

# CROSSROAD ACADEMY

## CHARTER SCHOOL OF BUSINESS

470 Strong Road, Quincy, FL 32351 \* Phone (850) 875-9626 Fax (850) 875-1403  
Mr. Kevin E. Forehand, Principal Educator

### Drug Awareness and Prevention Module Spring 2015

During this project, you will be given the opportunity to demonstrate how this experience has affected you and how you have learned from it. You will have an opportunity to read and to research topics such as drug awareness and substance abuse. The emphasis of these assignments should be on drug, alcohol and tobacco prevention as you are given the opportunity to research and present on these topics. It is MANDATORY for you to complete this packet in its entirety. Partial completion of it or any of the assignments will NOT be accepted.

#### **Due Dates:**

Part I – March 24 @ 8 a.m.

Part II – TBD

#### **PART I *Activities and Assignments***

##### **Plagiarism Disclaimer:**

- Please do not copy and paste. You can summarize and paraphrase to restate the text in your own words.
- All projects must be fact-based, thus all projects should include a list of any references that were utilized for the projects/assignments.

##### **Sample Sources:**

- Please be sure to use anti-drug websites.
  - Some suggestions are listed below:
    - [www.theantidrug.com/](http://www.theantidrug.com/)
    - [www.abovetheinfluence.com/](http://www.abovetheinfluence.com/)
    - <http://www.justthinktwice.com/>
    - <http://www.drugabuse.gov/NIDAHome.html>
    - <http://www.usdoj.gov/dea/index.htm>
    - <http://www.teendrugabuse.us/index.html>
    - <http://www.whitehousedrugpolicy.gov/streetterms/>
1. Google and read as much as you can about Ansley Rayborn, the Chiles High School freshmen who died in Tallahassee on February 7. A link to one of the articles can be found below.  
<http://www.tallahassee.com/story/news/local/2015/02/09/familys-nightmare-chiles-freshman-killed-car-wreck/23153399/>
  2. Read the Novel – Tears of a Tiger by Sharon Draper approximately \$8.00 (amazon, iTunes-ibooks, Barnes& Nobles, Books-a-million)
  3. Activity 1 – Reading Questions. Answer the following questions. All questions and responses must be typed under the heading “Activity 1: Reading Questions”
    - a. What drug(s) is/are used/abused in the book and/or the article?
    - b. Explain the short-term and long-term health consequences for the character with examples from the book and/or article.
    - c. Explain the legal consequences for the people/characters involved. Use examples from the book.
    - d. Explain the social consequences for the people/characters involved. Use examples from the book.
    - e. Overall, what happened to the person as a result of their drug/substance use? Did they get help? Did the person learn their lesson or was it too late?
    - f. What did you learn from the book and/or character’s substance use/abuse? Explain with examples from the book.
  4. Activity 2 – Reflection
    - Andy and his friends (as well as Ansley and her friends) were aware that drinking is dangerous, but they still made the decision to get behind the wheel after drinking illegally. As a reader, you are able to see how this bad decision affects so many others in the school and surrounding community through the multiple perspectives the writer gives.

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- **Your assignment** is to address the issue of why teens sometimes overlook the consequences and follow through with a bad decision. Think about the poor decisions you made knowing the negative consequences. Make a short list of the harmful decisions you made, even though you knew better, and then think about the effects.
  - **Next, write a personal reflection** that explains what you did and why. Then think about and explain how the negative choices you made have impacted your life (now and in the future). How has your decision affected those around you? Please be as detailed and vivid as possible with your explanation. Your reflection should be typed Times New Roman, 12-pt and 1.5 spaced.
5. Activity 3 – Research Paper/Presentation - You will be required to complete a research project as well as a 3-5 minute presentation on one of the following drugs. Your presentation may be in the form of a **Fact Sheet** or a **“How it Works”** display board. The additional guidelines for completing the research/presentation are listed below the list of drug choices.

You can choose from the following list of drugs:

- |                               |   |
|-------------------------------|---|
| i. Anabolic Steroids          | x. Prescription Depressant Medications                  |
| ii. Bath Salts                | xi. Prescription Drugs                                  |
| iii. Cocaine                  | xii. Prescription Pain Medications (Opioids)            |
| iv. Cough and Cold Medicines  | xiii. Prescription Stimulant Medications (Amphetamines) |
| v. Heroin                     | xiv. Salvia   |
| vi. Inhalants                 | xv. Spice   |
| vii. Marijuana                | xvi. Tobacco, Nicotine, & E-Cigarettes                  |
| viii. MDMA (Ecstasy or Molly) |   |
| ix. Methamphetamine (Meth)    |   |

Please also be sure to include:

- Picture of the drug.
- Description of the drug. What does it look like?
- Nicknames or street names
- How is it used/taken?
- Short and long term effects of the drug and dangers
- Credit to the sources where you found your information.
- Cost of drug
- Who is most likely to use it
- History of drug and its use
- Other interesting facts (Celebrities who have died of an overdose of this drug)

### **ALL INFORMATION SHOULD BE FACT BASED!**

- a. **Fact Sheet** – Design a public service sobriety resource fact sheet, newsletter, or brochure (must be typed/word processed). In addition to the items listed above, explain the difference between social use, dependence, and addiction to this drug. Include resources where teenagers with a drug problem can turn for help. Explain the types of help dependent or addicted teens can receive in the North Florida area. Don't forget to include a list of local resources (facilities). Be neat, colorful, and organized- make sure it looks like a final draft!
  - b. **How it Works** – Create a “How it Works” display that describes, in words and in illustrations how a specific drug affects the central nervous system or other systems in the human body. It should include all of the information above as well as be neat and colorful. The size should be a standard science display board. There should be no hand-written information on the display.
6. Read the provided articles on Tobacco Use and Teens. See Appendices
7. Activity 4 – Argumentative Essay – Write an argumentative essay in which you argue the importance of NOT using tobacco products AT ALL! Be sure to include a claim, address counterclaims, and use evidence from all the articles provided. You may use your writing conference packet to see example essays.

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**PART II Activities and Assignments** (Further details will follow at a later date)

1. School Pride Project
2. Student/Parent Drug & Technology Seminar
3. Join Students Working Against Tobacco (S.W.A.T)
4. Culminating Follow-up Activity

## Teen cannabis users have poor long-term memory in adulthood

**Date:** March 12, 2015

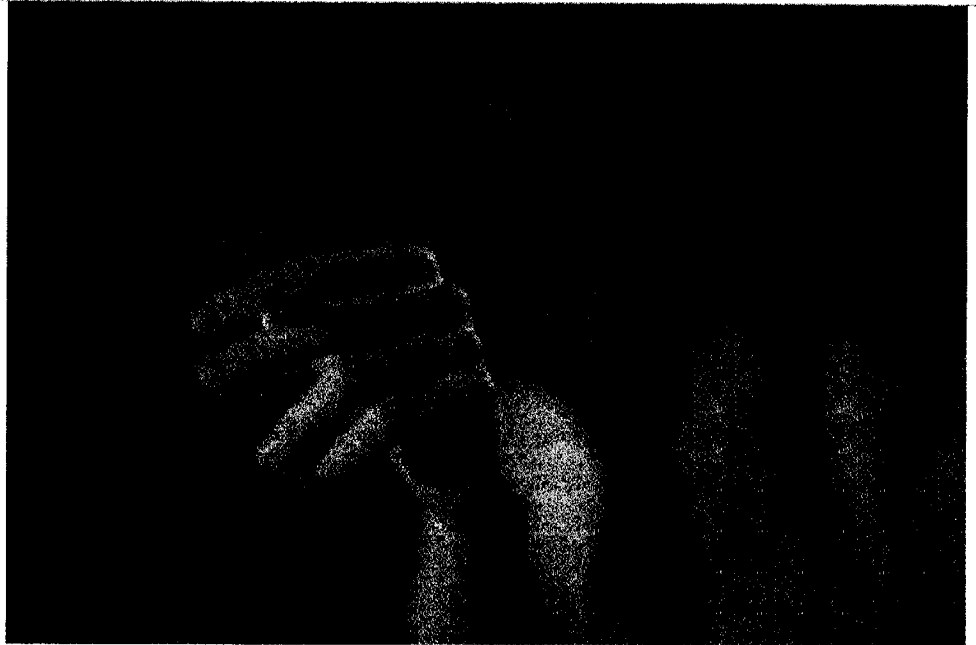
**Source:** Northwestern University

Teens who were heavy marijuana users -- smoking it daily for about three years -- had an abnormally shaped hippocampus and performed poorly on long-term memory tasks, reports a new Northwestern Medicine study.

The hippocampus is important to long-term memory (also known as episodic memory), which is the ability to remember autobiographical or life events.

The brain abnormalities and memory problems were observed during the individuals' early twenties, two years after they stopped smoking marijuana.

Young adults who abused cannabis as teens performed about 18 percent worse on long-term memory tests than young adults who never abused cannabis.



Teens who abused cannabis as teens performed about 18 percent worse on long-term memory tests than those who never abused cannabis.

*Credit: © stokkete / Fotolia*

"The memory processes that appear to be affected by cannabis are ones that we use every day to solve common problems and to sustain our relationships with friends and family," said senior author Dr. John Csernansky, the Lizzie Gilman professor and chair of psychiatry and behavioral sciences at Northwestern University Feinberg School of Medicine and Northwestern Memorial Hospital.

The study will be published March 12 in the journal *Hippocampus*.

The study is among the first to say the hippocampus is shaped differently in heavy marijuana smokers and the different looking shape is directly related to poor long-term memory performance. Previous studies of cannabis users have shown either the oddly shaped hippocampus or poor long-term memory but none have linked them.

Previous research by the same Northwestern team showed poor short-term and working memory performance and abnormal shapes of brain structures in the sub-cortex including the striatum, globus pallidus and thalamus.

"Both our recent studies link the chronic use of marijuana during adolescence to these differences in the shape of brain regions that are critical to memory and that appear to last for at least a few years after people stop using it," said lead study author Matthew Smith, assistant professor of psychiatry and behavioral sciences at the Feinberg School of Medicine.

The longer the individuals were chronically using marijuana, the more abnormal the shape of their hippocampus, the study reports. The findings suggest that these regions related to memory may be more susceptible to the effects of the drug the longer the abuse occurs.

The abnormal shape likely reflects damage to the hippocampus and could include the structure's neurons, axons or their supportive environments.

"Advanced brain mapping tools allowed us to examine detailed and sometimes subtle changes in small brain structures, including the hippocampus," said Lei Wang, also a senior study author and an assistant professor of psychiatry and behavioral sciences at Feinberg. The scientists used computerized programs they developed with collaborators that performed fine mappings between structural MRIs of different individuals' brains.

Subjects took a narrative memory test in which they listened to a series of stories for about one minute, then were asked to recall as much content as possible 20 to 30 minutes later. The test assessed their ability to encode, store, and recall details from the stories.

The groups in the study started using marijuana daily between 16 to 17 years of age for about three years. At the time of the study, they had been marijuana free for about two years. A total of 97 subjects participated, including matched groups of healthy controls, subjects with a marijuana use disorder, schizophrenia subjects with no history of substance use disorders, and schizophrenia subjects with a marijuana use disorder. The subjects who used marijuana did not abuse other drugs.

The study also found that young adults with schizophrenia who abused cannabis as teens performed about 26 percent more poorly on memory tests than young adults with schizophrenia who never abused cannabis.

In the U.S., marijuana is the most commonly used illicit drug, and young adults have the highest -- and growing -- prevalence of use. Decriminalization of the drug may lead to greater use. Four states have legalized marijuana for recreational use, and 23 states plus Washington D.C. have legalized it for medical use.

Because the study results examined one point in time, a longitudinal study is needed to definitively show if marijuana is responsible for the observed differences in the brain and memory impairment, Smith said.

"It is possible that the abnormal brain structures reveal a pre-existing vulnerability to marijuana abuse," Smith said. "But evidence that the longer the participants were abusing marijuana, the greater the differences in hippocampus shape suggests marijuana may be the cause."

Other Northwestern authors include senior author Hans C. Breiter and coauthors Derin J. Cobia, James L. Reilly, Andrea G. Roberts and Kathryn I. Alpert.

The study was funded by the National Institute of Mental Health of the National Institutes of Health, grants R01 MH056584 and P50 MH071616.

#### **Story Source:**

The above story is based on materials provided by **Northwestern University**. *Note: Materials may be edited for content and length.*

#### **Journal Reference:**

1. Matthew J. Smith, Derin J. Cobia, James L. Reilly, Jodi M. Gilman, Andrea G. Roberts, Kathryn I. Alpert, Lei Wang, Hans C. Breiter, John G. Csernansky. **Cannabis-related episodic memory deficits and hippocampal morphological differences in healthy individuals and schizophrenia subjects**. *Hippocampus*, 2015; DOI: 10.1002/hipo.22427

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#### **Cite This Page:**

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Northwestern University. "Teen cannabis users have poor long-term memory in adulthood." ScienceDaily. ScienceDaily, 12 March 2015. <[www.sciencedaily.com/releases/2015/03/150312082906.htm](http://www.sciencedaily.com/releases/2015/03/150312082906.htm)>.

## HEALTH

## Rise Is Seen in Students Who Use E-Cigarettes

By SABRINA TAVERNISE SEPT. 5, 2013

WASHINGTON — The share of middle and high school students who use e-cigarettes doubled in 2012 from the previous year, federal data show. The rise is prompting concerns among health officials that the new devices could be creating as many health problems as they are solving.

One in 10 high school students said they had tried an e-cigarette last year, according to a national survey by the Centers for Disease Control and Prevention, up from one in 20 in 2011. About 3 percent said they had used one in the last 30 days. In total, 1.8 million middle and high school students said they had tried e-cigarettes in 2012.

“This is really taking off among kids,” said Dr. Thomas Frieden, director of the C.D.C.

E-cigarettes are battery-powered devices that deliver nicotine that is vaporized to form an aerosol mist. Producers promote them as a healthy alternative to smoking, but researchers say their health effects are not yet clear, though most acknowledge that they are less harmful than traditional cigarettes. The Food and Drug Administration does not yet regulate them, though analysts expect that the agency will start soon.

Thomas Briant, executive director of the National Association of Tobacco Outlets, which represents 28,000 stores, said the study “raises too many unanswered questions,” for the data to be used for policy making. It was unclear, for example, whether students who tried e-cigarettes were using them regularly or only once. He pointed out that selling them to minors is now illegal in many states.

One of the biggest concerns among health officials is the potential for e-cigarettes to become a path to smoking among young people who otherwise would not have experimented. The survey found that most students who had tried e-cigarettes had also smoked traditional cigarettes.

But one in five middle school students who said they had tried e-cigarettes reported never having smoked a conventional cigarette, raising fears that e-cigarettes, at least for some, could become a gateway. Among high school students, 7 percent who had tried an e-cigarette said they had never smoked a traditional cigarette.

Dr. Frieden said that the adolescent brain is more susceptible to nicotine, and that the trend of rising use could hook young people who might then move into more harmful products like conventional cigarettes.

Murray S. Kessler, the chairman, president and chief executive of Lorillard, a North Carolina-based tobacco company that owns Blu eCigs, said that the rise in youth usage was “unacceptable,” and added that the company was “looking forward to a regulatory framework that restricts youth access” but does not “stifle what may be the most significant harm reduction opportunity that has ever been made available to smokers.”

The sharp rise among students mirrored that among adult users and researchers said that it appeared to be driven, at least in part, by aggressive national marketing campaigns, some of which feature famous actors. (Producers say the ads are not aimed at adolescents.) E-cigarettes also come in flavors, which were banned in traditional cigarettes in 2009 and which health officials say appeal to young people.

“Kids love gadgets and the marketing for these things is in your face,” said Gary A. Giovino, a professor of health behavior at the University at Buffalo. He added that the rising use of e-cigarettes risked reversing societal trends in which smoking had fallen out of fashion.

About 6 percent of all adults — not just smokers — reported having tried e-cigarettes in 2011, according to a C.D.C. survey, about double the number from 2010. Data for adults in 2012 are not yet available, a spokesman said.

A version of this article appears in print on September 6, 2013, on page A12 of the New York edition with the headline: Rise Is Seen In Students Who Use E-Cigarettes.

# Appendix B

## Drug Facts

# Tobacco, Nicotine, & E-Cigarettes

## What Are Tobacco, Nicotine, and E-Cigarette Products?

**Cigarettes:** Also known as: “smokes,” “cigs,” or “butts”

**Smokeless tobacco:** Also known as: “chew,” “dip,” “spit tobacco,” “snus,” or “snuff”

**Hookah:** Also known as: “narghile,” “argileh,” “shisha,” “hubble-bubble,” or “goza”



Tobacco is a leafy plant grown around the world, including in parts of the United States. There are many chemicals found in tobacco or created by burning it (as in cigarettes), but nicotine is the ingredient that can lead to addiction. Other chemicals produced by smoking, such as tar, carbon monoxide, acetaldehyde, and nitrosamines, also can cause harm to the body. For example, tar causes lung cancer and other serious diseases that affect breathing. Carbon monoxide causes heart problems, which is one reason why people who smoke are at high risk for heart disease.

Tobacco use is the leading preventable cause of disease, disability, and death in the United States. According to the Centers for Disease Control and Prevention (CDC), cigarettes cause more than 480,000 premature deaths in the United States each year—from smoking or exposure to secondhand smoke—about 1 in every 5 U.S. deaths, or 1,300 deaths every day.<sup>1</sup> An additional 16 million people suffer with a serious illness caused by smoking. Thus, for every 1 person who dies from smoking, 33 more suffer from at least 1 serious tobacco-related illness.<sup>2</sup>

1. U.S. Department of Health and Human Services. The Health Consequences of Smoking – 50 Years of Progress: A Report of the Surgeon General. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office of Smoking and Health, 2014 - <http://ash.org/wp-content/uploads/2014/01/full-report.pdf> [27.2 MB] or [http://www.cdc.gov/tobacco/data\\_statistics/fact\\_sheets/fast\\_facts/index.htm#to!!](http://www.cdc.gov/tobacco/data_statistics/fact_sheets/fast_facts/index.htm#to!!) [access 2014 Dec 22].

2. Centers for Disease Control and Prevention. National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, Department of Health and Human Services. Tobacco Use: Targeting the Nation's Leading Killer—At a Glance 2011. Available at: [http://www.cdc.gov/chronicdisease/resources/publications/aag/pdf/2011/tobacco\\_aag\\_2011\\_508.pdf](http://www.cdc.gov/chronicdisease/resources/publications/aag/pdf/2011/tobacco_aag_2011_508.pdf) [484 KB]



## How Are Tobacco and Nicotine Products Used?

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Tobacco and nicotine products come in many forms. People either smoke, chew, or sniff them, or inhale their vapors.

- **Smoked tobacco products.**
  - Cigarettes (regular, light, and menthol). No evidence exists that “lite” or menthol cigarettes are safer than regular cigarettes.
  - Cigars and pipes.
  - Bidis and kreteks (clove cigarettes). Bidis are small, thin, hand-rolled cigarettes primarily imported to the United States from India and other Southeast Asian countries. Kreteks—sometimes referred to as clove cigarettes—contain about 60-80% tobacco and 20-40% ground cloves. Flavored bidis and kreteks are banned in the United States because of the ban on flavored cigarettes.
  - Hookahs or water pipes. Practiced for centuries in other countries, smoking hookahs has become popular among teens in the United States. Hookah tobacco comes in many flavors, and the pipe is typically passed around in groups. As with smoking cigarettes, water pipe smoking still delivers the addictive drug nicotine and is at least as toxic as cigarette smoking.
- **Smokeless tobacco products.** The tobacco is not burned with these products:
  - Chewing tobacco, which is placed between the cheek and gums.
  - Snuff, ground tobacco which can be sniffed if dried or placed between the cheek and gum.
  - Dip, moist snuff that is used like chewing tobacco.
  - Snus, a small pouch of moist snuff.
  - Dissolvable products, including lozenges, orbs, sticks, and strips.
- **Electronic cigarettes.** Also called e-cigarettes, electronic nicotine delivery systems, or e-cigs, electronic cigarettes are smokeless, battery-operated devices that deliver flavored nicotine to the lungs without burning tobacco (the usual source of nicotine). In most e-cigarettes, puffing activates the battery-powered heating device, which vaporizes the liquid in the cartridge. The resulting vapor is then inhaled (called “vaping”). See [What About E-Cigarettes?](#) to learn more.

## How Do Tobacco and Nicotine Affect the Brain?

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Like cocaine, heroin, and marijuana, nicotine increases levels of a neurotransmitter called dopamine. Dopamine is released normally when you experience something pleasurable like good food, your favorite activity, or spending time with people you care about. When a person uses tobacco products,

the release of dopamine causes similar effects. This effect wears off quickly, causing people who smoke to get the urge to light up again for more of that good feeling, which can lead to addiction.

Studies suggest that other chemicals in tobacco smoke, such as acetaldehyde, may enhance the effects of nicotine on the brain.

When smokeless tobacco is used, nicotine is absorbed through the mouth tissues directly into the blood, where it goes to the brain. Even after the tobacco is removed from the mouth, nicotine continues to be absorbed into the bloodstream. Also, the nicotine stays in the blood longer for users of smokeless tobacco than for smokers.

## **What Are the Other Effects of Tobacco and Nicotine?**

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When nicotine enters the body, it initially causes the adrenal glands to release a hormone called epinephrine (adrenaline). The rush of adrenaline stimulates the body and causes an increase in blood pressure, heart rate, and breathing.

Most of the harm to the body is not from the nicotine, but from other chemicals contained in tobacco or produced when burning it—including carbon monoxide, tar, formaldehyde, cyanide, and ammonia. Tobacco use harms every organ in the body and can cause many problems. The health effects of smokeless tobacco are somewhat different from those of smoked tobacco. But for both types of tobacco products, the risks are real.

### **Smoking Tobacco Effects**

- **Cancer.** Tobacco use can be blamed for about one-third of all cancer deaths, including 90% of lung cancer cases. Tobacco use is also linked with cancers of the mouth, pharynx, larynx, esophagus, stomach, pancreas, cervix, kidney, ureter, bladder, and bone marrow (leukemia).
- **Lung or respiratory problems.** Bronchitis (swelling of the air passages to the lungs), emphysema (damage to the lungs), and pneumonia have been linked with smoking.
- **Heart disease.** Smoking increases the risk for stroke, heart attack, vascular disease (diseases that affect the circulation of blood through the body), and aneurysm (a balloon-like bulge in an artery that can rupture and cause death).
- **Cataracts (an eye condition).** People who smoke can experience this clouding of the eye, which causes blurred vision.
- **Loss of sense of smell and taste.**
- **Lowered lung capacity.** People who smoke can't exercise or play sports for as long as they once did.

- **Aging skin and teeth.** After smoking for a long time, people find that their skin ages faster and their teeth discolor or turn brown.
- **Harm to the unborn baby of a pregnant woman who smokes.** Pregnant women who smoke are at increased risk for delivering their baby early or suffering a miscarriage, still birth, or experiencing other problems with their pregnancy. Smoking by pregnant women also may be associated with learning and behavior problems in children.

## Secondhand Smoke

For people who do not smoke, secondhand smoke—exposure to exhaled smoke and smoke given off by the burning end of tobacco products—increases the risk for many diseases. Each year, an estimated 88 million Americans are regularly exposed to secondhand smoke and an estimated 41,000 nonsmokers die from diseases caused by secondhand smoke exposure.<sup>3</sup>

Inhaling secondhand smoke increases a person's risk for developing:

- **Heart disease.** Secondhand smoke increases the risk for heart disease by 25% to 30%. It is estimated to contribute to as many as 34,000 deaths related to heart disease.<sup>4</sup>
- **Lung cancer.** People exposed to secondhand smoke increase their risk for lung cancer by 20% to 30%. About 7,300 lung cancer deaths occur per year among people who do not smoke.<sup>5</sup>
- **Lung problems.** Secondhand smoke causes breathing problems in people who do not smoke, like coughing, phlegm, and lungs not working as well as they should.
- **Health problems for children.** Children exposed to secondhand smoke are at an increased risk for sudden infant death syndrome, lung infections, ear problems, and more severe asthma.
- **Accidental death from fires.** Smoking is the leading cause of fire-related deaths—more than 700 deaths each year.<sup>6</sup>

## Smokeless Tobacco Effects

People who use smokeless tobacco products, such as chewing tobacco, snuff, or dip, are at risk for several health problems:

- **Tooth decay, gum problems, and mouth sores.** Smokeless tobacco increases the chance of getting cavities, gum disease, and sores in the mouth that can make eating and drinking painful.
- **Cancer.** Close to 30 chemicals in smokeless tobacco have been found to cause cancer. People who use smokeless tobacco are at increased risk for oral cancer (cancers of the mouth, lip, tongue, and pharynx) as well as esophageal and pancreatic cancers.
- **Other potential health problems.** Recent research shows smokeless tobacco may play a role in

causing heart disease and stroke.

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3. Centers for Disease Control and Prevention. National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. Department of Health and Human Services. Smoking & Tobacco Use, Fast Facts. Available at: [http://www.cdc.gov/tobacco/data\\_statistics/fact\\_sheets/fast\\_facts/index.htm#toll](http://www.cdc.gov/tobacco/data_statistics/fact_sheets/fast_facts/index.htm#toll). Accessed 8/4/2014.

4. Centers for Disease Control and Prevention. National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, Department of Health and Human Services. Secondhand Smoke Facts. Updated April 2014. [http://www.cdc.gov/tobacco/data\\_statistics/fact\\_sheets/secondhand\\_smoke/general\\_facts/index.htm](http://www.cdc.gov/tobacco/data_statistics/fact_sheets/secondhand_smoke/general_facts/index.htm)

5. Centers for Disease Control and Prevention. National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, Department of Health and Human Services. Secondhand Smoke Facts. Updated April 2014. [http://www.cdc.gov/tobacco/data\\_statistics/fact\\_sheets/secondhand\\_smoke/general\\_facts/index.htm](http://www.cdc.gov/tobacco/data_statistics/fact_sheets/secondhand_smoke/general_facts/index.htm)

6. Centers for Disease Control and Prevention. National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, Department of Health and Human Services. Smoking and Tobacco Use. Tobacco-Related Mortality. Updated February 6, 2014. [http://www.cdc.gov/tobacco/data\\_statistics/fact\\_sheets/health\\_effects/tobacco\\_related\\_mortality/](http://www.cdc.gov/tobacco/data_statistics/fact_sheets/health_effects/tobacco_related_mortality/)

## **What About E-Cigarettes?**

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E-Cigarettes have emerged over the past decade and researchers in the early stage of investigating what the health effects are for people who use these products or who are exposed to the aerosol (vapor) secondhand.

E-Cigarettes are designed to deliver nicotine without the other chemicals produced by burning tobacco leaves. Puffing on the mouthpiece of the cartridge activates a battery-powered inhalation device (called a vaporizer). The vaporizer heats the liquid inside the cartridge which contains nicotine, flavors, and other chemicals. The heated liquid turns into an aerosol (vapor) which the user inhales—referred to as “vaping.”

There are conflicting studies about whether or not e-cigarettes help smokers to quit. For tobacco cigarette smokers, e-cigarettes may be a safer alternative, if the goal is not to quit nicotine all together. However, health experts have raised many questions about the safety of these products, particularly for teens:

- Testing of some e-cigarette products found the aerosol (vapor) to contain known cancer-causing and toxic chemicals, and particles from the vaporizing mechanism that may be harmful. The health effects of repeated exposure to these chemicals are not yet clear.
- There is animal research which shows that nicotine exposure may cause changes in the brain that make other drugs more rewarding. If this is true in humans, as some experts believe, it would mean

that using nicotine would increase the risk of other drug use and for addiction.

- There is an established link between e-cigarette use and tobacco cigarette use in teens. Researchers are investigating this relationship. The concern is that e-Cigarette use may serve as a “gateway” or introductory product for youth to try other tobacco products, including regular cigarettes, which are known to cause disease and lead to early death.
- The liquid in e-cigarettes can cause nicotine poisoning if someone drinks, sniffs, or touches it. Recently there has been a surge of poisoning cases in children under age 5. There is also concern for users changing cartridges and for pets.

## **Are E-Cigarettes Regulated?**

The U.S. government’s Food and Drug Administration (FDA) may start to regulate how e-cigarettes are made and sold. Currently, they only regulate e-cigarettes that have a therapeutic benefit, but at this time no products qualify. If the FDA moves to regulate all e-cigarettes, this will likely result in there being rules on safety, advertising, and warning labels, similar to those that currently govern tobacco cigarettes and other tobacco products. For now, e-cigarettes are not guaranteed to be safe. Consumers should not assume that the health claims made in advertisements by manufactures are scientifically proven.

## **Can You Get Addicted to Tobacco or Nicotine Products?**

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Yes. It is the nicotine in tobacco that is addictive. Each cigarette contains about 10 milligrams of nicotine. A person inhales only some of the smoke from a cigarette, and not all of each puff is absorbed in the lungs. Therefore, a person gets about 1 to 2 milligrams of the drug from each cigarette.

Studies of widely used brands of smokeless tobacco showed that the amount of nicotine per gram of tobacco ranged from 4.4 milligrams to 25.0 milligrams. Holding an average-size dip in your mouth for 30 minutes gives you as much nicotine as smoking 3 cigarettes. A 2-can-a-week snuff dipper gets as much nicotine as a person who smokes 1½ packs a day.

Whether a person smokes tobacco products or uses smokeless tobacco, the amount of nicotine absorbed in the body is enough to make someone addicted. When this happens, the person compulsively seeks out the tobacco even though he or she understands the harm it causes. Nicotine addiction can cause:

- **Tolerance.** Over the course of a day, someone who uses tobacco products develops tolerance—more nicotine is required to produce the same initial effects. Some of this tolerance is lost overnight. In fact, people who smoke often report that the first cigarette of the day is the strongest

or the “best.”

- **Withdrawal.** When people quit using tobacco products, they usually experience withdrawal symptoms, which often drive them back to tobacco use. Nicotine withdrawal symptoms include:
  - Irritability
  - Problems with thinking and paying attention
  - Sleep problems
  - Increased appetite
  - Craving, which may last 6 months or longer, and can be a major stumbling block to quitting

Treatments can help people who use tobacco products manage these symptoms and improve the likelihood of successfully quitting. For now, smokers who want to quit have other good options with proven effectiveness. Find out more at [teen.smokefree.gov](http://teen.smokefree.gov) and [cdc.gov/tobacco/campaign/tips/quit-smoking](http://cdc.gov/tobacco/campaign/tips/quit-smoking).

Most people (nearly 70%) who smoke want to quit.<sup>7</sup> Most who try to quit on their own relapse—often within a week. However, most former smokers have had several failed quit attempts before they succeed.

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7. Centers for Disease Control and Prevention. National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, Department of Health and Human Services. Smoking and Tobacco use: Fast Facts. Updated April 2014.  
[http://www.cdc.gov/tobacco/data\\_statistics/fact\\_sheets/fast\\_facts/index.htm](http://www.cdc.gov/tobacco/data_statistics/fact_sheets/fast_facts/index.htm)

## **Can You Die If You Use Tobacco and Nicotine?**

Yes. Tobacco use (both smoked and smokeless tobacco use) is the leading preventable cause of death in the United States. It is a known cause of human cancer. Smoking tobacco also can lead to early death from heart disease, health problems in children, and accidental fires caused by dropped cigarettes. In addition, the nicotine in smokeless tobacco may increase the risk for sudden death from a condition where the heart does not beat properly (ventricular arrhythmias); as a result, the heart pumps little or no blood to the body's organs.

According to the Centers for Disease Control and Prevention (CDC), cigarette smoking results in more than 480,000 premature deaths in the United States each year—about 1 in every 5 U.S. deaths, or 1,300 deaths every day.<sup>8</sup> People who smoke are at increased risk of death from cancer, particularly lung cancer, heart disease, lung diseases, and accidental injury from fires started by dropped cigarettes.

## How Many Teens Use Tobacco and Nicotine?

Smoking and smokeless tobacco use generally start during adolescence. Among people who use tobacco:

- More than 3,200 people younger than 18 years of age smoke their first cigarette.<sup>10</sup>
- An estimated 2,100 youth and young adults who have been occasional smokers become daily cigarette smokers.<sup>11</sup>
- If smoking continues at the current rate among youth in this country, 5.6 million of today's Americans younger than 18 years of age could die prematurely (too early) from a smoking-related illness. This is about 1 in every 13 Americans age 17 years or younger who are alive today.<sup>12</sup>
- Most smokeless tobacco users will also smoke cigarettes at some time in their lives.<sup>13</sup>
- Using smokeless tobacco remains a mostly male behavior. About 15% of high school boys use smokeless tobacco.<sup>14</sup>

### Monitoring the Future Study: Trends in Prevalence of Various Drugs for 8th Graders, 10th Graders, and 12th Graders; 2014 (in percent)\*

Drug	Time Period	8th Graders	10th Graders	12th Graders
Cigarettes (any use)	Lifetime	13.50	[22.60]	[34.40]
	Past Month	4.00	[7.20]	[13.60]
	Daily	1.40	[3.20]	[5.70]
	1/2-pack+/day	0.50	1.20	[2.60]
E-cigarettes	Past Month	8.70	6.20	17.10
Smokeless Tobacco	Lifetime	8.00	13.60	15.10
	Past Month	3.00	5.30	8.40
	Daily	0.50	1.80	3.40

\* Data in brackets indicate statistically significant change from the previous year.

For more statistics on teen drug abuse, see NIDA's Monitoring the Future study.