



# MAINTAINING A HEALTHY HEART



## LEARNING OBJECTIVES:

- Conclude that heart disease can start in childhood.
- Recognize exercise reduces the risk of heart disease.
- Determine how following Life's Simple 7 can greatly improve heart health.
- Connect high blood pressure, cholesterol, and blood sugar with the disease they cause.

## STANDARDS:

- 21.3-5.HL.1
- 21.3-5.HL.3
- 21.3-5.HL.5
- 21.6-8.HL.1
- 21.6-8.HL.3
- 21.6-8.HL.5

## SUPPLIES NEEDED FOR ACTIVITIES:

- Top Ten Causes of Death cards (included at the end of the lesson), enough copies for each small group of 3-5 students.
- Worksheet: (included), a copy for each small group.
- Poster paper and markers for each small group.

**NOTE: This content connects well with the Health Literacy portion of the Iowa Core Standards (21st Century Skills).**

## INTRODUCTION:

In our last lesson, we learned about the heart's anatomy and how it functions as part of our circulatory system. We learned how hard it works every second of our lives and that the difference between the heart working and stopping is life and death. Today we will learn about how we can maintain a strong heart so we can live a long and healthy life. To learn how we can help maintain a healthy heart, let's look at the outcomes of poor health, the most common causes of death, and investigate how we can help address this.

Ask students: Can you think of health conditions that can impact human health in the United States? Allow students to brainstorm and share specific health issues.

## ACTIVITY 1: LEADING CAUSES OF DEATH

Engage students in a brief discussion on the Top Ten Causes of Death. (There is an option for in-person or virtual delivery of this activity).

**In-person Option:** Break up the class into groups of 3-5 students and provide them a set of the Top Ten cards (included at the end of this lesson).

- **DO:** Your group has a stack of 10 cards that each list a type of disease that is one of the Top Ten causes of death. Your team is to discuss each one and order them from the #1 leading cause of death at the top to #10 at the bottom. (Give them about 3 minutes). Circulate between the groups assuring all opinions are being respected.
- **REFLECT:** This topic can sometimes be difficult to talk about, but I appreciate your time and thoughtful discussion. Have groups share their #1, #2, and #3 choices and why they selected those as leading causes. Give the students the correct order by calling out the causes starting from #10 to #1. Are there any surprises? If time allows, give additional information and/or percentages about some of the causes of death. (Answer key included on resource page at the end of this lesson).

Share that heart disease is the #1 leading cause of death in the United States and worldwide!

## VIRTUAL ADAPTATION FOR ACTIVITY 1

Share screen with the list of Top 10 causes of death in no particular order. Ask students to stand, and they will use their body stature to show their answer selection to the questions.

Directions:

- If they think it is towards the bottom (#8, 9, 10), they will squat low to the ground.
- If they think it's in the middle (#4, 5, 6, 7), they will do a normal squat as if they were sitting in a chair.
- If they think it's towards the top (#1, 2, 3), they will stand or even jump up in the air.

Teacher circles causes of death that have a majority of students standing/jumping up to narrow the top causes. Feel free to then review the class's decision to determine the leading cause of death. Share that heart disease is the number one leading cause of death in the United States and worldwide!

## OVERVIEW OF HEART DISEASE PREVALENCE

One illness that starts at an early age is heart disease, which is the #1 cause of death in the United States. For every American who dies from cancer (the #2 cause of death in the United States), two die from heart-related illnesses. The primary cause of heart disease is a build-up of fatty deposits inside the walls of our arteries, which causes passageways to become smaller and smaller. This is called atherosclerosis. It restricts the blood flow, much like holding your thumb over the end of a garden hose. This causes additional pressure inside the hose.

Because the fatty deposits restrict blood flow in our arteries, the additional pressure makes our heart work harder. As these fatty deposits build-up, blood does not flow well through the artery. Blood vessels can become totally blocked by fatty deposits or a blood clot. (A clot is when blood changes from a liquid into a thickened clump). When this happens to an artery that feeds the heart, a heart attack occurs. When this happens to an artery that supplies blood to the brain, a stroke occurs.

## VOCABULARY

**Atherosclerosis:** Greek word which means: athero = artery, sclerosis = being hard, unbendable. Refers to the buildup of fats, cholesterol and other substances in and on your artery walls (plaque), which can restrict blood flow.

**Heart attack:** Is the death of heart muscle caused by a loss of blood supply. The blood is usually cut off when an artery supplying the heart muscle is blocked by a blood clot. If some of the heart muscle dies, a person experiences chest pain and electrical instability of the heart muscle tissue.

**Stroke:** Occurs when the blood supply to part of your brain is interrupted or reduced, preventing brain tissue from getting oxygen and nutrients.

## ACTIVITY 2: BRAIN BREAK [SELECT ONE OF THE OPTIONS]

Since we have been sitting and listening for a while, let's get our heart pumping and blood moving. That will rejuvenate and energize us for the rest of this workshop. First, let's feel our heartbeat to see what its current rate of beats feels like. Ask them to place their hand on their chest and count how many beats they feel in 10 seconds.

- **DO:** Select one of the short Brain Break options below for the class to do together.
1. **5-4-3-2-1** In this simple game, students stand up, and the teacher (or leader) has them do five different movements in descending order. For example, the teacher would say: "Do five jumping jacks, spin around four times, hop on one foot three times, walk all the way around the classroom two times, give your neighbor one high-five (pausing in between each task for students to do it).
  2. **Name Moves** Students stand behind their chairs. In turn, each student says his or her name, accompanied by a special movement. For example, a student might say, "Jordan!" while dramatically dropping to one knee and doing Jazz Hands. After the student makes his or her move, the rest of the class says the student's name in unison and imitates the move. Then it is the next student's turn.
  3. **Dance Party!** Put on some fun music and dance! (You can decide for how long, it can be as short as 30 seconds or play a full song). If you can make the room semi-dark and have a black light or another special effect, that's even better!
- **REFLECT:** Put your hand to your chest. Can you feel your heartbeat? Is it moving quicker than before? Let's count our beats for 10 seconds and see how this number compares to our first check before the brain break (pause for responses). The quicker heartbeat moves the blood across our body to provide nutrients and oxygen to our different muscles and to our brain, so we can refocus our attention to the next task on hand.
  - **APPLY:** Can you think of another time during our day when we could incorporate another Brain Break to help us recharge and focus on our day? (Write students' brainstormed times to have Brain Breaks and post this in the classroom to serve as a reminder to incorporate more often).

# HEART DISEASE PREVENTION

Let's discuss the nine factors leading to a higher risk of heart disease. Out of these nine risk factors, there are three that we cannot control:

## Factors we cannot control:

1. Sex
2. Heredity (our genes from family)
3. Age

## Factors we have more control of:

1. Physical Inactivity
2. Obesity
3. High Blood Pressure
4. High Levels of Cholesterol
5. Stress
6. Smoking

Let's focus on the factors we do have more control over and learn how to incorporate daily habits to maintain a healthy heart.

The American Heart Association (AHA) has a guide called Life's Simple 7. The guide identifies seven factors that impact health and quality of life. The seven guidelines address the six controllable risk factors. They encourage us to:

1. **Be Physically Active**
2. **Eat a Heart-Healthy Diet**
3. **Live Tobacco-Free**
4. Keep a Healthy Weight
5. Keep Your Blood Pressure Healthy
6. Keep Your Total Cholesterol Healthy
7. Keep Your Blood Sugar Healthy

Focusing on these **three** most important guidelines will help us to accomplish the other items on the list. For example, suppose I am being physically active and eating heart-healthy foods. In that case, my weight, blood pressure, cholesterol, and blood sugar will all be improved. If I am tobacco-free, my blood pressure will also be improved.

In our next activity, we will divide into smaller groups to focus on one of three health behaviors and then report back to the larger group. Let's quickly review our body's basic needs for these three health behaviors.

## 1. PHYSICAL ACTIVITY

How many minutes of physical activity does your body need each day?

- a. 3 hours
- b. 15 minutes
- c. 60 minutes (answer)
- d. It doesn't really matter

Yes, youth need to be active 60 minutes each day. This movement needs to get our hearts beating quicker than their normal pace when we are sedentary (seated/at rest). This group will be learning more about how physical activity helps their heart. It will design a short activity that we can do here in class.

## 2. HEART-HEALTHY DIET

When trying to eat a heart-healthy diet, it is important to do which one of the following?

- a. Eat from all the food groups. (answer)
- b. Drink sweetened beverages.
- c. Completely avoid all fats and sugars.
- d. Skip breakfast once a week.

This group will take a deeper dive into the MyPlate, which focuses on the five food groups and identifying heart-healthy foods that we can incorporate into our diet each day and even create a healthy snack recipe we can try at home.

## 3. TOBACCO-FREE

Look at the statements below and decide which ones are true (answer: all are true).

- a. Tobacco products include things like cigarettes, chewing tobacco, and vapes.
- b. Using tobacco is addictive, meaning that it's really hard to stop doing it even if you want to quit.
- c. Tobacco products stain your hands and mouth and can make your teeth fall out.
- d. Using tobacco means you are more likely to get cancer, have a heart attack, or even a stroke.

This group will learn more about tobacco use risks and better stress management practices and will design a mindful moment we can try here in class.

## ACTIVITY 3: HEALTH PROMOTION ACTIVITIES

Divide the class into three groups (this will work for both in-person and virtual learning). The three groups are: Be Physically Active, Eat a Heart-Healthy Diet, and Live Tobacco-Free. Each group will receive a worksheet (a copy is found at the end of this lesson) to follow together or complete the tasks through the Flippity web platform tool at <https://www.flippity.net/>.

Physical Activity: [https://www.flippity.net/sh.php?k=1OMdt96DkW9BErtV8ZZtOMTHCO\\_ww\\_9PsTZe2TYAtMG0](https://www.flippity.net/sh.php?k=1OMdt96DkW9BErtV8ZZtOMTHCO_ww_9PsTZe2TYAtMG0)

Nutrition: <https://www.flippity.net/sh.php?k=1ZOk6Rppwr3qT8HYDGz33IJkcLQf47NipAdBXWVILT-0>

Tobacco-Free: <https://www.flippity.net/sh.php?k=1jJJ-37gD-Gf6Vaj14oSx3c3lvBs2jn5AgE7q6ILOCO8>

- **DO:** In your group, answer the questions on your worksheet about your assigned topic. As a team, you will either create a poster or design an activity on your topic that can be hung in a school hallway to educate your peers or demonstrated in our classroom. Your team will present your poster to the rest of the class to also learn about your topic. Regroup and have each small group take a few minutes to share about their healthy habit and recommendations to the large group.

**Virtual Adaptation:** Groups meet in breakout rooms and work through the worksheet/web platform. They can create a presentation slide or design an activity they can demonstrate through a virtual setting.

- **REFLECT:** What did you figure out in your team activity? What did you learn from other teams? What surprised you, or was new information for you?
- **APPLY:** Think about what your day would look like if you focused on the three big ideas of Be Physically Active, Eat a Heart-Healthy Diet, and Live Tobacco-Free. Place the posters in a hallway or share the activities they designed with other classrooms to encourage all students to practice these three behaviors.

## ACTIVITY 3: WRAP UP DISCUSSION AND REFLECTION

Today we learned heart disease is the #1 cause of death in the United States. The heart works very hard to take care of us, so we should take care of our hearts. Let's review some of the highlights from today's activities:

- **REFLECT:** What are some of the changes that happen in the body of someone with heart disease? (atherosclerosis/stiffened arteries, heart attack or stroke, weakness, shortness of breath, etc.).

What are some of the simple changes or habits we could try to practice each day to maintain healthy hearts? (physical activity – 60 minutes daily, nutrition – trying to eat more fruits and vegetables, stress management – say “no” to tobacco products and peer pressure and instead try mindful moments).

Although heart disease happens more to adults, it can start when you're a child. Taking steps to prevent heart disease at any age is extremely important. Participating in physical activities that strengthen the heart is a good start to reducing your chances of developing heart disease.

- **APPLY:** What are some things you are going to do so that you can keep your heart as healthy as possible? Write them down and share your ideas with your teacher, a friend, or a family member.

*Written in 2020 in collaboration between Iowa State University Extension and Outreach 4-H Youth Development and the Iowa Heart Center Foundation.*

*This institution is an equal opportunity provider. For the full non-discrimination statement or accommodation inquiries, go to [www.extension.iastate.edu/diversity/ext](http://www.extension.iastate.edu/diversity/ext).*



**IOWA STATE UNIVERSITY**  
Extension and Outreach





# TOP 10 CAUSES OF DEATH INSTRUCTOR GUIDE

**#1 Heart Disease** Heart disease is the leading cause of death for both men and women in the U.S. and also worldwide. Heart disease describes several conditions. Many are related to plaque build up in the walls of arteries.

**#2 Cancer** Cancer is a group of diseases characterized by the uncontrolled growth and spread of abnormal cells. If not controlled, it can interfere with essential life-sustaining systems. Lung cancer accounts for more deaths than any other cancer.

**#3 Chronic Lung Disease** Lung diseases cause airflow blockage and breathing-related issues.

**#4 Accidents** Unintentional injuries are the fourth leading cause of death in the U.S. and the leading cause of death for those aged 1 to 44 years.

**#5 Stroke** Stroke results from problems with blood supply to the brain.

**#6 Alzheimer's Disease** This disease results from changes to blood vessels that supply circulation to the brain, causing a decline of cognitive function that affects a person's ability to perform everyday activities and eventually basic bodily functions. Alzheimer's is the only cause of death in the top 10 that cannot currently be cured, prevented, or slowed.

**#7 Diabetes** Diabetes is a disease in which the body is no longer able to carefully control glucose, a simple sugar our bodies make from the food we eat to give us energy.

**#8 Flu and Pneumonia** Flu is a highly contagious viral infection. Having the flu can lead to pneumonia, a serious complication that can cause inflammation of the lungs.

**#9 Kidney Disease** Kidney disease is a condition in which the kidneys are damaged and cannot filter blood as well as healthy kidneys. Because the blood is poorly filtered, the waste remains in the body and may cause other health problems.

**#10 Suicide** Suicide is a form of intentional self-harm. It can be prevented by identifying and acting upon risk factors and signs in yourself and others.

Source: <https://www.medicalnewstoday.com/articles/282929.php>



## TOP 10 CAUSES OF DEATH ANSWER KEY

Average US life expectancy = 78.8 years

- |                         |       |
|-------------------------|-------|
| 1. Heart Disease        | 23.4% |
| 2. Cancer               | 22.5% |
| 3. Chronic Lung Disease | 5.6%  |
| 4. Accidents            | 5.2%  |
| 5. Stroke               | 5.1%  |
| 6. Alzheimer's Disease  | 3.6%  |
| 7. Diabetes             | 2.9%  |
| 8. Flu & Pneumonia      | 2.1%  |
| 9. Kidney Disease       | 1.8%  |
| 10. Suicide             | 1.6%  |

Source: Center for Disease Control and Prevention, 2014 statistics

Partnering for Youth Cardio-Fit Project, <https://www.qacps.org/Page/8449>

*Written in 2020 in collaboration between Iowa State University Extension and Outreach 4-H Youth Development and the Iowa Heart Center Foundation.*

*This institution is an equal opportunity provider. For the full non-discrimination statement or accommodation inquiries, go to [www.extension.iastate.edu/diversity/ext](http://www.extension.iastate.edu/diversity/ext).*



**IOWA STATE UNIVERSITY**  
Extension and Outreach



Cut out for in-class version

**HEART DISEASE**

**CANCER**

**CHRONIC LUNG  
DISEASE**

**ACCIDENTS**

**STROKES**

**ALZHEIMER'S  
DISEASE**

**DIABETES**

**FLU &  
PNEUMONIA**

**KIDNEY DISEASE**

**SUICIDE**



## BE PHYSICALLY ACTIVE

Note: the virtual adaptation that was developed for this lesson complements this worksheet well. Consider having students work through this online challenge if time allows: [https://www.flippity.net/sh.php?k=1OMdt96DkW9BErtV8ZZtOMTHCO\\_ww\\_9PsTZe2TYAtMG0](https://www.flippity.net/sh.php?k=1OMdt96DkW9BErtV8ZZtOMTHCO_ww_9PsTZe2TYAtMG0)

What does it mean to be physically active? This worksheet will help you to answer that question! Complete the activities below and be ready to report back to the class.

Participating in activities that promote cardiovascular fitness or aerobic exercise (which means exercise requires you to breathe a lot of air and lasts longer than a few minutes, such as jogging, walking, running, biking, swimming, jumping rope, etc.) strengthens the heart and reduces atherosclerosis. Active people are better able to clear fats from their bloodstream as a result of exercise.

Research shows active people have a lower risk for heart disease and are less likely to die from a heart attack than inactive people. While heart attacks and strokes happen suddenly, the factors causing the blocked arteries can be traced back, in many cases, to childhood. Creating healthy behaviors is easier when you are a child than when you are an adult. Similarly, making changes for your health as a child is easier than as an adult.

One of the best ways to keep our heart healthy is to Be Physically Active for at least 60 minutes (one hour) each day. This might mean doing something like a sports activity, playing outside with your friends, gym class, or exercising with your family. Think about some ideas for how you can be Physically Active for 60 minutes each day, and write them below.

3 Ways You Can Get Physical Activity:

- 1.
- 2.
- 3.

Brainstorm with your group a fitness routine you can lead together in class. Come up with 5 exercises and determine the number of repetitions:

Example:

1. 10 Wall-Push Ups
2. 20 Jumping Jacks
3. 10 Toe Touch Stretches
4. 10 Knee Highs
5. Plank Hold for 20 Seconds

Team Routine:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

Physical Activity Poster: As a team, create a poster to promote physical activity at home or school.

- What types of movements do you promote that students could do at their desk or in the hallway.
- What movements would students enjoy doing?
- Is there a fun challenge you could start with your peers?

*Written in 2020 in collaboration between Iowa State University Extension and Outreach 4-H Youth Development and the Iowa Heart Center Foundation.*

*This institution is an equal opportunity provider. For the full non-discrimination statement or accommodation inquiries, go to [www.extension.iastate.edu/diversity/ext](http://www.extension.iastate.edu/diversity/ext).*



**IOWA STATE UNIVERSITY**  
Extension and Outreach





# EAT A HEART-HEALTHY DIET

Note: the virtual adaptation that was developed for this lesson complements this worksheet well. Consider having students work through this online challenge if time allows: <https://www.flippity.net/sh.php?k=1ZOk6Rppwr3qT8HYDGz33IJkcLQf47NipAdBXWVILT-0>

What does it mean to eat a Heart Healthy Diet? This worksheet will help you to answer that question! Complete the activities below and be ready to report back to the class.

The MyPlate diagram is a great visual to model our meals after. Its design emphasizes the five food groups and encourages us to eat a balance of these different foods to ensure we get all the nutrients our bodies need to grow and be healthy.



What nutrients are good for your heart?

**Fiber** – Keep that peel on your apples and potatoes! Fiber helps reduce blood cholesterol. Great sources of fiber include:

- Fruits, vegetables, and whole grains (like whole-wheat bread, brown rice, popcorn, oats)

**Omega-3 Fatty Acids** – Found in seafood, it can help in the prevention of heart disease. Good sources of Omega -3's are found in:

- Seafood (salmon, trout, anchovies, sardines)

**Potassium** – Helps maintain healthy blood pressure and is found in:

- Bananas, cantaloupe, melon, orange juice, beans, spinach, and potatoes

What nutrients are not as healthy for your heart?

Saturated fats can increase cholesterol levels in our blood.

- Choose low-fat dairy and lean meats (chicken, turkey) to reduce saturated fat intake.

Sodium in more processed foods can increase our blood pressure if consumed in excess.

- Try to choose fresh foods or check the Nutrition Facts on packaged items.

One of the best ways to eat a Heart Healthy diet is to eat from all food groups (fruits, vegetables, grains, proteins, and dairy). Brainstorm two food ideas for each of the food groups listed below.

Fruits:

- 1.
- 2.

Vegetables:

- 1.
- 2.

Grains: (1-2 of them a "whole grain")

- 1.
- 2.

Proteins:

- 1.
- 2.

Dairy:

- 1.
- 2.

Think about the foods above and create a poster to highlight nutritious foods from all five food groups that are good for the heart! Have your team create a healthy snack recipe that includes an item from 3 of the food groups and include it on the poster with recipe name, ingredients, and directions.

Healthy Snack Recipe:

1. Food group: \_\_\_\_\_ Food item: \_\_\_\_\_ Amount of item: \_\_\_\_\_
2. Food group: \_\_\_\_\_ Food item: \_\_\_\_\_ Amount of item: \_\_\_\_\_
3. Food group: \_\_\_\_\_ Food item: \_\_\_\_\_ Amount of item: \_\_\_\_\_

*Written in 2020 in collaboration between Iowa State University Extension and Outreach 4-H Youth Development and the Iowa Heart Center Foundation.*

*This institution is an equal opportunity provider. For the full non-discrimination statement or accommodation inquiries, go to [www.extension.iastate.edu/diversity/ext](http://www.extension.iastate.edu/diversity/ext).*



**IOWA STATE UNIVERSITY**  
Extension and Outreach





## LIVE TOBACCO-FREE

Note: the virtual adaptation that was developed for this lesson complements this worksheet well. Consider having students work through this online challenge if time allows: <https://www.flippity.net/sh.php?k=1jJJ-37gD-Gf6Vaj14oSx3c3lvBs2jn5AgE7q6lLOCQ8>

What does it mean to Live Tobacco-Free? This worksheet will help you to answer that question! Complete the activities below and be ready to report back to your team and class. Tobacco Facts:

- Tobacco products include things like cigarettes, chewing tobacco, and vapes.
- Using tobacco is addictive, meaning that it's really hard to stop doing it even if you want to quit.
- Tobacco products stain your hands and mouth and can make your teeth fall out.
- Using tobacco means you are more likely to get cancer, have a heart attack, or even a stroke.

It is so important to live a tobacco-free life, and now is a great time for you to start! Living tobacco-free means that you say "no" to using tobacco and do other things instead. Sometimes, tobacco use is associated with helping deal with stress. While we all experience stress, it is important to use techniques that address our stress in a healthy way.

Imagine this: One of your friends from school offers you a cigarette or vape. Let's practice how to respond. Come up with three different ways that you could say no and be proud of yourself.

Write them below and share together as a small group.

- 1.
- 2.
- 3.

Sometimes people choose to use tobacco when they are bored or stressed.

Draw or think of two things that you could do for fun instead of using tobacco.

Can you think of ways you address your stress to help you find calmness?

Now let's practice a few Mindful Moments together:

1. 4-7-8 Breathing: Breathe in for 4 seconds, hold your breath for 7 seconds, release the breath for 8 seconds. When frustrated, nervous, or stressed, breathing can help us take time to pause, cool down, and respond thoughtfully.

2. Gratitude Journaling: Write down 5 things you are grateful for, then share 1 or 2 of them with your small group. Taking time to appreciate the good things can turn our negative mood around.

Stress Less Poster: Work together to design a poster encouraging students to say "no" to tobacco and provide examples of how they can address their stress in a healthy way, including the Mindful Moment.

*Written in 2020 in collaboration between Iowa State University Extension and Outreach 4-H Youth Development and the Iowa Heart Center Foundation.*

*This institution is an equal opportunity provider. For the full non-discrimination statement or accommodation inquiries, go to [www.extension.iastate.edu/diversity/ext](http://www.extension.iastate.edu/diversity/ext).*



**IOWA STATE UNIVERSITY**  
Extension and Outreach

