

GED 2002 Teachers' Handbook of Lesson Plans

Content Area Science	Lesson Title <i>How to Protect Your Heart</i>	Correlation to Framework 03.02/03.05/03.06	Lesson Number 35
<p>Objectives/Learner Outcomes</p> <p>At the end of this lesson, the learner will be able to:</p> <ul style="list-style-type: none"> • Use basic vocabulary associated with heart disease • Identify symptoms of heart disease • Know how to reduce the risk of heart disease • Assess personal risk for heart disease • Develop a personal plan for decreasing the risk of heart disease 		<p>Materials/Resources/Internet Sites/Handouts/Worksheets</p> <ul style="list-style-type: none"> • Handout – Graph Paper • Handout – Healthy Heart Plan • Handout – Risk Factors • Handout – Guide to Physical Activity • Internet Resources <ul style="list-style-type: none"> ○ Live and Learn Quiz – American Heart Association http://americanheart.org/presenter.jhtml?identifier=3019149 ○ Body Mass Indicator (BMI) Calculator by NIHLB http://www.nhlbisupport.com/bmi/bmicalc.htm ○ The Heart Truth Campaign Materials http://www.nhlbi.nih.gov/health/hearttruth/material/ (Real Player required) 	
<p>Pre-Requisite Knowledge</p> <p>The learner should be able to:</p> <ul style="list-style-type: none"> • Identify elements of a healthy lifestyle • Develop charts and/or graphs • Complete activities on the Internet and find resources as needed • Compare and contrast information 		<p>Key Words</p> <ul style="list-style-type: none"> • Heart attack • Stroke • High blood pressure (Hypertension) • Cholesterol • Cardiovascular • Intensity 	
<p>Anticipatory Set/Introduction</p> <p>Say: Heart disease is the number one cause of death in the United States. Do you know anyone who has had a heart attack or stroke? Thirty years ago, the chances of surviving a heart attack or stroke was very small. Today, doctors can saved many lives that could not be saved 25-30 years ago. With new diagnostic procedures, doctors can recognize the signs of heart disease earlier and help patients avoid heart attacks or strokes. However, the most important thing for you and your family to understand are the risk factors associated with heart disease and how to reduce and if possible eliminate them. In this lesson, you will have an opportunity to learn about risk factors associated with heart disease and will develop your own plan for reducing those risks.</p>			

Preview Questions for Lesson

1. What is a heart attack?
2. What causes a heart attack?
3. Is there a history in your family of heart disease?
4. Are you at risk for heart disease?
5. What can you do to reduce your risk of heart disease in the future?

Instructional Outline

The National Institute of Health provides a wealth of information and resources for the public about a wide range of health issues. They also provide a number of online resources that students will need to access as part of this lesson.

Say: There are different types of risk factors associated with heart disease. You have control over some of these risk factors. However, there are some risk factors you cannot control. Today, we are going to look at the different risk factors and see where we rank. Provide students with copies of the Handout – **Risk Factors**. Preview the text indicating key words. Have students read the text and then discuss the information.

Say: Now that you have read about the risk factors associated with heart disease, it's time to check your risk factors by taking the **Live and Learn Quiz** by the American Heart Association. Discuss with students their results. Have students share only that information with which they are comfortable. Have each student calculate his/her BMI and then compare the BMI to the information provided in the risk factors information sheet. Now that students have learned the risk factors, have each student make a list of the most important six things that they believe will create a healthy heart. (Have students create their list in priority order from most important to least important.) Survey the class and tally the results. Have students create a table or graph that displays the results.

Say: One factor that leads to overeating and obesity is the change in portion size. Today, servings in restaurants are bigger than ever. To offset larger portion sizes, people need to include more physical activity in their daily lives. Work in teams of two and take the **Portion Distortion Quiz** on the Internet at <http://hin.nhlbi.nih.gov/portion/>. When students complete the quiz, discuss the results and what they can do to decrease their chance of overeating when they are out in restaurants.

Conduct an experiment with students. Students will calculate their heart rate for three levels of activity – resting (sitting at desk), walking in place, and power walking around the parking lot or through the halls. Have students calculate their rate for 60-second intervals and write down each result. Have students graph their results using the graph paper provided in this lesson. Graph the class results to show the differences among all of the students. Discuss any difficulties that students had when increasing their physical activity levels.

Say: Research has shown that there are two things you can do to decrease the risk of heart disease: maintain a healthy weight level and include exercise as a part of your daily life. Your job is to develop your own personal plan for decreasing the risk of heart disease. You may use the Internet as a resource to help you build your plan. When everyone has completed his/her plan, we will share them with the class.

Process/Activities			
During this lesson, students will:			
<ul style="list-style-type: none"> • Access the Internet to complete online activities, including the Live and Learn Quiz, BMI calculation, and Portion Distortion • Read text and identify their own risk factors for heart disease • Participate in a short exercise activity that will enable them to calculate their heart rate and graph their results • Develop a personal healthy heart plan and share it with the class 			
Product/Evaluation/Summary			
When students have completed this lesson, they will provide the teacher with a copy of their heart rate graphs and their personal healthy heart plans.			
Teaching to Different Types of Learners			
	Visual	Auditory	Kinesthetic/Tactile
Learning Activity	Access images from the Internet that show healthy and diseased hearts. To find images, go to www.google.com . Click on the Images tab and type in "healthy heart" or "diseased heart" to find appropriate images.	Provide oral instructions to ensure students understand what is expected of them. Make an audio tape of the text so students can listen to it while they read.	Have a nurse visit the classroom and conduct basic screenings for high blood pressure and talk about hypertension and heart disease. Set up a matching game with the vocabulary words. Put words and definitions on strips of paper and have the students match them appropriately.
Special Differentiation Strategies	Provide a graphic organizer so that students can take notes during class discussion and when reading the text or resources from the Internet. Have students add vocabulary words to their personal dictionaries and include definitions in their own words.	Have students access <i>The Heart Truth Campaign Materials</i> from the National Institute for Health. Have students view or listen to the 30- and 60-second informational spots that promote heart health for women.	Have students practice different types of physical activity that they can incorporate in their healthy living plans. Request permission for students to visit a local health club or the YMCA and try out different exercises with a trained professional.

<p>Evaluation</p>	<p>Have students make a class presentation that includes appropriate handouts they can share with the class.</p>	<p>Check for understanding by asking questions about each student's healthy heart plan and why specific items were selected.</p>	<p>Have students construct poster boards of their healthy living plans, rather than writing them on paper.</p> <p>Have students develop a PowerPoint presentation for the class that includes information on their healthy heart plan.</p>
<p>The Family and Adult Literacy Connection</p> <p>Provide students with copies of the Handout – <i>Jump Start – Get Active, Have Fun, Be Healthy</i> family pages. Encourage students to share this with their own children or other family members. Research shows that children are getting more obese and less active all the time. Parents and children are bombarded with advertisements that push them to buy the latest snack foods, often foods that aren't healthy. Have parents sit down with their children and discuss the importance of including more healthy snacks in their diet. Parents and their children should select one new and healthy snack that they will try to incorporate in their diet for one week. Have the children design an advertisement for their selected snack food. Have the parents share their children's ads with the rest of the class.</p>		<p>ESE/ESOL Accommodations</p> <p>ESOL students may have difficulty with the vocabulary of this lesson. Practice pronouncing the more difficult words with the student. Provide bilingual dictionaries if needed. Have students work in groups and ask questions to check for understanding at selected points in the lesson.</p>	

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Risk Factors

Risk factors are behaviors or conditions that can increase your chances of developing a disease. For instance, high blood pressure is a risk factor for heart disease and stroke. There are other risk factors for heart disease and stroke. Most risk factors can be modified, although some cannot. The more risk factors you have, the greater your chances of developing disease. It is important to take steps to prevent or control these risk factors.

Heart disease and stroke risk factors that can be controlled are:

- High blood pressure (**hypertension**)
- Abnormal **cholesterol**
- Tobacco use
- Diabetes
- Overweight (see **Body Mass Index (BMI)** chart below)
- Physical inactivity

Risk factors beyond your control are:

- Age (55 years or older for men and 65 or older for women)
- Family history of early heart disease (having a mother or sister who has been diagnosed with heart disease before age 65 or a father or brother diagnosed before age 55) or a family history of **stroke**

BMI is a reliable indicator of total body fat, which is related to the risk of disease and death. The score is valid for both men and women but it does have some limits. The **limits** are:

- it may **overestimate** body fat in athletes and others who have a muscular build; and
- it may **underestimate** body fat in older persons and others who have lost muscle mass.

	BMI
Underweight	Below 18.5
Normal	18.5 - 24.9
Overweight	25.0 - 29.9
Obesity	30.0 and Above

Even a small weight loss (just 10 percent of your current weight) will help to lower your risk of developing diseases associated with obesity. People who are overweight or obese have a greater chance of developing high blood pressure, high blood cholesterol or other lipid disorders, type 2 diabetes, heart disease, stroke, and certain cancers. Even a small weight loss (just 10 percent of your current weight) will help to lower your risk of developing those diseases.

Key findings from studies of the relationship between heart disease and its major risk factors include:

Increased Risk

- More than 95 percent of those who die from a coronary event, such as a heart attack, have at least one major risk factor

Decreased Risk

- Those without major heart disease risk factors are unlikely to develop heart disease
- Heart disease accounts for a smaller portion

- Eighty to 90 percent of those who develop symptoms of heart disease have at least one major risk factor
- The worse each major risk factor, the greater the heart disease risk
- Women tend to have more major risk factors than men
- The association between major risk factors and risk holds for men and women throughout a broad range of ages
- Up to 90 percent of those with early heart disease have at least one major risk factor – cigarette smoking is the most common
- of all deaths among those at low risk than those at high risk
- There are fewer deaths from heart disease and **stroke** among those at low risk for heart disease
- There are fewer deaths from cancer among those at low risk
- There are significantly fewer deaths from any cause among those at low risk (40-58 percent) and their life expectancies are about 6 to 10 years longer
- Those at low risk in mid-life have lower average annual medical care costs in older age than those at high risk

Take Action To Lower Heart Disease Risk:

- Don't smoke. Smokers had a coronary event at least 10 years sooner than non-smokers, regardless of the presence or absence of other major risk factors. However, deaths dropped by 36 percent among those who had stopped smoking.
- Eat for heart health. If you have high blood pressure or high cholesterol, follow an eating plan low in saturated fat and cholesterol and limit your intake of salt and other forms of sodium. Those with high cholesterol should increase their intake of soluble fiber and cholesterol-lowering foods; those with high blood pressure who drink alcoholic beverages should do so in moderation.
- Be physically active. Regular physical activity helps prevent and control heart disease and its major risk factors.
- Aim for a healthy weight. If you are overweight, aim to lose no more than ½ to 2 pounds per week.

Sources for information in this fact sheet include the following articles from The Journal of the American Medical Association: *Low Risk-Factor Profile and Long-Term Cardiovascular and Noncardiovascular Mortality and Life Expectancy*, Dec. 1, 1999; *Major Risk Factors as Antecedents of Fatal and Nonfatal Coronary Heart Disease Events*, August 20, 2003; and *Prevalence of Conventional Risk Factors in Patients With Coronary Heart Disease*, August 20, 2003.

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Guide to Physical Activity

An increase in physical activity is an important part of your weight management program. Most weight loss occurs because of decreased caloric intake. Sustained physical activity is helpful in the prevention of weight regain. In addition, exercise has a benefit of reducing risks of cardiovascular disease and diabetes beyond that produced by weight reduction alone. Start slowly - trying too hard at first can lead to injury.

Examples of moderate amounts of physical activity

Common Chores

Washing and waxing a car for 45-60 minutes
Washing windows or floors for 45-60 minutes
Gardening for 30-45 minutes
Wheeling self in wheelchair 30-40 minutes
Pushing a stroller 1 1/2 miles in 30 minutes
Raking leaves for 30 minutes
Walking 2 miles in 30 minutes (15 min/mile)
Shoveling snow for 15 minutes
Stair walking for 15 minutes

Sporting Activities

Playing volleyball for 45-60 minutes
Playing touch football for 45 minutes
Walking 1 3/4 miles in 35 minute (20 min/mile)
Basketball (shooting baskets) 30 minutes
Bicycling 5 miles in 30 minutes
Dancing fast (social) for 30 minutes
Water aerobics for 30 minutes
Swimming Laps for 20 minutes
Basketball (playing game) for 15-20 minutes
Bicycling 4 miles in 15 minutes
Jumping rope for 15 minutes
Running 1 1/2 miles in 15 min. (10 min/mile)

Your exercise can be done all at one time or intermittently over the day. Initial activities may be walking or swimming at a slow pace. You can start out by walking 30 minutes for three days a week and then build to 45 minutes of more intense walking at least five days a week. With this regimen, you can burn an additional 100 to 200 calories per day. All adults should set a long-term goal to accumulate at least 30 minutes or more of moderate-intensity physical activity every day of the week. This regimen can be adapted to other forms of physical activity. However, walking is particularly attractive because of its safety and accessibility. Try to increase "every day" activities such as taking the stairs instead of the elevator. Reducing sedentary time is a good strategy to increase activity by undertaking frequent and less strenuous activities. With time, you may be able to engage in more strenuous activities. Competitive sports, such as tennis and volleyball, can provide an enjoyable form of exercise for many, but care must be taken to avoid injury.

Activity Progression

- For the beginner, activity level should begin very light, including an increase in standing activities, special chores like room painting, pushing a wheelchair, yard work, ironing, cooking, playing a musical instrument, etc.
- The next level is light activity, such as slow walking of 24 min/mile, garage work, carpentry, house cleaning, child care, golf, sailing, and recreational table tennis.
- The next level is moderate activity, such as walking 15 minute/mile, weeding and hoeing a garden, carrying items, cycling, skiing, tennis, and dancing.
- High activity includes walking a 10 minute/mile or with a load uphill, tree felling, heavy manual digging, basketball, climbing, or soccer/kick ball.
- You may also want to try:
 - flexibility exercises to attain full range of joint motion;
 - strength or resistance exercises; and/or
 - aerobic conditioning.

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My Healthy Heart Plan

Name _____ Date _____

My Risk Factors That I Can Control	My Risk Factors That I Cannot Control

	What I Do Now	What I Will Change and Do to Maintain a Healthy Heart
High Blood Pressure (Hypertension)		
Cholesterol Concerns		
Tobacco Use		
Weight Control (BMI)		
Physical Activity Level		

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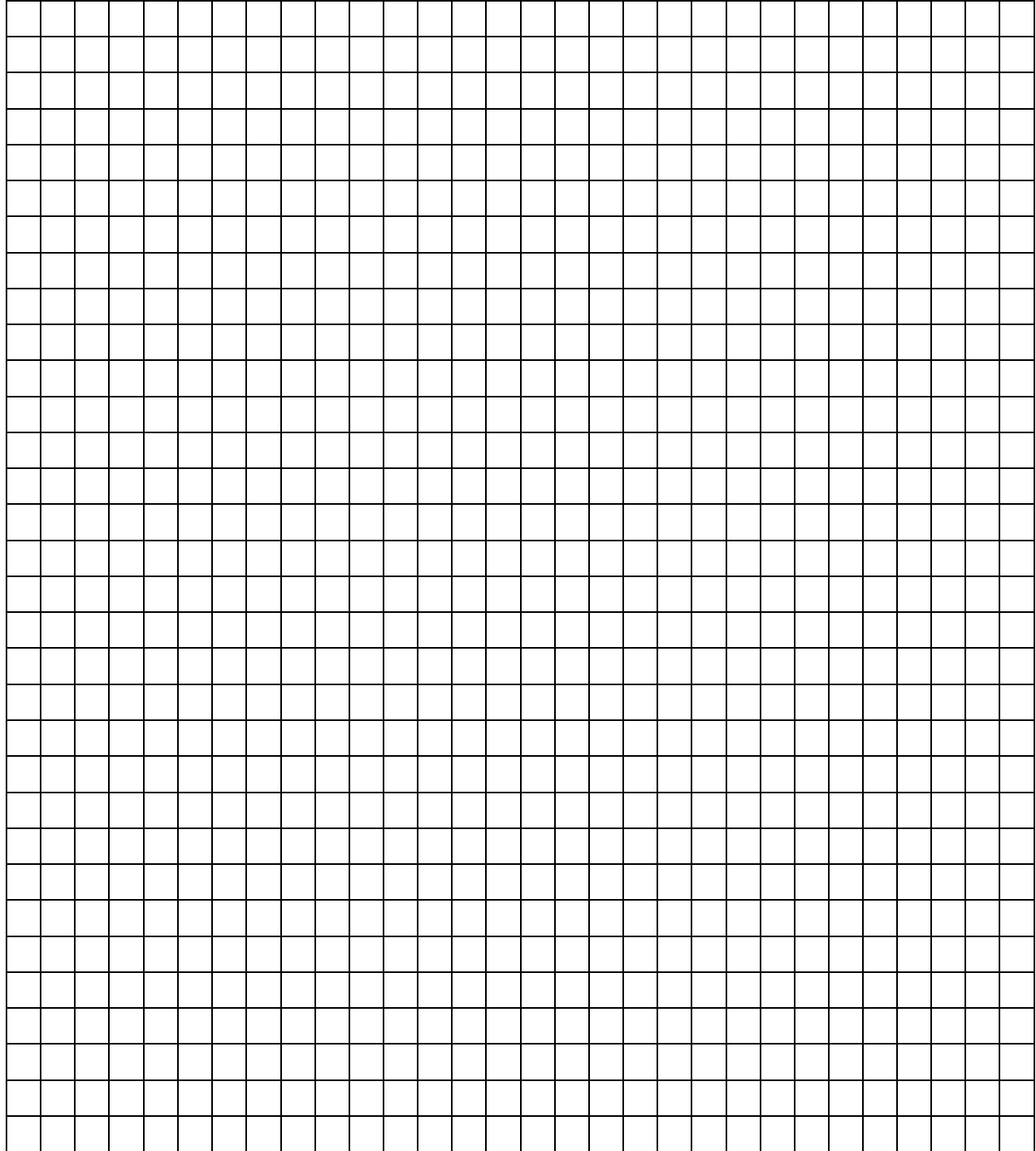
Graph Paper

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Home Connection



Your child's teacher has received JumpStart classroom materials designed to incorporate both physical activity and nutrition information in classroom lessons, and to promote collaboration between schools and local parks.

On the Move

Active living has a great impact on preventable diseases and enhanced quality of life. Experts brought together by the National Heart, Lung, and Blood Institute to consider the importance of physical activity have recommended that children take part in at least 30 minutes of moderately intense physical activity (such as brisk walking, swimming or cycling) every day. The exercise can be continuous or in 10-minute sessions.

Eat Heart Healthy!

High levels of fat, saturated fat and cholesterol are linked to increased risk for cardiovascular disease. Help make your family's diet heart healthy.

- Choose a variety of foods, especially those lower in fat, saturated fat, and cholesterol;
- Eat more grains, vegetables and fruits.

Get Out and Play!

Here are some ways to encourage your whole family to get more physically active and

have fun at the same time. At first it may seem difficult to find time to play together, but the rewards are tremendous.

● Break the Time Barrier

Use a calendar to make dates for playing actively together. If you make a commitment to play, you're more likely to do it. The best way to make sure family members stick with an action plan? Make sure it's fun for all.

● Put It In Writing

Have each family member make a pledge, in writing, to do some kind of physical activity every day. Start out gradually; then add time—up to 30 minutes a day. Ask children what activity they would like to do and help them do it.

● Unplug!

Agree to turn off the TV, video games, computer and VCR, one day a week for a month. After one month, move up to two days a week. Instead, take a walk, a family bike ride, or a chance on a new activity.

JUMPSTART

has been developed by Scholastic Inc. for the National Recreation and Park Association (NRPA), which promotes active, healthy lifestyles through local parks and recreation agencies; and the National Heart, Lung, and Blood Institute (NHLBI) which, as part of the National Institutes of Health, supports medical research to improve the health of children and adults.



● **Be Family Fun Detectives**

Discover what your town has to offer. Contact your local parks and recreation department for information about ongoing activities and special events. Take advantage of local year-round recreation opportunities.

● **Make a Wish List**

Post a menu of activity ideas from every member of the family. Include activities you have always thought would be fun to try, even if they seem impractical. Talk about your choices. Then pick an activity and do it! Keep adding to the list.

● **Get Moving!**

When planning family events, be sure to include physical activities — hiking, biking, skiing, water sports. On birthdays and holidays, give gifts that call for “doing,” not sitting — a ball, a jump rope, in-line skates.

Seasonal Fun

Fall — Take a hike in a local park or along a nature trail

to check for signs of the changing season. Rake leaves with your neighbors.

Winter — In December, take part in the National Audubon Society’s nationwide bird census. Look for animal tracks in the snow. Participate in a local park’s winter sports festival.

Spring — Learn to throw a Frisbee®. Hike nature trails to identify signs of Spring. Start jogging for part of every walk. Take part in Spring clean-ups of local recreation areas. Help neighbors with yard work.

Be Kind to Your Park

Kids are never too young to learn lessons about the environment — such as respect for nature and the value of open spaces.

Parks are great places to teach them to always use trash cans, and to never pick flowers or harm trees or shrubs.

**WARM UP/
COOL DOWN**

Before starting any physical activity, warm up by stretching, walking, or doing your activity more slowly. Cool down the same way.



JOIN THE FUN!

● For information about making the most of parks and recreation with your family, give the NRPA a call at **1-800-649-3042**.

Find more great JumpStart activities on the NRPA website
<http://www.nrpa.org>.

● For more information on heart health, contact: NHLBI Information Center
P.O. Box 30105
Bethesda, MD 20824-0105.
NHLBI website:

<http://www.nhlbi.nih.gov/nhlbi/nhlbi.htm>

