, but children and teens with fever should avoid it because aspirin increases the risk of a rare and sometimes deadly disease called Reye's syndrome.

When giving children medication, follow your pediatrician's recommendation. Check the label as well to make sure you're giving the right dose for your child's weight. ■



Wise Choices Know When to Call a Doctor

Adults, contact a doctor if:

- your body temperature is above 103 degrees Fahrenheit.
- your temperature is 100.4 degrees or higher for more than 3 days.

Call your doctor if these symptoms accompany a fever:

- Severe headache
- Unusual skin rash
- Neck stiffness or pain
- Confusion
- Persistent vomiting
- Difficulty breathing or chest pain
- Abdominal pain or pain when urinating
- Blood in stool



Definitions

Immune System

The system that protects your body from invading viruses, bacteria and other microscopic threats.



Web Links

For links to more about fever, see this story online:

<http://newsinhealth.nih.gov/2009/March/feature2.htm>



Health Capsules

For links to more information about these topics, visit this page online:
<http://newsinhealth.nih.gov/2009/March/capsules.htm>

Diabetes Rates on the Rise

More than 1 in 10 adults over age 20 has **diabetes**, but about 40% of them don't know they have the disease, according to a large national survey. In addition, nearly 1 in 3 adults has **pre-diabetes**.

Diabetes is the most common cause of blindness, kidney failure and amputations in adults. It's also a leading cause of heart disease and stroke. People with diabetes have unusually high levels of a sugar called glucose in the blood. When blood glucose gets too high, it can damage your tissues and organs.

Researchers have collected data on diabetes for several decades as part of the National Health and Nutrition Examination Survey. For this survey, people were given a 2-hour oral glucose tolerance test during 2

time periods—from 1988 to 1994 and again from 2005 to 2006. This test is more sensitive in detecting diabetes and pre-diabetes than a more common and less expensive test called fasting plasma glucose.

By comparing data from the 2 time periods, scientists found that the percentage of people with diabetes rose from about 5% in 1988-1994 to nearly 8% a decade later. By 2006 more than 40% of adults had either diabetes or pre-diabetes.

"It's important to know if you have diabetes or pre-diabetes, because there's so much you can do to preserve your health," said Joanne Gallivan, director of NIH's National Diabetes Education Program. "Talk to your health care professional about your risk." ■



Definitions

Diabetes

A disease in which the body has trouble controlling the level of glucose in the blood.

Pre-diabetes

A condition in which your blood glucose level is higher than normal but not high enough for a diagnosis of diabetes. It raises your risk for developing type 2 diabetes, heart disease and stroke.

Cleaner Air May Lengthen Life

Cleaner air may be adding months to our lives, according to a new study.

To see how air pollution affects lifespan, NIH-funded scientists looked at fine-particle pollution in 51 U.S. cities. These particles are only about 1/30th the width of a human hair. Fine-particle air pollution usually comes from power plants, industry and car exhaust.

The researchers analyzed pollution levels from around the early 1980s and again from around the early 2000s. They then calculated the lifespans of the cities' residents during those years.

The researchers found that air pollution levels dropped in all 51 cities during the 20-year study period, and life expectancy rose on average by nearly 3 years. After the scientists adjusted for income, smoking and other factors that affect lifespan, they found that improved air quality accounted for up to 15% of the overall increase in longevity. That's an average gain of nearly 5 months of life.

"We're getting a substantial return on our investments in improving our air quality," said lead researcher Dr. C. Arden Pope III of Brigham Young University. ■



Featured Web Site Genetic and Rare Diseases Information Center

<http://rarediseases.info.nih.gov/GARD>

Turn to this NIH web site for reliable information about genetic and rare diseases. Find out what's already known and what research is now underway. You can also contact information specialists who can give you accurate information about specific diseases in both English and Spanish.

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