

Grade 7: Healthy Mind & Emotions

Lesson 7 - Choose to be Smoke-Free! The Best Health Decision You Can Ever Make.

Objectives:

1. Students will explain the short-range impacts of smoking on five body systems.
2. Students will explain the long-range impacts of smoking on five body systems.
3. Students will identify three harmful substances in tobacco and explain their harmful effects.
4. Students will explain why tobacco is addictive.
5. Students will identify the internal and external influences to smoke.
6. Students will identify personal strategies to deal with the internal and external influences to smoke.

Materials:

- Drinking straws
- Easel paper
- Poster board, markers, etc.
- Effects of Nicotine on the Body (**See Figure 1**)

Activity Summary:

In this lesson students will examine the short- and long-range effects of smoking on systems of the body, internal and external influences on people to smoke, what makes smoking addictive, and personal strategies to deal with smoking issues.

Background Information for the Teacher:

Overview:

Without question one of the healthiest decisions anyone could ever make for a lifetime of good health is the decision to remain smoke-free. Cigarette smoking is one of the most addictive (if not **the** most addictive) and damaging substances anyone could ever choose to put in their body. The pervasively destructive effects of smoke on the body are astounding including the following:

Respiratory System – Lungs are compromised for life even when a smoker quits. The vital alveoli are damaged thus affecting the oxygen-carbon dioxide exchange capacity of the body.

Effects of Nicotine on the Body

System Affected	Short Term	Long Term
Respiratory	Bad breath, shortness of breath, coughing, and increased phlegm. Greater vulnerability to respiratory infections (colds and flu), as well as allergies and asthma.	Bronchitis, lung cancer and emphysema
Circulatory	Accelerated heart rate and blood pressure and lower energy levels due to a decreased oxygen flow to the heart and throughout the body.	Weakens blood vessels, increases cholesterol level, and narrows blood vessels. Heart disease and stroke may result.
Nervous	Alters brain chemistry.	Stroke may result from reduced oxygen flow to the brain.
Digestive	Upset stomach, bad breath, stained teeth, cavities and gum disease.	Stomach ulcers as well as cancers of the lip, mouth, throat, larynx, esophagus, stomach and pancreas.
Excretory		Bladder cancer
Skin	Contributes to drying and wrinkling of the skin, as well as stained fingers and skin. Tobacco odor remains on hair, hands.	

Why Smoke At All?

It is legitimate to ask why anyone would choose to use tobacco, given all that is known about its detrimental effects on the body. But although interesting, it may be a question that is challenging to answer definitively. The reasons people choose to smoke are likely as diverse as the individuals themselves. Taking up smoking may largely be the result of being influenced by a person or lifestyle that is idealized.

Smoking influences are both internal and external. The most significant influences include:

External:

- **Media and Advertising** – Advertising, music videos, and movies, etc. can promote the idea that smoking is a cool, socially acceptable thing to do. While adult tobacco use is declining, teen use has been increasing. Although a federal lawsuit in the late 1990's forced tobacco companies to curtail advertisements geared towards children and teens this population remains particularly susceptible to tobacco advertising.
- **Role Models** - Adult family members, siblings, neighbors, and peers can influence the desire to smoke by personal example as well as by attitude. Role models such as celebrities or sports stars who smoke may also negatively influence students by their behavior.

Internal:

- **Self-image** - Students may have the impression that smoking is a “grown-up” thing to do.
- **Weight and Body Image** - The mistaken assumption that using cigarettes will help control weight is common.
- **Stress** – Smoking suppresses emotions. So smoking is perceived as being useful in aiding relaxation and coping with stress.

What's So Bad About Tobacco?

Tobacco is a plant, the leaves of which are dried and aged. Chemicals are added and the leaves are made into a variety of smoking or chewing products, including:

Cigarettes – Still the most commonly used tobacco product, in 2006 approximately 45.3 million U.S. adults (or 20.8% of the population) were current cigarette smokers, and smoking remains the leading preventable cause of disease and death in the United States. According to the Centers for Disease Control, the economic costs of smoking in the U.S. are estimated at **\$167 billion** annually (\$92 billion in productivity losses from premature death and \$75.5 billion in health-care expenditures.)

Cigars – According to estimates by the U.S. Dept. of Agriculture, more than five billion cigars were consumed in 2006. One large cigar has as much tobacco as an entire pack of cigarettes, but while almost all cigarette smokers inhale, most cigar smokers do not. Therefore, the risk of lung cancer is lower for cigar smokers than cigarette smokers. However, the risk increases with the more frequent cigar smoking and depth of inhalation. Studies show that men who smoke at least five cigars a day and report moderate inhalation, experience lung

cancer deaths at about two-thirds the rate of men who smoke one pack of cigarettes a day. Cigars represent the most recent addition to the list of tobacco products requiring health warnings.

Pipes – Like cigar smoking, the ill effects of pipe smoking, although not the same as cigarettes, are certainly sufficient. According to the American Cancer Society, pipe smokers have an increased risk of dying from cancers of the lung, throat, esophagus, larynx, pancreas, and colon and rectum. They also have an increased risk of dying of heart disease, stroke, and chronic lung disease, at about the same risk levels as that for cigar smokers.

Smokeless tobacco – Whether chewed, “dipped,” or sniffed, the many forms of “smokeless” tobacco pose a major health risk. The American Cancer Society stresses that although smokeless tobacco is less lethal substitute for smoking cigarettes, “less lethal is a far cry from safe,” and the amount of nicotine absorbed is usually *more* than the amount delivered by a cigarette. The most harmful cancer-causing substances in spit tobacco are tobacco-specific nitrosamines, which have been found at levels 100 times higher than the amount allowed in bacon, beer and other foods. These carcinogens cause lung cancer in experimental animals, even when injected, not inhaled. The “juice” from the smokeless tobacco, which is absorbed directly through the lining of the mouth, causes sores and white patches (called leukoplakia) that often lead to cancer of the mouth.

Specialty cigarettes – Flavored tobacco, preferred by some smokers because they want something a little different and exotic, still carries many of the same risks of cigarettes and other tobacco products, and each has additional problems linked to it. For instance, the ground cloves, clove oil and other additives in clove cigarettes have been linked to asthma and other lung diseases, and have been shown to deliver more nicotine, carbon monoxide, and tar than regular cigarettes.

Bidis or “beedies,” flavored cigarettes imported mainly from India which are hand-rolled in an unprocessed tobacco leaf and tied with colorful strings on the ends, come in many flavors such as strawberry, vanilla and grape, and usually cost less than regular cigarettes. But even though they generally contain less tobacco than regular cigarettes, they are unfiltered, and deliver higher levels of nicotine, as well as tar and carbon monoxide. Thinner than regular cigarettes, they require nearly three times as many “puffs” per cigarette. Smokers of these cigarettes have a much higher risk of heart attack, chronic bronchitis, and some cancers than non-smokers.

Hookah smoking – Originating in the Middle East, users burn flavored tobacco in a water pipe, inhaling the smoke through a long hose. Recently gaining in popularity among younger smokers, especially around college campuses, hookah smoking often becomes a social event that allows

smokers to “hang out” together and talk as they pass the water pipe around. Although promoted as a safer alternative to cigarettes because the percentage of tobacco in the product smoked is relatively low, the claim for safety is false. The water does not filter out many of the toxins, and in fact, hookah smoke contains *more* toxins such as nicotine, carbon monoxide, tar, and other hazardous substances than cigarette smoke. Several types of cancer have been linked to hookah use, and it also increases the risk for spreading infectious diseases through the pipe OR through the way the tobacco is initially prepared.

BOTTOM LINE? ALL FORMS OF TOBACCO ARE DANGEROUS. The American Cancer Society stresses that ALL tobacco products contain nicotine, which leads to increased use and addiction. Anyone who uses smokeless tobacco products greatly increase their risk of cancers, including those of the pharynx (throat) and other negative effects such as:

- Chronic bad breath
- Stained teeth and fillings
- Gum disease
- Tooth decay
- Tooth loss
- Tooth abrasion
- Loss of bone in the jaw.

Users may also have problems with high blood pressure and may be at an increased risk for heart disease.

Tobacco and tobacco smoke contain about 4000 chemicals, including:

- **Nicotine** – A highly addictive component found in ALL tobacco, this is typically what creates the nicotine addiction. It only takes seven or eight *seconds* for nicotine to reach the brain, and the impact, though immediate, is NOT long-lasting. In as little as thirty minutes the effects of nicotine wear off, and a feeling of mild discomfort may occur, causing the user to want more tobacco in order to recapture the stimulating feeling of the initial nicotine “rush.”
- **Tar** – A substance that forms when the tobacco burns, gets into the lungs when smoke is inhaled and leaves a dark, sticky and thick residue on the alveoli. Tar also destroys cilia, the small, wavy hair-like structures that protect the lungs.
- **Carbon monoxide** – Burning tobacco produces this colorless, odorless, and poisonous gas, which goes from the lungs into the bloodstream, where it diminishes the oxygen level in the blood. Reduced oxygen weakens blood vessels and contributes to heart disease and stroke.

Other harmful substances in tobacco smoke are **cyanide** (a toxic vasodilator), **methanol** (a volatile, flammable, poisonous liquid alcohol) and **formaldehyde** (a pungent, irritating gas used as a disinfectant and a preservative). Even though it may not seem very appetizing to think about all these substances entering your bloodstream, a smoker's addiction to nicotine tends to insidiously override the rational, thinking brain.

Tobacco is Highly Addictive

Simply stated, **tobacco use is addictive**. Nicotine is as addictive as alcohol, cocaine or heroin, and the addictive impact of the nicotine begins almost immediately with the first cigarette use.

It takes only seven to eight seconds for nicotine to reach the brain, where it attaches to brain receptors. Over time the body builds up a tolerance to the drug, eventually requiring more and more of it to experience and maintain nicotine's pleasurable effects. This process escalates as the brain produces larger numbers of nicotine receptors, which in turn require more nicotine to bind to them. Once a person has become dependent on cigarettes and can no longer quit, the addiction has taken hold.

Because nicotine promotes *both* physical and psychological dependency giving up cigarettes can be one of the toughest addictions to kick. Physically, nicotine affects body temperature, heart rate, muscles, and digestion. Psychologically, nicotine dulls emotional impact and so acts as a stress reliever.

As with any addictive substance, the body and psyche experience highly unpleasant withdrawal symptoms when a person attempts to stop smoking. Physical responses include cravings for nicotine, headaches, shakiness, increased appetite, fatigue, and nausea. Psychological irritability, nervousness, sadness, and disturbed thinking and sleeping may also be experienced. Going through the process of withdrawal these may prove challenging until the addictive impact of nicotine begins to subside. Because of this, many people are ultimately unable to quit smoking.

Healthy Choices You Can Make

Choice #1: You can choose to **remain tobacco free** today and every day by:

- Saying "YES" to yourself, your health and your life.
- Saying "NO" to smoking and its disastrous effects on your body.
- Exploring the benefits of NOT smoking. Decide what matters to YOU and how YOU are going to live your life.
- Practicing your refusal skills.
- Knowing how to deal with influence pressure. Recognize it for what it is.

Choice #2: If you're already a smoker **STOP smoking TODAY!**

- Make this decision for YOU. This is a very hard decision to make since quitting isn't easy, but it is a life-affirming and life-enhancing choice.
- What do you want for you that becoming tobacco-free will help you have or be? Do you want to write a book, or a poem? Create a painting? Accomplish an academic or sports-related goal? Cultivate friends? Climb a mountain? Clarify what you want that smoking interferes with or that being tobacco-free will help you attain.
- Work with your doctor or other health professional for strategies and support in quitting.
- Fill the time that you spent smoking with an activity that is interesting, fun, and may even help you accomplish that goal.
- Set small, realistic goals for quitting. For example, when giving up the use of tobacco take just one day at a time.
- Find and use support. Surround yourself with people who will actively support you in becoming tobacco-free. Ask them for help and tell them what kind of help you need. The American Cancer Society, the American Lung Association, and the American Heart Association all have information and programs that support people in quitting smoking.
- Be active. Play. Go outside. Walk. Jog. Skate. Ride your bike. Swim. Grow a garden.
- Develop good stress management skills. Learn the Relaxation Response. Use music and fresh air to calm you. Write or draw in your journal. Help someone less fortunate. Create positive thoughts.

Choice #3: Limit your exposure to **being around others who smoke**, and if possible, **don't expose yourself to second-hand smoke** at all.

DEALING WITH EXTERNAL INFLUENCES

1. Stay alert. Be aware of the influences on your self-esteem, self-worth, and body image, whether from media or peers.
2. Choose to be around people who support you for developing healthy habits and making healthy choices.
3. Choose to filter negative influences. Recognize them for what they are.
4. Evaluate the images and messages portrayed in advertising or the media by asking:

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- What is the message's appeal to you?
 - What values are portrayed?
 - Who is the media's sponsor and what is their purpose in the message? How reliable or objective is it?
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Refusal Skills

There are five key refusal steps:

1. **SAY “NO.”** Firmly. “No. I don’t want to do that.” You don’t have to give a reason unless YOU want to. You don’t have to justify or defend your choices.
2. If you wish, you can explain why you are not interested in using tobacco. Speak up for what’s good for YOU.
3. Offer an alternative. Suggest something else to do.
4. **ACT “NO”** by walking away. Leave the situation, and engage in another activity with or without your friend.
5. Be with people who support your healthy choices, and who don’t ask you or pressure you to use tobacco.

The websites for the Centers for Disease Control and the National Institutes of Health MedLine Plus have excellent information about smoking.

- Centers for Disease Control: <http://www.cdc.gov/tobacco/>
- National Institutes of Health MedLine Plus: <http://www.nlm.nih.gov/medlineplus/smokingandyouth.html>

Vocabulary:

Nicotine
Tar
Carbon monoxide
Cyanide
Methanol
Formaldehyde
Internal influence
External influence
Addiction
Tolerance
Withdrawal
Cancer
Lung cancer
Emphysema

Engage:

1. Have students experience the limited breathing that can result from compromised lung function. Give each student a drinking straw.
2. Focusing the Students: Have them pay attention to their normal breathing rhythm for one minute, then attempt to describe the sensation.
3. Engage in “Comparison Breathing:
 - Gently pinch the nostrils closed with one hand. Breathe IN as deeply as possible through the mouth. Pay attention to the how fully the lungs expand even without the nostrils.

- Gently pinch the nostrils closed again. Hold the straw in the mouth and close the lips around the straw. Now breathe into the mouth through the straw. Notice the change in the lung expansion and the effort needed to take breath into the lungs.
4. Discuss the differences in the breathing. Discuss what is like to breathe when someone smokes.
 5. Ask: “**What would your life be like if your breathing was always so difficult?**” Have students think about the activities in their own lives as well as future activities they would like to participate in that would be negatively impacted by smoking.
 6. **Question Box:** Set up a box that students can use to address their questions and concerns about smoking. Make sure the box is accessible in a place that allows students to remain anonymous with their questions.

Explore:

1. **Homework:** Have students ask one person they know who smokes the following questions:
 - Why do you smoke?
 - Why do you think it is okay to continue smoking?
 - Why haven't you quit?
 - How much does it cost you per week to smoke?
 - When did you start smoking?
 - What made you start smoking?
 - Do plan to quit? If so, why?
2. Have students describe the person they interview including their physical appearance, their current state of health, their activity level, etc.
3. Ask students to consider what connection they make between their smoking and their appearance, health and activity level.
4. Have students discuss their answers in groups of four or five. (A smaller group allows students to speak about concerns they have about family or friends in a more intimate, less intimidating setting.) Have one person in each group record the answers given for each question, then have another student summarize and present those answers to the entire class.
5. Discuss the information presented by asking the following questions:
 - Are the people you talked to **addicted** to smoking?
 - How do you know if someone is addicted to smoking?

6. Discuss answers, providing information about smoking addiction:

Nicotine promotes both physical and psychological dependency:

- **Physically** - Body temperature, heart rate, muscles, and digestion are affected
- **Psychologically** - The impact of the smoker's emotional response to stress is diminished; smoking may be viewed of as stress reliever.

Cigarette smoking is one of the most challenging addictions to kick, largely due to the highly unpleasant withdrawal symptoms that may be experienced, including:

- Cravings for nicotine
- Headaches
- Shakiness
- Increased appetite
- Fatigue
- Nausea
- Irritability
- Nervousness
- Sadness
- Disturbances in thinking and sleeping

These symptoms eventually diminish as the addictive impact of nicotine subsides.

7. Have students work in groups to solve the following questions after providing the following basic information about nicotine's "binding" effect:

- The addictive impact of nicotine begins with first cigarette
- It only takes seven to eight seconds for nicotine to reach the brain
- Nicotine attaches to brain receptors
- The human body eventually builds up a tolerance to nicotine, requiring more of it to experience and maintain its pleasurable effects.
- The brain produces additional nicotine receptors, requiring more nicotine to bind to them.

8. Question: Considering the binding effect of nicotine on the receptors:

- What physical effects do you think will occur in the body as a result of smoking?
- What are the early effects? The long range effects?
- Which body systems are affected?
- Are the effects on the body of a young person who smokes more, less, or the same as an adult and why?

9. Students can use the Effects of Nicotine on the Body Table (**See Figure 1**) to organize their answers. Draw the outline of the table on a large piece of easel paper or the marker board. Record correct information in the table as the groups present their answers.
10. Distribute a copy of the completed table to the students at the conclusion of the activity.

Explain:

1. Ask: **“What substances are in tobacco?”** (*Nicotine, tar, carbon monoxide, cyanide, methanol, and formaldehyde and about 4000 other chemicals.*)
2. Ask: **“What physical effects do nicotine, tar, and carbon monoxide cause in the body?”** *Answers:*
 - **Nicotine** – *Extremely addictive, when the effects of nicotine wear off, discomfort results. This discomfort causes the user to want more tobacco in order to recapture the stimulating feeling of the nicotine rush.*
 - **Tar** – *Trapped in the lungs when tobacco smoke is inhaled, tar leaves a dark, sticky, thick residue on the alveoli. Tar also destroys cilia, the small, wavy hair- like structures that protect the lungs.*
 - **Carbon monoxide** – *Carbon monoxide travels from the lungs into the bloodstream where it diminishes the supply of oxygen in the blood. Reduced oxygen weakens blood vessels and contributes to heart disease and stroke.)*
3. Ask: **“How would the cost of supporting a cigarette habit affect your life? For example, how much would it cost you each month if you smoked a pack of cigarettes a day?”** (*Have students research the cost of a pack of cigarettes locally to determine the cost.*)
4. Ask: **“Think of something you would like to buy; how much does it cost?”** (*Have students give responses.*) Ask: **“How many packs of cigarettes could you buy for that same price?”**
5. Ask students to refer to their interviews with smokers, listing the reasons they gave for smoking. Under the headings **“External”** and **“Internal,”** list those reasons on the board, tallying each under the appropriate category. As a class, determine the primary reasons for smoking.
 - (*Note: If there is time available, you may expand this activity by having each student survey **three to five** smokers about their personal reasons for smoking. When they return to class with the information have students tally these results.*)

6. Divide the students into three groups. Have each group choose ONE of the following three topics:

- I choose to remain tobacco free today and every day.
- I choose to stop smoking today.
- What I can do to deal with the influences that “encourage” me to start smoking.

Brainstorm strategies for each topic that students can use to support themselves.

7. Prepare posters illustrating/listing their results. Report to the whole class.

Extend: Research Groups

Have students research the following topics and others that students are interested in to give an overview of additional information about smoking. The results can be presented in poster or some visual format and shared with other students in the school.

Topics:

1. What are health laws about smoking in your city or local community?
2. What are health laws about smoking in your State?
3. What is the Surgeon General’s Warning on each pack of cigarettes? Why is it there? When did it begin?
4. Advertising and media:
 - What anti-smoking campaigns (state and local) via billboards, television, newspapers, etc. exist in your community? Who sponsors them? How effective are they?
 - What advertising is available for promoting any kind of tobacco use? Analyze the images and words used, and how those influence tobacco use.
5. Statistical Information:
 - What are the statistics on tobacco use by adults, teens and children in your state, local or regional community? What are the statistics for tobacco-related illnesses for adults, teens and children in your state, local or regional community? Apply those percentages to the number of students in class or in the school.

6. Tobacco companies:
 - Who are the two or three major makers and distributors of tobacco?
 - What products do they make?
 - How and where do they market their products?
 - What information do they provide about smoking and health to the public?
7. What cancers are caused from smoking? What is typically the outcome?
8. What is the impact of second-hand smoke? Is second-hand smoke as dangerous to your health as first-hand smoke?

Evaluate:

Activities in **Explore**, **Explain**, and **Optional Enrichment** can be used for evaluation.

1. Critical thinking:
 - Have students write a short expository paper analyzing the connection between addiction, tobacco and stress.
2. Have each student do an analysis of their personal situation and influences on them to smoke. Have them explore the following two choices: “**If I Smoke**” and “**If I Remain Smoke-Free.**” Organize the information in a chart that considers the following for each option:
 - Influences for that choice
 - Personal response strategies for each influence
 - Physical Consequences
 - Impact on My Personal Goals (Short range, intermediate and long-range plans)Draw conclusions about the information and what how the student wants to handle smoking in their life.

Optional Enrichment Activity #1:

- Invite a physician to speak to the class about smoking. Have them talk about what happens to people when they smoke, what people who smoke look like, medical cases involving cancer caused by smoking, etc.

Optional Enrichment Activity #2:

- Have students role-play, practicing the strategies listed and/or refusal skills. Use situations about smoking from the Question Box (maintain privacy and confidentiality), situations you are currently aware of, and other situations suggested by students to create role-play scenarios.
1. Organize the class into teams of three. Each student will take turns playing the roles of: student, friend or peer, and coach.

2. Assign three scenarios to each team. (The same scenario can be given to different teams and the role-plays can be compared.)
 3. The “student” role creates and practices the response to the situation presented by the “friend/peer” role. The “coach” works with the “student” to develop effective responses based on information discussed in class. The coach can also give feedback to the student at the conclusion of the role-play.
- *(Variation: The teams can be organized so that two (or three) teams have the same three scenarios. The student/coach duo in each team for each scenario develops their response separately, then the role-play for each scenario is presented to the other team. After both role-plays for each scenario are presented, all six students can discuss what they learned, how effective the response was, and how it could be improved.)*

Additional Web Resources:

- American Cancer Society - <http://www.cancer.org>
- American Heart Association - <http://www.americanheart.org>
- American Lung Association - <http://www.lungusa.org>
- U.S. Environmental Protection Agency - www.epa.gov

Missouri Standards:

Health and Physical Education Frameworks

III. Risk Assessment and Reduction

C. Tobacco, Alcohol and Other Drugs

What All Students Should Know:

1. The way in which a drug affects the body is determined by the nature of the drug, how it enters the body, and how it interacts with the body chemistry.

What All Students Should Be Able To Do:

- a. Differentiate among the effects of drugs on the body based on their classification.

What All Students Should Know:

1. The use of TAOD imposes personal health risks as well as family and societal problems.

What All Students Should Be Able To Do:

- a. Present different opinions and arguments about the effects of TAOD on the individual and others.

What All Students Should Know:

2. Both smoked and smokeless forms of tobacco can cause serious health problems.

What All Students Should Be Able To Do:

- a. Make informed decisions regarding the use of tobacco based on knowledge of short- and long-term effects on the body, and effects on both the individual and society.

Figure 1

Effects of Nicotine on the Body

System Affected	Short Term	Long Term
Respiratory		
Circulatory		
Nervous		
Digestive		
Excretory		
Skin		