Chapter 12

Staying Healthy

12-1 Fighting Disease

**disease**- a kind of illness or sickness

**defense**- a way your body fights off harmful organisms

**virus**- a very small disease-causing particle

**vaccine-**using weakened viruses to help the body fight stronger ones

\* Many **diseases** are caused by tiny organisms, such as bacteria. Some diseases, like

the common cold, are not usually serious. Other diseases are very serious.

\* Every year, people seem to be concerned about the flu. There are **vaccines** to keep people from getting sick.

\* In the 1300’s, a terrible disease swept through Europe. One out of every 4 people died from it in just 20 years. This was known as the Plague, or Black Death.

\* The Plague is also called the bubonic plague, named for buboes, which are inflamed swellings of the lymph glands caused by the disease..

\* Since that time, scientists have learned a lot about what makes people sick. They have also learned how to prevent disease.

\* People can catch diseases from other animals. Mosquitoes, fleas, cows, and pigs (to name a few) can carry disease.

\* Humans pass disease to one another. This is why you should cover your mouth when you cough or sneeze. It is also why you should wash your hands often.

\*\*\**Now we will look at a variety of health department posters. After viewing them, we will create a safety poster of our own.*

\* The human body has many ways to fight disease. These are your **defenses**. Your immune system defends you from harmful organisms.

Why do you have skin? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Why do you have hair? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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\* Your skin and hair provide important defense. It keeps harmful microscopic organisms from reaching most of your organs. The hairs in your nose keep harmful organisms out of the body. These hairs filter the air you breathe.

\* Bacteria find its way into our bodies no matter what we do.

\* Germs travel through the air they land on doorknobs, and survive harsh climates. Explain how the germs travel from place to place. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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\*We use white blood cells to destroy the invaders. Your white blood cells attack the bacteria and reproduce (make more) until there are enough to fight off the invader. Until that happens, you could feel very sick.

\* The immune system works best when someone is healthy. If you eat right and exercise and enough sleep, there is less chance of getting sick.

\* A healthy person has about 1 white blood cell for every 1,000 red blood cells.

\* **Viruses** are smaller than bacterium. Viruses cause many diseases such as AIDS, influenza (the flu), colds, polio, chicken pox, measles, and mumps.

\* Scientists do not understand viruses. In fact, they are unsure if viruses should be considered living or nonliving particles.

\* Here are some other interesting details about viruses:

1.) Viruses do not appear to be alive.

2.) They do not carry out normal cell functions.

3.) Viruses invade living cells.

4.) The virus feeds off of healthy cells from the host.

5.) The cell itself is eventually killed.

6.) Different kinds of viruses attack different parts of the body or different cells. Cold viruses attack cells that are in the nose and throat. Polio viruses attack nerve cells. AIDS viruses attack white blood cells.

12-2 Nutrition

**nutrition**- the study of food and eating right to stay healthy

**nutrient**- a substance usually found in food that body cells need to stay healthy and grow

**carbohydrate**- a sugary or starchy food that gives people energy

**fat**- a nutrient in foods that supplies the body with energy

**cholesterol**- a substance found in some fats and also in the body, which is needed in small amounts

**protein**- a nutrient in foods that builds and repairs body tissues

**vitamin**- a nutrient found in tiny amounts in may plant and animal foods; it is needed by the body to stay healthy

**mineral**- an inorganic substance found in water and some foods; tiny amounts of some minerals are needed by the body to stay healthy

Have you ever heard the expression “You are what you eat”? What do you think that means? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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\* If you eat well, you are more likely to feel well and avoid disease. **Nutrition** plays an important role in your overall health.

\* Nutrition is not about excess. It is about balance. You must eat the right combination of foods. Your body requires a balance of fats, proteins, and carbohydrates to stay healthy. This includes fruits, vegetables, grains, dairy, and oils.

\* There are six main kinds of nutrients:

 1.) Carbohydrates

 2.) Fats

 3.) Proteins

 4.) Vitamins

 5.) Minerals

 6.) Water

\* If any of these nutrients are missing from your diet, your health may be in danger.

\* Rickets, for example, is a painful disease that weakens bones. It is caused by a lack of Vitamin D. You can get vitamin D by eating tuna, salmon, eggs, or drinking milk that has vitamin D added to it.

\* Another source of vitamin D is the sun. Vitamin D forms in the skin when the body is exposed to sunlight.

\* Mushrooms are the only non-mammals that produce vitamin D from exposure to the sun.

\* **Carbohydrates** give you energy. Fruits, vegetables, rains, potatoes, and pasta are all sources of carbohydrates.

\* Another kind of carbohydrate is fiber. Humans cannot digest fiber, but it helps move food and wastes through the digestive system. Fiber is found in whole grains and the skins of fruits and vegetables.

\* **Fats** do not break down as quickly as carbohydrates. Most people eat more fat than they should.

\* Fat builds up in blood vessel walls and can lead to heart disease. Butter, ice cream, and red meat are all sources of unhealthy fat.

\* **Cholesterol** is needed in small amounts to digest food and produce certain substances in the body. Too much cholesterol can be unhealthy. It causes fat to build up in the arteries and reduce the flow of blood.

\* You should limit your cholesterol from animal fats in your diet. Eating less red meat and fewer eggs and food containing butter, cheese, or cream helps.

\* Adults should have their cholesterol checked once per year.

\* **Proteins** make up almost every part of your body. This includes hair, fingernails, blood, muscles, and organs.

\* Meat, fish, nuts, beans, and dairy products are all sources of proteins.

***Remember***

*These are three ways to prevent heart disease*

1. *Do not smoke.*
2. *Cut back on fatty foods.*
3. *Get plenty of exercise.*

\* **Vitamins and minerals** are needed in people’s diet to keep them healthy. The body needs tiny amounts of some minerals to stay healthy. Potassium, calcium, and iron are examples of minerals the body needs.

\* Vitamins and minerals come from food but can also be taken in pill form. They even have gummy bear vitamins for kids and adults.

\* Scientists believe that taking large amounts of some of these nutrients can prevent disease. Others say a well-balanced diet with a variety of foods gives you the vitamins and minerals you need.

\* Water is also an important nutrient. All body cells contain water. To stay healthy, you should drink 8 glasses of water per day (4 bottles).

\* Eating the right amount of nutrients takes practice. Your meals throughout the day should contain a balance of nutrients.

\* Scientists have created a tool to help you choose foods for a healthy diet. That tool is called the Food Guide Pyramid.

\* The Food Guide Pyramid groups food according to the number of servings you should eat daily. The foods you should eat most often are at the bottom of the pyramid.

\* The Food Pyramid was developed in 1992 by the U.S. Department of Agriculture and the Department of Health and Human Services. It reflected the latest research findings on nutrition and replaced the four food groups classifications used at that time.

\* For a healthy diet, start with plenty of whole grain bread, cereal, rice, pasta, fruits, and vegetables.

\* Then add foods from the milk group and meat group. Meat includes fish, poultry, eggs, dry beans, and nuts.

*\** Fats, oils, and sweets are all at the top of the pyramid. They take up the least amount of space. That means you should eat the least of these foods.

\* You need about 13 vitamins for good health. Vitamin B and C dissolve in water. Therefore, your body does not store them. You need to eat food rich in vitamins B and C daily.

12-3 Guarding Your Health

\* Only you can guard your health.

\* You remember from chapter 11 that heart disease is the number one cause of death in the United States.

\* Good nutrition is one way you can protect yourself against heart disease. Not smoking and getting exercise also help protect you from disease.

\* *Nicotine* is a substance in cigarettes that can make you sick. There are over 4,000 other chemicals in cigarettes that can make you sick. Nicotine causes blood vessels to become narrow. That makes it difficult for blood to flow freely through your body. This can lead to heart disease over time.

\* Cigarettes have 43 known carcinogens-substances that cause cancer.

\* Smoking also causes cancer. Cancer is the second most deadly disease in the United States.

\* Exercise keeps your heart muscles in good working order. Your heart is a big muscle. It needs exercise just as other muscles in your body do.

\* Exercising keeps blood vessels open and prevents heart disease.

\* Illegal drugs can also hurt the body.

\* People get addicted to substances such as nicotine, caffeine, alcohol, certain medicines, and illegal drugs.

\* **Addicted**- having a habit that cannot be easily broken.

\* People addicted to a substance can have serious health problems and should get help.

*Create a Poster-discuss the dangers of addiction and what can be done to stay healthy*.