ESL FOR PERSONAL HEALTH



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ESL for Healthcare - Part 1: Personal Health

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1: HEALTH CARE SYSTEMS AND HEALTH INSURANCE

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1.1: Introduction

Learning Objectives

After completing this activity students will be able to:

- Use this information to help them navigate the US healthcare system in their own personal lives
- Use this information to help make decisions about their health insurance and to understand the costs

Pre-reading questions:

- What do you think of the *quality* of healthcare in the United States?
- What do you think about the *costs* of healthcare?
- What questions do you have about health insurance in the United States? List at least 3 here:

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1.2: Healthcare systems and health insurance

What is a healthcare system?

A healthcare system organizes people and resources to provide medical care to a community or population. Different countries have different kinds of healthcare systems.

- Countries such as Canada, England and Taiwan have a *national health care system*. This means health care is run only by the government and almost all health care information comes from one government organization. This is sometimes called a “universal single payer system”.
- In the United States, health care is a *collaboration of private companies and government (public) institutions*. Insurance and health care in the US can be complicated and difficult to understand. Sometimes, people in the United States are uninsured, often because healthcare insurance is expensive, and they may not be able to afford it. For this reason, the government created the “Affordable Care Act” to increase the number of people in the US who have health insurance.

Under the US system, health care is managed through many different organizations that are not connected to one another. This is why you may have to fill out information forms every time you go to a new clinic or hospital. This can also make health care very confusing for everyone, including people who have lived their whole lives in the United States.

What is health insurance?

Insurance is something you buy so that if you get sick, you will not have to pay the entire medical bill by yourself. Having health insurance allows a sick or injured person to have her insurance company pay for part of the medical services. Without health insurance, a person must pay for all their medical care by themselves, which can cost a lot of money.

Health insurance also supports preventive health care. This is healthcare that a person receives even when they are not sick. In other words, preventive care is health care that can help prevent illness, or identify illness before it becomes serious.

Most health insurance companies will pay for routine check-ups, to help prevent individuals from becoming very sick. In the end, preventing illness costs less than treating serious illness and people live better lives as a result. This is called “preventive care”.

How can I get health insurance?

- Employed: Many people receive health insurance through their workplace.
- Employed but uninsured: Individuals whose jobs do not offer insurance can purchase private insurance if they do not qualify for government assistance.
- Unemployed, disabled or low-income: Individuals may be able to get insurance through a program funded by the state and/or the federal government, such as The Oregon Health Plan or the Affordable Care Act.
- Age 65+: Senior citizens who have lived and worked in the U.S. for a certain amount of time qualify for Medicare, health insurance for senior citizens provided by the federal government.

Write a short answer based on the reading above.

1. What kind of health care system does the US have?

2. How can you get health insurance if you don’t have a job?

3. What might happen if a person is uninsured and gets sick or has an injury?

4. Based on the reading, what is preventive care?

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1.3: Private insurance, policies, premiums, and coverage

When someone has *private health insurance*, they choose an *insurance plan* that best fits their needs. Most insurance companies have more than one plan that people can choose from, and they all have different prices and different *coverage*, or things the insurance plan will pay for. The more expensive the plan, the more things the insurance company will *cover* if you get sick.

The Affordable Care Act is a governmental program that allows people to purchase private insurance with financial support from the government if the cost of the insurance is more than they can afford. This is a type of partnership between the government and private companies.

Policies, premiums, coverage

Once someone chooses a *plan* and signs up for it, they have an individual *policy*. A policy is specific to the individual or family-like a bank account. Each policy has a *premium,* which is the amount of money the insurance policy costs. Usually premiums are paid monthly for one year, and then the person can renew the policy or switch to a different plan. When someone has a health insurance policy and all monthly payments are paid, that person *is insured*, or *has insurance coverage*. If someone does not pay their premium every month, they may be at risk of getting *kicked off their insurance* and *losing coverage*. Therefore it is essential to pay insurance premiums on time each month. If you lose your insurance, most companies will let you *reinstate it , or get your insurance back* once your bill is paid in full.

Cost Sharing

Even when a person pays their premiums on time, private insurance companies usually do not pay for the entire cost of a person's healthcare. The insurance company pays most of the costs, but the insured individual must also pay something as well. This is called *cost sharing*.

Out-of-pocket costs

The costs paid for by the patient are called *out-of-pocket costs*. Typical out of pocket costs include *deductibles*, *co-pays*, and *coinsurance*.

Deductibles are the amount of money an insured person must pay for their own care before they can use their insurance. Often these deductibles are around $250, but sometimes they are much higher. When someone has paid the amount of the deductible to one or more healthcare providers, the person has *met their deductible*.

Copays are smaller amounts (around $30) that the patient must pay the provider per office visit, usually for *routine checkups*. Often copays must be paid at the time of service.

For non-routine healthcare and hospital stays, patients with private insurance usually must pay a percentage of the bill themselves, even after they have met their deductible. This is called *Coinsurance*. For example, for an MRI that costs $1,000, if the coinsurance is 20 percent, the patient must pay $200, and the insurance company will pay the other 80 percent ($800). Plans with higher premiums typically have less coinsurance.

Most insurance policies have an *out-of-pocket maximum*, which is the maximum amount of money a person will have to spend of their own money, or *out of pocket,* in one calendar year.

Monthly premiums are separate from out of pocket costs, so when a person is looking for a health insurance plan, they need to consider both the monthly premium cost as well as the out of pocket costs when they are making their decisions.

Networks

It is always best to see a provider that is *in the insurance company's network*. The network is the list of providers that the insurance company works with. Using an In-network provider keeps your costs as low as possible. Some insurance companies will

pay for out of network care, but they will pay less.

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1.4: Dialogues Illustrating Insurance

1. **A dialogue between a young person buying health insurance for the first time and an insurance agent. This dialogue explains the concepts of cost-sharing and being in-network**

Young Person: Hi, I'm looking to buy health insurance for the first time, can you help me understand my options?

Insurance Agent: Absolutely! Are you looking for individual coverage or are you on a plan through your employer?

Young Person: I don't have an employer-sponsored plan, I need to buy one on my own.

Insurance Agent: Okay, great. There are a few things I'll need to ask you to help narrow down your options. First, do you know if you want a plan that has a network of providers or are you open to out-of-network providers as well?

Young Person: I'm not sure, can you explain the difference?

Insurance Agent: Sure! An in-network plan has a set of healthcare providers that have agreed to lower rates with the insurance company. This means that when you see an in-network provider, you'll typically pay less for your care. An out-of-network plan allows you to see any provider, but you'll typically pay more for your care.

Young Person: Okay, I think I would prefer to stay in-network.

Insurance Agent: Great, that will definitely help keep your costs down. Another thing to consider is cost-sharing. Do you know what cost-sharing is?

Young Person: No, I'm not familiar with that term.

Insurance Agent: Cost-sharing refers to how much of the cost of your healthcare you'll be responsible for. Cost-sharing includes deductibles, copays, and co-insurance. Let's start with deductibles. Some plans have a high deductible, or the amount of money you have to pay on your own before insurance kicks in. Other plans have a low deductible, which means you don't have to pay as much before the insurance starts to pay, but your monthly premium will be higher.

Young Person: I see, so a high deductible plan would mean I pay less monthly, but when I need to see a doctor, I have to pay more money on my own before insurance pays anything at all?

Insurance Agent: Exactly. For example, a plan with a $6,000 deductible means that you have to pay the first $6000 all on your own, before you get anything at all from the insurance company. This type of plan has a lower premium, because you pay a lot on your own before the insurance pays. A plan with a $300 deductible means you only pay $300 on your own before the insurance will pay, but you will pay much more for your monthly premiums. And there are other types of cost sharing too, like copays and coinsurance, so we'll need to consider all of those as well when looking at the plans.

Young Person: Whoa. What are copays and co-insurance?

Insurance Agent: A copay is a fixed dollar amount you pay for a specific healthcare service, like a doctor's visit or a prescription. For example, a plan might have a $20 copay for a doctor's visit or a $5 copay for a prescription. Usually with routine healthcare, like checkups and office visits, you pay a copay. Coinsurance is when you pay a percentage of the cost of a less routine healthcare service. For example, a plan might have a 20% coinsurance for a surgery, which means you'll pay 20% of the cost of the surgery and the insurance will pay the rest.

Young Person: So copays are the same every time, and are for basics, like office visits, and coinsurance is a percentage of the cost of bigger procedures or things like being in the hospital?

Insurance Agent: That's right. And both copays and coinsurance are typically in addition to any deductible you'll need to meet before your insurance kicks in.

Young Person: So you have deductibles, copays AND coinsurance. That sounds crazy. Is there a way to have lower copays and coinsurance or a way to avoid them altogether?

Insurance Agent: Some plans will have lower copays and coinsurance, and some plans may even have no copays or coinsurance at all. But plans with lower copays and coinsurance often have a very high monthly premium, sometimes as much as $500 or more a month for an individual, so it's a matter of finding the right balance between what you can afford and what coverage you need. But your age is also important. The older you get, the more your premiums will cost.

Young Person: Why would anyone pay more than $400 a month?

Insurance Agent: Well, if someone has a chronic illness, needs a lot of care, and may regularly need to be hospitalized, it might cost less for them to pay a high monthly premium rather than pay a high deductible and then pay a higher percentage of a lot of expensive procedures or hospitalizations.

Young Person: Ok. So if someone needs a lot of care, maybe a higher premium is better?

Insurance Agent: Exactly. It's good to think about your normal healthcare needs before you purchase a plan. I'll pull up some options and we can go over them together. And remember that you always have the option to change plans or renew your plan each year, in case you find something that better suits your needs.

Discuss:

- What is a deductible?
- What are copays?
- What is coinsurance?
- What is the benefit of choosing a plan that has in-network providers?
- Why do you think insurance costs more the older you get?
- What situations might make it worth it for someone to pay more for their premiums?

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1.5: Government-funded insurance and options for the uninsured

If a person has government-funded insurance such as Medicaid, or the Oregon Health Plan, much of the cost of care is paid for by the government program, and patients do not pay much out of pocket, if anything. For many services such as emergency services, or children's health, there are no out of pocket costs at all. For some individuals there may be out of pocket costs, but they are minimal, and may not total more than 5% of the family's total income. In order to qualify for these government sponsored insurance plans, individuals and families must meet income and residency requirements. Age and disability status will also affect eligibility. In most states, people can apply online to see if they are eligible for this type of insurance.

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1.6: Options for the Uninsured

If patients are *uninsured* (do not have insurance coverage), healthcare providers might require them to pay cash *up front, at the time of service* for routine, non-emergency care. If a person cannot afford insurance, in many places there are special clinics for people who are uninsured. In Eugene, for example, there are low-cost clinics such as *Volunteers In Medicine Clinic of Lane County* which provides affordable healthcare for people with lower incomes and the uninsured. For emergencies that require hospital care, some hospitals have special financial support programs for uninsured people who cannot afford health care.

Fill in the blank: Use the words in the box to complete each sentence in the following passage about health insurance.

premium co-pay network insurance deductible

Many employers offer their employees health _____ as a benefit.

The _____ is often taken from your salary with each paycheck, a little bit at a time.

If you get sick, you often have to choose a doctor that is in your _____.

When you go to the doctor's office for an examination, you pay a _____.

Even when you have health insurance through your employer, you usually have a _____, which is the amount you must pay before the health insurance company will start to pay. This amount can vary, depending upon your plan, and can be as low as $200, and as high as $10,000.

Matching: Match the words to their definitions.

1. _____ Network

2. _____ Deductible

3. _____ Out-of-pocket limit/maximum

4. _____ Co-pay

5. _____ Premium

6. _____ Co-insurance

a. The percentage of money that you are expected to pay after the deductible is reached

b. The groups of healthcare providers, laboratories, and pharmacies connected to a specific health insurance company

c. The amount of money that you and/or your employer pays the insurance company every month or year as part of the insurance plan

d. After you have paid this amount of money, your health insurance will cover 100% of your costs for medical services that are included in your plan

e. The amount of money that an individual pays before the benefits of health insurance kick in and co-insurance starts

f. The flat fee that an individual is expected to pay for a medical service, such as a doctor's appointment.

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1.7: Healthcare Consumers

Because healthcare is so expensive, many Americans treat healthcare like they would any other service. They see themselves as healthcare *consumers*, so they *shop around* and try to be as well-informed as possible. Many people use online websites and patient reviews to choose their healthcare providers from their insurance plan's *provider network*. Consumers expect high-quality care, and they also expect healthcare providers to treat them as *competent* individuals who deserve respect. Many people want to make *informed decisions* about healthcare, and they expect healthcare providers to give them information and explain things clearly. In the past, people expected their doctor or nurse to tell them what to do in any healthcare situation. Today, many people see healthcare providers as guides who give advice that will help people make their own decisions about their health.

Meaning in Context:

These words are not directly defined in the text, but based on the reading or your own ideas, what do you think these words from the readings above mean?

to be kicked off insurance

to pay cash up front

consumer

to shop around

to be a competent person

to make informed decisions

routine healthcare services

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1.8: End Chapter

Quizlet and Nearpod Practice Online

https://quizlet.com/603549962/health-insurance-terminology-flash-cards/

Nearpod Healthcare Systems Lesson by Nancy Wood (This link requires you to add this lesson to your personal nearpod library, and is mainly for teachers)

Reinforce what you've read: Video

Watch the following video about health insurance: Health Insurance Explained – The YouToons Have It Covered

Glossary

Affordable Care Act /Health Insurance Marketplace: a program for Americans who are low-to middle income who are not eligible for Medicaid or Medicare, and who do not have access to affordable health care coverage through their employer. The ACA Marketplace is a collaboration of private insurance companies and the Federal and State governments to offer health insurance plans to individuals and families at a reduced cost.

co-insurance: the percentage of money that you are expected to pay after the deductible is reached

co-pay: the flat fee that you are expected to pay for a medical service, such as a doctor's appointment

deductible: the amount of money that an individual pays before the benefits of health insurance kick in and co-insurance starts

healthcare system: A system that organizes people and resources to provide medical care to a community or population.

health insurance: a system that organizes people, institutions and resources to deliver health care services

Medicaid: health insurance for very low-income people, funded by federal and state government

Medicare: a federal health insurance program for people over 65

Oregon Health Plan: Oregon's Medicaid program

network: the groups of healthcare providers, laboratories, pharmacies, etc. that are connected to a specific health insurance company

out-of-pocket maximum/limit: after you have paid this amount of money, your health insurance will cover 100% of your costs for medical services that are included in your plan

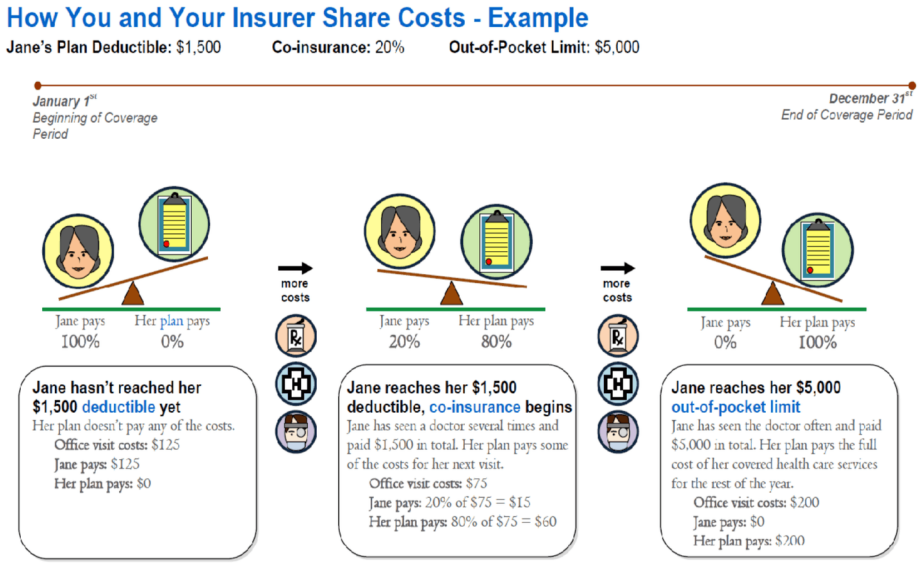
plan: the amount of insurance coverage and costs that the individual chooses to have. Most insurance companies offer many different plans to fit the various needs of people of different ages and incomes

premium: the amount of money that you and/or your employer pays the insurance company every month or year as part of the insurance plan

prescription: a doctor's recommendation or instruction to take a specific medicine that cannot be purchased without doctor's approval. Often written as *Rx*

Infographic-Example

Let's look at an example that illustrates how insurance works:



Use the chart about Jane's health insurance to answer the questions.

1. How much is Jane's deductible?

2. What percentage of the bill does ***Jane's health care plan*** pay once co-insurance begins?

3. What percentage of the bill does ***Jane*** pay once co-insurance begins?

4. How much is Jane's out-of-pocket limit?

5. How much does Jane pay after she reaches her out-of-pocket limit?

Role Play- Health Insurance

Mario was recently hired at a technology business. He is meeting with the Human Resources Director to talk about health insurance. She is explaining the different health benefit options to Mario.

Fill in the blanks with the following terms:

covered premiums network preventive primary care

HR: Hello, Mario. Welcome to Tech Solutions. I would like to review your health benefits with you.

Mario: That's great, because it can be really confusing.

HR: Yes, it can. Your coverage is with a Health Maintenance Organization (HMO). Most medical services, such as the lab, x-ray, and pharmacy, are located within the same site.

Mario: Okay, that seems convenient. What are the other advantages of this type of system?

HR: Well, HMOs think p_____ c_____ is important, so those types of services are almost always covered. They have low monthly p_____ and low co-pays. You'll probably have a primary health care provider who coordinates your care.

Mario: That all sounds good. Are there any disadvantages to this type of system?

HR: Your p_____ health care provider must be within the HMO network, because providers out of the n_____ aren't covered or have limited coverage. You must get a referral from your primary provider to see a specialist. Not all medical services are c_____.

Mario: I see. Well, thank you for explaining all of that. How will I know if something is covered?

HR: Here are some informational materials for you to take home, and there is also a website listed. If you have any questions about whether a healthcare visit or procedure is covered, call the customer support number that you will find on the brochure and on the website and ask them.

Talk with your partner and write a short answer to the following question.

What are the main advantages and disadvantages of Mario's insurance?

Advanced: Going Deeper with Additional Reading:

New York Times: How to dispute surprise medical bills

Insurance Issues in Real Life: A Tragic Story

Insulin and Insurance: How a Tragic Death Saves Lives

Discussion:

- Do you regularly see healthcare providers? How do you feel about utilizing healthcare?
- If you have insurance, what kind of insurance do you have?
- If you are not insured, what do you do when you get sick?
- How do you feel about the insurance system in the US? Is it different from other places you have lived?
- How was the information in this unit helpful?
- Do you like to have the doctor or healthcare provider help you make *informed decisions* about your own health, or do you prefer it when they tell you exactly what to do?

Attributions

This lesson has been developed by Nancy Wood using the following resources.

How US Health Insurance Works | Vaden Health Services (an explanation about healthcare from Stanford University for students and others who are new to the US)

Volunteers In Medicine Clinic (Low cost care in Eugene for people who do not have health insurance)

Health Authority : Apply for OHP : Oregon Health Plan : State of Oregon (A Governmental program run by the state of Oregon for people who qualify for financial assistance with health insurance)

Cost Sharing Out of Pocket Costs (Explanation from Medicaid, a the US governmental healthcare organization)

Additional material for this lesson has been adapted with permission from the Minnesota Department of Health, using the English Language Learners (ELL) Health Curriculum, State of Minnesota Department of Health https://www.health.state.mn.us/communities/rih/ell/

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2: BODY PARTS, PAIN, DISEASE CONDITIONS

2.1: Introduction
2.2: 2.1 Body Parts Activity- What do you already know?
2.3: 2.2 Communicating about Pain
2.4: 2.3 Putting it all together-Body Parts and Pain
2.5: Pain Management
2.6: End Chapter

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2.1: Introduction

In this lesson we will review basic body parts in order to be able to fully discuss pain and where it is located. We will also learn essential words for talking about disease or illness.

Learning Objectives

After completing this activity students will be able to:

- Name basic body parts
- Discuss pain in a way that provides complete information, including information about location, description, severity, onset, and duration of pain
- Identify and use essential vocabulary to describe conditions of disease/injury/illness

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2.2: 2.1 Body Parts Activity- What do you already know?

Body Parts Quizlet and Video Resources

The following resources can help you practice body parts if you need more practice. These resources include examples of the pronunciation of the parts, which may be helpful.

Body Parts Quizlet https://quizlet.com/_aalsvq?x=1jqt&i=187f78

Video- Body Parts https://youtu.be/aB7sIePM4rE

Study

Study the image below to learn names of body parts that you may be less familiar with:

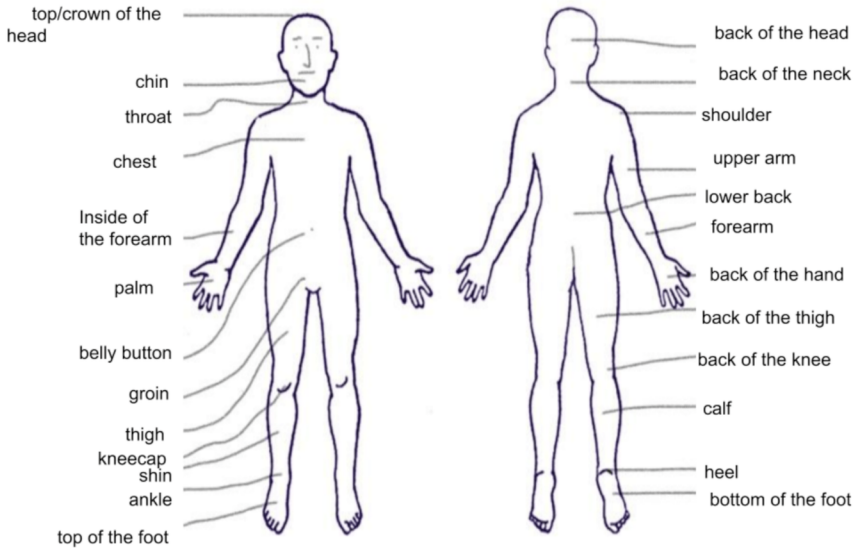


Image: labeled drawing of the front and back of the human body

Practice (speaking)

Point to the body parts named below, and use the word in a sentence. Use your own body for reference.

thigh

- *jawbone*
- *chin*
- *back of the neck*
- *palm*
- *navel/belly button*
- *eyebrow*
- *nostril*
- *lip*
- *fingernail*

- *armpit/underarm*
- *chest*

- *breast*
- *ribcage/ribs*
- *waist*
- *hips*
- *heel*

- *kneecap*
- *shin*
- *calf*
- *shoulder*
- *forehead*
- *elbow*
- *forearm*
- *wrist*
- *finger*
- *ankle*
- *groin*
- *top of foot*
- *toes*
- *buttocks/*

bottom

- *shoulder blades*

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2.3: 2.2 Communicating about Pain

Pain is something that each person experiences in their own way. Pain is a subjective experience. When something is subjective, only the person who is experiencing pain can tell you what it feels like.

Therefore, the person who is experiencing pain needs words to describe that pain as best they can.

As we look at words used to describe pain, it is important to know that we need many words to describe pain fully. When we talk about pain we need to communicate where it is, how it feels, how bad, or intense it is, how long it lasts, and whether it is in one area, or spread out.

Let's start by looking at two common pain words, *ache* and *cramp*.

Ache

The word "ache" is used in many ways. It can be a specific type of problem, such as a *headache*, and it can also be used simply to express that you have mild pain somewhere.

Noun:

*I have **an ache** in my foot. (The noun form is often used with the verb "have".)*

*I **have** a headache, I have a stomachache, I have a toothache, backache, earache, bellyache*

Verb:

My foot aches all the time. (simple present tense verb)

My foot is aching right now. (present continuous tense verb)

Adjective:

I have an aching pain in my neck.

Cramp (painful muscle contraction)

Noun:

I have a cramp in my calf. (The noun form is often used with the verb "have".) For example a "Charley Horse" is a very intense cramp of a muscle, usually in leg)

I get cramps every month in my lower abdomen (menstrual cramps)

When someone has diarrhea they sometimes have cramps.

Verb:

My foot cramps up when I exercise. (simple present tense verb)

My foot is cramping right now. (present continuous tense verb)

Adjective:

I have a cramping pain in my abdomen.

Words that describe the action of the pain

Some pain words describe actions. These words are usually verbs in the present continuous or adjectives. These include *throb*, *radiate*, *shoot* and *stab*.

To throb (v), throbbing (adj): to pulsate or pound with abnormal force or rapidity

to radiate (v), radiating (adj): pain that expands out from an area

to shoot (v), shooting (adj): STRONG radiating pain

My head is throbbing from the pain. (present continuous verb)

I have a throbbing headache. (adjective plus noun)

*The pain radiates **from** my neck **to** my shoulder. (present simple verb)*

I have radiating pain from my neck out to my shoulder (adjective plus noun)

(note: “from” tells us where the pain starts. “To” tells us where it moves to.)

*The pain **is shooting down my leg**! (present continuous verb)*

*I feel a shooting pain **that starts in my back** and **goes down** my leg.*



“The pain is radiating from my neck to my shoulder”

Match! Which words could describe typical pain in each situation?

Throbbing Cramping Aching Shooting Radiating

In the forehead

From the chest to the left arm

A thumb hit with a hammer by accident

Back pain that affects the leg

Menstrual pain

Now pretend that you have pain in each of these areas. What would you say to your doctor? Use the same pain words, and communicate both the location of the pain and how it feels.

Ex: I have an ache in my forehead.

More words to describe the quality of the pain, or the way it feels:

- **Heavy**: a type of pain that feels like it has weight, makes the body feel slow and heavy
- **Hot or burning**: pain that feels hot, almost as if on fire
- **Sharp**: pain that feels like a knife is stabbing you, also called "stabbing pain"
- **Sickening**: pain that makes you nauseous or feel like you might vomit or faint
- **Tiring or exhausting**: pain that is strong enough to take away the person's energy
- **Tender areas**: areas sensitive to touch or palpation

Match! Which of the words above could describe typical pain in each situation? What would you say to your doctor?

- After falling asleep in the sun
- Back pain that makes you feel tired all the time
- A bruise in your elbow after you bumped it
- Flu that makes your whole body hurt
- Pain in your side after running fast (common word is "a side stitch" or "a stitch in the side")

Adjectives to Describe Pain Intensity

When we talk about pain, we need to not only say *where* it is and what it *feels* like, but also how *intense* it is.

Mild: pain that is present, but not really a problem

Moderate: pain that is bothersome, but the person can still go about life fairly ok, but there are some limitations

Severe: pain that can't be ignored; pain that interferes with the ability to live daily life

Excruciating: pain that is so intense that the person cannot do anything other than deal with the pain

- What injuries or illness might cause *mild* pain?
- What injuries or illness might cause *moderate* pain?
- What injuries or illness might cause *severe* pain?
- What injuries or illness might cause *excruciating* pain?

Adjectives to describe how long pain lasts

We also need to communicate how long the pain has been going on. Your healthcare provider will want to know *when it started*, which is called the ***onset.***

Acute- pain caused by injury, surgery, illness; lasts for a short period of time, and usually disappears when the underlying cause has been treated or has healed.

Intermittent- pain that comes and goes

Constant- pain that is continuous and does not go away, but has lasted less than 6 months

Temporary-pain that doesn't last very long, and often goes away with or without treatment

Chronic- ongoing pain that lasts for 6 months or longer

Speaking about your pain experiences

1. Look at these words to describe the way pain feels:

throbbing cramping aching shooting sharp heavy burning sickening exhausting tender

2. Then look at the second list describing the pain intensity:

mild moderate severe excruciating

3. Then describe how long the pain went on:

Acute, intermittent, constant, temporary, chronic

4. Now describe a time when you had pain. In what part of the body did you experience the pain? (location) What type of pain did you feel? How intense was it?(intensity) How long did it last? (duration)

Questions you will be asked by your healthcare provider

When did the pain start?

Where do you feel the pain?

How long has it been going on?

Is your pain in one spot or does it radiate out?

How does the pain feel and how severe is it?

Is the pain constant or intermittent?

How long does it last?

What activities make the pain worse? What makes it feel better?

How does your pain limit what you can do?

What, if anything, triggers (similar to causes) the pain?

Trigger- A useful word to describe a cause

The word *trigger* can be both a noun and a verb.

Strong smells *trigger* headaches for some people. (verb)

Strong smells are *a headache trigger* for some people. (noun)

When someone has a condition like asthma or migraines, the doctor might ask the person “Do you know what your migraine triggers are?” or “Can you tell me what triggers your migraines?”

(Adapted from the National Institute of Health: How can I describe my pain to my health care provider? | NICHD)

Discussion

Do you know anyone who has chronic pain (pain that lasts longer than 6 months)? What causes the pain?

How do they manage the pain?

How does it affect their lives?

Pain Quizlet- Review the Vocabulary from this lesson:

https://quizlet.com/_a0u9rq?x=1jqt&i=187f78

Vocabulary in Context:

The article below is from the National Institutes of Health" News in Health" newsletter. (What Can You Do About Headache Pain? | NIH News in Health) .

Read the article below and *highlight or underline* the words we have learned in this lesson.

What Can You Do About Headache Pain?

Throbbing, aching head? You're not alone. Nearly everybody has had a headache. It's one of the major reasons people visit the doctor and miss work or school.



Not all headaches are the same. They can differ in how severe the pain is and how often you get them. Some people may get them only once in a while. Others may get them daily.

What causes headaches varies. Some types of headaches run in families. Others can be triggered by stress, alcohol, certain smells, allergies, or even the weather.

Tracking your headaches can help your health care provider figure out what causes them and choose a treatment for them. Write down the time of day they happen, what you were doing at the time, how long they lasted, any medicines or food you had beforehand, and anything you notice like noises, smells, or other possible triggers.

Your provider can review this information and your medical history to help figure out what type of headaches you're having. They can also run lab tests for other medical conditions that may be the cause. Different types of headaches are treated differently.

Not all headaches require medical care. But sudden onset headaches can signal a more serious disorder. Get help right away if you experience a sudden, severe headache along with a stiff neck, fever, nausea, or vomiting. Or if you're getting headaches more often or more severely over time.

Discussion: Do you have headaches? What triggers them, what do they feel like, and how long do they last?

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2.4: 2.3 Putting it all together-Body Parts and Pain

Speaking about Pain:

Choose a body part using the image below. Imagine you have pain in that area.

Use the pain vocabulary to describe how your pain feels, how intense the pain is, and how long it lasts. Then find a partner and do the role play.

Words that describe the quality of the pain, or what the pain feels like:

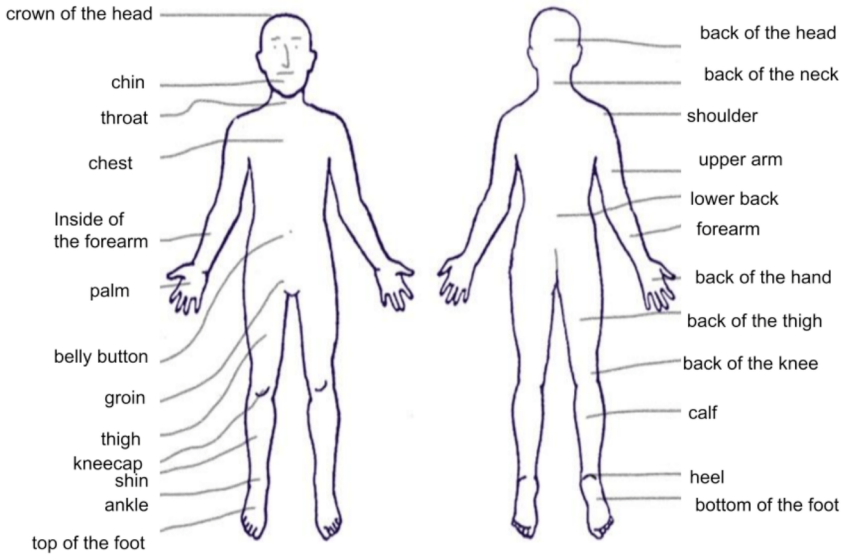
- Heavy
- Hot or burning
- Sharp/stabbing
- Shooting
- Sickening
- Radiating
- Tender
- Throbbing
- Tiring or exhausting
- Sore
- Aching
- Tingling

Words that describe severity, or how bad or intense the pain is:

- Mild
- Moderate
- Severe
- Excruciating

Words that show duration, or how long the pain lasts:

- Temporary
- Constant
- Intermittent (comes and goes)
- Chronic (more than 6 months)



Role Play:

Practice this out loud with a partner. You and your partner should play both roles. Choose a body part from the image above to talk about.

PCP: Hello How are you today?

P: I am in pain.

PCP: Oh, I'm sorry to hear that. Where do you feel the pain?

P:(*choose a body part now)*

PCP: Can you describe how the pain feels?

P:

PCP: How severe is it? (use mild,moderate, severe, excruciating)

P:

PCP: Is it constant, or intermittent?

P:

PCP: When did the pain start and how long have you had it?

P:

PCP: How does the pain affect your daily activities?

P:

PCP: Do you know what triggers the pain, if anything?

P:

PCP: What kinds of things help relieve the pain?

P:

PCP: What activities make the pain worse?

P:

PCP: Ok. I am going to investigate. Where exactly do you feel the pain?

P:

PCP: Is it tender here?

P:

PCP: Ok I think we might need to get an Xray or do some more tests. In the meantime, take 3 ibuprofen 3 times a day with food and we will get you an appointment tomorrow for more tests. Can you handle that?

P:

PCP: Do you have any questions?

P: (*Think of at least three questions to ask your healthcare provider)*

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2.5: Pain Management

Pain Treatments Commonly Used in the US

There are several different types of treatment for pain that are commonly used in the United States.

1. Medications: This includes over-the-counter drugs like ibuprofen (Advil) and acetaminophen (Tylenol), as well as prescription medications like opioids.

   These can provide quick and effective relief for pain, but they can also have side effects. In addition, opioid medications such as oxycodone can carry with them the risk of addiction.

2. Physical therapy: This type of treatment involves exercises and techniques to help strengthen the muscles and improve flexibility. It can be effective in treating chronic pain, but it may take time to see results.
3. Chiropractic treatment: This type of treatment involves manual adjustments to the spine and other joints to help improve alignment and reduce pain. It can be effective for treating pain in the back and neck, but it's not recommended for certain medical conditions.

Alternative Treatment for Pain

There are also several alternative ways to manage or treat pain, some of which include:

1. Mindfulness-based stress reduction (MBSR): This technique involves practicing mindfulness, which is the act of paying attention to the present moment in a non-judgmental way. It has been shown to be effective in reducing chronic pain and can be done through meditation, yoga, or other practices.
2. Exercise: Regular exercise can help reduce pain and improve function. It can also help improve mood and overall well-being. Mind-Body exercise such as yoga includes physical postures, breathing exercises, and meditation which can help improve flexibility, balance, and relaxation. It can be beneficial for reducing pain and stiffness in the body, but all exercise should be done under the guidance of a physical therapist or physician.
3. Herbal medicine: Many cultures have a long history of using herbs and plants to treat various *ailments*, including pain. Herbs such as willow bark, turmeric, ginger, and devil's claw are commonly used to treat pain.
4. Acupuncture: This traditional Chinese practice involves the insertion of thin needles into specific points on the body. It is believed to help balance the body's energy and is often used to treat chronic pain.
5. Massage: This practice is used in many cultures to relieve muscle tension, improve circulation, and reduce pain. It can be done with various techniques such as Swedish massage, deep tissue massage, and shiatsu.

Medication: Benefits and Drawbacks

There are several types of pain medications commonly used in the US, each with different mechanisms of action and potential side effects.

- Acetaminophen (Tylenol) is a non-opioid pain medication that is effective for mild to moderate pain and is available over-the-counter. It is generally considered safe, but high doses can cause liver damage.
- Nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen (Advil) and naproxen (Aleve) are also non-opioid pain medications that are effective for mild to moderate pain and are available over-the-counter. They work by reducing inflammation and are commonly used for conditions such as arthritis and menstrual cramps. However, they can cause stomach irritation and bleeding, and long-term use can increase the risk of heart attack and stroke.
- Opioids such as morphine, fentanyl, and oxycodone are powerful pain medications that are only available by prescription, and are effective for moderate to severe pain. They work by binding to receptors in the brain to reduce the perception of pain. However, they also come with a high risk of addiction and overdose, and long-term use can lead to physical dependence and *withdrawal symptoms*.

Benefits of Medication:

- Medications can provide quick and effective relief for pain.
- They can be used to treat a wide range of pain conditions, including acute and chronic pain.
- They can be used in conjunction with other treatments such as physical therapy or acupuncture.
- There are both widely available and accessible, over-the-counter options and there are also prescription medications.

Drawbacks of Medication:

- Medications can have side effects, such as drowsiness, nausea, and stomach upset.
- Long-term use of certain medications, such as opioids, can lead to addiction and dependence.
- They may not address the underlying cause of the pain and may only provide temporary relief.
- They can interact with other medications or medical conditions, and may not be suitable for everyone.

Comprehension:

1. When comparing medication, physical therapy, and chiropractic treatment for pain, which do you think is the *least invasive*? Why
2. What are some of the benefits of treating pain with medication?
3. What are some of the drawbacks of treating pain with medication?
4. Why is it important to work with a healthcare professional when treating pain with medication?
5. What are some examples of side effects that can be caused by medication for treating pain?
6. What is one benefit of physical therapy, and what is one drawback?
7. Write at least 2 questions you would ask your doctor if you were prescribed opioid pain medication.

Comprehensive Pain Management

A comprehensive pain management plan is a personalized approach to managing pain that takes into account an individual's specific needs and goals. It can include a variety of treatments, including medication, physical therapy, and lifestyle changes. It is developed with the help of a healthcare professional, such as a doctor, nurse, or physical therapist, and is regularly reviewed and modified as needed.

Having a comprehensive pain management plan is a good idea because it allows for a more holistic approach to managing pain. It also allows *for a tailored approach* to an individual's specific pain condition, which can improve treatment outcomes and quality of life. It also helps the healthcare professional to monitor the effectiveness of the treatment and make adjustments as needed.

Creating a *tailored (individualized, personalized)* comprehensive pain management plan typically involves several steps:

1. A thorough evaluation of the individual's medical history, current symptoms, and overall health.
2. Identification of the underlying cause of the pain, if possible.
3. Discussion of treatment options and goals with the individual.
4. Development of an individualized plan that includes various types of treatments, such as medication, physical therapy, or lifestyle changes.
5. Regular monitoring and evaluation of the plan's effectiveness and making adjustments as needed.

It's important to note that creating a comprehensive pain management plan is a process that may require the involvement of several healthcare professionals, such as a primary care physician, specialist, physical therapist, and psychologist, to ensure that all aspects of an individual's pain are addressed.

Keywords

- Comprehensive pain management plan
- Personalized approach
- Holistic approach
- Tailored approach
- Underlying cause

- Treatment options
- Goals
- Regular monitoring
- Evaluation
- Adjustments
- Chronic pain

Vocabulary focus

Use any three of the keywords above in a sentence about pain treatment. You will write three sentences.

Discussion

- What is your own attitude towards pain? Why do you think you have this attitude about it?
- If you have lived in countries other than the US, describe any differences between that country and the US when it comes to treating or talking about pain.
- Do you believe that non-invasive, natural methods of treating pain are just as effective as traditional medications? Why or why not?
- In which situations would you use opioids if you were prescribed them?
- Some people believe that a comprehensive pain management plan that includes a variety of treatments is more effective than relying on a single form of treatment. Do you agree or disagree? Why?

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2.6: End Chapter

Homework: Watch a Video:

For this activity, choose one of the videos below to watch. When you watch the video do the following:

- Write down at least three things that stood out to you.
- Write down at least 3 vocabulary words that were new to you, or that you did not understand
- Write down three sentences that you found interesting or confusing. Then write down what you think they mean. (use the transcript for this).
- Write your reactions to the video– Was it sad, was it inspiring, informative? Hard to understand?
- Evaluate the speaker's way of speaking– was it easy to understand? Why or why not?

Jen Gunter: What you should know about opioids and painkillers | TED Talk

In this video, a doctor gives advice about the effectiveness of anti-inflammatory painkillers, opioid medication and things you should ask your doctor. A transcript is available to read while you watch.

Mike Davis: What causes opioid addiction, and why is it so tough to combat? | TED Talk

This video explains the basic biochemistry of opioid addiction and why it can be so difficult to treat. A transcript is available to read while you watch.

Travis Rieder: The agony of opioid withdrawal -- and what doctors should tell patients about it | TED Talk

This is a personal talk about the experience one man had when he stopped taking opioids for pain relief after a motorcycle accident. He talks about how he became addicted to the medication and how our healthcare system was not designed to help him safely stop taking it. This talk has good vocabulary for symptoms. This is also a good listening exercise because the speaker does not speak like an English teacher! A transcript is available to read while you watch.

Attributions:

This lesson was written for English Language Learners by Nancy Wood. Information for this lesson is from The National Institute of Health, National Institute of Child Health and Human Development, How can I describe my pain to my health care provider? | NICHD. The article *What Can You Do About Headache Pain? | NIH News in Health)* is used with permission. Images in this lesson are freely available from https://unsplash.com/. Role play by Nancy Wood. The Pain Management activity was created and edited by Nancy Wood using Open AI as a tool to generate a rough draft of a general knowledge text, which was then edited and cross checked using information from the National Institutes of Health.

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3: EMERGENCIES, WOUNDS, SEPSIS AND HEAT ILLNESS

3.1: Introduction

3.2: 3.1 When to Go to the Emergency Room

3.3: 3.2 Wounds

3.4: 3.3 Sepsis

3.5: 3.4 Heat Illness- The Oregon Health Authority

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3.1: Introduction

Learning Objectives

After completing this activity students will be able to:

- Discuss emergencies, and use the vocabulary involved in deciding when to seek care
- Read a text originally created by the CDC to identify how to care for wounds, and how to identify and prevent sepsis
- Use appropriate vocabulary to discuss wounds, and describe the symptoms of sepsis and what to do to prevent it

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3.2: 3.1 When to Go to the Emergency Room

In this activity we will learn how to be ready to use emergency services if we need them. You will read tips on what to do to prepare, and then you will look up information on the internet.

The sources of information for this activity is the Medline website. This website is a respected source of medical information, recommended by health professionals. When to use the emergency room - adult

Steps to Using the Emergency Department

Prepare before you need care:

Write down the numbers of your *primary care provider or walk-in clinic*, *the Urgent Care Clinic* and *Emergency rooms* nearest you:

- Primary Care: Name, location and phone number
- Urgent Care: Name, location
- The closest emergency department name and location:

Whenever an illness or injury occurs, you need to decide how serious it is and how soon to get medical care. You need to decide whether it is best to:

- Call your healthcare provider (Co-pay, around $25)
- Go to an urgent care- walk-in clinic ($50-100) (for non-life threatening situations when you need care right away, but don't need ED)
- Go to an emergency department (ED) right away for serious or life-threatening situations (most expensive)

Signs of an Emergency:

Read the section below on calling 911. Look up any words you do not know.

Call 911 to have the emergency team *come to you* asap, such as for:

- Choking
- Stopped breathing
- Head injury with passing out, *fainting* (to briefly lose consciousness) or confusion
- Injury to neck or spine, particularly if there is loss of feeling *(or numbness)* anywhere or inability to move
- Electric shock or lightning strike
- Severe burn
- Severe chest pain or pressure
- *Seizure (convulsions)* that lasted 3 to 5 minutes (*a person who knows that they often have seizures that have no warning has a disease called epilepsy. Seizures shorter than 3 minutes do not usually need emergency care*)
- Heavy bleeding that does not stop

Role Play: Choose a situation from the list above and role play calling 911: (911 is the Emergency Number in North America and Central America)

I have provided a script for the role of the operator. You must decide what to say as the patient.

SCRIPT:

911 Operator: What is your emergency?

Patient:

Operator: Can you describe what is going on?

Patient:

Operator: Where are you calling from? Can you give me an address?

Patient:

Operator: Are you alone? Is there anyone there to help you?

Patient:

Operator: I am sending an ambulance now. Don't hang up the phone. Do you understand?

Patient:

Call 911 for an ambulance *or go to an emergency department* (*ask someone else to drive if possible*) for help for problems such as the following:

- Trouble breathing
- Passing out, fainting *(syncope)*
- Pain in the arm or jaw
- Unusual or bad headache, particularly if it started suddenly
- Suddenly not able to speak, see, walk, or move
- Suddenly weak or *drooping* on one side of the body
- Dizziness or weakness that does not go away
- Inhaled smoke or poisonous fumes
- Sudden confusion
- Heavy bleeding
- Possible broken bone, loss of movement, particularly if the bone is pushing through the skin
- Deep wound
- Serious burn
- Coughing or throwing up blood
- Severe pain anywhere on the body
- Severe allergic reaction with trouble breathing, swelling, hives *(urticaria)*
- High fever with headache and stiff neck
- High fever that does not get better with medicine
- Throwing up or loose stools that does not stop
- Poisoning or overdose of drug or alcohol
- Suicidal thoughts
- Seizures

If you are not Sure, Talk to Someone!

If you're not sure if you should get emergency care, call your PCP or medical team for advice.

Keep the phone numbers for your health care provider and the emergency departments in a place where you can easily find them.

If it is on an evening or weekend, most insurance plans have numbers you can call for advice:

Action: *Find out the number of the 24-hour medical helpline. Write it down here:*_____

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3.3: 3.2 Wounds

Wounds are injuries that break the skin or other body tissues. They include bruises, cuts, scrapes, scratches, burns, and punctured skin. Closed wounds are when the skin is intact, such as in bruises, or closed fractures. Open wounds are wounds in which the skin is broken and the tissues inside are exposed, such as in cuts, punctures, serious burns, scratches, and scrapes. Incisions are cuts made in order to perform surgery, and are also called surgical wounds. Sometimes only the first layer of skin is damaged, and sometimes it goes much deeper.

Minor wounds usually aren't serious, but it is important to clean them. Keep open wounds as clean as possible by washing thoroughly with soap and clean water. Cover clean, open wounds with a waterproof bandage to reduce the chance of infection. Serious and infected wounds require first aid followed by a visit to your doctor.



Image 1: Wounds-A scrape, a puncture wound, and an incision, or surgical wound

(a *scrape* is also called an *abrasion,* a *cut* is also called a *laceration, a scratch* is extremely minor and superficial. Exception: A *cat scratch* is not always minor– that can be a deeper wound)

Taking Care of Wounds

- Wash your hands thoroughly with soap and clean water, if possible.
- Avoid touching the wound with your fingers while treating it (if possible, use disposable, latex gloves).
- Remove obstructive jewelry and clothing from the injured body part.
- Apply direct pressure to any bleeding wound to control bleeding.
- Clean the wound after bleeding has stopped.
- Examine wounds for dirt and foreign objects.
- Gently flood the wound with bottled water or clean running water (if available, saline solution is preferred).
- Gently clean around the wound with soap and clean water.
- Pat dry and apply an adhesive bandage or dry clean cloth.
- Leave unclean wounds, bites, and punctures open. Wounds that are not cleaned correctly can trap bacteria and result in infection.
- Provide pain relievers when possible.
- Review the wound every 24 hours.

Seek medical attention (ED) as soon as possible if:

- There is a foreign object (soil, wood, metal, or other objects) embedded in the wound;
- A wound is a result of an animal bite;
- A wound is a result of a puncture by a dirty object;
- If a wound develops redness, swelling, or *oozing* or other signs of working infection such as fever, increasing pain, shortness of breath, fast heart rate,

- You have signs of sepsis such as confusion or disorientation, shortness of breath, high heart rate, fever or shivering, extreme pain or discomfort or clammy or sweaty skin.

Speaking:

In each of the situations below, use the vocabulary and information above to tell how you would take care of the wound:

- Your 5 year old falls and scrapes her knee
- Your husband is working in the garage in flip flops and accidentally steps on a nail. Will you put a bandage on it? Why or why not?
- You have a bad blister on your toe and it starts to ooze yellow pus
- You cut yourself with a knife while cooking

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3.4: 3.3 Sepsis

Sepsis is a life-threatening medical emergency. Sepsis happens when the body has an extreme response to an infection. Your immune system goes into overdrive, or overreacts, and attacks its own organs and tissues in an attempt to control the infection.

Infections that lead to sepsis most often start in the *skin, lungs, urinary tract, or gastrointestinal tract*. Without treatment, sepsis can rapidly lead to tissue damage, organ failure, and death. Sometimes, the cause of sepsis may be a wound.

What causes sepsis?

When germs get into a person's body, they can cause an infection. If you don't stop that infection, it can cause sepsis. Bacterial infections cause most cases of sepsis. Sepsis can also be a result of other infections, including viral infections, such as COVID-19 or influenza.

A minor wound that doesn't get cleaned could end up being the cause of a very preventable death.

What are the signs & symptoms?

A patient with sepsis might have one or more of the following signs or symptoms:


High heart rate or low blood pressure


Confusion or disorientation


Extreme pain or discomfort


Fever, shivering, or feeling very cold


Shortness of breath


Clammy or sweaty skin

What should I do if I suspect sepsis?

Sepsis is a medical emergency. If you or your loved one has an infection that's not getting better or is getting worse, ACT FAST.

- Get medical care IMMEDIATELY for infections that are not improving
- Ask your healthcare professional, "Could this infection turn into sepsis?"
- Ask if you should go to the emergency room.
- If you or your loved one show signs of sepsis, CALL 911. If you have or think you have sepsis, tell the operator. Fast recognition and treatment can increase your chances of survival.
- If you have Covid, pneumonia, an infected wound, or any other infection, tell the medical personnel immediately

Video Activity

https://youtu.be/6NdLnHbLZMU (What is Sepsis?)

Watch this video. As you watch, answer the following questions:

- What is a “local” infection?
- What are the symptoms to watch out for, according to the video?

Fill in the blanks Vocabulary Activity

Use the following words to fill in the blanks:

Flood disoriented bruises scrapes oozing pat clammy infection puncture open wounds sepsis

Wounds can be simple, minor injuries such as the blueish-colored _____we might get when we bump into a table. Other wounds can put us at risk for infections. _____ _____ expose the tissues under the skin to infection-causing bacteria or other germs from the outside world. Open wounds include cuts, _____, scratches, and _____ wounds, such as from a nail that goes deep into the skin. If a wound starts _____ yellowish pus, it is time to pay close attention, as this is a sign of an_____. One way to prevent infection is to clean the wounds well. _____ the wound gently with water and soap to clean it out, and then gently _____ it dry. If someone with a wound later starts to have a fever, shortness of breath, _____ skin, or seems to be _____, this could very well be a life threatening situation called _____. If you suspect a person might be experiencing sepsis, call 911 immediately and tell the operator about the wound, and all of the symptoms that they are experiencing.

Vocabulary Practice-Quizlet

https://quizlet.com/_bp8ltu?x=1qqt&i=187f78 Wounds and Sepsis

A Case of Sepsis: What went wrong? What went right?

Read the following story about a boy with a wound who later developed sepsis. After you read the story, answer the questions below.

During a soccer game, a young boy fell down and began to bleed from a cut on his knee. The referee sent him out of the game and over to his coach who took out a bandage and put it on the wound. He did not clean the cut. With the bandage in place, the coach put the boy back in the game.

The next day, the boy began to show signs of a fever, so his parents called his pediatrician. They didn’t know anything about the dangers of sepsis, so they did not tell the doctor he had a wound. The doctor was not concerned, and did not ask very many questions. She told the parents to give the boy Tylenol and keep an eye on him.

Later that night, the boy became worse. He had extreme pain, was confused, sweaty and shivering, so the parents rushed him to the hospital. The ER team recognized the boy’s condition was life-threatening, and asked the parents if anything unusual had happened recently. Had he been sick? Did he eat something he was allergic to? Had he been bitten by an animal? That was when his parents remembered the wound. They told the doctors about the cut.

The doctors immediately gave the boy antibiotics and tried to identify the type of bacteria that had caused the infection. Thankfully, four days later the boy was able to be let out of intensive care. He spent another week in the hospital, and was finally sent home. He was extremely lucky not to have died. The cause of the infection that almost killed him was the bacteria that entered his body through the cut on his knee.

Discuss

1. What mistakes did people make in this story that resulted in a life-threatening situation for the boy? Name at least 3
2. What things did people do right that probably saved the boy’s life?

3. What signs of infection would make you call your doctor?
4. What signs of infection would make you call 911?
5. What are your takeaways from this story, and from this lesson in general?

Vocabulary List:

bruise: an injury where blood vessels in the skin are broken, but the skin is intact

clammy skin: skin that is cold and moist in an unpleasant way

closed wound: body tissues are injured, but the skin is not broken

a cut: a break or opening in the skin. Also called a *laceration*, and may be deep, smooth, or jagged. It may be near the surface of the skin, or deeper

disoriented: confused, may not know time or place

intact: unbroken; whole

minor: not serious, likely to heal on its own

open wound: an injury in which the skin is broken open, exposing the tissue beneath

puncture wound: a deep hole made by a sharp object such as a nail

pus: a yellowish fluid created by infection.

a scrape; a wound in which the skin has been rubbed or torn off, also called an abrasion

shivering: involuntary shaking of the body to raise body temperature in response to cold or infection

surgical incision: a cut made intentionally with a knife in surgery

to flood a wound: to rinse it thoroughly with water to clean it

to ooze, oozing: to leak out slowly, leaking

to pat dry: to gently tap the wound until it is dry

wound: an injury that breaks the skin, bone or other body tissues

Attributions

This lesson, case study and activities have been created by Nancy Wood for English language teaching and health education purposes, using adapted materials from the Center for Disease Control and Prevention and MedlinePlus.

The original articles are:

What is sepsis? | Sepsis | CDC Source: CDC, Materials developed by CDC

(Use of the material does not imply endorsement by CDC, ATSDR, HHS or the United States Government).

Wounds and Injuries | Fracture | Bruises | MedlinePlus Adaptation of this article for English Language learners is courtesy of MedlinePlus from the National Library of Medicine. MedlinePlus brings together authoritative health information from the National Library of Medicine (NLM), the National Institutes of Health (NIH), and other government agencies and health-related organizations.

Video and Images

Video- What is sepsis? from the Swedish Sepsis Trust

Puncture Wound image: Symac, CC BY-SA 3.0 <https://creativecommons.org/licenses/by-sa/3.0>, via Wikimedia Commons

Incision Image Photo by Sharon McCutcheon on Unsplash

Scraped knee Photo by Klara Kulikova on Unsplash

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3.5: 3.4 Heat Illness- The Oregon Health Authority

Learning Objectives

After completing this activity students will be able to:

- Use diagrams and infographics developed by the Oregon Health Authority to identify specific facts about what to do if someone has heat illness
- Use appropriate vocabulary to explain how to prevent heat illness as well as describe the symptoms of heat illness



Be prepared for a heat wave- Speaking

As summer approaches, so does the hot weather in Oregon. While heat can be dangerous for everyone, some groups are especially sensitive to heat:

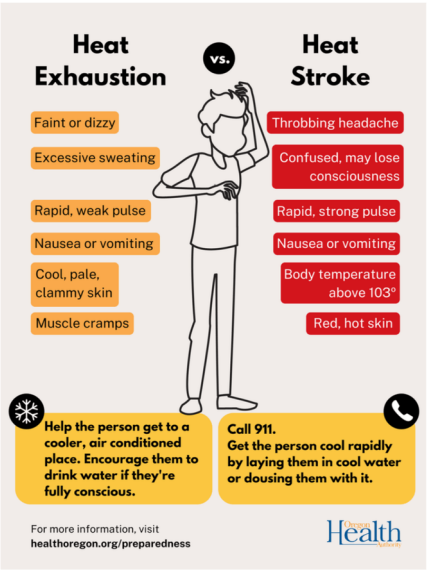
Infants and young children are sensitive to the effects of extreme heat, and must rely on other people to keep them cool and hydrated.

People with a chronic medical condition may not sense and respond to changes in temperature. Also, they may be taking medications that can worsen the impact of extreme heat.

People who exercise or work outdoors in extreme heat are more likely to become dehydrated and become ill.

Drinking water every 15 minutes is one way to prevent heat illness.

Use the infographic on the left from the Oregon Health Authority to describe other things you should do to prevent heat illness.



Heat illness:

Excessive heat can be life-threatening, and if someone has symptoms of heat illness, they must get help immediately.

Read the infographic and the text below from the Oregon Health Authority website. You may find the original materials at Extreme Heat - Oregon Health Authority

Heat-related Illness: Warning Signs and Symptoms

Muscle cramping might be the first sign of heat-related illness, and may lead to heat exhaustion or heat stroke. Here is how you can recognize heat exhaustion and heat stroke and what to do:

Heat Exhaustion	**What you should do**
Faint or dizzy	• Move to a cooler location. • Sip water. • Apply cool, wet cloths to as much of your body as possible. • Lie down and loosen your clothing. • If the person has vomited and it continues, seek medical attention immediately.
Heavy sweating	
Fast, weak pulse	
Nausea or vomiting	
Cold, pale, clammy skin	
Muscle cramps	

Heat Stroke	**What you should do**

High body temperature (above 103°F)	• **Call 911 immediately** - heat stroke is a medical emergency. • Move the person to a cooler environment. • Reduce the person's body temperature with cool cloths or even a bath. • Do NOT give fluids.
Red, hot, dry or damp skin	
Fast, strong pulse	
Headache	
Nausea or vomiting	
May lose consciousness	

Activity-Using information from the Oregon Health Authority

Use the image and the text from the Oregon Health Authority to answer the following questions:

1. What are the two types of heat illness?
2. List the symptoms of each type of heat illness.
3. Are there any words in your list of symptoms that are new? List them here.
4. Describe a person with heat exhaustion. What should you do if you think someone is experiencing heat exhaustion?
5. Describe a person with heat stroke. What should you do if someone has symptoms of heat stroke?

Attribution

This lesson has been written for English language teaching and health education purposes, using information from the Oregon Health Authority. The original materials can be found at *Extreme Heat - Oregon Health Authority*. These materials are freely available from the State of Oregon and are used under “fair use”. No copyright laws have been infringed, as per the Copyright Disclaimer under section 107 of the Copyright Act 1976, in which allowance is made for “fair use” for purposes such as criticism, comment, news reporting, teaching, scholarship, education and research.

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4: RESPIRATORY SYSTEM- RESPIRATORY ILLNESSES AND ALLERGIES

4.1: Introduction

4.2: Reading- The Respiratory System

4.3: Reading- Cold, Flu, or Allergy? Know the Difference for Best Treatment

4.4: Vocabulary Practice 1

4.5: Speaking Practice-Talking about your symptoms

4.6: Chronic Respiratory Illness- Asthma

4.7: Attributions

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4.1: Introduction

This lesson introduces you to the structures and functions of the respiratory system. You will also learn vocabulary to talk about the symptoms of common respiratory illnesses.

Respiratory System Introduction:

Learning Objectives

This activity is designed to introduce you to the language used to talk about respiratory system illnesses and allergies. At the end of this lesson you will be able to:

- Understand and use vocabulary related to the respiratory system and allergies
- Talk about the differences between colds, flu and allergies
- Talk about asthma and common asthma symptoms
- Name common allergens and triggers for asthma and allergies

Useful Vocabulary

- ***allergen****: something that causes an allergic reaction; common allergens include pollen, pet fur, dust, certain foods, etc*
- ***allergy****: a condition in which an individual's immune system is hypersensitive to something that does not cause illness in most people*
- ***allergic response****: A hypersensitive immune reaction to a substance that normally is harmless or would not cause an immune response in most people. An allergic response may cause harmful symptoms such as itching or inflammation or tissue injury.*
- ***asthma****: when the airways of the lungs narrow, making breathing difficult*
- ***pollen****: a fine powdery substance produced by seed plants; can be transported in the air by wind*
- ***pet dander****: tiny flakes of skin that are shed by household pets- similar to dandruff in humans but smaller and harder to see*
- ***trigger****: something that causes something else to happen, such as in something that causes an allergic reaction ; may also be used as a verb– to trigger*
- ***virus:*** *a very simple microorganism that infects cells and may cause disease. Because viruses can multiply only inside infected cells, they are not considered to be alive.*

These words can also be practiced on Quizlet at https://quizlet.com/_bs8bdb?x=1qqt&i=187f78

Video: The Respiratory System Introduction

The Respiratory System

Watch the video to get a visual introduction to the respiratory system

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4.2: Reading- The Respiratory System

Why is the respiratory system important?

The primary function of the respiratory system is to supply the body with oxygen and get rid of (remove) carbon dioxide. The body needs oxygen so that it can make energy. Oxygen is found in the air we breathe. When we breathe, the oxygen enters our lungs and then moves into our blood. The blood delivers oxygen to the rest of the body. We inhale oxygen, we exhale carbon dioxide. If carbon dioxide is not removed from the body, severe health problems can occur. The process of inhalation and exhalation is called respiration.

Another thing the respiratory system does is to filter out things that we do not want to breathe into our bodies. Our airways are lined with *cilia,* which are tiny hairs that line the nose, parts of the throat, trachea and lungs; the cilia trap dirt so that the air that goes into our lungs stays as clean as possible.

Figure 1: Image of the respiratory system

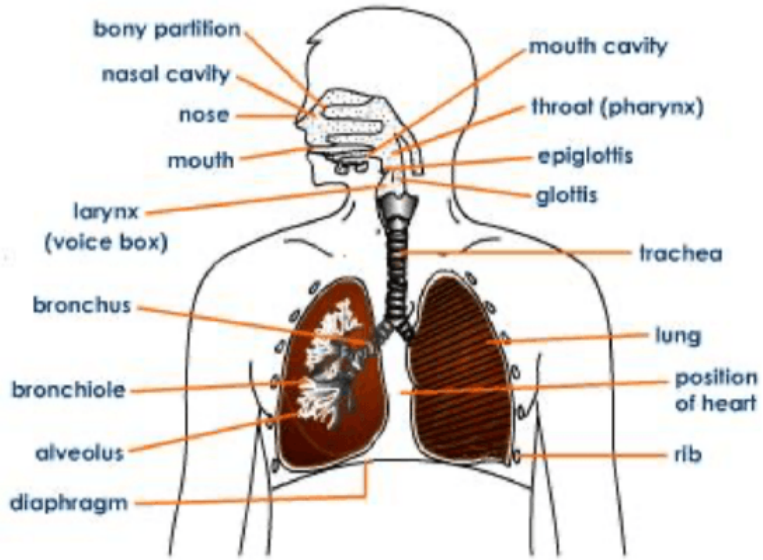


Figure 1: Image of the respiratory system

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Review vocabulary: Quizlet

Quizlet: The Respiratory System

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4.3: Reading- Cold, Flu, or Allergy? Know the Difference for Best Treatment

Text is from Cold, Flu, or Allergy? | NIH News in Health from the National Institute of Health

You're feeling pretty lousy. You've got sniffles, sneezing, and a sore throat. Is it a cold, flu, or allergies? It can be hard to tell them apart because they share so many symptoms. But understanding the differences will help you choose the best treatment.

"If you know what you have, you won't take medications that you don't need, that aren't effective, or that might even make your symptoms worse," says NIH's Dr. Teresa Hauguel, an expert on infectious diseases that affect breathing.

Cold, flu, and allergy all affect your respiratory system, which can make it hard to breathe. Each condition has key symptoms that set them apart.

Colds and flu are caused by different viruses. "As a rule of thumb, the symptoms associated with the flu are more severe," says Hauguel. Both illnesses can lead to a runny, stuffy nose; congestion; cough; and sore throat. But the flu can also cause high fever that lasts for 3-4 days, along with a headache, fatigue, and general aches and pain. These symptoms are less common when you have a cold.

"Allergies are a little different, because they aren't caused by a virus," Hauguel explains. "Instead, it's your body's immune system reacting to a trigger, or allergen, which is something you're allergic to." If you have allergies and breathe in things like pollen or pet dander, the immune cells in your nose and airways may overreact to these harmless substances. Your delicate respiratory tissues may then swell, and your nose may become stuffed up or runny.

"Allergies can also cause itchy, watery eyes, which you don't normally have with a cold or flu," Hauguel adds.

Allergy symptoms usually last as long as you're exposed to the allergen, which may be about 6 weeks during pollen seasons in the spring, summer, or fall. Colds and flu rarely last beyond 2 weeks.

Most people with a cold or flu recover on their own without medical care. But check with a health care provider if symptoms last beyond 10 days or if symptoms aren't relieved by over-the-counter medicines.

To treat colds or flu, get plenty of rest and drink lots of fluids. If you have the flu, pain relievers such as aspirin, acetaminophen, or ibuprofen can reduce fever or aches. Allergies can be treated with antihistamines or decongestants.

Be careful to avoid "drug overlap" when taking medicines that list 2 or more active ingredients on the label. For example, if you take 2 different drugs that contain acetaminophen—one for a stuffy nose and the other for headache—you may be getting too much acetaminophen.

"Read medicine labels carefully—the warnings, side effects, dosages. If you have questions, talk to your doctor or pharmacist, especially if you have children who are sick," Hauguel says. "You don't want to overmedicate, and you don't want to risk taking a medication that may interact with another."

Comprehension questions

- According to the text, why is it important to know whether your symptoms are cold, flu, or allergies? What sentences from the article helped you answer this question?

  Cold:

  Flu:

  Allergies:

- According to the text, what are the main symptoms that help you tell the difference between colds, flu and allergies

- What are typical treatments for each of the above?

  Cold:

  Flu:

  Allergies:

- What is *drug overlap* and why should you try to avoid this? Which sentences in the article helped you answer this question?

Treatment: Cold, Flu, or Allergy?

Treatment depends on which you have. A health professional can help you choose the best therapy.

Common Cold

- Symptoms last up to 2 weeks
- Stuffy, runny nose; sore throat; cough, congestion
- Treated with rest, fluids, over-the-counter (OTC) medicines to ease symptoms

Seasonal Flu

- Symptoms usually last 1-2 weeks
- High fever (100-102 °F, or higher in youngsters), headache, aches and pains, weakness, exhaustion, cough, chest discomfort, congestion
- Treated with rest, fluids, OTC medicines, prescription antiviral drugs

Airborne Allergy

- Lasts as long as allergens (such as pollen, pet dander) are present
- Stuffy, runny nose; itchy, watery eyes, congestion
- Treated with antihistamines, decongestants, nasal steroids, avoiding allergens

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4.4: Vocabulary Practice 1

Fill in the blanks with words from the information above.

I have an allergy to pet **d_____.**

When I start to get **w**_____ eyes, I know it might be because of all of the **p_____** from grass and trees.

Some people's allergy symptoms are **t_____** by mold.

When I had the flu, I had a **f_____.**

Generally when I have a cold, I don't take **o_____** medicines unless my symptoms are really bad.

Allergy symptoms usually last as long as you're exposed to the **a_____.**

Colds and flu are caused by different **v_____.**

Colds, flu and allergies may all cause general **c_____.**

For colds and flu, getting rest and plenty of **f** _____ is always a good idea.

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4.5: Speaking Practice-Talking about your symptoms

Use information from the article above about colds, flu, allergies and their treatments to answer the questions in each of the following scenarios. You may write your ideas down on a piece of scratch paper before you speak.

Possible vocabulary to use includes the following, plus any others you can think of:

Congestion Headache General Aches, Pains Fatigue, Weakness Extreme Exhaustion Stuffy, Runny Nose Sneezing Sore Throat Cough Chest Discomfort Itchy or watery eyes

- Imagine you have a common cold. Your doctor asks you to describe how you feel. What will you say? In addition to the words from the article, use one of the words to describe disease intensity (mild, moderate, severe). If this is a cold, how do you think it will be treated?
- Imagine that you have a teenage son and you are at the doctor. You think he might be allergic to your new cat. Describe the signs and symptoms that you see and explain why you think he might be allergic to the cat. If he IS allergic to the cat, what do you think the treatment will be?
- You were perfectly healthy yesterday. Today you are very sick. You think you might have the flu. Why? Explain to your doctor why you think it is the flu.

Additional Practice Video:Why do people have seasonal allergies? - Eleanor Nelsen

For those of you who are curious to learn more about allergies and why they happen, watch this video to learn more!

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4.6: Chronic Respiratory Illness- Asthma

Asthma is a chronic (long-term) condition that affects the airways in the lungs. The airways are tubes that carry air in and out of your lungs. If you have asthma, the airways can become inflamed and narrowed at times. This makes it harder for air to flow out of your airways when you breathe out. Watch this video to learn about asthma and how it affects the lungs.

Asthma affects people of all ages and often starts during childhood. Symptoms of asthma may include:

- Chest tightness
- Coughing, especially at night or early morning
- Shortness of breath
- Wheezing, which is a whistling sound when you breathe out

Asthma symptoms often come and go over time. In other words, sometimes the person with asthma does not experience any symptoms at all. The medical term for this is that the symptoms are intermittent.

Certain things can trigger or worsen asthma symptoms, such as pollen, exercise, viral infections, or cold air. These are called asthma triggers. To *trigger* something (verb) is to cause something to happen; A trigger (noun) is something that causes a reaction. Common triggers for asthma include:

- Indoor allergens, such as dust mites, mold, and pet dander or fur
- Outdoor allergens, such as pollens and mold
- Emotional stress, such as intense anger, crying, or laughing
- Physical activity, although with treatment, you or your child should still be able to be active
- Infections, such as colds, influenza (flu), or COVID-19
- Certain medicines, such as aspirin, which may cause serious breathing problems in people with severe asthma
- Poor air quality or very cold air

When symptoms get worse, it is called an asthma attack. Attacks can come on fast or gradually and may be life-threatening. People with severe asthma tend to get asthma attacks more often. You should go to the ER if at-home treatments are not working or if you have a severe asthma attack. For young children with asthma, call 9-1-1 if they:

- Seem drowsy, confused, or troubled
- Have a blue tint to the skin and lips, called cyanosis
- Have a fast heartbeat

There is no cure for asthma, but treatment and an asthma action plan can help you manage it. The plan may include monitoring, avoiding triggers, and using medicines.

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Information on Asthma is from The National Heart, Lung, and Blood Institute-What Is Asthma? | NHLBI, NIH, National Institutes of Health; U.S. Department of Health and Human Services. The image of the respiratory system is available at Mawaishasan, CC BY-SA 4.0 <https://creativecommons.org/licenses/by-sa/4.0>, via Wikimedia Commons)

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5: CARDIOVASCULAR SYSTEM AND BLOOD

5.1: The Cardiovascular System- A transportation system that keeps us alive
5.2: Reading Activity- Complete Blood Count
5.3: Listening- Lecture Activity on Myocardial Infarction
5.4: Attributions
5.5: Heart and Blood Reading Quiz
5.6: Reflect in Writing
5.7: Attributions

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5.1: The Cardiovascular System- A transportation system that keeps us alive

The primary structures of the cardiovascular system are the *heart, blood vessels, and blood*.

- The primary function of the *heart* is to pump blood through the blood vessels to all of the cells in the body
- *Blood vessels* are tubes of different sizes and types through which blood flows. The major types are *arteries, veins* and *capillaries*.
- *Blood* carries essential materials to and from the cells, bringing in oxygen, hormones, and nutrients to the cells, and removing carbon dioxide and waste products from the cells



Image: BodyParts3D/Anatomography, CC BY-SA 2.1 JP <https://creativecommons.org/licenses...2.1/jp/deed.en>, via Wikimedia Commons

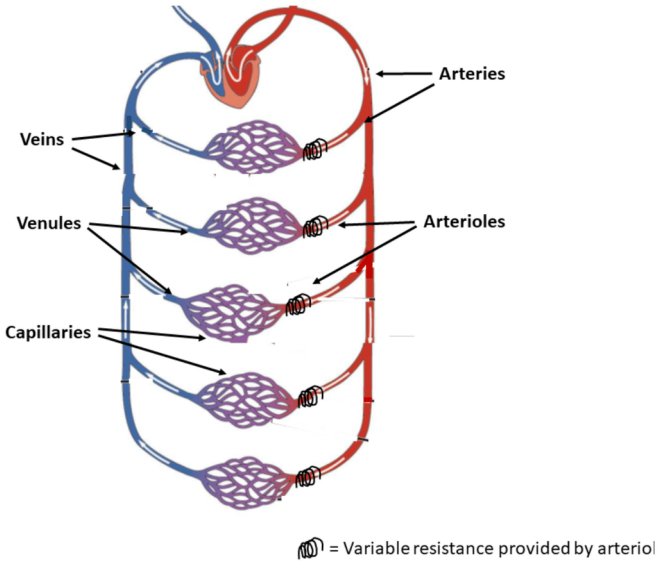
The *human heart* is a muscular organ, composed primarily of cardiac muscle tissue.

The heart contracts repeatedly with a steady rhythm. Every time the heart contracts, it pumps blood out of the heart and into the entire body. Every time it relaxes, the heart fills up with blood again. This happens involuntarily, our entire lives long. In one day, the average heart beats around 100,000 times.

The heart pumps blood rich in oxygen and nutrients to the cells in your body.

As blood flows through the body delivering oxygen and nutrients, it picks up waste that comes from the normal breakdown of tissues and from the food you eat. As blood flows through the lungs, carbon dioxide waste exits the blood so we can breathe it out, and the oxygen that we have breathed in enters the bloodstream. Nutrients enter our blood through the process of digestion, and wastes from this process are filtered out by the kidneys. This waste exits the body as urine. After leaving the kidneys, the clean blood flows back to the system and the circular cycle starts over again.

Blood vessels are the hollow tubes through which blood flows around the body They connect the heart to every cell in the body. *Arteries* carry blood away from the heart. As arteries divide into smaller branches, they are called *arterioles*. *Capillaries* are the smallest blood vessel; they connect arteries and veins. Gasses and other substances are exchanged between cells and the blood across the very thin walls of capillaries. *Veins* return blood to the heart. The smallest veins connect to capillaries and are called *venules*.



Capillaries are the smallest blood vessels. The tiny capillaries are located everywhere in the body. Capillaries have very thin walls, which allow important things like oxygen, hormones and nutrients to pass from the blood into the cell.

At the same time, carbon dioxide and other waste products pass out of the body's cells and into the blood to be carried away and removed.

For a more detailed discussion and activities see this interactive slide show, which was created for this course: The Cardiovascular System: Transportation

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5.2: Reading Activity- Complete Blood Count

Learning Objectives

This activity uses a web-based article from the Mayo Clinic in order to help students learn to :

- Identify and comprehend important vocabulary, facts and procedures concerning the elements in our blood and how blood tests provide us with health information
- Utilize the skills necessary to comprehend the main points in a text

This article is included on the basis of fair use. Sections of the article are included below. To read the original article go to: Complete blood count(CBC),

Complete Blood Count: Mayo Foundation for Medical Education and Research

Overview:

A complete blood count (CBC) is a blood test used to evaluate your overall health and detect a wide range of disorders, including anemia, infection and leukemia.

A complete blood count test measures several components and features of your blood, including:

- Red blood cells, which carry oxygen
- White blood cells, which fight infection
- Hemoglobin, the oxygen-carrying protein in red blood cells
- Hematocrit, the proportion of red blood cells to the fluid component, or plasma, in your blood
- Platelets, which help with blood clotting

Abnormal increases or decreases in cell counts as revealed in a complete blood count may indicate that you have an underlying medical condition that calls for further evaluation.

Questions:

1. What kind of test is a CBC?
2. What components of the blood does it measure, and what is the function of each of those components?

Why it's done:

A complete blood count is a common blood test that's done for a variety of reasons:

- **To review your overall health.** Your doctor may recommend a complete blood count as part of a routine medical examination to monitor your general health and to screen for a variety of disorders, such as anemia or leukemia.
- **To diagnose a medical condition.** Your doctor may suggest a complete blood count if you're experiencing weakness, fatigue, fever, inflammation, bruising or bleeding. A complete blood count may help diagnose the cause of these signs and symptoms. If your doctor suspects you have an infection, the test can also help confirm that diagnosis.
- **To monitor a medical condition.** If you've been diagnosed with a blood disorder that affects blood cell counts, your doctor may use complete blood counts to monitor your condition.
- **To monitor medical treatment.** A complete blood count may be used to monitor your health if you're taking medications that may affect blood cell counts.

Questions: (Use your own words where possible):

1. If you are having a routine medical exam, why might your doctor want you to do a CBC?
2. Name at least three signs and symptoms that might lead your doctor to order a CBC.
3. Why do you think cancer patients often need CBC tests while they are going through chemotherapy?

How you prepare:

If your blood sample is being tested only for a complete blood count, you can eat and drink normally before the test. If your blood sample will be used for additional tests, you may need to fast for a certain amount of time before the test. Your doctor will give you specific instructions.

What you can expect

For a complete blood count, a member of your health care team (often a phlebotomist) takes a sample of blood by inserting a needle into a vein in your arm, usually at the bend in your elbow. The blood sample is sent to a lab for analysis. You can return to your usual activities immediately.

What the results may indicate

Results in the following areas above or below the normal ranges on a complete blood count may indicate a problem.

- **Red blood cell count, hemoglobin and hematocrit.** The results of your red blood cell count, hemoglobin and hematocrit are related because they each measure aspects of your red blood cells.
  If the measures in these three areas are lower than normal, you have anemia. Anemia causes fatigue and weakness. Anemia has many causes, including low levels of certain vitamins or iron, blood loss, or an underlying condition.
  A red blood cell count that's higher than normal (erythrocytosis), or high hemoglobin or hematocrit levels, could point to an underlying medical condition, such as polycythemia vera or heart disease.

- **White blood cell count.** A low white blood cell count (leukopenia) may be caused by a medical condition, such as an autoimmune disorder that destroys white blood cells, bone marrow problems or cancer. Certain medications also can cause white blood cell counts to drop.
  If your white blood cell count is higher than normal, you may have an infection or inflammation. Or, it could indicate that you have an immune system disorder or a bone marrow disease. A high white blood cell count can also be a reaction to medication.

- **Platelet count.** A platelet count that's lower than normal (thrombocytopenia) or higher than normal (thrombocytosis) is often a sign of an underlying medical condition, or it may be a side effect from medication. If your platelet count is outside the normal range, you'll likely need additional tests to diagnose the cause.

For specifics about what your complete blood count results mean if they fall outside the normal ranges, talk to your doctor.

Questions:

1. What condition does a lower than normal red blood count indicate? What are the signs and symptoms of this condition?
2. What will probably happen if your platelet count is abnormal?
3. What is a higher than normal white blood count a sign of?

Your Experience:

Have you ever had blood drawn? How did you feel while you were getting the blood drawn? (Notice the verb "*to draw blood*". This is how we refer to the act of taking blood out of a person's body with a needle.)

Do you think you would want to be a phlebotomist/ Why or Why not?

What kinds of skills do you think you need to become a phlebotomist?

If you had a complete blood count done, and the doctor gave you a copy of the results, how could you use this article? What do you need to do in addition?

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5.3: Listening- Lecture Activity on Myocardial Infarction

Sean Jones Lecture on Myocardial Infarction

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19.1 Heart Anatomy - Anatomy and Physiology Open Stax Anatomy and Physiology

Transportation in Humans Ck-12 Foundation

Capillaries Ck-12.org Human Biology Ck-12 Foundation

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Physiology of Circulation NIH National cancer Institute, SEER Training Modules

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5.5: Heart and Blood Reading Quiz

Learning Objectives

With this quiz, students will show they can:

- Find important health information by reading a text from the US Department of Health that has been written for the general public.

Blood Clots Explained

Clearing Blockages in the System



Figure 1: An illustration of a blood clot

Your blood is an amazing, multi-purpose substance. It flows continuously through the body, carrying oxygen and nutrients to your cells. But if you get a scrape or cut, some of this flowing liquid quickly turns to a protective clot.

Clots are tangles of molecules and blood cells that clump together. They help prevent blood loss when the skin breaks open. They also help stop infections from getting inside the body. But when clotting happens inside a blood vessel, it can be dangerous.

Clots can form on the blood vessel walls to help them heal if they get damaged. Afterward, the clots usually dissolve. But sometimes a clot doesn't get broken down as it's supposed to. Clots may also form when they're not needed.

Sometimes, clots break off a vessel wall and travel through the blood to other parts of the body. They may cause a lot of damage, depending on where they block blood flow. Blood clots can potentially harm the brain, heart, lungs, or other organs.

But researchers have made great progress over the last few decades in managing blood clots. They continue to develop new ways to treat and prevent such blockages.

Clogs in the System

Three main things can lead to dangerous blood clots, explains Dr. Mitchell Elkind, an expert on stroke at Columbia University. "One is an abnormality in the blood that makes it more likely to clot. For example, genetic causes, cancer, or damage from smoking," he says. "The second is when blood doesn't flow properly." This can be a side effect of diseases and disorders of the

heart or blood vessels.

The third is damage to the lining of blood vessels. One cause of such damage is cholesterol buildup in the blood. Cholesterol is a waxy, fat-like substance that can clump together to form plaques. If a plaque breaks apart, it can damage the blood vessel.

Blood clots can happen to anyone, at any age. But some people are at increased risk. These include older adults and those with certain heart conditions.

Major surgery or a serious injury also add risk. Obesity, being physically inactive, and some medications can boost the chance of a dangerous clot, too.

“And once you’ve had one blood clot, you’re at high risk of another one,” notes Dr. Nigel Key, an expert on blood disorders at the University of North Carolina.

Some infections may also increase the risk of blood clotting. Recent studies have shown that the virus that causes COVID-19, SARS-CoV-2, can cause blood clots in some people.

Blood clots can occur anywhere in the body. That makes it difficult to find them before they cause a problem, Elkind explains. The symptoms of a blood clot depend on where they are.

A clot blocking blood flow to the brain can lead to a stroke. Strokes can cause sudden difficulty seeing, speaking, or walking. They can also make you feel weak, numb, dizzy, or confused.

A clot that blocks blood flow to the heart can cause a heart attack. The most common signs are crushing chest pain and difficulty breathing. Others range from cold sweats to arm or shoulder pain.

A clot in the lungs can cause shortness of breath, pain when breathing deeply, or even coughing up blood.

A clot in a vein deep within the body is called a deep vein thrombosis, or DVT. Symptoms include swelling, pain, warmth, or red or discolored skin. These usually happen in your legs. Long periods of inactivity can increase your risk.

“Compared with a heart attack or stroke, there’s low awareness of the symptoms of deep vein thrombosis,” Key says. Many symptoms overlap with less dangerous conditions, such as a muscle sprain.

If you have symptoms of a blood clot, call your healthcare provider or 911 immediately. You may need to go to the hospital to have blood or imaging tests.

Busting Blockages

Treatment depends on where a clot is and how long you’ve had symptoms. Certain drugs can break up and dissolve some types of clots. But they have to be given within a few hours of when symptoms start.

A type of surgery called a thrombectomy can be used to remove clots in large blood vessels. It can be used even if people don’t get to the hospital in time to receive clot-busting drugs. “That’s been a huge benefit for patients,” says Dr. Waleed Brinjikji, an expert on stroke at the Mayo Clinic.

This technique has also let researchers study what clots are made of after they’re removed. “We’re starting to realize how different clots can be,” says Brinjikji.

Different types of clots might benefit from different removal techniques or drugs. So Brinjikji’s team is now testing ways to identify the type of clot before it’s removed. That way they can start to test which treatments work best.

Questions:

1. What is a blood clot?
2. When are blood clots beneficial (good) for your body?
3. When are blood clots dangerous?
4. Name 3 possible causes of a blot clot.
5. Name two possible ways to treat blood clots.

6. What do you think you can do to help lower your risk of blood clots? (This is not directly answered in the reading, but the reading will help you answer the question).
7. Name 4 locations of common blood clots and the symptoms caused

location	symptoms

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5.6: Reflect in Writing

How does it feel to read healthcare information in English as compared to reading it in a different language? What is easy for you, and what is challenging? Explain fully.

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6: THE DIGESTIVE SYSTEM

6.1: Introducton

6.2: What is the digestive system?

6.3: Why is digestion important?

6.4: How does food move through my GI tract?

6.5: How does my digestive system break food into small parts my body can use?

6.6: What happens to the digested food?

6.7: How does my body control the digestive process?

6.8: Attributions

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6.1: Introducton

Learning Objectives

When you complete this activity you will be able to:

- Identify important information in a text
- Share important information that you read with others
- Recognize and use vocabulary about the digestive system

Pre-Reading:

Watch this National Geographic video to see the digestive system in action! The Digestive System (about 5 minutes)

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6.2: What is the digestive system?

The digestive system is made up of the gastrointestinal tract—also called the GI tract or digestive tract—and the liver, pancreas, and gallbladder. The GI tract is a series of hollow organs joined in a long tube from the mouth to the anus. The hollow organs that make up the GI tract are the mouth, esophagus, stomach, small intestine, large intestine, and anus. The liver, pancreas, and gallbladder are the solid, "accessory" organs of the digestive system. (See Fig. 1)

Questions:

1. According to this text, what is the GI tract?
2. What is a simple way to describe the GI tract?
3. What are the hollow organs of the GI tract?
4. What are the solid organs of the digestive system?

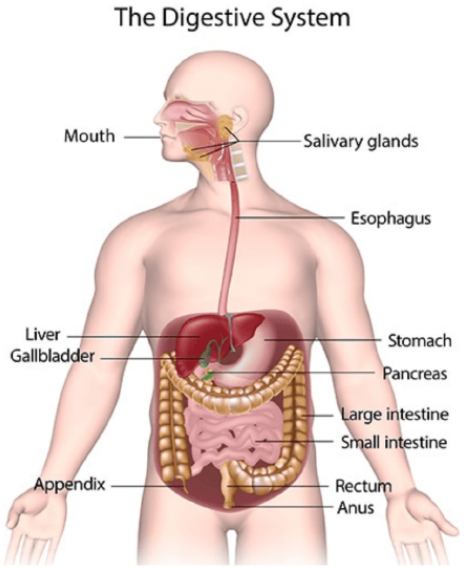


Figure 1: The structures of the digestive system

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6.3: Why is digestion important?

Digestion is important because your body needs nutrients from food and drink to work properly and stay healthy. Proteins, fats, carbohydrates, vitamins, minerals, and water are nutrients. Your digestive system breaks nutrients into parts small enough for your body to absorb and use for energy, growth, and cell repair.

- Proteins break into amino acids
- Fats break into fatty acids and glycerol
- Carbohydrates break into simple sugars

Questions

1. Name the different types of nutrients
2. When you look at the list of nutrients, what do you think it means to “have a balanced diet”?
3. Do you think you have a balanced diet? Why?

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6.4: How does food move through my GI tract?

Food moves through your GI tract by a process called peristalsis. Peristalsis is the involuntary constriction and relaxation of muscles, creating wave-like movements. The large, hollow organs of your GI tract contain a layer of muscle that enables their walls to move. The movement pushes food and liquid through your GI tract and mixes the contents within each organ. The muscle behind the food contracts and squeezes the food forward, while the muscle in front of the food relaxes to allow the food to move.

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6.5: How does my digestive system break food into small parts my body can use?

As food moves through your GI tract, your digestive organs break the food into smaller parts using:

- **Mechanical digestion**: motion, such as chewing, squeezing, and mixing
- **Chemical digestion**: digestive juices, such as stomach acid, bile, and enzymes

Mouth. The digestive process starts in your mouth when you chew. Chewing food well breaks the food into smaller pieces and makes it easier to swallow. If the pieces of food are too large, there is a risk of choking. Your salivary glands make saliva, a digestive juice, which moistens food so it moves more easily through your esophagus into your stomach. Saliva also has an enzyme that begins to break down starches in your food.

Esophagus. After you swallow, peristalsis pushes the food down your esophagus into your stomach.

Stomach. Glands in your stomach lining make stomach acid and enzymes that break down food. Muscles of your stomach mix the food with these digestive juices.

Pancreas. Your pancreas makes a digestive juice that has enzymes that break down carbohydrates, fats, and proteins. The pancreas delivers the digestive juice to the small intestine through small tubes called ducts. (Your pancreas also produces hormones, including insulin, which we will discuss in the lesson on Diabetes.)

Liver. Your liver makes a digestive juice called *bile* that helps digest fats and some vitamins. Bile ducts carry bile from your liver to your gallbladder for storage, or to the small intestine for use.

Gallbladder. Your gallbladder stores bile between meals. When you eat, your gallbladder squeezes bile through the bile ducts into your small intestine.

Small intestine. Your small intestine makes digestive juice, which mixes with bile and pancreatic juice to complete the breakdown of proteins, carbohydrates, and fats. Bacteria in your small intestine make some of the enzymes you need to digest carbohydrates. Your small intestine moves water from your bloodstream into your GI tract to help break down food. Your small intestine also absorbs water with other nutrients. Most of the nutrients from your food are absorbed in the small intestine.

Large intestine. Your large intestine absorbs water, and the waste products of digestion become stool (poop). In your large intestine, water moves from your GI tract into your bloodstream. Bacteria in your large intestine help break down remaining nutrients and make vitamin K. Waste products of digestion, including parts of food that have not been fully broken down, become the stool that we eliminate.

Questions:

1. What is peristalsis?
2. Where does this happen in the digestive system?
3. Name the two ways food gets broken into smaller pieces.
4. What type of digestion happens in the mouth?
5. Why do you think in many cultures children are told to chew their food thoroughly?

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6.6: What happens to the digested food?

The small intestine absorbs most of the nutrients in your food. Those nutrients enter the bloodstream through a network of capillaries in the small intestine. The blood moves through the circulatory system and passes the nutrients on to other parts of your body to store or use. Your blood carries simple sugars, amino acids, glycerol, and some vitamins and salts to the liver. Your liver stores, processes, and delivers these nutrients to the rest of your body when needed.

The lymph system, a network of vessels that carry white blood cells and a fluid called lymph throughout your body to fight infection, absorbs fatty acids and vitamins.

Your body uses all of these nutrients to build substances you need for energy, growth, and cell repair.

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6.7: How does my body control the digestive process?

Your hormones and nerves work together to help control the digestive process. Signals flow within your GI tract and back and forth from your GI tract to your brain.

Hormones

Cells lining your stomach and small intestine make and release hormones that control how your digestive system works. These hormones tell your body when to make digestive juices and send signals to your brain that you are hungry or full. Your pancreas also makes hormones that are important to digestion.

Nerves

You have nerves that connect your brain and spinal cord to your digestive system and control some digestive functions. For example, when you see or smell food, your brain sends a signal that causes your salivary glands to "make your mouth water" to prepare you to eat. There are also nerves around your rectum and anus that send sensations to the brain to let you know when it is time to use the bathroom.

Questions

1. What is the function of the small intestine, and the bloodstream in terms of helping us use the nutrients that we get from food?
2. What are two important ways nerves function in the digestive system?

Vocabulary:

Test your vocabulary of the digestive system with this Digestive System Quizlet

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7: DISEASE TRANSMISSION

7.1: Introduction

7.2: Part 1- Reading

7.3: Vocabulary- Recognizing Definitions

7.4: Attributions/References

7.5: Video Activity- Disease Transmission and Pathogens

7.6: Quizlets

7.7: Attributions

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7.1: Introduction

Learning Objectives

The purpose of this activity is to help you develop your skills so you can:

- Read, Identify and Summarize Central Ideas: Identify and summarize facts, details, and recommendations found in informational texts, infographics, diagrams, and charts that are created for healthcare consumers.

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7.2: Part 1- Reading

There are many types of diseases in our world, and there are many causes of disease. Often, diseases are caused by organisms that enter the body and cause illness. Microscopic organisms that cause disease are called *pathogens*. Diseases caused by pathogens that get into the body are called *infectious diseases*.

Sometimes infectious diseases can be spread from person to person. When people spread infectious diseases to other people, these diseases are considered to be *contagious*, or *communicable*.

Contagious diseases spread from person to person in several ways. One way is through direct physical contact, like touching or kissing a person who has the infection. This is called *direct contact transmission*. Something as simple as shaking hands could be a way that a disease is transmitted through direct contact. This is why it is always recommended to wash hands before eating.

When diseases are spread through direct sexual contact, whether oral, anal, or vaginal, they are called *STD's or sexually transmitted diseases or STIs - sexually transmitted infections*.

It is also possible to become infected with a contagious disease by touching or using something that has been used or touched by someone who has the disease. For example, teens often share water bottles. If the teen who shares the water bottle with her friend has an infection, it is possible that her friend can get the same infection from the water bottle. This is called *indirect transmission*.

Another way diseases are spread is through the air after someone sneezes, coughs or talks. When the bacteria travel in large, moist respiratory drops that fall to the ground within 6 feet of the host, it is called *droplet transmission*. Colds can be transmitted by droplet transmission, which is why wearing masks can help prevent transmission of the common cold.

When the virus or bacteria travels in *very* small particles in the air it is called *airborne transmission*. Airborne pathogens can travel more than 6 feet and may remain in the air even after the person has left the room. Measles is an example of a disease that is spread through airborne transmission. There is also evidence that COVID-19 spreads this way as well. Face coverings such as N95 and KN95 masks can help protect you and others from airborne transmitted diseases.

Some diseases are spread through contact with infected human blood. This is called *blood-borne transmission*. HIV/AIDS and Hepatitis C are both transmitted through blood. This is why it is especially dangerous for people who inject drugs to share needles. When people share needles, there may be tiny drops of blood on the needle, and this causes others to become infected with diseases from another person's blood.

When diseases are spread through food or drinking water, the type of transmission is called *food-borne or water-borne transmission*. When food or water contain pathogens, they are said to be *contaminated*. A common bacteria that is often found on unwashed vegetables or raw meat is *E. coli,* which can cause diarrhea and even kidney failure. This is why it is important to wash vegetables before you eat them, and cook meat well. After natural disasters such as earthquakes or floods, water may also become contaminated by sewage, spreading diseases such as cholera. Diseases like these are not considered *contagious*, as they do not spread from person to person.

Finally, there is another type of transmission called *vector-borne transmission*. Vectors are things that carry disease, like insects, mice, and other animals. Like food and water borne diseases, vector-borne diseases are not usually communicable. For example, rabies is spread when someone is bitten by an animal that has the disease. You must be bitten by a rabid animal to get the disease, and even if you have it, you cannot spread the disease to people.

Once you are aware of how diseases are transmitted, you have the knowledge you need to protect yourself. You can help protect yourself and others against contagious diseases by washing your hands well and often, covering your face in public places during disease outbreaks, staying away from those who are sick, making sure you're up to date on all vaccinations, and always using condoms during any type of sex. You can avoid diseases like food poisoning by cooking your food thoroughly and you can avoid rabies by staying clear of animals that look like they might be ill.

Discussion:

- What contagious diseases have you had in your life? Do you know how you got them?

- Have you ever had any infectious diseases like food poisoning or malaria that are not contagious? Do you know how you got them?
- What do you do in your daily life to prevent getting infectious diseases?

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7.3: Vocabulary- Recognizing Definitions

There are a few common patterns that show us that there is a definition.

- One common pattern gives you the term being defined followed by ***is/are*** and the definition
  - Example: *A pathogen **is** a microbe or germ that causes disease.*
- Sometimes the definition comes first, followed by **“is called”**
  - Example: *A microbe or germ that causes disease **is called** a pathogen.*
- Sometimes the definition is longer and starts with the word “**when**” and uses the phrase "**it/this is called"**
  - Example: ***When** a microbe or germ causes a disease, **it is called** a pathogen*

Activity: Finding the Definitions in the text:

Use the reading above to help you define the terms below. You may write the definitions exactly as they are written in the text above. Most of them follow one of the three patterns, or something very similar.

- infectious disease
- communicable (also called contagious) disease
- pathogen
- contaminated
- indirect contact transmission
- bloodborne transmission
- droplet transmission
- airborne transmission
- food-borne and waterborne transmission
- vector-borne transmission

Are there any other words that you didn’t know? Write them down and/or ask your teacher to explain.

For more information and practice about infectious diseases and how they are spread, see this activity about the **chain of infection**: Chain of Infection Overview

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7.5: Video Activity- Disease Transmission and Pathogens

Learning Objectives

After you have completed this activity you will be able to:

- Define “pathogen”
- Describe the different types of disease transmission
- Name three common pathogens and the common diseases they cause.

Disease Transmission Glossary: Pronunciation Practice

Read each of the following terms and their definitions out loud. If you don’t know how to pronounce a word, ask your teacher.

asymptomatic

A person is asymptomatic when they HAVE a disease or infection, but show no signs or symptoms of illness; often they do not know they are infected

communicable or contagious

Used to describe a disease that can be spread from one person to another. Communicable and contagious mean the same thing.

contaminated

something that contains a harmful substance such as toxins, disease, or infectious materials.

to catch or get an illness or disease from someone

When you receive a disease from someone else, you “catch” (or get) the disease from them

to give someone an illness or disease

When you pass an infection or illness on to someone else, you “give” it to them

direct contact transmission

when a person gets infected by touching the infected person directly, for example, shaking hands, kissing, or something else

indirect contact transmission

situations in which a person is infected by contact with a contaminated surface, such as a contaminated doorknob or faucet

bloodborne transmission

the spread of disease through contact with infected blood or other body fluids that are contaminated by infected blood. Examples include AIDS or HIV, and Hepatitis C.

droplet transmission

disease is spread through large, respiratory droplets that a sick person sprays through coughing or sneezing onto a nearby person or object. *Droplets fall to the ground after about 6 feet*. Using facemasks helps limit this type of transmission.

airborne transmission

disease is spread through contact with germs *floating in the air,* often coming from when a sick person coughs or sneezes. *Certain pathogens can stay in the air for a long time, even after the sick person is gone.* Examples include measles and chickenpox

food-borne and water-borne transmission

Disease is caused by eating or drinking contaminated food or water, or washing hands etc. with water that is contaminated

vector-borne transmission

The spread of a disease due to the bite of an animal or insect that carries the disease. The animal or insect that carries the disease is called a vector. Common vectors include flies, mosquitoes, fleas, ticks, rats, mice, dogs, etc. Malaria and Lyme Disease are both vector-borne diseases. The vector that carries malaria is a mosquito, while lyme disease is carried by deer ticks.

infectious disease

an illness caused by germs (pathogens) such as bacteria and viruses, fungi or parasites; Some infectious diseases are also contagious, but not all.

pathogen

An microorganism (microbe) or germ that causes disease

Video Activity

Diseases are transmitted in multiple ways, as we learned above. The most common ways are through the air (airborne & droplet), through contact (touching people or surfaces that are infected through direct and indirect contact) and through contaminated food and water (food-borne and water-borne transmission).

But what is it that is being transmitted? In other words, what are the things that cause disease?

Watch the following video: What are pathogens? (5:15)

Answer the questions below on a separate piece of paper, or make a copy of this activity and share it with me when you finish. Stop the video to answer the questions.

0:00-0:50 Introduction

- What is a microbe?
- What is a pathogen?
- Name 3 common types of pathogen mentioned in the video

0:50-2:08 Bacteria

- Name one type of bacteria
- Where do you often find bacteria?
- What common food-borne illnesses are often caused by bacteria?
- Are bacteria alive?
- Describe 3 things about bacteria

2:08-3:08 Viruses

- Name a disease caused by a virus. How is that disease transmitted?
- What IS a virus?
- Are viruses alive?
- Describe what viruses do in your body at the cellular level

3:08-to the end- Fungi

- Name a common fungal infection
- What are common signs of fungal infections?

Discussion (note the use of verb tenses!)

What do you do to avoid infectious diseases in your daily life? Name the actions you take to prevent infections.

Have you ever heard of any of these pathogens before? If so, which ones have you heard of? Have you ever been infected with any of these bacteria, viruses, or fungi?

What did you like about this video?

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7.6: Quizlets

- Quizlet on the Immune system, Immunity and Infectious Diseases
- Communicable Diseases

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8: ENDOCRINE SYSTEM BASICS AND DIABETES

8.1: Introduction
8.2: Overview of the Endocrine System
8.3: A Common Endocrine System Disease- Diabetes
8.4: Attributions/References

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8.1: Introduction

Learning Objectives

After completing this lesson students will be able to:

- Use *reading skills* to learn basic information about the endocrine system
- Use *listening skills* and video to gain information about the endocrine system, including learning pronunciation of important terms

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8.2: Overview of the Endocrine System

Glands are organs in the human body that secrete substances. The *endocrine system* is a system of glands called *endocrine* glands that release chemical messengers called hormones into the *bloodstream*. Hormones help regulate the way the body functions. The endocrine system is a system in which hormones flow through the blood to regulate important things that our body does in order to work properly. Not all glands in the body are part of the endocrine system. There are also glands called *exocrine* glands. These include sweat glands and salivary glands. Exocrine glands secrete substances, but not into the bloodstream. Instead, they secrete them through ducts (like tubes) that help them exit the body. In this unit, we are focusing only on on *endocrine* glands and the way the endocrine system regulates the body.

- What is a gland?
- What are the names of the two major types of glands?
- What are hormones?

The endocrine system, made up of all the body's different *hormones*, regulates all the processes in the body, starting from the moment an egg is fertilized by a sperm and continuing throughout a person's entire life. Processes are things that the body does in order to maintain life. For example, the endocrine system regulates growth and development, sleep cycles, emotions and mood, digestion and metabolism and blood sugar levels.

Endocrine hormones travel through the bloodstream to the cells they affect, and this takes time. The endocrine system does not regulate the body as quickly as the nervous system does. Also, while hormones travel through the whole body, each single hormone only affects specific cells. In other words, hormones only affect the specific cells they are meant to affect– their target cells. Much like a lock and key, many hormones act by binding to a cell's specific receptors that are produced within the cells. When a hormone binds to a receptor, the receptor carries out the hormone's instructions.. The hormone-receptor complex switches on or switches off specific biological processes in cells, tissues, and organs. Hormones can cause effects that last for days, weeks, or even months.

- What is the primary function of the endocrine system?
- Give an example of 2 processes that the endocrine system regulates

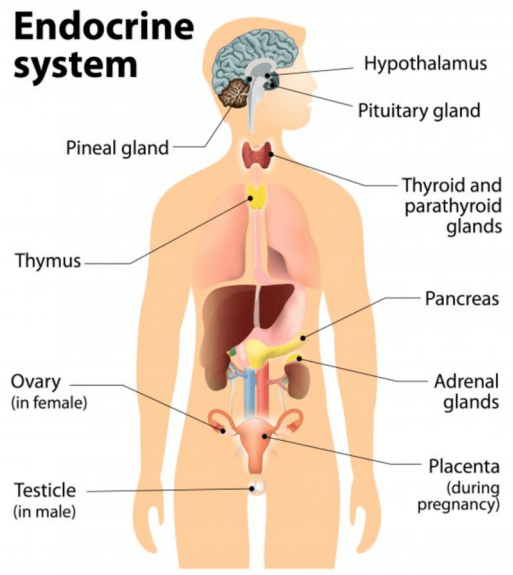


Figure 1: The major glands of the endocrine system

Glands of the Endocrine System

- In the brain: pineal gland, hypothalamus, pituitary gland,
- In the throat and chest: thyroid, parathyroids, thymus,

- In the abdominal area: pancreas, adrenal glands,
- In the groin: ovaries and testes

(Note that the ovary and testis are the only endocrine glands that are different in males and females)

Pituitary Gland

The pituitary gland is located in the brain. It is controlled by the nervous system via the brain structure called the hypothalamus. One endocrine hormone secreted by the pituitary gland is *growth hormone*, which stimulates cells throughout the body to make proteins and divide. Most of the other hormones secreted by the pituitary gland are hormones that regulate other endocrine glands. Generally, these hormones direct the other glands to secrete either more or less of their hormones. *This is why the pituitary gland is often referred to as the "master gland" of the endocrine system.*

Remaining Glands of the Endocrine System

Each of the other glands of the endocrine system is summarized below.

- The ***thyroid*** gland is a large gland in the neck. Thyroid hormones increase the rate of metabolism in cells throughout the body. They control how quickly cells use energy and make proteins. This affects many processes in the body such as breathing, body temperature, digestion, and heartbeat.
- The four ***parathyroid*** glands are located in the neck behind the thyroid gland. The parathyroid hormone helps keep the level of calcium in the blood at the correct levels. It stimulates bone cells to dissolve calcium and release it into the blood.
- The ***pineal*** gland is a tiny gland located near the center of the brain. It secretes the hormone melatonin, which controls the sleep-wake cycle and several other processes.
- The ***pancreas*** is located near the stomach. Its endocrine hormones include insulin and glucagon, which work together to control the level of glucose (also called "blood sugar") in the blood. When the pancreas releases too little insulin, a person has a condition known as diabetes.
- The two ***adrenal*** glands are located above the kidneys. Adrenal glands secrete several different endocrine hormones, including the hormone adrenaline, which is involved in the *fight-or-flight response*.
- The ***gonads, or reproductive glands*** include the ovaries in females and testes in males. They secrete sex hormones, such as testosterone (in males) and estrogen (in females). Both males and females have both hormones in their bodies, just in different amounts.
- The ***thymus*** gland is located in front of the heart. It is the site where immune system cells called T cells mature. T cells are important in the adaptive immune system, in which the body learns to recognize and defend against specific pathogens.

Video: Hormones

Watch the following video to help support your reading. Then answer the review questions using both the video and the reading.

How do your hormones work? - Emma Bryce

Review Questions:

1. What secretes hormones?
2. How do hormones travel?
3. Give an example of a hormone and name something that it does.
4. Say something you know about estrogen and testosterone in men and women.
5. When you read about the endocrine system, what other systems can you think of that work together with the endocrine system?
6. When you hear the word hormones, what do you think of? How do you notice the effect of hormones in *your* daily life?

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8.3: A Common Endocrine System Disease- Diabetes

Hormones & Insulin

Insulin is a hormone. A hormone is a chemical in your body that signals cells to do things. Insulin is made by the *pancreas*, an organ near your stomach. The pancreas sends insulin into the bloodstream when glucose levels in the blood go up. The purpose of insulin is to find glucose in the blood stream and transport it into cells.

Your digestive system breaks down the carbohydrates in the foods you eat. The simple sugars, mainly glucose, move into your bloodstream. Next, insulin helps move the glucose from the blood into your body's cells to use as fuel or store for later use. Cells need glucose to fuel the body. Insulin is important because it moves glucose into cells. Without insulin, glucose stays in the blood instead of getting used by the cells, and this causes big problems for the body. When you have diabetes or pre-diabetes, insulin does not work as it should, so your cells do not get the energy they need and glucose builds up in your blood. High blood glucose can harm almost every part of your body.

Watch this video to learn more about the pancreas and what it does:

What does the pancreas do? - Emma Bryce | TED-Ed

Diabetes

There are different types of diabetes. With diabetes, your body does not make enough insulin, or the insulin does not work as it should to help your body get energy from the food you eat. Having diabetes can increase your risk for other health concerns, such as arthritis, hearing loss, blindness, depression and stroke.

Type 1 diabetes

Type 1 diabetes is a serious disease in which the pancreas stops making insulin. People with type 1 diabetes need to take insulin shots every day and could die if they do not get this treatment. Type 1 diabetes is usually diagnosed during childhood.

Type 2 diabetes

Type 2 diabetes is more common than type 1. Type 2 diabetes is often diagnosed in adults, but may develop in children. Even if type 2 diabetes does not cause symptoms at first, it can cause many serious health problems over time. Unlike type 1 diabetes, type 2 may be prevented by maintaining a healthy weight, exercising and eating a healthy diet.

Gestational diabetes is a type of diabetes that can happen to women during their pregnancy, but it usually goes away after the baby is born. A woman who has had gestational diabetes is at higher risk of getting Type 2 diabetes.

The following video series provides a clear, visual explanation of diabetes. Watch the video to support your understanding of the reading.

Video: What Happens in Diabetes? (for Parents) - Nemours KidsHealth

Complications of Diabetes

Heart disease

- Having diabetes increases blood pressure and cholesterol.
- Increased blood pressure and cholesterol can lead to heart disease.
- Heart disease increases chances of stroke and heart attacks.

Arthritis

- Inability to move your body because of joint problems

Nerve and blood vessel problems

- A person with diabetes might have numbness, a tingling feeling, or pain in his hands and feet
- If parts of the body, such as the feet, do not get enough blood, they may become damaged. In severe cases, toes, feet or even legs may have to be amputated (cut off by a surgeon)

Eye problems

- Cataracts: blurred vision
- Diabetic retinopathy: Blood vessels in the eyes leak, which can cause blindness

Stroke

Also called a “cerebrovascular accident (CVA),” a stroke happens when blood flow to the brain is blocked, or when a blood vessel breaks in the brain. Strokes can cause long-lasting brain damage and death

Kidney disease

The kidneys remove waste products from your blood. Having untreated diabetes makes the kidneys work too hard. Over time, the kidneys stop working (kidney failure) Kidney failure may require kidney dialysis, and it can be deadly. Diabetes can also cause hearing loss, dental problems and digestion problems. It can also contribute to depression.

Risk Factors for Diabetes

- Overweight
- Age
- Family history of diabetes
- Smoking
- Inactivity

- High blood cholesterol
- Gestational diabetes

Check your understanding

Activity 1

Read each item. Write the letter from definitions below that gives the correct definition of the term on the left. Use the reading to help you.

1. _____ hormone

2. _____ gestational diabetes

3. _____ Type 2 Diabetes

4. _____ glucose

5. _____ insulin

6. _____ pancreas

7. _____ Type 1 Diabetes

a. A chronic condition in which the pancreas produces no insulin

b. When the body becomes resistant to insulin or does not produce enough insulin

c. Diabetes some women get while pregnant

d. An organ near the stomach that pumps insulin into the body

e. A chemical that regulates body function

g. A hormone that moves glucose into cells to use or store as energy

h. Simple sugar; it provides energy

Activity 2

Use the words in italics to complete each sentence in the following passage.

insulin glucose pancreas hormone diabetes

The body gets energy from carbohydrates in food. After you eat, the body breaks down carbohydrates into _____ (a type of sugar). Cells need glucose to fuel the body. _____ is important because it is the _____ that moves glucose into cells. Insulin is made in the _____. Without insulin, glucose builds up in the blood instead of getting used by the cells, and this causes big problems for the body, such as _____.

Discussion

- If you had increased thirst at night, and were noticing that you were always hungry, what would you do? Why?
- How much risk do you have of developing diabetes? (Try to use the terms (high risk, moderate risk, low risk, as in "*I have a low risk of developing diabetes, since I am young, eat mostly whole foods, and exercise regularly.)*
- What can you do in your own life to minimize your risk?
- Do you know anyone who has diabetes? What do they do to keep it under control?

The following paragraphs are from a recent New York Times article about research that shows the benefits of walking. Read these two paragraphs. After you read them, let's talk about your reactions. Will this knowledge change the way you do things? If so, how? (To read the full article, go to: Just 2 Minutes of Walking After a Meal Is Surprisingly Good for You - The New York Times)

New York Times Reading: How walking affects blood sugar levels

Just 2 Minutes of Walking After a Meal Is Surprisingly Good for You

By Rachel Fairbank, The New York Times

Aug. 4, 2022, 12:02 p.m. ET

Walking after a meal, conventional wisdom says, helps clear your mind and aids in digestion. Scientists have also found that going for a 15-minute walk after a meal can reduce blood sugar levels, which can help ward off (prevent) complications such as Type 2 diabetes. But, as it turns out, even just a few minutes of walking can activate these benefits.

In a meta-analysis, recently published in the journal Sports Medicine, researchers looked at the results of seven studies that compared the effects of sitting versus standing or

walking on measures of heart health, including insulin and blood sugar levels. They found that light walking after a meal, in

increments (amounts) of as little as two to five minutes, had a significant impact in moderating blood sugar levels.

"Each small thing you do will have benefits, even if it is a small step," said Dr. Kershaw Patel, a preventive cardiologist at Houston Methodist Hospital who was not involved in the study.

(Answers: Activity 1: 1e, 2c, 3b, 4h, 5g, 6d, 7a Activity 2: glucose, insulin, hormone, pancreas, diabetes)

Quizlet Vocabulary Practice

To practice the words you have just learned, review this **quizlet** Endocrine System Basic

Speaking/Writing (Lesson Assessment)

Imagine you have a family member who has just been told they have pre- diabetes. In either speaking or writing:

- explain briefly what diabetes is (at least 4-5 sentences)
- tell your family member what they can do to lower their risk of getting diabetes in the future

Try to use some language of definitions ("*diabetes is…"*) and the vocabulary words *pancreas, hormone, bloodstream, blood sugar, secrete, regulate and insulin* in your answer.

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Learners (ELL) Health Curriculum, State of Minnesota Department of Health https://www.health.state.mn.us/communities/rih/ell/.

The New York Times excerpt was written by Rachel Fairbank for The New York Times, published Aug. 4, 2022, 12:02 p.m. ET. The full article can be found here: Just 2 Minutes of Walking After a Meal Is Surprisingly Good for You - The New York Times.

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9: PERSONAL HEALTH HISTORY

9.1: Personal Health History
9.2: Verb Tenses in the Context of Health
9.3: Practice Using Verb Tenses in a Personal Health History
9.4: Discussion- Privacy
9.5: Attributions

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9.1: Personal Health History

Learning Objectives

After you have completed this activity you will be able to:

- Use appropriate vocabulary to discuss your personal health history
- Identify the verbs that you need to practice using in the past tense
- Identify the difference between the simple present tense, simple past tense and the present perfect tense
- Talk about your own personal health history using the simple present tense, past simple tense and present perfect tense.

Purpose of Taking a Health History

A personal health history is a document that tells all about the patient and their health, from childhood up to the point at which the health history is being taken. The purpose of taking a health history is to gather information about the past so that the healthcare team can provide the best care possible in the present.

When we are talking about times in a person's life, it is important to use verb tenses correctly, so that the healthcare provider understands when things happened, if they are still happening now, and what kinds of things the patient is doing in the present to care for themselves.

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9.2: Verb Tenses in the Context of Health

Simple Present Tense

Use simple present tense for things that are facts, or for habits or routines; things that you do regularly, or to describe things that you don't do.

I exercise more than three times a week. I walk my dog twice a day, and I also try to ride my bike for at least 20 minutes at least 5 days a week. I do not smoke, and I eat a lot of vegetables. I am 5 feet, two inches tall and I weigh about 110 pounds. I eat chocolate every day, but only a little bit. I like lemon soda, but I don't drink it very often, since I don't want to get cavities in my teeth. My only bad habit is that I drink a lot of coffee!

Simple Past Tense:

Used for things that happened in the past and are finished.

I had surgery about 9 years ago. I had a lot of back pain, and I went to physical therapy, but it didn't help. It turned out that the back pain was not a back problem at all. I had a tumor in my uterus! So instead of physical therapy, I needed surgery. When my uterus was removed, the back pain immediately went away. It took about 6 months to fully recover, but after 6 months I felt totally fine.

Present Perfect Tense:

The present perfect tense connects the past to the present moment in some way. This verb tense is used to:

- talk about events that happened in the past and are still happening
- To connect a past event with the present moment and how things are now
- To talk about an experience in a non-specific time in the past, or to find out whether someone has HAD a certain experience
- Often used with *since* and *for*

Example

I have not had any issues with my back at all since I had that surgery. In fact, I have not needed to see a physical therapist for over 9 years! I have been amazingly healthy in my back since the surgery. I have not had any other health issues since then, which is pretty nice! So I feel lucky.

Often a healthcare provider will use the present perfect to ask questions, since they do not know if you have ever had certain issues, nor do they know WHEN you may or may not have had those issues.

Healthcare Professional: Have you ever been hospitalized? (Have you ever been a patient in a hospital?)

- *No I haven't.*
- *Yes. I have.*

Healthcare Professional: When were you hospitalized and why? (go back to simple past tense)

- *I was hospitalized in 2018. I broke my leg.*

Grammar Group Activity- Present Perfect/Past simple

Look at the questions in the role play below. Write down at least three examples of the present perfect tense. Then write down at least three examples of the past simple tense. Why was each example used that way?

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9.3: Practice Using Verb Tenses in a Personal Health History

1. Work with a partner and read this role play. Each person will have a chance to play the role of the patient. When you are the patient, try to use the correct verb tense to answer the question.
2. Write down or highlight any new words or words you don't know how to pronounce.
3. Discuss any questions that might be sensitive or embarrassing to you. How do you feel about these questions? Why do you think they are part of the health history?

Role Play Text:

PCP: Do you have any health issues that you are aware of?

Patient:

PCP: Have you ever received medical care? If so, what problems/issues were addressed? Was the care continuous or as-needed?

Patient:

PCP: Have you ever been hospitalized? If so, for what? How long were you in the hospital?

PCP: Have you been hospitalized any other time?

Patient:

PCP: Were you ever operated on, even as a child? Were there any complications ?

Patient:

PCP: Do you take any prescription medicines?

If so, what is the dose and frequency?

Do you know what you are taking them for? Do they help?

Patent:

PCP: Are you taking any alternative or culturally traditional *supplements* or medications? This includes vitamins or herbs. How much and what are you taking it for? Has it been effective?

Patient:

PCP: What herbs do you take?

PCP: Have you experienced any *adverse reactions* to medications? When did this happen? Can you describe what happened?

Patient:

PCP: Now I'm going to ask you a few questions about your lifestyle. These are routine questions that I ask everyone. Please answer them honestly. They may be sensitive, but there is no judgment no matter how you answer.

Patient: Do I have to answer?

PCP: You may choose not to answer any of these questions, but I can help you better if I have this information.

Patient: ok, it''s fine.

PCP: Do you drink alcohol? How much? Do you use drugs? If so, what kind of drugs or how much do you use per day/week? Does

this concern you?

Would you like to learn effective ways to quit or cut down?

Patient:

PCP: Are you sexually active? If so, with persons of the same or opposite sex? Are you married? Do you have sex with more than one partner? Do you use condoms or other means of birth control? (*birth control* and *contraception* are the same thing)

(These questions are sensitive, but they are important. The doctor needs to know if they need to test you for STDs, such as HIV, Cervical Cancer, Gonorrhea, Herpes, etc. We call them "routine" questions. The healthcare provider asks these questions to protect your health, not to judge you.)

Patient:

PCP: Have you ever been pregnant? Have you ever had an abortion or a miscarriage? When did that happen?

Patient

PCP: Do you have children? If so, are they healthy? Do they live with you?

Patient:

PCP: Do you or anyone in your family have any allergies to food or any medicine?

PCP: Has anyone in your family had or currently have a genetic illness *such as* coronary artery disease, diabetes and/or some kinds of cancer? What disease do they or did they have? How old were they when they became ill? What was the outcome?

Patient:

PCP: Is there any history of mental illness in your family? (Mental illnesses are things like anxiety, depression) Do you have any concerns about you or your family's mental health? Would you like to learn about how get help for mental health issues?

Patient:

PCP Do you participate in any physical activity? (*Do you exercise?*) How often? Do you enjoy it?

Patient:

PCP: Do you feel like you manage stress well? What things work for you?

Patient:

Do you have any other questions or concerns about your own health?

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9.4: Discussion- Privacy

One thing that is very important in the US is the **privacy** of people's health information. When we speak to the doctor, we need to be open and honest, and not be afraid to tell the doctor things that might feel very private, or even embarrassing. Because doctors hear very private information, there are very strict laws that make it so that the doctor can only tell other healthcare providers about your personal health.

What do you think of the way Americans value the privacy of their medical information? Is privacy important to you? Why or Why not? Are you comfortable talking to your doctor about private information?

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10: ONLINE HEALTH INFORMATION- WHAT IS RELIABLE?

10.1: Introduction
10.2: Questions
10.3: Reliable Health Information- Websites to Trust

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10.1: Introduction

The National Institute of Health is an agency of the US Federal Government. The *Federal Government* governs the entire United States, whereas state governments are in charge of each individual state.

The National Institute of Health has put together an easy to read resource on where to find reliable health information. You can find that webpage Online Health Information: Is It Reliable? | National Institute on Aging.

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10.2: Questions

Use this website to answer the following questions:

Who is the target audience for this website? How do you know? Look at the title for clues.

1. Does it matter that this information was written for a specific audience? Can anyone use this information?
2. Where does this website suggest you start when looking for health information online?
3. Name two places this website suggests are good places to find information.
4. If a website ends in .com do you think it is as reliable as a website that ends in .edu? Why or why not?
5. Under the heading "*Who wrote the information? Who reviewed it?*" you will find a discussion of some things to ask yourself when evaluating a website. Name at least three things.
6. Why are personal stories about medical issues not always the best sources of *general* information?
7. Why is the date the information was published important when searching for health information?
8. If you don't know if a non-profit organization (.org) is trustworthy , look in the "ABOUT" section on the website. If you see that the organization works with research, educational institutions, large teaching hospitals or doctors, it is probably reliable, especially if it links to websites supported by the government.
9. If you were looking for information about Vitamin D, would the following websites be reliable sources? How do you know?

https://www.nordic.com/healthy-science/an-introduction-to-vitamin-d

https://ods.od.nih.gov/factsheets/VitaminD-Consumer

https://www.hsph.harvard.edu/nutritionsource/vitamin-d/

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10.3: Reliable Health Information- Websites to Trust

Here are some sources that we have used this term, and that I highly recommend:

Reliable Information from Reputable Research Hospitals and Medical Schools:

- The Mayo Clinic: Diseases and Conditions
- The Cleveland Clinic Health Library Medical Questions & Answers

Reliable Information from Governmental Sources:

- Medline Plus- The U.S. National Library of Medicine: MedlinePlus Health Topics
- Centers for Disease Control and Prevention: Centers for Disease Control and Prevention (CDC)
- Oregon Health Authority: Oregon Health Authority : Prevention and Wellness : Prevention and Wellness : State of Oregon

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11: HEALTH PROFESSIONS CAREERS (LOOKING TO THE FUTURE)

11.1: Vocabulary and Healthcare Careers
11.2: Part 2: Reading Comprehension Questions
11.3: Attributions

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11.1: Vocabulary and Healthcare Careers

Training and Education:

- **Certification**: some jobs require you to complete a training program or pass an exam to show that you have the knowledge to do the job; once you have completed the requirements, you are *certified* and have *earned a certificate*.
- **Community/Technical College**: offers programs from 1 term up to 2-years that range from certificates to associate's degrees
- **Bachelor's Degree**: a 4-year degree from a college or university
- **Graduate Program**: an additional 2-year (or longer) degree after a 4-year degree has been completed
- **Professional Schools**: Schools that train people for a specific profession after they have completed a Bachelor's degree; examples include medical school, Dental school, Law School
- **Career Training:** Education that leads to being "job-ready" in a career

Important Terms

- **Prescription**: written instructions from a healthcare provider; a patient brings a prescription to a pharmacy to get medicine
- **Annual Salary**: the payment a person receives during one year for doing his or her job
- **Median Salary:** The middle point of all salaries for that career. In other words, half of the people who work in that field make less than the median salary, and half make more.
- **Hourly Wage:** the amount of money a person earns per hour
- **Clinical Training**: Training that takes place on the job, after students have learned in a classroom. Most health professions require students to learn job skills in a healthcare setting, under careful supervision.

Careers in Healthcare

This is only a partial list. There are many more careers to choose from. All median salary estimates are from The U.S. Bureau of Labor Statistics Occupational Employment and Wage Statistics. Salaries in Oregon may be slightly higher than the average salaries across the United States.

Counselors, Therapists

Counselors and therapists are health care professionals who are trained to evaluate and help improve a person's mental health. There are many different types of counselors and therapists. Most positions require a master's degree (M.S. or M.A.) in a mental health-related field such as psychology, counseling psychology, marriage or family therapy, among others. The median annual salary is $43,000. (This does not include psychiatrists or psychologists, who are doctors, and earn more).

Dental Assistants

A dental assistant helps the dentist with a wide variety of tasks. These tasks include assisting the dentist or hygienist in caring for patients, helping with equipment and helping file records and appointment scheduling. It may also include collecting and recording medical and dental histories and patient vital signs and ordering dental supplies and maintaining dental equipment inventory. It usually requires one year of training in a private dental assisting training program or at a community college.

Dental Hygienists

Dental hygienists provide preventive dental care, teeth cleaning, examining the patient for gingivitis and other oral health issues or disease, and talking to patients about how they can improve oral health. This job requires an associate's degree from an accredited program or college (usually a 2 year degree), and successfully passing a licensure exam in the state in which you wish to work. The median annual salary is $77,090.

Emergency Medical Technician (EMT) or Paramedic

People in these positions respond to 911 calls. They perform lifesaving emergency procedures and transport patients to the hospital in an ambulance. They write reports and communicate with other healthcare providers about the care they have given to patients. An EMT may complete more training to become a paramedic. The median annual salary is $36,500.

Home Health Aide or Caregiver

This position may require a brief training program, and in some cases, none at all. Home health aides help patients who have illnesses or disabilities, or who are older. Aides help with daily living tasks, such as bathing, dressing and taking medication. The median annual salary is $27,000.

Massage Therapist

Massage therapists treat clients by using touch to manipulate the muscles and other soft tissues of the body. Many massage therapists run their own independent businesses, though some work for Spas or in medical offices. Massage therapy training varies in length, but most training programs take around one year to complete and require knowledge of anatomy. All massage therapists must pass state licensure exams before being allowed to work. The median annual salary is $41,500

Medical Assistant (MA)

A one-year training program is usually required. Medical assistants help physicians by interviewing and explaining information to patients and recording patients' medical information in a computer system. Medical assistants also set up patient rooms and sterilize equipment. The median salary is $36,500.

Medical Doctor (Physician) or Dentist

These careers require at least 8 years of college and may include a residency. Doctors prescribe and administer treatment to patients, order and interpret medical tests and monitor patients' conditions. Dentists diagnose and treat dental issues, correct bite issues, perform surgeries and extractions and lead the dental team to ensure that the teeth and mouth are healthy. The salary for both physicians and dentists is usually at least $150,000 and often much higher.

Medical Lab Technician

A position requiring a 2-year degree that involves testing patients' blood, urine and other body fluids. A medical lab technician uses complicated equipment and is responsible for setting it up and cleaning it. Technicians enter test results into the computer and discuss them with their supervisors. The median salary is $39,000.

Nursing Assistant (CNA 1 and 2)

Nursing assistants help patients with daily tasks such as bathing and eating. They check patients' vital signs and may give medications. Nursing assistants communicate with patients and the nurses who supervise them. This position requires a brief training program for certification. CNA 1 works in rehabilitation and long-term care settings. CNA 2 may work in hospitals. The median salary is $30,850.

Nursing: Licensed Practical Nurse (LPN) and Registered Nurse (RN)

Both LPNs and RNs take care of patients by observing them, recording how they are doing, and communicating with other healthcare providers. Nurses provide many types of care, education and treatment, generally under the supervision of doctors. RNs have more training and greater responsibilities than LPNs. Most RNs have a bachelor's degree, though some RN training programs are 3 year degrees from community colleges. LPN degrees may take 1-2 years. The median salary for LPNs is $48,800; The median salary for RNs is $75,000.

Optometric Assistant (Vision Tech)

Optometric assistants may only require a high school diploma or GED and on-the job training. When required, training programs take less than one year to complete. Optometric assistants assist opticians and optometrists in vision care centers, and do customer service, recordkeeping, insurance tasks, and technical support. The median salary is $38,530.

Pharmacist

This position requires 4 years of college plus a graduate degree. It takes between 6 and 8 years of study to become a pharmacist. The pharmacist reviews prescriptions and educates patients about drug interactions and side effects. They supervise other workers and keep records on patients. The median salary is $128,000.

Pharmacy Technician

Pharmacy Tech training programs take less than one year to complete. Pharmacy technicians help patients as they drop off and pick up prescriptions, enter patients' information into a computer system, and help keep medical supplies organized. The median salary is $35,000.

Phlebotomist

Training to become a phlebotomist takes less than one year. Phlebotomists draw blood from patients for a variety of laboratory tests, prepare and maintain equipment, enter data into computers, and assist with record keeping. The median salary is $35,000.

Physical Therapist (PT)

This career requires a graduate degree, usually at least 2 years after 4 years of college. PTs help rehabilitate patients by planning and carrying out programs to restore physical functioning after an injury or illness. The median salary is $91,000.

Physical Therapy Assistant (PTA)

This career requires 2 years of college. PTAs assist physical therapists by observing patients, helping patients do their exercises, and communicating with patients' families. The median salary is $59,000.

Radiologic Technologist

To get this job, you need a 2-year degree. Radiologic technologists perform imaging tests, such as X-rays, on patients. They operate equipment, communicate with patients and physicians, and enter information into a computer system. Salary range is $61,000.

Surgical Technologist

This job also requires a 2-year degree. Surgical technologists work under the supervision of a surgeon to make sure that the operating room or environment is safe, that the equipment is working and that the safety of the patient is closely monitored. They also make sure all equipment is sanitized. Median salary is around $50,000.

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11.2: Part 2: Reading Comprehension Questions

1. Which of the health professions above require a 2- year degree?

2. What does a Pharmacy Technician do?

3. What is the median salary for a Medical Assistant?

4. What does a Home Health Aide do, and what is another name for this job?

5. What does the “median salary” refer to?

6. If you started in a career in your first job, would you expect to get the median salary? Why or Why not?

Speaking:

1. In your opinion, what kinds of skills would help a person be successful in the following health professions? Think of at least three skills that you would need for each profession.
    - Nursing Assisting
    - Massage Therapy
    - Radiologic or Surgical Technology
    - Physical Therapy
2. Which health profession interests you the most? Why? (Write at least two sentences).

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Additional references: National Alliance on Mental Illness:

Types of Mental Health Professionals; All median salary estimates are from The U.S. Bureau of Labor Statistics Occupational Employment and Wage Statistics.

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