

NIH News in Health

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Dealing with Drug Problems Preventing and Treating Drug Abuse

Drug abuse can be a painful experience—for the person who has the problem, and for family and friends who may feel helpless in the face of the disease. But there are things you can do if you know or suspect that someone close to you has a drug problem.

Certain drugs can change the structure and inner workings of the brain. With repeated use, they affect a person's self-control and interfere with the ability to resist the urge to take the drug. Not being able to stop taking a drug even though you know it's harmful is the hallmark of addiction.

A drug doesn't have to be illegal to cause this effect.

People can become addicted to alcohol, nicotine, or even prescription drugs when they use them in ways other than prescribed or use someone else's prescription.

People are particularly vulnerable to using drugs when going through major life transitions. For adults, this might mean during a divorce or after losing a job. For children and teens, this can mean changing schools or other major upheavals in their lives.

But kids may experiment with drug use for many different reasons. "It could be a greater availability of drugs in a school with older students, or it could be that social activities are changing, or that they are trying to deal with stress," says Dr. Bethany Deeds, an NIH expert on drug abuse prevention. Parents may need to pay more attention to their children during these periods.



The teenage years are a critical time to prevent drug use. Trying drugs as a teenager increases your chance of developing substance use disorders. The earlier the age of first use, the higher the risk of later addiction. But addiction also happens to adults. Adults are at increased risk of addiction when they encounter prescription pain-relieving drugs after a surgery or because of a chronic pain problem. People with a history of addiction should be particularly careful with opioid pain relievers and make sure to tell their doctors about past drug use.

There are many signs that may indicate a loved one is having a problem with drugs. They might lose interest in things that they used to enjoy or start to isolate themselves. Teens' grades may drop. They may start skipping classes.

"They may violate curfew or appear irritable, sedated, or disheveled," says child psychiatrist Dr. Geetha Subramaniam, an NIH expert on substance use. Parents may also come across drug paraphernalia, such as water pipes or needles, or notice a strange smell.

"Once drug use progresses, it becomes less of a social thing and more of a compulsive thing—which means the person spends a lot of time using drugs," Subramaniam says.

If a loved one is using drugs, encourage them to talk to their primary care doctor. It can be easier to have this conversation with a doctor than a family member. Not all drug treatment requires long stays in residential treatment centers. For someone in the early stages of a substance use problem, a conversation with

a doctor or another professional may be enough to get them the help they need. Doctors can help the person think about their drug use, understand the risk for addiction, and come up with a plan for change.

Substance use disorder can often be treated on an outpatient basis. But that doesn't mean it's easy to treat. Substance use disorder is a complicated disease. Drugs can cause changes in the brain that make it extremely difficult to quit without medical help.

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For certain substances, it can be dangerous to stop the drug without medical intervention. Some people may need to be in a hospital for a short time for detoxification, when the drug leaves their body. This can help keep them as safe and comfortable as possible. Patients should talk with their doctors about medications that treat addiction to alcohol or opioids, such as heroin and prescription pain relievers.



Wise Choices Signs to Look for

People with drug problems may act differently than they used to. They might:

- spend a lot of time alone
- lose interest in their favorite things
- get messy—for instance, not bathe, change clothes, or brush their teeth
- be really tired and sad
- be very energetic, talk fast, or say things that don't make sense
- be nervous or cranky (in a bad mood)
- quickly change between feeling bad and feeling good
- sleep at strange hours
- miss important appointments
- have problems at work
- eat a lot more or a lot less than usual

Recovering from a substance use disorder requires retraining the brain. A person who's been addicted to drugs will have to relearn all sorts of things, from what to do when they're bored to who to hang out with. NIH has developed a customizable wallet card to help people identify and learn to avoid their triggers, the things that make them feel like using drugs. You can order the card for free at <https://drugpubs.drugabuse.gov/publications/drugs-brain-wallet-card>.

"You have to learn ways to deal with triggers, learn about negative peers, learn about relapse, [and] learn coping skills," Subramaniam says.

NIH-funded scientists are studying ways to stop addiction long before it starts—in childhood. Dr. Daniel Shaw at the University of Pittsburgh is looking at whether teaching healthy caregiving strategies to parents can help promote self-regulation skills in children and prevent substance abuse later on.

Starting when children are two years old, Shaw's study enrolls families at risk of substance use problems in a program called the Family Check-Up. It's one of several parenting programs that have been studied by NIH-funded researchers.

During the program, a parenting consultant visits the home to observe the parents' relationship with their child. Parents complete several questionnaires about their own and their family's well-being. This includes any behavior problems they are experiencing with their child. Parents learn which of their



Web Links

For more about drug abuse treatment, click the "Links" tab at: newsinhealth.nih.gov/issue/June2017/Feature1

children's problem behaviors might lead to more serious issues, such as substance abuse, down the road. The consultant also talks with the parents about possible ways to change how they interact with their child. Many parents then meet with the consultants for follow-up sessions about how to improve their parenting skills.

Children whose parents are in the program have fewer behavioral problems and do better when they get to school. Shaw and his colleagues are now following these children through their teenage years to see how the program affects their chances of developing a substance abuse problem. You can find video clips explaining different ways parents can respond to their teens on the NIH Family Checkup website at <https://www.drugabuse.gov/family-checkup>.

Even if their teen has already started using drugs, parents can still step in. They can keep closer tabs on who their children's friends are and what they're doing. Parents can also help by finding new activities that will introduce their children to new friends and fill up the after-school hours—prime time for getting into trouble. "They don't like it at first," Shaw says. But finding other teens with similar interests can help teens form new habits and put them on a healthier path.

A substance use problem is a chronic disease that requires lifestyle adjustments and long-term treatment, like diabetes or high blood pressure. Even relapse can be a normal part of the process—not a sign of failure, but a sign that the treatment needs to be adjusted.

With good care, people who have substance use disorders can live healthy, productive lives. ■

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Pebbles in Your Plumbing

Flushing Kidney Stones

Have you ever heard that passing a kidney stone is more painful than giving birth? Each year, more than 1 million people in the U.S. rush to the emergency room with pain caused by a kidney stone.

Kidney stones are hard, pebble-like pieces of material that form in one or both kidneys. They're caused by high levels of certain minerals in your urine.

Stones vary in size from tiny crystals that can only be seen with a microscope to stones over an inch wide. Tiny stones may pass out of your body without your even noticing. With larger stones, you won't be so lucky. Stones that are larger than a pencil eraser can get stuck in the urinary tract—and that can really hurt.

Everyone is at some risk for developing kidney stones. "It is a very common condition," says Dr. Ziya Kirkali, a urologist at NIH. "One out of 11 individuals in the U.S. is affected by this disease."

Kidney stones can form at any age, but they usually appear during middle age (40s to 60s). Of those who develop one stone, half will develop at least one more in the future.



Wise Choices Kidney Stone Clues

See your health care provider if you have any of these symptoms:

- Sharp, severe pains in your back, side, lower belly, or groin
- Nausea and vomiting
- Blood in your urine, making it look pink, red, or brown
- Constant need to empty your bladder
- Pain when you urinate
- Difficulty urinating

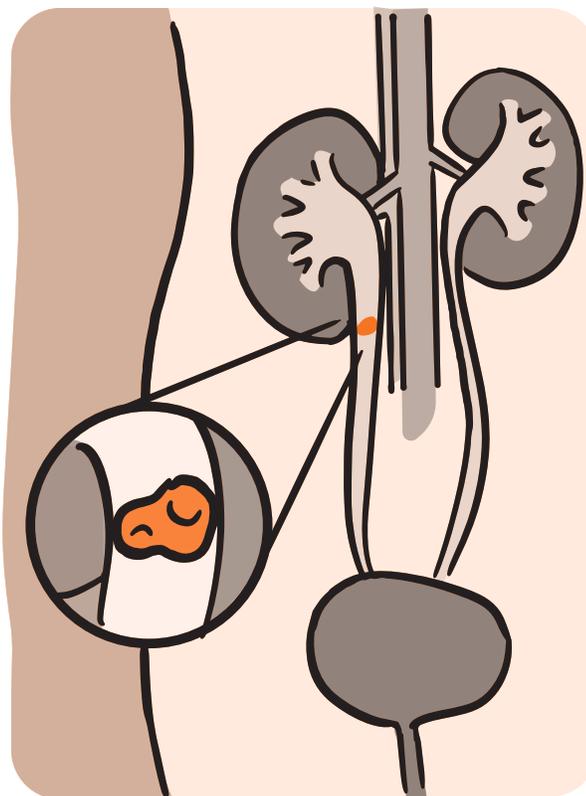
"Probably one of the most important reasons why people form stones is dehydration," Kirkali says. When urine is too concentrated, minerals can build up and form stones. "I can't over-emphasize the importance of drinking plenty of water, because that's the most effective way of preventing kidney stone disease."

During the warmest months of the year, you're at greatest risk of becoming dehydrated. "So it is really important to drink more than you usually drink during the cooler days or months," Kirkali says.

To detect kidney stones, your doctor may order lab or imaging tests. Lab tests look in urine for blood, signs of infection, minerals (like calcium), and stones. Blood tests can also detect high levels of certain minerals. "About 80% of all stones are made of calcium oxalate," Kirkali says. Knowing what the stones are made of can help guide treatment.

Treatment also depends on the stone's size and location. CT scans or plain X-ray imaging can help your doctor pinpoint the location and estimate the size of a kidney stone. Depending on what your doctor finds, you may be prescribed medicine and advised to drink a lot of fluids. Or, you might need a procedure to break up or remove the kidney stone.

There are different procedures for breaking up or removing kidney stones. One method delivers shock waves to the stone from outside of the body. Other strategies involve inserting a tool into the body, either through the urinary tract or directly into the kidney through surgery. After the stone is located, it can be broken up into smaller pieces.



Once you've had a kidney stone, you have an increased chance for having another. NIH-supported scientists are studying ways to prevent kidney stones from returning.

"We always tell our patients to drink more, but it's not so easy to really increase your fluid intake," Kirkali says. A new study is testing a method to encourage people to drink more fluids each day. Other NIH-funded studies are trying to unravel why some people seem more at risk of developing kidney stones. Still others are looking into how to better detect stones and treat them.

Don't let the pain of kidney stones send you to the emergency room. Keep hydrated! But if you develop any of the symptoms shown in the "Wise Choices" box, see your doctor right away. ■



Web Links

For more about kidney stones, click the "Links" tab at: newsinhealth.nih.gov/issue/Jun2017/Feature2

Health Capsules

For links to more information, see these stories online:
newsinhealth.nih.gov/issue/Jun2017/Capsule1

Diabetes Increases in Children and Teens

A recent study found that rates of new cases of diabetes in children and teens rose during 2002 to 2012. The researchers reported increases in the rates of both type 1 and type 2 diabetes.

More than 29 million Americans are living with diabetes. People with diabetes have sugar (glucose) levels that are too high. Over time, high levels of blood glucose can cause many health problems.

In type 1 diabetes, the body does not produce insulin. People with type 1 diabetes need to take insulin every day to stay alive. Type 2 diabetes is caused when the body doesn't make or use insulin well.

Researchers found that, for each year between 2002 and 2012, the rate of new cases of type 1 diabetes in youths under 20 rose by about 2%. The rate of new cases of type 2 diabetes in youths ages 10 to 19 increased by about 5%. Unlike type 1 diabetes, type 2 is seldom diagnosed in children younger than 10.

The researchers noted that rates of diabetes rose significantly in certain racial and ethnic groups. For type 1 diabetes, the rate of new cases increased in Hispanics, non-Hispanic blacks, and non-Hispanic whites. For type 2 diabetes, the rate of new cases rose in Hispanics, non-Hispanic blacks, Asian Americans/Pacific

Islanders, and Native Americans.

The study also detected differences in the rates for male and female youths. For type 1 diabetes, the rate rose more in males. For type 2 diabetes, the rate increased more in females.

"The differences among racial and ethnic groups and between genders raise many questions," says Dr. Barbara Linder, NIH's senior advisor for childhood diabetes research. "We need to understand why the increase in rates of diabetes development varies so greatly and is so concentrated in specific racial and ethnic groups."

NIH-funded studies are now examining what factors may increase the risk of diabetes. ■

Guiding Teens Toward Alcohol-Free Parties

Are you a parent of a high school student? If so, have you talked with your teen about avoiding alcohol at celebrations like graduation? Research shows that talking with your child about the risks of drinking does make a difference.

Ask your teen to think about the potential consequences of drinking before they celebrate. You can help them prevent a life-changing mistake. Tragedies can—and do—happen. Teens who drink alcohol put themselves and their friends at risk. Drinking to celebrate can lead to alcohol-related traffic crashes, sexual assaults, trips to the emergency room, or worse.

Underage drinking shouldn't be a part of any end-of-year celebration. If

you're hosting a party, tell guests you have a no-alcohol policy. Providing alcohol to minors is against the law in all 50 states in most circumstances.

Teach your child about the dangers of alcohol. Drinking lowers your inhibitions, impairs your ability to make sound decisions, and can cause loss of balance, slurred speech, and blurred vision. One of the most serious risks of teen drinking is an overdose. Without immediate medical care, an overdose can cause permanent brain damage or death.

For advice on how to speak with your teen, read NIH's fact sheet "Parents—Talk With Your High School Grads About Celebrating Safely" at <http://pubs.niaaa.nih.gov/publications/GraduationFacts/graduationFact.htm>. ■



Featured Website Safe Sleep for Your Baby

safetosleep.nichd.nih.gov

Do you know how to help your baby sleep safely? This site shows you how to reduce a baby's risk of Sudden Infant Death Syndrome (SIDS) and other sleep-related causes of infant death.



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