

## Purpose

- ♥ Examine risk factors for heart disease
- ♥ Formulate questions about heart disease
- ♥ Understand the diagnostic process

## Time Frame

45–50 minutes

## What Students Do In This Activity

Students read Bill Harvey's patient file. Using information in the file, as well as background knowledge, the class constructs a KWL (Know, Want to Know, Learned) chart for heart disease. Next, students examine the risk factors and control measures for heart disease. Finally, in an extension to the lesson, students look at the specific nutritional risk factor for Bill Harvey.

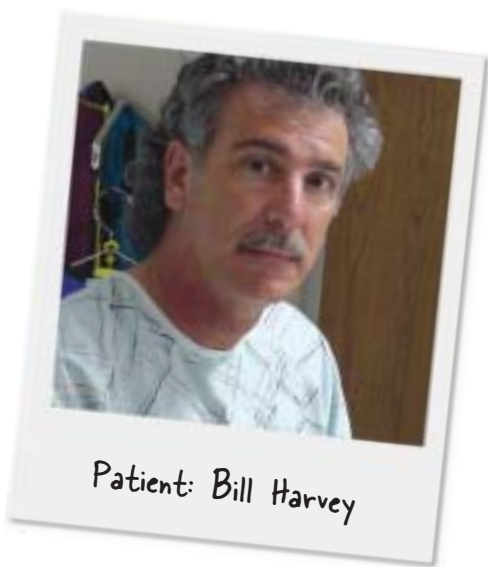
## Background

Coronary artery disease (CAD) is the number one killer in the United States, accounting for over 500,000 deaths per year. In most people, CAD begins in young adulthood and gradually develops throughout a person's life.

The patient, Bill Harvey, exhibits many controllable and uncontrollable risk factors for heart disease.

## Materials

- ♥ Large sheet of paper for KWL chart (post on the wall for duration of unit)
- ♥ Copies of the **Lesson 1 Student Pages** and **Student Welcome Letter** for each group of students
- ♥ Patient file folders (manila folders) for each student
- ♥ Markers



## Sample KWL Chart

Heart Disease		
K What we know about Heart Disease	W What we want to know about Heart Disease	L What we have learned about Heart Disease

## Controllable Risk Factors:

- ♥ Smoking (and secondhand smoke)
- ♥ Obesity
- ♥ Lack of exercise
- ♥ High cholesterol
- ♥ Stress
- ♥ High blood pressure (hypertension)
- ♥ Managing diabetes

## Uncontrollable Risk Factors:

- ♥ Age
- ♥ Family history
- ♥ Diabetes
- ♥ Gender



## Procedure

## Part A: Assessing the Patient

1. Distribute copies of the **Lesson 1 Student Page** and **Student Welcome Letter** to the students.
2. Use the **Student Welcome Letter** to introduce students to the unit. Explain that they will be taking on the role of a Junior Heart Doc and will assess, diagnose and treat a patient named Bill Harvey, who has come to the cardiologist complaining of chest pain. Explain that during the unit they will have the opportunity to watch live, open-heart surgery.
3. In small groups, students will read the **Patient Chart**, highlighting and noting in the margin important information that may be contributing to Bill Harvey's condition.
4. Lead the class to create a KWL (Know, Want to Know, Learned) chart. Using butcher paper that can be saved for the duration of the unit, divide the page into three columns. Title the first column **"What We Know About Heart Disease."** Ask students to brainstorm, and then write down what they know about heart disease in their small groups. Next, solicit ideas from the groups about what they "know" and write this information in the first column.
5. In small groups, the class will next make a list of what they would like to learn about heart disease during this unit. Title the second column of the KWL chart **"What We Want to Know About Heart Disease."** Ask the students to contribute their ideas to the large group, and then record the ideas in the second column. Questions you can ask to get the students thinking might include: At what age is heart disease most prevalent? Are males at greater risk of heart disease than females? How is heart disease treated? Can heart disease be cured? Tell students that these are some of the questions they will examine as a Junior Heart Doc.
6. Post the KWL chart in the classroom. Throughout the unit, return to the KWL chart and add any relevant questions or information. Students will complete the **"What We Have Learned About Heart Disease"** section for the culminating activity.
7. Students complete Part A by answering the four questions on page 1-3 of the lesson.

### Notes:



## Lesson 1: Presenting the Patient

## Part B: Risk Factors

1. Based on the KWL chart and notes from the cardiologist and nurse, students will highlight and record any risk factors that may contribute to Mr. Harvey's heart disease.
2. Using the **Coronary Artery Disease Risk Factors Reference Sheet**, as well as the **Patient Chart** and the **notes from the nurse and the cardiologist**, students will identify three factors that influence Mr. Harvey's condition, and then they will write him a memo explaining how to control these risk factors.
3. As a class, discuss the risk factors for heart disease and how they can be controlled.

### Part C: Extension Activities (recommended as homework)

1. **Mr. Harvey's Diet**  
On the worksheet **Mr. Harvey's Diet**, students measure the amount of calories and fat Mr. Harvey eats in a typical day and make recommendations to improve the healthfulness of his diet.
2. **Risk Factors**  
Students explore more closely the risk factors related to heart disease by creating note cards or flash cards. Example:

SMOKING:

- increases heart rate by as much as 30% within the first 10 minutes of smoking
- increases blood pressure by causing the blood vessels to constrict, which forces the heart to work harder to deliver blood to the rest of the body, including the heart
- reduces the ability of the blood to carry oxygen
- damages the lining of the arteries and allows for plaque to accumulate
- increases "bad," or low-density lipoprotein (LDL), cholesterol, which is another risk factor for heart disease
- secondhand smoke also causes these effects, so even if you are not the one who is lighting up, you could be damaging your heart

3. **I Want to Know**  
Students may research one or more of the questions identified in the **“What We Want to Know About Heart Disease”** column. When they are finished with their research, they can write a memo to the cardiologist detailing their findings.

### Notes: