

Risk Factors for Cardiovascular Disease

Written by: Stephanie Fazio, Maria Giambanco and Steven Sheng

- Topic: Cardiovascular Disease; Cardiovascular Disease Risks
- Grade Level: Grades 9-12 (Regents Living Environment or AP Biology Students)
- Time Needed: 45 minute lesson
- Background: The Teacher should be knowledgeable in cardiovascular disease, risks and anatomy. The links below are primers to these topics.
<http://www.americanheart.org/> (Cardiovascular Disease and Risks)
<http://www.texasheartinstitute.org/HIC/Anatomy/> (Cardiovascular Anatomy)
- Learning Objective: Students will be able to utilize internet resources to research and disseminate information about cardiovascular (heart) disease.
- Prerequisites: Students should be able to identify and describe the anatomy of the cardiovascular system, including the heart.
Students should be able to distinguish between arteries, veins and capillaries.
- National Standards: Science Teaching Standard C and F
- NYS Standards: 4-1.2b, d, h
4-5.2h
4-5.3a, b
- Materials: Computers with internet access
Motivational Video (CD-ROM or accessed via website address below)
Website: <http://qcpages.qc.cuny.edu/~sfazio100/cardiovascular.html>
Research Organization Worksheet (included)
3-D Model of the Heart (optional)

Procedure:

1. Distribute Video Worksheet and Research Organization Worksheet to each student.
2. **Motivation** (5 minutes): Show students the motivational video. Instruct the students to observe the lifestyle choices of the individuals in the video. Students should record the behaviors of each individual on his/her research organization worksheet under section A.
3. *Say to students*, "Predict which individual, Steve or Maria, is more likely to develop health problem. Support your prediction with observations of the two individuals' lifestyles."
4. Think-Pair-Share. Students should share their prediction with a near-by classmate. Allow two-three pairs to share their predictions with the class.
5. **Mini Lesson** (10-15 minutes): Myocardial infarction (heart attack). Demonstrate how to complete research using the internet for this disease. Emphasis the importance of using

credible website (i.e. NOT Wikipedia). Briefly discuss the risk factors, symptoms, treatment and prevention for a myocardial infarction.

6. **Small Group** (20-25 minutes): Teacher should assign groups of two to four students. Distribute one computer to each small group of students. Each group should access <http://qcpages.qc.cuny.edu/~sfazio100/cardiovascular.html>. Using the website, as well as the helpful links, students should research *one* of the following cardiovascular diseases:

Aneurysm	Stroke	Coronary Artery Disease
Atherosclerosis	Congestive Heart Failure	Hypertension
Pericardial Disease	Valvular Heart Disease	Cardiomyopathy
Angina		

Using the Research Organization Worksheet, students should obtain information regarding **risk factors, symptoms, prevention** and **treatment** for the disease.

7. **Closure** (10-15 minutes): Each group should present their research (risks, symptoms, prevention, and treatment) to the teacher and class. Each group should be allowed approximately 2 minutes to present.

Adaptations (ESL/ELL students): Use of 3D models, pictures and diagrams
Use of motivational video
Use a double period (90 minutes) to complete lesson at a pace that is more suitable for the students in the classroom
Use of multilingual websites for research purposes

Multicultural Connections: Students should research rates of cardiovascular disease as it affects people of different backgrounds and races.

Students should research the dietary habits of different cultures and use their knowledge of risk factors to analyze how these diets can affect the rates of cardiovascular disease in these groups.

Assessment: Group presentation on the risks, symptoms, prevention and treatments of their different cardiovascular diseases

Extension Activities: Create a tri-fold informational pamphlet on the risks, symptoms, prevention and treatment of this cardiovascular disease.

References:

Miller, K.R. and Levine, J. (2006) Prentice Hall Biology. Pearson Education. Saddle River, NJ. Pp. 943-955.

(2008). American Heart Association. Retrieved April 25, 2008, from American Heart Association Web site: <http://www.americanheart.org/>

(2008). Texas Heart Institute. Retrieved April 25, 2008, from Texas Heart Institute Web site: <http://www.texasheartinstitute.org/>

Name: _____ Class: _____ Date: _____

Video – Who’s Heart is Healthier???

Compare and Contrast the lifestyles of Person A (Maria) and Person B (Steve).

Person A	Person B

Name: _____ Class: _____ Date: _____

Cardiovascular Disease Research Organization Worksheet

Cardiovascular Disease: _____

Risk Factors:

Symptoms (What is this disease? What does it cause?):

Treatment:

Prevention:

References (What websites did you use?): _____
