





### **JAMA Patient Page: Teenaged Drivers**

Motor vehicle crashes are the leading cause of death of teenagers in the United States. Over 5,000 teenagers die each year in such crashes, and teen drivers are involved in a substantial number of crashes that result in deaths of other people.

Graduated driver licensing is a step-by-step licensing process that can help reduce the number of teen motor vehicle crashes and save lives. The October 3, 2001, issue of *The Journal of the American Medical Association* includes two articles about teen drivers and graduated licensing.

#### **Reasons for Teen Crashes**

- Lack of experience can make it difficult for teens to recognize and respond to hazards on the road
- Risk-taking behavior and immaturity result in speeding, going too fast for road conditions, inattention, using alcohol or other drugs, and not using seat belts (nearly one in five high school students report they rarely or never use them)
- Greater risk exposure such as teens driving at night with other teens in the vehicle

#### **Graduated Licensing**

Not all states have graduated licensing, but you can still adopt your own graduated driving rules for your teenager. A suggested program may be:

##### **Stage One**

- Teen must be 15 1/2 years old to have a learner's permit, must complete a driver education program, and must drive only with an adult over 21
- Teen driver may not drive between 10 PM and 5 AM; must wear a safety belt; and use no tobacco, alcohol or other drugs while driving
- Teen driver must remain ticket-free and crash-free for six months

##### **Stage Two**

- Teen must be at least 16 and have had a learner's permit for six months
- Driver must drive with an adult during nighttime hours and drive unsupervised only during daytime hours
- Passengers should be restricted to only one non-family member
- Driver and passengers must wear safety belts at all times and should not use tobacco, alcohol or other drugs in the vehicle
- Driver must remain ticket-free and crash-free for 12 months before moving on to a full driver's license

##### **Stage Three**

- Teen must be at least 18 or have driven for two years at Stage Two
- No restrictions on driving if teen has been ticket-free and crash-free for six months
- No use of tobacco, alcohol or other drugs permitted, and all passengers must wear safety belts

## Ways Parents Can Help

1. Don't rely on driver education classes alone to teach your teen to be a safe driver — take an active role and plan practice sessions that include night and bad weather driving; work up to challenges such as highway and heavy traffic driving
2. Restrict night driving as it requires more skill — set and enforce curfews of 9 p.m. or 10 p.m.
3. Remember you are a role model and must practice safe driving to set an example
4. Prohibit drinking and other drug use and driving; offer a free call and ride home in case your teenager has been abusing drugs or alcohol or is with a driver who is doing so
5. Choose vehicles for safety and avoid cars with high-performance images, such as sports cars; be sure the car the teen drives is properly maintained

**Sources:** American Academy of Family Physicians, American Academy of Pediatrics, Insurance Institute for Highway Safety, American Automobile Association, National Highway Traffic Safety Administration, National Safety Council

## For More Information

National Insurance Institute for Highway Safety  
(703) 247-1500  
[www.hwysafety.org](http://www.hwysafety.org)

National Highway Traffic Safety Administration  
(202) 366-9550  
[www.nhtsa.dot.gov](http://www.nhtsa.dot.gov)

National Center for Injury Prevention and Control  
(770) 488-4652  
[www.cdc.gov/ncipc](http://www.cdc.gov/ncipc)

## Inform Yourself

To find this and previous JAMA Patient Pages, go to the Patient Page Index on JAMA's Web site at [www.jama.com](http://www.jama.com). A JAMA Patient Page on driving and alcohol was published on May 3, 2000.

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## Teens Having Fun and Staying Safe

As a teen, your family may give you more responsibilities and the chance to spend more time with your friends. This extra time with your friends may put you in new or different social situations and places. With your parents not around as much, you are making more decisions for yourself and will need to keep yourself safe. If you forget about your safety, your fun can quickly turn into danger.

Check out these questions and answers to learn how to stay safe on the go.

### How Do I Keep Myself Safe at a Party?

New social settings like parties are a fun way for you to spend time with your friends. Most of the time, parties are a safe way to hang out with your friends, but sometimes things can happen that can make a party a dangerous place to be. It's important to know what to do if a party gets out of control and how to keep yourself safe.

- Never walk away with strangers.
- Never be alone with someone who has been drinking or taking drugs.
- Don't drink alcohol or do drugs.
- Tell your parents and friends where you are going.
- Never get in a car with someone who has been drinking or doing drugs.

### What If Someone Offers Me Alcohol or Drugs?

You're more likely to be offered alcohol or drugs by a friend than a stranger. It's OK to say no to friends. Many people are focused on themselves, so they won't be as worried about what you're doing as you may think. Below are eight great ways to turn down an offer.

- "No, thanks."
- "I'm not into that."
- "Alcohol's not my thing."
- "I don't feel like it — do you have any soda?"
- "I'm OK. Thanks."
- "No, I'm training for \_\_\_\_\_."
- "No, I'm on the \_\_\_\_\_ team, so I don't want to risk it."
- "No. I gotta go soon."

You can set an example for others by staying away from drugs and alcohol. You might be worried about not being "cool" if you don't try drugs or alcohol, but you can start a different, more real kind of "cool" by being looked up to as someone who makes confident choices for you.

### Find Out What Dana Does When Her Friend Elle Wants to Drink

It was after school and Dana and her friend Elle were hanging out at Dana's house. Dana's parents were still at work. They were bored and tried to come up with something to do. All of a sudden, Elle came up with an idea. She said, "Let's drink. Your parents have a bottle of vodka in the freezer." Right away, Dana knew this was a bad idea, but she didn't want to seem uncool. So, Dana said, "No, my parents know how much alcohol is in that bottle. If we drink any of it, I'll be grounded for life and then we won't be able to hang out. Let's watch some TV instead."

### What Can I Do to Develop a Safety Plan for Different Social Situations?

No matter what the situation is, you can develop a plan to help keep yourself safe. Read the following list and develop your safety plan right now!

- Tell your parents where you are going, who you will be with and when you will be back. This may sound lame, but you will be safer for doing so.
- Carry money, a phone card or a cell phone in case you need to make an emergency phone call. Don't forget to keep emergency numbers and the phone number of a taxi service in your wallet or backpack or program them into your cell phone.
- Stay in well-lit public places.
- Stick with another person or a group of your friends.
- Try to avoid strangers. If you talk to them, don't share information about yourself.
- Use code words on the phone that you and your family decide on ahead of time. If you are in trouble, say the code word so that your family member knows you can't talk openly and need to be picked up right away.

### **What Do I Do If I Am Walking in an Unfamiliar Neighborhood?**

There are certain things that you can do to keep yourself safe until you are near home.

- Walk with another person whenever possible.
- Walk on the sidewalk of main streets and stay where it is well lit.
- Don't walk with headphones so that you can hear what is going on around you.
- If you think that you are being followed, cross the street to see if the person does the same. Do not be afraid to start running if you need to — don't wait until the person is very close to you to do this. Go to the nearest store, restaurant or police station.
- Walk quickly and confidently.
- If an unfamiliar person grabs your purse or bag, just let go. DO NOT struggle with them to try to get it back. If you fight, you risk getting hurt. Money and other belongings can be replaced — your safety is the most important thing. Run in the opposite direction of the person and go to the nearest police station or store to call for help.
- If you are in trouble, yell! This will bring attention from the people around you.

### **What Do I Do If I Am Out and Someone That I Don't Know Comes Up to Me?**

When you were younger, your parents probably taught you never to talk to strangers. This is a good rule for children, but in your teenage years, it doesn't always seem to fit. There are lots of times when you might need to talk to someone that you don't know. Most strangers are nice people, but it is important that you do not trust everyone that you meet right away.

Know the warning signs and how to protect yourself:

- Be aware of anyone in a car who stops to talk to you or ask you for directions if you are walking down the street, even if you are in a familiar neighborhood. Try to keep your

distance from the car and never offer to get in the car — even if the stranger is going in the same direction that you are headed, or the stranger says there is an emergency.

- Be assertive. If a person that you don't know comes up to you to start a conversation, you don't have to talk to them if you don't feel comfortable. Don't be afraid to sound rude if someone keeps bothering you. Stay calm and firmly say "NO."
- Be street smart. Not all dangerous strangers are rude or forceful right away when you first meet them. It is important that you are aware of strangers, both men and women, who seem nice — the ones who make conversation easily and get important information about you without you even realizing it. Remember that you do not have to share any information. If a stranger tells you where he or she lives, it doesn't mean that you have to tell him or her where you live.
- Be careful who you trust. Keep your distance from a new person until you have had the chance to get to know him or her. Don't trust someone who follows you around or won't leave you alone if you ask them to. You can make up code words with your family that they will use if there is an emergency at home. This way, if a stranger comes up to you and says that there is an emergency and that you need to leave with them, you can ask for the code words that only you and your parents know. If you are worried or nervous, you can go to police officers or to security guards with nametags and badges. You also will find people who may be able to help you at information desks and customer service desks at public places like the mall; restaurant or store managers may also be able to help you.
- Be prepared. Check out self-defense classes in your town. Your local police department or school might offer classes that can teach you how to protect yourself and how to handle uncomfortable situations. Thinking ahead and planning for your safety is a way to feel powerful and confident!
- You do not have to be afraid every time you leave the house. But, it is important that you take some responsibility for your own safety. Trust your instincts, pay attention to what is going on around you and protect yourself. Remember, being safe will not take away from your fun. Being safe will make sure that you can keep having it!

Source: Office on Women's Health, U.S. Department of Health and Human Services

**Updated:** August 2006



**AMERICAN  
PSYCHIATRIC  
ASSOCIATION**

## **Let's Talk Facts About College Students and Alcohol Abuse. What Is Alcohol Abuse and Dependence?**

Alcohol abuse is when an individual experiences one or more of the following in a one-year period:

- Recurrent use resulting in failure to fulfill major role obligations at home, school or work.
- Recurrent use in dangerous situations, such as continuing to drink heavily despite having frequent "blackouts."
- Recurrent alcohol-related legal problems such as convictions for driving while intoxicated (DWI).
- Continued use despite social and interpersonal problems caused or worsened by alcohol.

Alcohol dependence is a more severe and less frequent diagnosis that is given when a person experiences three or more of the following in a one-year period:

- Tolerance - increased amounts are needed to achieve the desired effect or a diminished affect from the same amount of alcohol.
- Withdrawal - includes symptoms such as sweating, increased heart rate, shaking, nausea/vomiting, or even more severe symptoms such as seizures and/or hallucinations.
- A great deal of time is spent trying to obtain alcohol, using it or recovering from its effects.
- Important activities are given up or reduced because of alcohol.
- Drinking more or longer than intended.
- Persistent desire to drink or unsuccessful efforts to cut down or control alcohol use.
- Continued use despite diagnosis of a mental health disorder, such as depression that is caused by or worsened by alcohol.

In general, college students should talk to a mental health professional about their alcohol intake if they:

- Drink everyday.
- Binge drink to get drunk.
- Think alcohol is interfering with schoolwork and relationships.

## **What Causes Alcohol Abuse and Dependence?**

Similar to many other mental health disorders, alcohol abuse and dependence are likely due to a wide variety of environmental and biological factors. The cultural traditions surrounding the use of alcohol in family, religious and social settings, especially during childhood, can affect both alcohol use and the likelihood that alcohol problems may develop.

## **How Are Alcohol Abuse and Dependence Treated?**

Treatment depends on the severity of the alcohol problem and the treatment resources that are available at an individual's higher education institution and local community. Treatment may include:

- Alcohol detoxification, which is the procedure of safely getting alcohol out of your system by treating withdrawal symptoms.

- Prescription medications such as acamprosate, disulfiram and naltrexone that have been shown to help prevent a relapse to drinking once drinking has stopped.
- Various types of counseling that teach alcohol abusers to identify situations and emotions that typically trigger their desire to drink and find new ways to cope that do not include alcohol use. These treatments are usually provided on an outpatient basis, and many are offered through university counseling centers throughout the country.
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- Support of family members, which is important to the recovery process. Many people with alcohol problems have disturbed many of their closest relationships, and these have to be rebuilt.
- Free community and government programs, such as group support meetings, legal assistance or job training.

It is important to work with a mental health care provider to:

- Consider the positive benefits of stopping an unhealthy drinking pattern.
- Set a specific drinking goal. You may choose to abstain from alcohol or limit the amount that you drink in order to avoid negative legal and social consequences.
- Examine the situational triggers for unhealthy drinking patterns and determine new ways of tackling those trigger situations.

Students of legal age (age 21 and older) who consume alcohol should do so responsibly and in moderation. Unfortunately, many students engage in underage, risky drinking that could lead to long-term alcohol problems. These patterns include binge drinking and heavy drinking on a regular basis. The health and social effects of alcohol misuse can be extremely serious and even life threatening both to the individual and to others.

### **Additional Resources**

American Psychiatric Association  
1000 Wilson Blvd., Suite 1825  
Arlington, VA 22209  
(703) 907-7300  
Internet: [www.healthyminds.org](http://www.healthyminds.org)

National Institute on Alcohol Abuse and Alcoholism  
Scientific Communications Branch  
6000 Executive Blvd.  
Willco Building, Suite 409  
Bethesda, MD 20892-7003  
(301) 443-3860  
Internet: [www.collegedrinkingprevention.gov](http://www.collegedrinkingprevention.gov)

Substance Abuse & Mental Health Services Administration  
1 Choke Cherry Road  
Rockville, MD 20857  
240-276-2420  
<http://www.samhsa.gov>

Stop Alcohol Abuse  
[www.stopalcoholabuse.gov](http://www.stopalcoholabuse.gov)



Alcoholics Anonymous World Services, Inc.  
475 Riverside Dr., 11th Floor  
New York, NY 10115  
(212) 870-3400  
Internet: [www.aa.org](http://www.aa.org)

Al-Anon Family Group Headquarters, Inc.  
1600 Corporate Landing Parkway  
Virginia Beach, VA 23454-5617  
757 - 563-1600  
Internet: [www.al-anon.alateen.org](http://www.al-anon.alateen.org)

National Council on Alcoholism and Drug Dependence, Inc.  
20 Exchange Place, Suite 2902  
New York, NY 10005  
(212) 269-7797 or 1-800-NCA-CALL  
Internet: [www.ncadd.org](http://www.ncadd.org)



### **News From the ASA:**

#### **Over-the-Counter Drug Abuse**

The American Society of Anesthesiologists (ASA) is concerned about the abuse of over-the-counter medications. There seems to be a public perception that if a medication can be purchased without a prescription, then it can't really cause any harm.

The truth is that, even though these medications are an important tool for consumers to use in treating their own minor illnesses, these products are safe only if used according to package directions.

Anesthesiologists, particularly those involved in critical care medicine, often are called upon to care for patients who are in very serious condition because they have taken an overdose of an over-the-counter drug.

A recent fad among teens and young adults is the abuse of cough and cold medicines containing the ingredient dextromethorphan, or DXM, in order to get high. When taken in large quantities, this ingredient can cause nausea, vomiting, life-threatening seizures, hallucinations, and even death. At least 14 people have died from taking excessive amounts of DXM.

#### **Would you recognize these symptoms in a family member or friend?**

Here are some other symptoms that DXM abusers may experience:

- Confusion
- Impaired judgment and mental performance
- Blurred vision
- Slurred speech
- Loss of coordination
- Rigid motor tone and involuntary muscle movement
- Tremor
- Dizziness
- Excessive sweating
- Irregular heartbeat
- Numbness of fingers or toes
- ASA urges young people and their parents to be aware of the dangers of experimenting with DXM or any drug found in over-the-counter products.

In addition to the symptoms mentioned above, parents should watch for clues such as:

- Bookmarked Web sites about "robotripping" or DXM
- Packages of cough medicines containing dextromethorphan
- Sleep masks or cotton balls in a teen's room, indicating they may use sensory deprivation to enhance the DXM "high"

#### **Did you know?**

Critical care anesthesiologists are uniquely positioned to help overdose patients survive, due to their extensive training in airway management, respiratory support and cardiovascular resuscitation. Here are some of the ways that this training helps anesthesiologists and critical care physicians to treat these patients:

When people have abused certain drugs, the normal protective reflexes no longer work, and they

cannot protect their own airway. Anesthesiologists are well trained in airway management, or helping patients to breathe and avoid choking.

Drug overdoses can cause some form of abnormal heart rhythm or heart collapse. Anesthesiologists have excellent skills in the areas of resuscitation pharmacology and cardiovascular support.

To treat overdose patients, physicians often give them medications to reverse the drug's effects. Because a critical care anesthesiologist understands the pharmacological interactions between illicit drugs and controlled substances, his/her choice of what medications to use to reverse the overdose effect may be better or different than a physician that does not have this extensive training.

### **More about critical care**

Here are some more facts about how anesthesiologists function in the critical care setting.

- For nearly 50 years anesthesiologists have been working in a critical care setting.
- Critical care anesthesiologists go through additional training for one or more years. A certificate of special qualifications in critical care medicine is awarded by the American Board of Anesthesiology to those who pass the examination process.
- Critical care is part of the anesthesiology residency. Currently two months are required and this soon may increase to 6 months.
- There are 50 anesthesiology programs in the U.S. that offer fellowship training in critical care.
- Although all anesthesiologists are trained to treat critically ill patients, some make this their practice exclusively.
- Formally trained critical care anesthesiologists provide intensive diagnostic and therapeutic interventions within the Intensive Care Unit.
- The breadth and depth of critical care services vary considerably but some of the functions include:
  - Ventilator management
  - Blood circulation management (hemodynamic)
  - Fluid management
  - Blood oxygenation
  - Pain management
  - Neurological evaluation
  - Emergency airway management
  - Diagnostic studies
- Despite the wide spectrum of clinical problems for which a patient might require ICU care, studies have consistently documented improved care, reduced length of stay, reduced cost, and improved morbidity and mortality and better patient safety.



### Effects of Inhalants

One thing that all inhalants have in common is that they contain chemicals that were never meant for people to consume. So why would anyone breathe toxic chemicals on purpose? Just like the users of other drugs, inhalant abusers try to get "high" from the chemicals.

The effects of inhalants usually last only a few minutes, unless users inhale repeatedly. At first, inhalants have a stimulating effect. Then if the users keep inhaling, they may feel dazed, dizzy, and have trouble walking. Sometimes users get aggressive or think they see things that are not there. Stronger chemicals or repeated inhaling can cause people to pass out. A user can also die suddenly from using inhalants.

When someone uses an inhalant, large amounts of toxic chemicals enter the lungs and pass from the bloodstream into the brain. There they damage and kill brain cells. The amount of fumes a young person inhales greatly exceeds what is considered safe even in a workplace setting. It takes at least 2 weeks for the body to get rid of some of the chemicals in inhalants. Inhalants exit the body mainly through exhaling, which is why an inhalant abuser's breath often smells like chemicals. Inhalants also pass out of the body through urine.

Short-term effects of inhalants are:

- Headaches, nausea, vomiting
- Loss of balance
- Dizziness
- Slurred and slow speech
- Mood changes
- Hallucinations

Over time, inhalants can cause more serious damage, such as:

- Loss of concentration
- Short-term memory loss
- Hearing loss
- Muscle spasms
- Permanent brain damage
- Death

When children are abusing inhalants, many times their parents do not find out until the abuse has already become a habit. Chronic inhalant abusers are hardest to treat because they often have many serious personal and social problems. They also have difficulty staying off inhalants and have very high rates of relapse. All of these reasons can keep chronic inhalant abusers from benefiting from many drug abuse treatment programs.

Toxic chemicals from inhalants stay in the body for weeks. Because of this, when chronic abusers stop using inhalants they may feel the effects of withdrawal for weeks. Withdrawal is the body's way of getting over its physical addiction to inhalants. During withdrawal from inhalants, a person may have:

- Hand tremors
- Excess sweating

- Constant headaches
- Nervousness

Treatment for inhalant abusers is usually long-term, sometimes as long as 2 years. It must address the many social problems most inhalant abusers have and involves:

- Support of the child's family
- Moving the child away from unhealthy friendships with other abusers
- Teaching and fostering better coping skills
- Building self-esteem and self-confidence
- Helping the child adjust to school or another learning setting

Inhalant abuse is a difficult form of substance abuse to treat. It is best to recognize and start treatment before the problem becomes a habit. Parents and educators need to be able to recognize the signs of inhalant abuse, especially because most abusers do not seek treatment on their own.

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### Common Inhalants

Hair spray. Gasoline. Spray paint. Glue. Typewriter correction fluid. You probably have at least one of these products in your home. These are just a few of the inhalants that are poisonous when children:

- Sniff or inhale them directly from the cans, bottles, or other containers they are in.
- Spray them into a bag, empty soft drink can, or other container and breathe them in. (Gases like nitrous oxide are often inhaled from balloons.)
- Spray or pour them onto a cloth or piece of clothing and inhale deeply from the fabric.

Generally, inhalants fall into three categories: solvents, gases, and nitrites.

**Solvents** are usually liquid. They are found in household and industrial products, such as glues, paints, and polishes.

**Gases** are found in many household and commercial products.

**Aerosol sprays** like hair spray and spray paint, as well as medical gases like nitrous oxide, fall into this category. Almost all pressurized aerosol sprays can be abused.

**Nitrites** are found in room deodorizers.

Here is a list of only a few of the common household products that are dangerous when inhaled:

- **Kitchen**
  - Cooking spray
  - Typewriter correction fluid
  - Disinfectants
  - Fabric protectors
  - Felt-tip markers
  - Furniture polish and wax
  - Oven cleaners
- **Bathroom**
  - Air fresheners
  - Spray deodorants
  - Hair sprays
  - Nail polish removers
- **Garage/Workshop**
  - Pressurized aerosol sprays
  - Butane
  - Gasoline
  - Glues and adhesives
  - Paints and paint thinners
  - Refrigerants (freon)
  - Rust removers
  - Spray paints

Keep this list in mind when you consider what products in your home have the potential to be misused.

Inhalant abuse can be deadly and no one can predict how much of an inhalant will kill. A young person can use a certain amount one time and seem fine, but his or her next use could be fatal.

The Texas Commission on Drugs and Alcohol Abuse reports the following ways that inhalants can kill:

- Asphyxia - Solvent gases can cause a person to stop breathing from a lack of oxygen.
- Choking - Users can choke on their own vomit.
- Suffocation - This is more common among users who inhale from plastic bags.
- Injuries - Inhalants can cause people to become careless or aggressive. This often leads to behaviors that can injure or kill, such as operating a motor vehicle dangerously or jumping from great heights. Teens also can get burned or even be killed if someone lights a cigarette while they are huffing butane, gasoline, or some other flammable substance.
- Suicides - Coming down from an inhalant high causes some people to feel depressed, which may lead them to take their own lives.
- Cardiac arrest - Chemicals from inhalants can make the heart beat very fast and irregularly, then suddenly stop breathing. This is called cardiac arrest. One reason why this might happen is that inhalants somehow make the heart extra-sensitive to adrenaline. (Adrenaline is a hormone that the body produces, usually in response to fear, excitement, or surprise.) A sudden rush of adrenaline combined with inhalants can make the heart stop instantly. This "Sudden Sniffing Death," as it is called, is responsible for more than half of all deaths due to inhalant abuse.

Another very real danger of inhalants is that they often lead young people to try other drugs whose effects are even more intense and last longer.

## Smoking Cessation: Ways of Quitting

### Switch Brands

- Switch to a brand you find distasteful.
- Change to a brand that is low in tar and nicotine a couple of weeks before your target date. This will help change your smoking behavior. However, do not smoke more cigarettes, inhale them more often or more deeply, or place your fingertips over the holes in the filters. All of these will increase your nicotine intake, and the idea is to get your body used to functioning without nicotine.

### Cut Down the Number of Cigarettes You Smoke

- Smoke only half of each cigarette.
- Each day, postpone the lighting of your first cigarette one hour.
- Decide you'll only smoke during odd or even hours of the day.
- Decide beforehand how many cigarettes you'll smoke during the day. For each additional cigarette, give a dollar to your favorite charity.
- Change your eating habits to help you cut down. For example, drink milk, which many people consider incompatible with smoking. End meals or snacks with something that won't lead to a cigarette.
- Reach for a glass of juice instead of a cigarette for a "pick-me-up."
- Remember: Cutting down can help you quit, but it's not a substitute for quitting. If you're down to about seven cigarettes a day, it's time to set your target quit date. Get ready and stick to it.
- **Don't Smoke "Automatically"**
  - Smoke only those cigarettes you really want. Catch yourself before you light up a cigarette out of pure habit.
  - Don't empty your ashtrays. This will remind you of how many cigarettes you've smoked each day, and the sight and the smell of stale cigarette butts will be very unpleasant.
  - Make yourself aware of each cigarette by using the opposite hand or putting cigarettes in an unfamiliar location or a different pocket to break the automatic reach.
  - If you light up many times during the day without even thinking about it, try to look in a mirror each time you put a match to your cigarette; you may decide you don't need it.

### Make Smoking Inconvenient

- Stop buying cigarettes by the carton. Wait until one pack is empty before you buy another.
- Stop carrying cigarettes with you at home or at work. Make them difficult to get to.

### Make Smoking Unpleasant

- Smoke only under circumstances that aren't especially pleasurable for you. If you like to smoke with others, smoke alone. Turn your chair to an empty corner and focus only on the cigarette you are smoking and all its many negative effects.
- Collect all your cigarette butts in one large glass container as a visual reminder of the filth made by smoking.

### Just Before Quitting

- Practice going without cigarettes.



- Don't think of never smoking again. Think of quitting in terms of one day at a time.
- Tell yourself you won't smoke today, and then don't.
- Clean your clothes to rid them of the cigarette smell, which can linger a long time.

### **On the Day You Quit**

- Throw away all your cigarettes and matches. Hide your lighters and ashtrays.
- Visit the dentist and have your teeth cleaned to get rid of tobacco stains. Notice how nice they look and resolve to keep them that way.
- Make a list of things you'd like to buy for yourself or someone else. Estimate the cost in terms of packs of cigarettes, and put the money aside to buy these presents.
- Keep very busy on the big day. Go to the movies, exercise, take long walks, go bike riding.
- Remind your family and friends that this is your quit date, and ask them to help you over the rough spots of the first couple of days and weeks.
- Buy yourself a treat or do something special to celebrate.

### **Immediately After Quitting**

- Develop a clean, fresh, nonsmoking environment around yourself - at work and at home. Buy yourself flowers; you may be surprised how much you can enjoy their scent now.
- The first few days after you quit, spend as much free time as possible in places where smoking isn't allowed, such as libraries, museums, theaters, department stores and churches.
- Drink large quantities of water and fruit juice (but avoid sodas that contain caffeine).
- Try to avoid alcohol, coffee and other beverages that you associate with cigarette smoking.
- Strike up conversation instead of a match for a cigarette.
- If you miss the sensation of having a cigarette in your hand, play with something else - a pencil, a paper clip, a marble.
- If you miss having something in your mouth, try toothpicks or a fake cigarette.

### **Avoid temptation**

- Instead of smoking after meals, get up from the table and brush your teeth or go for a walk.
- If you always smoke while driving, listen to a particularly interesting radio program or your favorite music, or take public transportation for a while, if you can.
- For the first one to three weeks, avoid situations you strongly associate with the pleasurable aspects of smoking, such as watching your favorite TV program, sitting in your favorite chair, or having a cocktail before dinner.
- Until you are confident of your ability to stay off cigarettes, limit your socializing to healthful, outdoor activities or situations where smoking is not allowed.
- If you must be in a situation where you'll be tempted to smoke (such as a cocktail or dinner party), try to associate with the nonsmokers there.
- Try to analyze cigarette ads to understand how they attempt to "sell" you on individual brands.

### **When you get the crazies**

- Keep oral substitutes handy; try carrots, pickles, sunflower seeds, apples, celery, raisins or sugarless gum instead of a cigarette.

- Take 10 deep breaths and hold the last one while lighting a match. Exhale slowly and blow out the match. Pretend it's a cigarette and crush it out in an ashtray.
- Take a shower or bath if possible.
- Learn to relax quickly and deeply. Make yourself limp, visualize a soothing, pleasing situation, and get away from it all for a moment. Concentrate on that peaceful image and nothing else.
- Light incense or a candle instead of a cigarette.
- Never allow yourself to think that "one won't hurt"; it will.

### **Find new habits**

- Change your habits to make smoking difficult, impossible or unnecessary, For example, it's hard to smoke while you're swimming, jogging, or playing tennis or handball. When your desire for a cigarette is intense, wash your hands or the dishes or try new recipes.
- Do things that require you to use your hands. Try crossword puzzles, needlework, gardening or household chores. Go bike riding or take the dog for a walk; give yourself a manicure; write letters.
- Enjoy having a clean mouth taste and maintain it by brushing your teeth frequently and using a mouthwash.
- Stretch a lot.
- Get plenty of rest.
- Pay attention to your appearance. Look and feel sharp.
- Try to find time for the activities that are the most meaningful, satisfying and important to you.

### **About gaining weight**

- Many people who are considering quitting are very concerned about gaining weight. If you are concerned about weight gain, keep these points in mind:
- Quitting doesn't mean you'll automatically gain weight. When people gain it's because they often eat more once they quit.
- The benefits of giving up cigarettes far outweigh the drawbacks of adding a few pounds. You'd have to gain a very large amount of weight to offset the many substantial health benefits that a normal smoker gains by quitting. Watch what you eat, and if you are concerned about gaining weight, consider the tips that follow:
  - Make sure you have a well-balanced diet, with the proper amounts of protein, carbohydrates and fat.
  - Don't set a target date for a holiday, when the temptation of high-calorie food and drinks may be too hard to resist.
  - Drink a glass of water before your meals.
  - Weigh yourself weekly.
  - Chew sugarless gum when you want sweet foods.
  - Plan menus carefully, and count calories. Don't try to lose weight; just try to maintain your pre-quitting weight.
  - Have low-calorie foods on hand for nibbling. Use the Snack Calorie Chart to choose foods that are both nutritious and low in calories. Some good choices are fresh fruits and vegetables, fruit and vegetable juices, low-fat cottage cheese and air-popped popcorn without butter.
  - Take time for daily exercise or join an organized exercise group.

## For More Information

The Cancer Information Service, a program of the National Cancer Institute, is a nationwide telephone service for cancer patients and their families and friends, the public, and health care professionals. The staff can answer questions (in English or Spanish) and can send free National Cancer Institute materials about cancer. They also know about support groups and other resources and services. One toll-free number, (800) 4-CANCER (800-422-6237), connects callers with the office that serves their area.

The following organizations also can help you.

American Cancer Society\*  
1599 Clifton Road, NE  
Atlanta, GA 30329  
(404) 320-3333

The American Cancer Society (ACS) is a voluntary organization composed of 58 divisions and 3,100 local units. Through "The Great American Smoke Out" in November, the annual Cancer Crusade in April, and the numerous educational materials, ACS helps people learn about the health hazards of smoking and become successful ex-smokers.

American Heart Association\*  
7272 Greenville Avenue  
Dallas, TX 75231  
(214) 373-6300

The American Heart Association (AHA) is a voluntary organization with 130,000 members (physicians, scientists, and laypersons) in 55 state and regional groups. AHA produces a variety of publications and audiovisual materials about the effects of smoking on the heart. AHA also has developed a guidebook for incorporating a weight-control component into smoking cessation programs.

American Lung Association\*  
1740 Broadway  
New York, NY 10019-4374  
(212) 315-8700

The oldest voluntary health agency with 57 state associations and 60 affiliates throughout the United States, the American Lung Association (ALA) provides help for smokers who wish to quit through their Freedom From Smoking(r) self-help smoking cessation program. The organization actively supports legislation and information campaigns for nonsmokers' rights and conducts public information programs about the health effects of smoking.

Office on Smoking and Health Centers for Disease Control  
Mail Stop K-50  
4770 Buford Highway, NE  
Atlanta, GA 30341-3724  
(404) 488-5705

The Office on Smoking and Health (OSH) is the Department of Health and Human Services' lead agency in smoking control. OSH sponsors distribution of publications on smoking-related topics, such as free flyers on relapse after initial quitting, helping a friend or family member quit smoking, the health hazards of smoking, and the effects of parental smoking on teenagers.

\*Consult your local telephone directory for listings of local chapters. Source: National Cancer Institute, National Institutes of Health.

## **Cigarette Smoking and Cancer: Questions and Answers Key Points**

- Cigarette smoking causes 87 percent of lung cancer deaths and is responsible for most cancers of the larynx, oral cavity, esophagus and bladder (see Question 1).
- Secondhand smoke is responsible for an estimated 3,000 lung cancer deaths among nonsmokers each year (see Question 2).
- Tobacco smoke contains thousands of chemical agents, including more than 60 substances that are known to cause cancer (see Question 3).
- The risk of developing smoking-related cancers, as well as noncancerous diseases, increases with total lifetime exposure to cigarette smoke (see Question 4).
- Smokers can decrease their risk of developing cancer by quitting smoking (see Question 5).

Tobacco use, particularly cigarette smoking, is the single most preventable cause of death in the United States. Cigarette smoking alone is directly responsible for approximately 30 percent of all cancer deaths annually in the United States<sup>1</sup>. Cigarette smoking also contributes to lung disease, heart disease, stroke and the development of low birth weight babies<sup>2</sup>. Quitting smoking can significantly reduce a person's risk of developing heart disease, stroke and diseases of the lung, and can limit adverse health effects on children.

### **1. What are the effects of cigarette smoking on cancer rates?**

Cigarette smoking causes 87 percent of lung cancer deaths. Lung cancer is the leading cause of cancer death in both men and women<sup>1</sup>. Smoking is also responsible for most cancers of the larynx, oral cavity, esophagus and bladder. In addition, it is highly associated with the development of, and deaths from, kidney, pancreatic and cervical cancers<sup>2,3</sup>.

### **2. Are there any health risks for nonsmokers?**

The health risks caused by cigarette smoking are not limited to smokers — exposure to secondhand smoke, or environmental tobacco smoke (ETS), significantly increases a nonsmoker's risk of developing lung cancer<sup>12</sup>. (Secondhand smoke is a combination of the smoke that is released from the end of a burning cigarette and the smoke exhaled from the lungs of smokers.) According to the Centers for Disease Control and Prevention (CDC), exposure to secondhand smoke causes about 3,000 lung cancer deaths among nonsmokers and is responsible for lower respiratory tract infections in an estimated 300,000 children each year<sup>3</sup>. The U.S. Environmental Protection Agency (EPA) released a risk assessment report in December 1992 that classified secondhand smoke as a Group A (known human) carcinogen — a category reserved for only the most dangerous cancer-causing agents.<sup>4,5</sup>

### **3. What harmful chemicals are found in cigarette smoke?**

Cigarette smoke contains about 4,000 chemical agents, including more than 60 substances that are known to cause cancer in humans (carcinogens)<sup>3</sup>. In addition, many of these substances, such as carbon monoxide, tar, arsenic, and lead, are poisonous and toxic to the human body. Nicotine is a drug that is naturally present in the tobacco plant and is primarily responsible for a person's addiction to tobacco products, including cigarettes. During smoking, nicotine is absorbed quickly into the bloodstream and travels to the brain in a matter of seconds. Nicotine causes an addiction to cigarettes and other tobacco products that is similar to the addiction produced by using heroin and cocaine<sup>6</sup>.

**4. How does exposure to tobacco smoke affect the cigarette smoker?**

The risk of developing smoking-related diseases, such as lung and other cancers, heart disease, stroke and respiratory illnesses, is related to total lifetime exposure to cigarette smoke<sup>7</sup>. This includes the number of cigarettes a person smokes each day, the intensity of smoking (i.e., the size and frequency of puffs), the age at which smoking began, the number of years a person has smoked, and a smoker's secondhand smoke exposure.

**5. How would quitting smoking affect the risk of developing cancer and other diseases?**

Smokers who quit live longer than those who continue to smoke. In addition, the earlier smokers quit, the greater the health benefit<sup>1</sup>. Quitting smoking reduces a person's risk of dying from smoking-related cancers and other diseases<sup>1</sup>. The extent to which this risk is reduced depends on the number of years a person smoked, the number of cigarettes smoked per day, the age at which smoking began, and the presence or absence of illness at the time of quitting. Research has shown that people who quit before age 35 reduce their risk of developing a tobacco-related disease by 90 percent<sup>1</sup>. Even smokers who quit before age 50 significantly reduce their risk of dying from a tobacco-related disease<sup>1</sup>.

For additional information on quitting smoking, see the NCI fact sheet *Questions and Answers About Smoking Cessation*, which can be found at [http://cis.nci.nih.gov/fact/8\\_13.htm](http://cis.nci.nih.gov/fact/8_13.htm) on the Internet.

**6. What additional resources are available?**

For additional information about cancer or tobacco use, call (800) 4-CANCER or visit the NCI's Web site about tobacco at <http://www.cancer.gov/tobacco> on the Internet.

For help with quitting smoking, call NCI's smoking cessation quitline at (877) 44U-QUIT or visit NCI's smoking cessation Web site at <http://www.smokefree.gov> on the Internet.

Information about the health risks of smoking is also available from:

Office on Smoking and Health (OSH)  
National Center for Chronic Disease Prevention and Health Promotion  
Centers for Disease Control and Prevention  
Mail Stop K-50, 4770 Buford Highway, NE.  
Atlanta, GA 30341-3717  
National phone number: (800) CDC-1311 (800-232-1311)  
Local phone number: (770) 488-5705  
Fax: (888) CDC-FAXX (888-232-3299)  
FAX Information Service: (770) 332-2552  
Web site: <http://www.cdc.gov/tobacco>  
E-mail: [ccdinfo@cdc.gov](mailto:ccdinfo@cdc.gov)

**References**

1. American Cancer Society. *Cancer Facts and Figures 2003*. Atlanta, GA: American Cancer Society, 2003.
2. U.S. Department of Health and Human Services. *Targeting Tobacco Use: The Nation's Leading Cause of Death*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2003.

3. Centers for Disease Control and Prevention. *Tobacco Use in the United States*. Retrieved September 30, 2003, from:  
[http://www.cdc.gov/tobacco/overview/tobus\\_us.htm](http://www.cdc.gov/tobacco/overview/tobus_us.htm).
4. U.S. Environmental Protection Agency. *Respiratory Health Effects of Passive Smoking: Lung Cancer and Other Disorders*. Washington, DC: U.S. Environmental Protection Agency, 1992.
5. U.S. Department of Health and Human Services. *Report on Carcinogens: Tenth Edition*. Research Triangle Park, NC: U.S. Department of Health and Human Services, Public Health Service, National Toxicology Program, 2002.
6. U.S. Department of Health and Human Services. *Nicotine Addiction: A Report of the Surgeon General*. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, Center for Health Promotion and Education, Office on Smoking and Health, 1988.
7. International Agency for Research on Cancer. *Tobacco Smoke and Involuntary Smoking*. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Vol. 83. Lyon, France, 2003 (in press).

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**Source:** National Cancer Institute, National Institutes of Health

## **Frequently Asked Questions about HIV/AIDS: Transmission and Prevention**

### **How is HIV passed from one person to another?**

HIV transmission can occur when blood, semen (including pre-seminal fluid or "pre-cum"), vaginal fluid, or breast milk from an infected person enters the body of an uninfected person.

HIV can enter the body through a vein (e.g., injection drug use), the anus or rectum, the vagina, the penis, the mouth, other mucous membranes (e.g., eyes or inside of the nose), or cuts and sores. Intact, healthy skin is an excellent barrier against HIV and other viruses and bacteria.

These are the most common ways that HIV is transmitted from one person to another:

- By having sexual intercourse (anal, vaginal, or oral sex) with an HIV-infected person
- By sharing needles or injection equipment with an injection drug user who is infected with HIV
- From HIV-infected women to babies before or during birth, or through breast-feeding after birth

HIV also can be transmitted through transfusions of infected blood or blood clotting factors. However, since 1985, all donated blood in the United States has been tested for HIV. Therefore, the risk of infection through transfusion of blood or blood products is extremely low. The U.S. blood supply is considered to be among the safest in the world.

Some health-care workers have become infected after being stuck with needles containing HIV-infected blood or, less frequently, after infected blood contact with the worker's open cut or through splashes into the worker's eyes or inside their nose. There has been only one instance of patients being infected by an HIV-infected health care worker. This involved HIV transmission from an infected dentist to six patients.

#### **Can I get HIV from kissing on the cheek?**

HIV is not casually transmitted, so kissing on the cheek is very safe. Even if the other person has the virus, your unbroken skin is a good barrier. No one has become infected from such ordinary social contact as dry kisses, hugs and handshakes

#### **Can I get HIV from open-mouth kissing?**

Open-mouth kissing is considered a very low-risk activity for the transmission of HIV. However, prolonged open-mouth kissing could damage the mouth or lips and allow HIV to pass from an infected person to a partner and then enter the body through cuts or sores in the mouth. Because of this possible risk, the CDC recommends against open-mouth kissing with an infected partner.

One case suggests that a woman became infected with HIV from her sex partner through exposure to contaminated blood during open-mouth kissing.

#### **Can I get HIV from someone performing oral sex on me?**

Yes, it is possible for you to become infected with HIV through receiving oral sex. If your partner has HIV, blood from their mouth may enter the urethra (the opening at the tip of the penis), the vagina, the anus, or directly into the body through small cuts or open sores. While no one knows exactly what the degree of risk is, evidence suggests that the risk is less than that of unprotected anal or vaginal sex.

If you choose to have oral sex:

- Use a latex condom on the penis; or
- If you or your partner is allergic to latex, a plastic (polyurethane) condom can be used.

Research has shown the effectiveness of latex condoms used on the penis for preventing the transmission of HIV. Condoms are not risk-free, but they greatly reduce your risk of becoming HIV-infected if your partner has the virus.

If you choose to have oral sex and you are female:

- Use a latex barrier (such as a cut-open condom that makes a square or a dental dam) between their mouth and the vagina. Plastic food wrap can also be used as a barrier. The barrier reduces the risk of blood entering the body through the vagina.

### **Can I get HIV from having vaginal sex?**

Yes, it is possible to become infected with HIV through vaginal intercourse. In fact, it is the most common way the virus is transmitted in much of the world. HIV can be found in the blood, semen, pre-seminal fluid, or vaginal fluid of a person infected with the virus. The lining of the vagina can tear and possibly allow HIV to enter the body. Direct absorption of HIV through the mucous membranes that line the vagina also is a possibility.

The male may be at less risk for HIV transmission than the female through vaginal intercourse. However, HIV can enter the body of the male through his urethra (the opening at the tip of the penis) or through small cuts or open sores on the penis.

Risk for HIV infection increases if you or a partner has a sexually transmitted disease (STD). See also "Is there a connection between HIV and other sexually transmitted diseases?"

If you choose to have vaginal intercourse, use a latex condom to help protect both you and your partner from the risk of HIV and other STDs. Studies have shown that latex condoms are very effective, though not perfect, in preventing HIV transmission when used correctly and consistently. If either partner is allergic to latex, plastic (polyurethane) condoms for either the male or female can be used.

### **Can I get HIV from anal sex?**

Yes, it is possible for either sex partner to become infected with HIV during anal sex. HIV can be found in the blood, semen, pre-seminal fluid, or vaginal fluid of a person infected with the virus. In general, the person receiving the semen is at greater risk of getting HIV because the lining of the rectum is thin and may allow the virus to enter the body during anal sex. However, a person who inserts his penis into an infected partner also is at risk because HIV can enter through the urethra (the opening at the tip of the penis) or through small cuts, abrasions or open sores on the penis.

Having unprotected (without a condom) anal sex is considered to be a very risky behavior. If people choose to have anal sex, they should use a latex condom. Most of the time, condoms work well. However, condoms are more likely to break during anal sex than during vaginal sex. Thus, even with a condom, anal sex can be risky. A person should use a water-based lubricant in addition to the condom to reduce the chances of the condom breaking.

### **How effective are latex condoms in preventing HIV?**

Studies have shown that latex condoms are highly effective in preventing HIV transmission when used consistently and correctly. These studies looked at uninfected people considered to be at very high risk of infection because they were involved in sexual relationships with HIV-infected people. The studies found that even with repeated sexual contact, 98 percent to 100 percent of those people who used latex condoms correctly and consistently did not become infected.



## **Is there a connection between HIV and other sexually transmitted diseases?**

Yes. Having a sexually transmitted disease (STD) can increase a person's risk of becoming infected with HIV, whether the STD causes open sores or breaks in the skin (e.g., syphilis, herpes, chancroid) or does not cause breaks in the skin (e.g., chlamydia, gonorrhea).

If the STD infection causes irritation of the skin, breaks or sores may make it easier for HIV to enter the body during sexual contact. Even when the STD causes no breaks or open sores, the infection can stimulate an immune response in the genital area that can make HIV transmission more likely.

In addition, if an HIV-infected person also is infected with another STD, that person is three to five times more likely than other HIV-infected persons to transmit HIV through sexual contact.

Not having (abstaining from) sexual intercourse is the most effective way to avoid STDs, including HIV. For those who choose to be sexually active, the following HIV prevention activities are highly effective:

- Engaging in sex that does not involve vaginal, anal or oral sex
- Having intercourse with only one uninfected partner
- Using latex condoms every time you have sex

## **Why is injecting drugs a risk for HIV?**

At the start of every intravenous injection, blood is introduced into needles and syringes. HIV can be found in the blood of a person infected with the virus. The reuse of a blood-contaminated needle or syringe by another drug injector (sometimes called "direct syringe sharing") carries a high risk of HIV transmission because infected blood can be injected directly into the bloodstream.

In addition, sharing drug equipment (or "works") can be a risk for spreading HIV. Infected blood can be introduced into drug solutions by:

- Using blood-contaminated syringes to prepare drugs
- Reusing water
- Reusing bottle caps, spoons, or other containers ("spoons" and "cookers") used to dissolve drugs in water and to heat drug solutions
- Reusing small pieces of cotton or cigarette filters ("cottons") used to filter out particles that could block the needle

"Street sellers" of syringes may repackage used syringes and sell them as sterile syringes. For this reason, people who continue to inject drugs should obtain syringes from reliable sources of sterile syringes, such as pharmacies. It is important to know that sharing a needle or syringe for any use, including skin popping and injecting steroids, can put one at risk for HIV and other blood-borne infections.

## **How can people who use injection drugs reduce their risk for HIV infection?**

The CDC recommends that people who inject drugs should be regularly counseled to:

- Stop using and injecting drugs
- Enter and complete substance abuse treatment, including relapse prevention

For injection drug users who cannot or will not stop injecting drugs, the following steps may be taken to reduce personal and public health risks:

- Never reuse or "share" syringes, water, or drug preparation equipment
- Only use syringes obtained from a reliable source (such as pharmacies or needle exchange programs)
- Use a new, sterile syringe to prepare and inject drugs
- If possible, use sterile water to prepare drugs; otherwise, use clean water from a reliable source (such as fresh tap water)
- Use a new or disinfected container ("cooker") and a new filter ("cotton") to prepare drugs
- Clean the injection site prior to injection with a new alcohol swab
- Safely dispose of syringes after one use

If new, sterile syringes and other drug preparation and injection equipment are not available, then previously used equipment should be boiled in water or disinfected with bleach before reuse.

Injection drug users and their sex partners also should take precautions, such as using condoms consistently and correctly, to reduce risks of sexual transmission of HIV. Persons who continue to inject drugs should periodically be tested for HIV.

### **Can I get HIV from getting a tattoo or through body piercing?**

A risk of HIV transmission does exist if instruments contaminated with blood are either not sterilized or disinfected or are used inappropriately between clients. CDC recommends that instruments that are intended to penetrate the skin be used once, then disposed of or thoroughly cleaned and sterilized.

Personal service workers who do tattooing or body piercing should be educated about how HIV is transmitted and take precautions to prevent transmission of HIV and other blood-borne infections in their settings. If you are considering getting a tattoo or having your body pierced, ask staff at the establishment what procedures they use to prevent the spread of HIV and other blood-borne infections, such as hepatitis B virus. You also may call the local health department to find out what sterilization procedures are in place in the local area for these types of establishments

### **Are health care workers at risk of getting HIV on the job?**

The risk of health care workers getting HIV on the job is very low, especially if they carefully follow universal precautions (i.e., using protective practices and personal protective equipment to prevent HIV and other blood-borne infections). It is important to remember that casual, everyday contact with an HIV-infected person does not expose health care workers or anyone else to HIV. For health care workers on the job, the main risk of HIV transmission is through accidental injuries from needles and other sharp instruments that may be contaminated with the virus. Even this risk is small, however. Scientists estimate that the risk of infection from a needle jab is less than 1 percent; a figure based on the findings of several studies of health care workers who received punctures from HIV-contaminated needles or were otherwise exposed to HIV-contaminated blood.

For more information on universal precautions or occupational risks of HIV exposure, call the CDC National Prevention Information Network (operators of the National AIDS Clearinghouse) at (800) 458-5231.

### **Are patients in a dentist's or doctor's office at risk of getting HIV?**

Although HIV transmission is possible in health care settings, it is extremely rare. Medical experts emphasize that the careful practice of infection control procedures, including universal precautions, protects patients as well as health care providers from possible HIV infection in medical and dental offices.

In 1990, the CDC reported on an HIV-infected dentist in Florida who apparently infected some of his patients while doing dental work. Studies of viral DNA sequences linked the dentist to six of his patients who were also HIV-infected. The CDC has as yet been unable to establish how the transmission took place.

Further studies of more than 22,000 patients of 63 health care providers who were HIV-infected have found no further evidence of transmission from provider to patient in health care settings.

For more information on universal precautions or occupational risks of HIV exposure, call the CDC National Prevention Information Network (operators of the National AIDS Clearinghouse) at (800) 458-5231.

### **Should I be concerned about getting infected with HIV while playing sports?**

There are no documented cases of HIV being transmitted during participation in sports. The very low risk of transmission during sports participation would involve sports with direct body contact in which bleeding might be expected to occur.

If someone is bleeding, their participation in the sport should be interrupted until the wound stops bleeding and is both antiseptically cleaned and securely bandaged. There is no risk of HIV transmission through sports activities where bleeding does not occur.

### **Can I get HIV from casual contact (shaking hands, hugging, using a toilet, drinking from the same glass, or the sneezing and coughing of an infected person)?**

No. HIV is not transmitted by day-to-day contact in the workplace, schools, or social settings. HIV is not transmitted through shaking hands, hugging or a casual kiss. You cannot become infected from a toilet seat, a drinking fountain, a doorknob, dishes, drinking glasses, food or pets.

A small number of cases of transmission have been reported in which a person became infected with HIV as a result of contact with blood or other body secretions from an HIV-infected person in the household. Although contact with blood and other body substances can occur in households, transmission of HIV is rare in this setting. However, persons infected with HIV and persons providing home care for those who are HIV-infected should be fully educated and trained regarding appropriate infection-control techniques.

HIV is not an airborne or food-borne virus, and it does not live long outside the body. HIV can be found in the blood, semen, or vaginal fluid of an infected person. The three main ways HIV is transmitted are:

- Through having sex (anal, vaginal, or oral) with someone infected with HIV
- Through sharing needles and syringes with someone who has HIV
- Through exposure (in the case of infants) to HIV before or during birth, or through breast feeding

For more information about providing home care or living with a person who is HIV-infected, call the CDC National Prevention Information Network (operators of the National AIDS Clearinghouse) at (800) 458-5231 and ask for the publication "Caring for Someone with AIDS: Information for Friends, Relatives, Household Members, and Others Who Care for a Person With AIDS at Home."

### **Can I get infected with HIV from mosquitoes?**

No. From the start of the HIV epidemic there has been concern about HIV transmission of the virus by biting and bloodsucking insects, such as mosquitoes. However, studies conducted by the CDC and elsewhere have shown no evidence of HIV transmission through mosquitoes or any

other insects - even in areas where there are many cases of AIDS and large populations of mosquitoes. Lack of such outbreaks, despite intense efforts to detect them, supports the conclusion that HIV is not transmitted by insects.

The results of experiments and observations of insect biting behavior indicate that when an insect bites a person, it does not inject its own or a previously bitten person's or animal's blood into the next person bitten. Rather, it injects saliva, which acts as a lubricant so the insect can feed efficiently. Diseases such as yellow fever and malaria are transmitted through the saliva of specific species of mosquitoes. However, HIV lives for only a short time inside an insect and, unlike organisms that are transmitted via insect bites, HIV does not reproduce (and does not survive) in insects. Thus, even if the virus enters a mosquito or another insect, the insect does not become infected and cannot transmit HIV to the next human it bites.

There also is no reason to fear that a mosquito or other insect could transmit HIV from one person to another through HIV-infected blood left on its mouth parts. Several reasons help explain why this is so. First, infected people do not have constantly high levels of HIV in their blood streams. Second, insect mouth parts retain only very small amounts of blood on their surfaces. Finally, scientists who study insects have determined that biting insects normally do not travel from one person to the next immediately after ingesting blood. Rather, they fly to a resting place to digest the blood meal.

### **How safe is the blood supply in the United States?**

The U.S. blood supply is among the safest in the world. Nearly all people infected with HIV through blood transfusions received those transfusions before 1985, the year HIV testing began for all donated blood.

The Public Health Service has recommended an approach to blood safety in the United States that includes stringent donor selection practices and the use of screening tests. U.S. blood donations have been screened for antibodies to HIV-1 since March 1985 and HIV-2 since June 1992. Blood and blood products that test positive for HIV are safely discarded and are not used for transfusions.

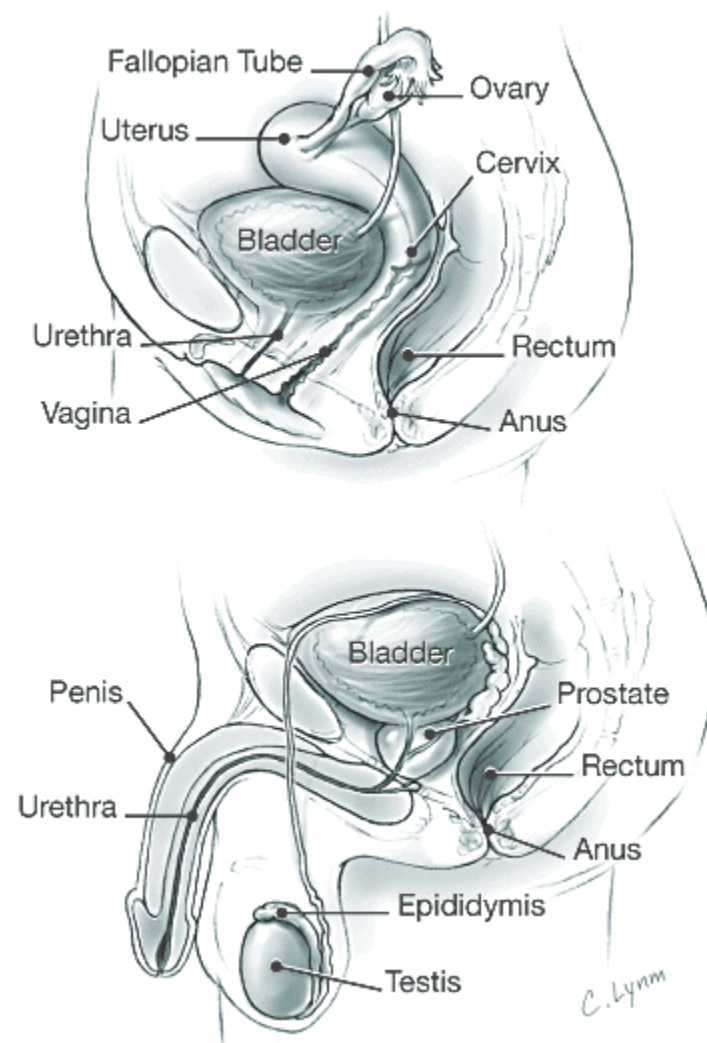
An estimated one in 450,000 to one in 660,000 donations per year are infectious for HIV but are not detected by current antibody screening tests. In August 1995, the FDA recommended that all donated blood and plasma also be screened for HIV-1 p24 antigen. The improvement of processing methods for blood products also has reduced the number of infections resulting from the use of these products. Currently, the risk of infection with HIV in the United States through receiving a blood transfusion or blood products is extremely low and has become progressively lower, even in geographic areas with high HIV prevalence rates

Source: National Center for HIV, STD and TB Prevention, Centers for Disease Control and Prevention

## Screening and Prevention of Sexually Transmitted Diseases

Most people who have an infection usually will experience at least one or two noticeable symptoms. However, many people who have a sexually transmitted infection caused by chlamydia might not have symptoms and might not know they are infected. This is why it is important to get tested or "screened" if you are at risk for coming in contact with someone who is infected.

Chlamydia is a sexually transmitted disease caused by infection with a type of bacteria called *Chlamydia trachomatis*. An article in the January 3, 2001, issue of *The Journal of the American Medical Association* discusses the association between infection with certain strains or serotypes of *Chlamydia trachomatis* and a higher likelihood of contracting cervical squamous cell carcinoma (cancer of the cervix — part of a woman's reproductive tract).



### What are Sexually Transmitted Diseases?

Sexually transmitted diseases (sometimes referred to as "STDs") are diseases that are usually spread through sexual activity. They include chlamydia, gonorrhea, genital herpes, HIV/AIDS, and syphilis. There are many serious health problems associated with STDs. These include pelvic inflammatory disease in women (a serious infection of the uterus and fallopian tubes) and epididymitis (inflammation of the epididymis — a coiled tube by the testis) in men. These complications from STDs can cause infertility and increase the risk for some cancers.

STDs can be spread by other means than sexual activity, such as contact with body fluids from an infected person, and can be passed from a mother to her newborn baby.

### **Symptoms of an STD Infection:**

- Burning sensation in the urethra (the tube connected to the bladder through which urine is eliminated from the body) when urinating
- Sores, bumps, rashes, or blisters in the genital or anal area
- Abnormal discharge from the vagina or penis
- Itching, pain, or discharge in the anal area
- Redness or swelling in the genital area
- Pain in the pelvic or abdominal area
- Pain, soreness, irritation, or other discomfort during intercourse, or bleeding after intercourse
- Recurring yeast infections

Remember that many people with STDs may not experience symptoms.

### **The Importance of Screening**

Anyone who is sexually active should have regular checkups for STDs. If it is determined that you are infected, you can receive medication to treat the infection and prevent spreading the disease to others by sexual contact or to your baby, if you are pregnant.

### **Lowering Your Risk of STD Infection**

If you are sexually active and are unsure if your partner is infected with an STD (or is in contact with someone else who is infected), or if you have more than one sex partner, you should:

- Practice safe sex; correctly use a new latex condom from the beginning throughout the duration of the sex act every time you have vaginal, anal, or oral sex
- Avoid contact with body fluids and tissues, such as vaginal fluids, semen, and any open sores
- Have regular checkups for STDs

### **For More Information**

- CDC National STD Hotline  
(800) 227-8922  
or [www.cdc.gov](http://www.cdc.gov)
- National Institute of Allergy and Infectious Diseases  
[www.niaid.nih.gov](http://www.niaid.nih.gov)

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Sources: National Institute of Allergy and Infectious Diseases, Centers for Disease Control and Prevention, *The AMA Complete Guide to Women's Health*, *The AMA Family Medical Guide*.

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