

How Tobacco Affects the Body

TOBACCO – HOW IT AFFECTS YOUR BODY

Chapter 8

How Tobacco Affects the Body

LESSON 1

How Tobacco Affects the Body

Facts About Tobacco

One puff of
tobacco smoke

=

4,000 Harmful
Chemicals!

In the United States, more than **400,000** people die every year from smoking-related illnesses.

How Tobacco Affects the Body

What Is In Tobacco?

Tobacco products contain **poisonous substances** such as nicotine, tar, and carbon monoxide.

Tobacco naturally contains harmful substances, but tobacco companies **add more** harmful ingredients when they prepare tobacco to be sold.



nicotine An addictive, or habit-forming, drug found in tobacco.

Once you are addicted to nicotine, your body has a strong need, or craving, for it. As a result, you want to smoke again and again.

How Tobacco Affects the Body

What Is In Tobacco?



tar A thick, dark liquid that forms when tobacco burns.

Tar coats the airways and the linings of the lungs. Lungs coated with tar can become diseased.



carbon monoxide A colorless, odorless, poisonous gas produced when tobacco burns.

When **carbon monoxide** enters the body, it **damages the brain** and the heart by reducing the amount of oxygen available to these organs.

How Tobacco Affects the Body

What Is In Tobacco?

Cyanide

A deadly poison found in pest control products.

Formaldehyde

A burning, stinging gas used as a preservative in laboratories. Causes nasal cancer.

Methyl Ethyl Ketone

Used in solvents. Harms the central nervous system.

Polonium 210

An element known to cause cancer.

How Tobacco Affects the Body

Forms of Tobacco

Cigarettes

- **Filters** do not keep out harmful chemicals.
- **Flavored** cigarettes have more chemicals than non-flavored cigarettes.

Cigars and Pipes

- Cigar smoke is **more harmful** than cigarette smoke.
- Smokers of cigars and pipes are more likely to get **mouth**, **tongue**, or **lip** cancer than people who don't smoke.

Smokeless Tobacco

- The two forms are **chewing tobacco** and **snuff**.
- Nicotine is absorbed into the body through the **digestive tract**.
- Smokeless tobacco **is just as harmful** and addictive as cigarettes.

Tobacco companies harvest leaves from tobacco plants. They dry the leaves and prepare them for people to smoke or chew.

How Tobacco Affects the Body

Tobacco Affects Body Systems

Some of the effects of using tobacco include:

- Bad **breath**
- Bad odor in **hair** and **clothes**
- Increased **heart rate**
- Increased **blood pressure**
- Getting sick more **often** and **longer**
- Decreased ability to **run** as far or as fast

How Tobacco Affects the Body

Respiratory
System

Respiratory System

Breathing in tobacco smoke damages the **alveoli**, which can lead to **emphysema**.



alveoli The tiny air sacs in the lungs, they supply oxygen to your body.



emphysema A disease that results in the destruction of the alveoli in the lungs can lead to death.

Smokers are 12 to 22 times more likely than nonsmokers to develop lung cancer.

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Digestive
System

Digestive System

Tobacco use is linked to **cancers** of the **mouth**, **throat**, **esophagus**, **stomach**, and **pancreas**.

All forms of smoking increases the risk of **cavities** and **gum disease**.

Tobacco dulls the taste buds and can cause **stomach ulcers**.

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Nervous
System

Nervous System

Tobacco use **reduces** the flow of **oxygen** to the brain, which increases the risk of **stroke**.

Your brain needs a healthy supply of oxygen.

- Tobacco smoke contains **carbon monoxide**, which cuts down the amount of oxygen that the blood can carry to the brain.

The brain adapts to nicotine by increasing the number of **nicotine receptors**.

- This causes tobacco users to need more tobacco.

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Circulatory System

- As a person smokes, blood **vessels constrict**.
- Over time, the **blood vessels** can **harden**, which can lead to heart attack, stroke, or coronary heart **disease**.
- **Coronary heart** disease is when the blood vessels turn hard or become clogged.

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Excretory System

See Teacher Notes for
Fill-In answers.

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LESSON 2

How Tobacco Affects the Body

You Need Oxygen to Live

Your respiratory system ensures that your body gets the **oxygen** it needs.



respiratory system The organs that supply your blood with oxygen

Body cells use **oxygen** to make **energy** from food.

Oxygen gets into the body by breathing in. As you breathe out, your body rids itself of **carbon dioxide**.

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Parts of Your Respiratory System

The main parts of the respiratory system are:

- Mouth
- Nose
- Trachea



trachea A passageway in your throat that takes air into and out of your lungs. (windpipe)

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Parts of Your Respiratory System

The main parts of the respiratory system are:



epiglottis A flap of tissue in the back of your mouth that keeps food out of your trachea.



lungs Two large organs that exchange oxygen and carbon dioxide.



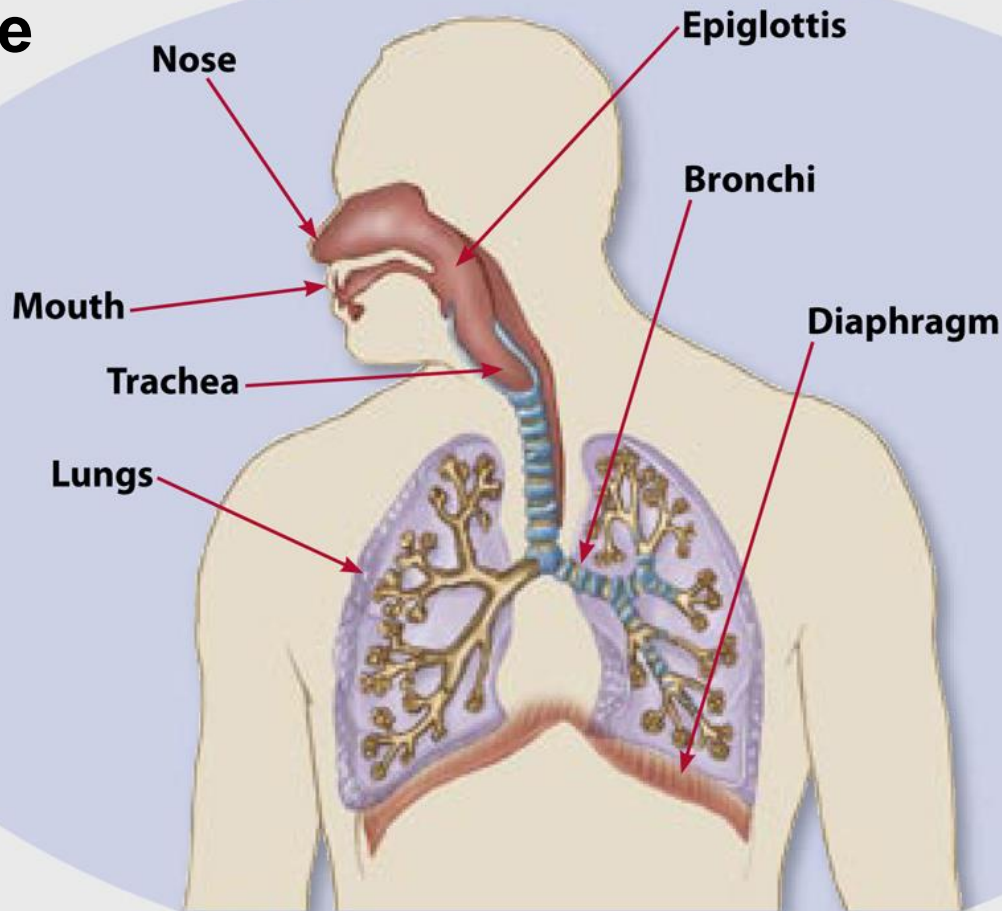
bronchi Two passageways that branch from the trachea, one to each lung.



diaphragm A large, dome-shaped muscle below the lungs that expands and compresses the lungs, enabling breathing.

How Tobacco Affects the Body

These are the parts of the respiratory system.



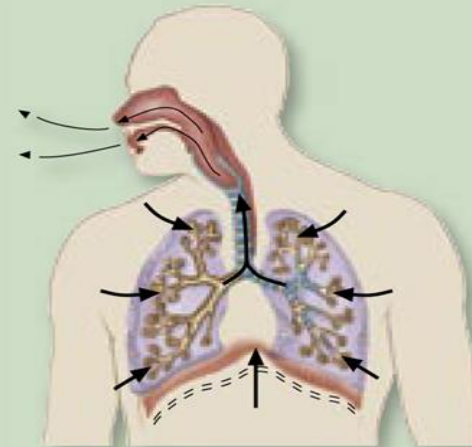
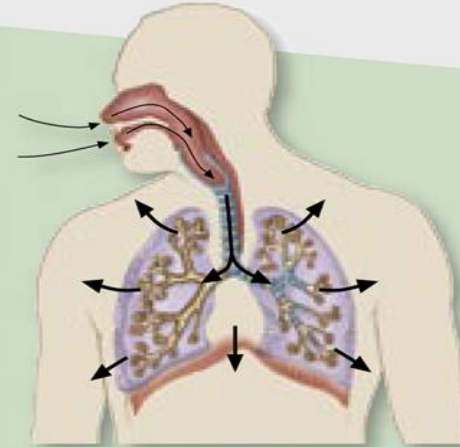
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The Breathing Process

1 Inhaling. Your diaphragm moves down and your ribcage expands, creating more room in your chest. This causes air to flow into your body through the nose or mouth. The air then moves past the epiglottis and into the trachea and bronchi.

2 Inside Your Lungs. The bronchi divide into smaller passageways called bronchioles (BRAHNG-kee-ohlz). Air flows through the bronchioles into the alveoli, which are surrounded by capillaries. In the capillaries, oxygen moves from the air into the bloodstream, and carbon dioxide from the blood moves into the alveoli.

3 Exhaling. Your diaphragm moves up, and your ribs move in and down, pushing air out of your lungs. The air, now containing carbon dioxide, moves back through the bronchioles and bronchi, flows up the trachea, and out through the nose or mouth.



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Problems of the Respiratory System

Tobacco smoke, chemicals, germs, and air pollution are all harmful to your health because they can damage the many parts of the respiratory system.

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Problems of the Respiratory System

Disease or Disorder	Description
Asthma	Disorder in which airways narrow.
Cold / Flu	Illnesses caused by viruses.
Emphysema	Disease in which alveoli lose their ability to stretch.
Lung Cancer	Uncontrolled growth of cells that reproduce abnormally in the lungs.
Mouth and Tongue Cancer	Uncontrolled growth of cells in the mouth and tongue. Almost always caused by tobacco use.
Pneumonia	Bacterial or viral disease that affects the lungs.
Tuberculosis	Bacterial disease that affects the lungs.

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Cancer



Healthy
Lung



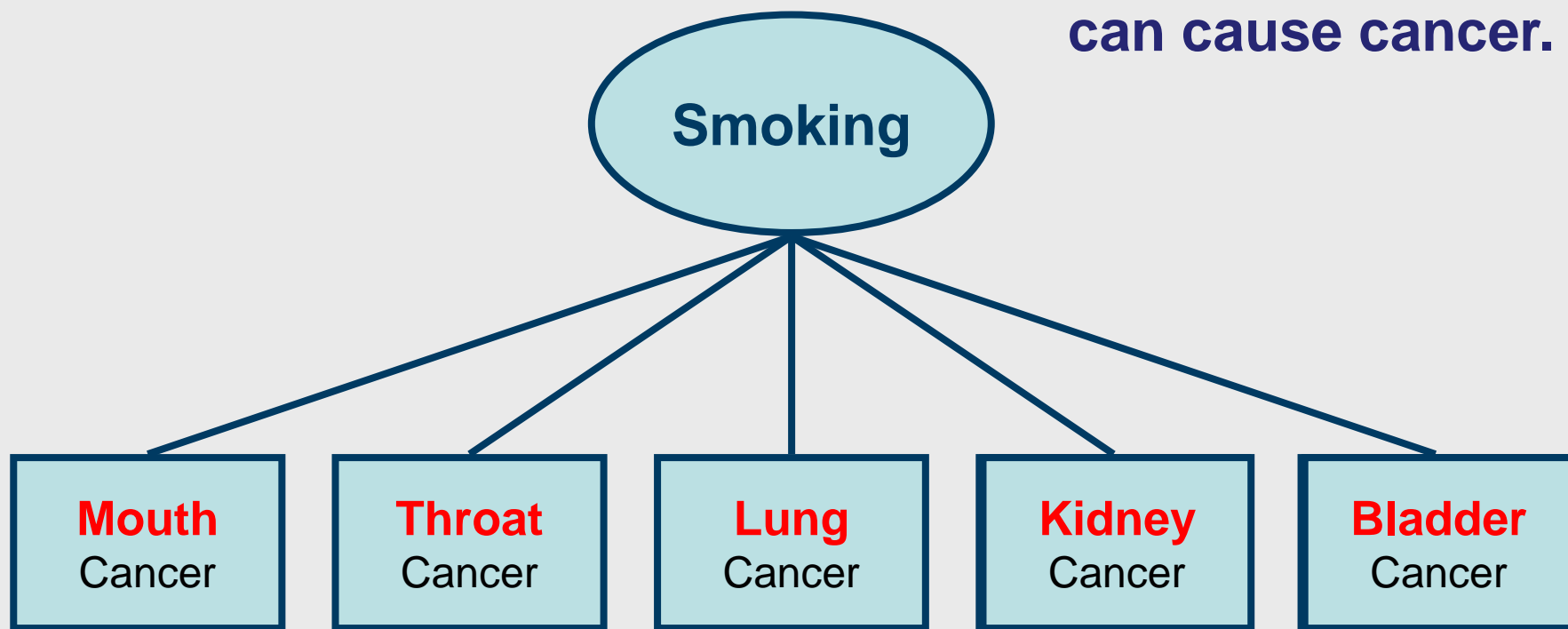
Cancerous
Lung



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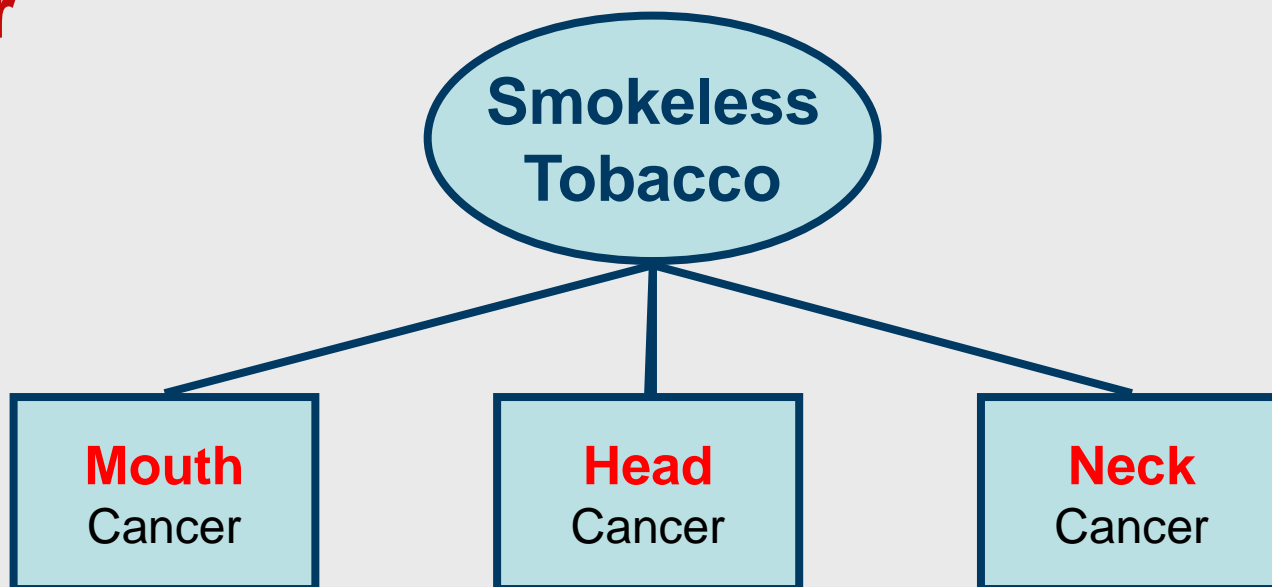
Cancer

All tobacco products contain substances that can cause cancer.



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Cancer



The smokeless tobacco user has a higher risk of developing cancer than a smoker does.

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Tips for Taking Care of Your Respiratory System

Avoid tobacco use.

Stay away from people who smoke. Don't go places where the air is smoky.

Take care of your body when you have a **cold**, the flu, or any respiratory **illness**.

Drink plenty of **fluids**.

Take deep, full **breaths**.

Eat a **healthful** diet.

Get outside and breathe **fresh air**.

Pay attention to any **allergy alerts**, **ozone alerts**, and **pollution alerts** in your area.

Be physically active on a **regular basis**.

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LESSON 3

How Tobacco Affects the Body

Why Do Teens Begin Using Tobacco?

Teens may try tobacco even if they don't want to because they think they might lose their friends.

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Tobacco Addiction

Tobacco contains nicotine. Nicotine causes addiction.



addiction A mental or physical need for a drug or other substance.

Nicotine is as addictive as **cocaine** and **heroin**.

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Tobacco Addiction

Anyone who **stops** using **nicotine** goes through withdrawal.



withdrawal The unpleasant symptoms that someone experiences when he or she stops using an addictive substance.

Symptoms: Poor sleep, crave nicotine, moody. Nervous, and extra hungry.

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Psychological Dependence

Psychological dependence on tobacco creates a **need** that **outweighs** the fear of tobacco's **effects**.



psychological dependence A person's belief that he or she needs a drug to feel good or function normally.

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Physical Dependence

Teens can develop a physical dependence on nicotine much **more easily** than adults can.



physical dependence An addiction in which the body develops a chemical need for a drug.

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Physical Dependence

The body's tolerance for nicotine **increases** over time.



tolerance The body's need for larger and larger amounts of a drug to produce the same effect.

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Tobacco Advertising

Tobacco advertisements can strongly affect teens by making **teens feel** that it's fun or cool to use tobacco.

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Targeting Teens

Teens are a good **target audience** for tobacco companies.



target audience A group of people for which a product is intended.

Tobacco companies want teens to become **lifelong** tobacco users.

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Targeting Teens

Advertisers use product placement to sell tobacco to teens.

**product placement**

A paid arrangement a company has made to show its products in media such as television or film.

Tobacco companies **sponsor** sporting events knowing that teens will see their advertisements.

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Targeting Teens

Media literacy can help teens understand the **validity** of messages that come from advertisers.



media literacy The ability to understand the goals of advertising and the media.

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Antismoking Efforts

More and more teens **want** to stay healthy by avoiding tobacco use.

Thanks to antismoking efforts, most teens and adults are in favor of a **tobacco-free society**.

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Legal Bans on Tobacco Ads

- Tobacco companies are not allowed to place outdoor advertisements within **1,000** feet of schools and playgrounds.
- Tobacco companies cannot make or sell **hats**, **T-shirts**, and other items.
- Cigarette advertisements cannot appear on **radio** and **television**.

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Legal Bans on Tobacco Ads

It is illegal for stores to sell tobacco products to people under the age of **18**.

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Antismoking Ad Campaigns

Antismoking ad campaigns urge teens to **avoid** tobacco use.

Antismoking ad campaigns urge smokers to see the **dangers** of tobacco and to seek **help** quitting.

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LESSON 4

How Tobacco Affects the Body

Tobacco's Effects on Nonsmokers

When people smoke near you,
you breathe secondhand smoke.



secondhand smoke Air that has been contaminated by tobacco smoke.

Secondhand smoke is also called environmental tobacco smoke (ETS).

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Tobacco's Effects on Nonsmokers

People who are around secondhand smoke are passive smokers.

**passive smokers**

Nonsmokers who breathe in secondhand smoke.

The U.S. Environmental Protection Agency (EPA) has labeled secondhand smoke as a human carcinogen. This means it causes cancer.

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Environmental Tobacco Smoke

The two forms of secondhand smoke are mainstream smoke and sidestream smoke.

**mainstream smoke**

The smoke that is inhaled and then exhaled by a smoker.

**sidestream smoke**

Smoke that comes from the burning end of a cigarette, pipe, or cigar.

Sidestream smoke is especially dangerous because it contains twice as much tar and nicotine as mainstream smoke.

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Health Hazards to Adults, Children, and Unborn Babies

Each year, an estimated **53,000** people in the United States **die** as a result of **passive smoking**.

When children are exposed to secondhand smoke, they are more likely to have respiratory and other problems.

- **allergies, asthma**, ear infections, and heart problems

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Health Hazards to Adults, Children, and Unborn Babies

Pregnant women who smoke have more **miscarriages** and stillbirths, as well as babies with **low birth weight**.

Sudden Infant Death Syndrome is linked to babies who had mothers who smoked during or after pregnancy.

How Tobacco Affects the Body

Ri

Figure out the next
fill-in.

Smoker is a guest in your house, you can ask the
person to smoke outside.

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Smoke-Free Environments

The number of smoke-free businesses and public spaces are **on the rise** across the country.

In New York State, almost all public spaces, including restaurants, **do not allow** people to smoke indoors.

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Legal Restrictions on Smoking

- Laws control how tobacco companies package and sell cigarettes.
 - Packages must have **clear warning labels**, or disclaimers.
 - Packages must say that smoking is **harmful**.
 - New laws requiring **pictures** to be placed on all packages have been canceled.

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Tobacco Strains the Health Care System

Tobacco-related illnesses, such as lung cancer and emphysema, often require **expensive hospital stays**.

If a tobacco user has no health insurance, the **government helps** cover the costs. This means that every U.S. **family pays**, too, as part of their taxes.

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Hidden Costs to Society

- According to the Centers for Disease Control and Prevention (CDC), smoking **costs society** about **\$193 billion a year** in the form of lost productivity and health costs.

How Tobacco Affects the Body

LESSON 5

How Tobacco Affects the Body

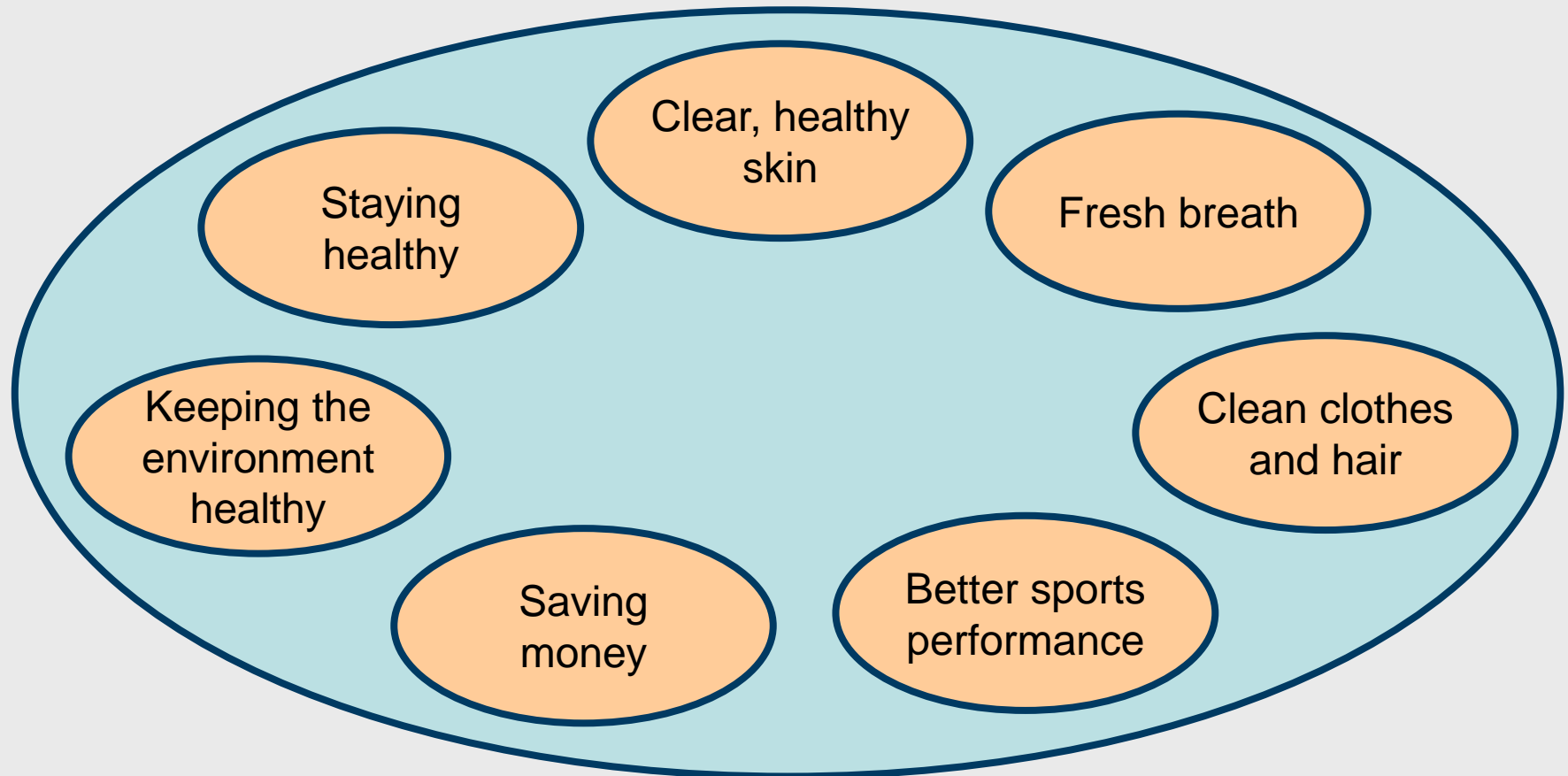
Tobacco Free: A Healthy Choice

Choosing not to use tobacco shows that you are **taking responsibility** for personal health.

Choose to spend time with others who are **tobacco-free** and practice your **refusal skills** for the time when someone offers you tobacco.

How Tobacco Affects the Body

Benefits of Being Tobacco Free



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Benefits of Being Tobacco Free

- **Staying healthy:**

- People who smoke get sick more easily and more often than nonsmokers.

- **Clear, healthy skin:**

- If you use tobacco, your skin cells are less able to take in oxygen and other nutrients.

- **Fresh breath:**

- Cigarettes and smokeless tobacco products cause bad breath.

- **Clean clothes and hair:**

- Smokers usually smell like smoke. Smelly odors cling to clothes and hair.

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Benefits of Being Tobacco Free

- **Better sports performance:**
 - People who use tobacco, especially smokers, don't do as well in sports because of damaged respiratory systems.
- **Saving money:**
 - Using tobacco is expensive. Teens who do not buy tobacco have more money to spend.
- **Keeping the environment healthy:**
 - Environmental tobacco hurts everyone. By staying tobacco free, you are doing your part to keep the environment healthy.

How Tobacco Affects the Body

You Can Quit

Once a person decides to quit, he or she may go through withdrawal.

Signs of withdrawal include **nervousness**, **moodiness**, difficulty sleeping, **hunger**, and cravings for nicotine.

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You Can Quit

Tips for Kicking the Habit

List your **reasons**. *(Read your list when you feel like smoking.)*

Set small **goals**.

Choose **tobacco-free** places to spend your time.

Change your tobacco-related **habits**. *(Eat a healthful snack instead)*

Be **physically** active. *(When you feel like smoking, go for a ride or walk.)*

Keep **trying**. *(Quitting doesn't always work the first time.)*

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Getting Help

Some people may choose to stop using tobacco cold turkey.



cold turkey Stopping all use of tobacco products immediately.

In **seven to fourteen days** after quitting, there is no more nicotine in the body, but withdrawal symptoms may last longer.

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Getting Help

- **Libraries** and **bookstores** carry books that offer information on quitting tobacco use.
- Users can find tips on quitting and **support groups** through the American Lung Association, the American Heart Association, and the American Cancer Society.

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Resources for Quitting

Doctors are able to **prescribe medication** to help users quit.