

## Project 4.4.2: Heart Disease Interventions

### Introduction

Anna Garcia had a history of heart disease, but did this disease contribute to her death?

Lifestyle plays a role in prevention and maintenance of many diseases and disorders. *Risk factors* are conditions that put a person at greater risk of developing a specific disease. Some risk factors are *modifiable* and can be affected by lifestyle and daily actions. Smoking and eating a diet high in saturated fat are modifiable risk factors. You can make a choice to end these behaviors. Unfortunately, some diseases also have *nonmodifiable* risk factors, risk factors that cannot be changed. Family history of disease, race, and gender are risk factors that are considered nonmodifiable – you have no control over these. The more risk factors a person has for a particular disease, either modifiable or not, the greater chance the person has of developing the disease.

In this activity you will learn to assess risk of heart disease. You will use an online risk calculator to explore factors that increase or decrease the risk of heart attack or associated coronary disease. You will calculate risk for both Anna Garcia and a patient you have been assigned. As you design a heart disease intervention plan for your assigned patient, think about all you have learned in this unit and how lifestyle and the choices that we make impact overall health.

### Equipment

- Computer with Internet access and Inspiration software (optional)
- Project 4.4.2 Resource Sheet
- Project 4.2.1 Medical History Resource Sheet
- Project 4.3.1 Medical History Resource Sheet
- Activity 4.1.2 Autopsy Report Resource Sheet
- Highlighters (2 colors)
- Laboratory journal
- Career journal
- PBS Course File

### Procedure

#### Part I: Analyzing Anna

1. Refer to the Project 4.2.1 Medical History Resource Sheet and obtain two different color highlighters.
2. Return to the introduction of Anna's cardiac workup on Project 4.2.1 Medical History Resource Sheet. Read the information in the file and think about behaviors that put Anna at risk for heart disease and behaviors which could have helped prevent disease. Use one highlighter to highlight risk factors (either

modifiable or nonmodifiable) and use another color to highlight those actions that decrease her risk of developing disease.

3. Visit the American Heart Association's Heart Attack Risk Assessment page available at [http://www.heart.org/HEARTORG/Conditions/HeartAttack/HeartAttackTools/Resources/Heart-Attack-Risk-Assessment\\_UCM\\_303944\\_Article.jsp](http://www.heart.org/HEARTORG/Conditions/HeartAttack/HeartAttackTools/Resources/Heart-Attack-Risk-Assessment_UCM_303944_Article.jsp). Read the opening paragraph and then click on the *Learn Your Risk* button. This calculator estimates your 10-year risk of heart attack or dying of coronary heart disease.
4. When the Heart Attack Risk Calculator opens, choose *Begin*. You do not need to register at this time.
5. Accept the terms and conditions and begin to answer questions.
6. Complete the risk assessment for Anna as described on slides 1-6 of the computerized risk calculator, using information from her medical history sheet. Pay attention to the risk factor information described on the left hand side of the page. Click on the blue links for additional information about each risk factor. Take notes in your laboratory journal.
7. Note that slide 7 of the calculator will display Heart Attack Risk and discuss modifiable risk factors – cholesterol, blood pressure, and smoking. Explore each risk factor tab to learn more about each factor.
8. Note that slide 8 describes ways to lower heart attack risk. Use the “+” and “-” buttons on the right side of the screen, as well as the risk factor tabs, to experiment with the impact of certain actions.
9. Read the information presented on Slide 9 about metabolic syndrome. Define this term in your laboratory journal.
10. Print the report described on Slide 10 and file this document as the Anna Garcia Heart Attack Risk Assessment in the appropriate tab of your course file. Use the PBS Course File – Table of Contents as a guide. Note that you can also print action plan reports that provide information on how to modify heart disease risk.
11. Refer to the 4.1.2 Autopsy Report, the 4.2.1 Medical History document, and the Project 4.3.1 Medical History document. Add any last comments, findings, or causes of death to the autopsy report or any final recommendations to the medical history documents.
12. Update the classroom evidence board with information from Lesson 4.4.
13. Answer Conclusion questions 1-4.

## **Part II: Patient Plans**

14. Obtain a Project 4.4.2 Resource Sheet from your teacher.
15. Choose a fictional client from the Resource Sheet. You may be assigned a particular client by your teacher.
16. Read the information available about your client. Highlight risk factors as well as actions that decrease heart disease risk. Use the same color highlighters you used in Step 2.

17. Complete the American Heart Association Risk Assessment using the information provided for your client. Print out the final report.
18. Work with your team to design a heart disease risk reduction program for you assigned client. Your plan should be clear and concise and include recommendations for improving heart health and decreasing risk. Think about the current values and outline goals of where this patient should be. Describe actions that can help your patient go from his or her current state to the goal. You can use some of the suggestions presented on the American Heart Association summary sheets, but make sure to choose recommendations that make sense for your patient.
19. The plan should be the collaborative work between three health professionals. Each member of the group should play the role of one health professional. One professional should be a cardiologist. The other two professionals should be from two additional fields as deemed necessary by the case. These professionals may include nurses, nutritionists, physical therapists or trainers, natural medicine practitioners such as acupuncturists or reflexologists, or others. The plan should include the following:
  - An outline of the key heart-related medical issues and risk factors apparent from the narrative. Provide a diagnosis if applicable
  - A discussion of how lifestyle modifications play a role in treatment and prevention.
  - A clearly outlined plan for helping the patient achieve heart health.
  - Recommendations for medical procedures as well as post-operative instructions and guidelines or recommendations for medications (as necessary given the case).
  - A schedule for post-intervention testing and goal values such as blood pressure levels, cholesterol levels, and physical fitness as appropriate to the case. Demonstrate how you plan to measure progress.
20. Compile your plan in a case file. Include memos, doctor's notes, and other documents that showcase the items researched in Step 19. Make sure it is clear how the three medical professionals contributed to the overall diagnosis and plan.
21. (Optional) Present your plan in a PowerPoint presentation. Use graphics, diagrams, or models as needed. Be prepared to answer questions from the audience. As you present, assume the role of your designated medical professional.
22. In your career journal, add a heading for each career covered in your project (if not already covered in your journal already). Write a reflection describing your level of interest in each career.
23. Answer the remaining Conclusion questions.

## Conclusion

1. How does smoking relate to risk of heart attack and atherosclerosis?
2. Explain why metabolic syndrome is so dangerous.
3. Which risk factors for heart disease are also risk factors for the development of diabetes?
4. Outline at least three ways Anna Garcia should have modified her life to treat her medical conditions.
5. Outline the rationale a doctor should use for deciding whether or not to put a patient on blood pressure or cholesterol lowering medications.

6. Explain the role that stress can play on the development of disease. Describe at least three strategies or interventions a person could employ to control stress.
7. Describe how each professional researched in this activity may have helped diagnose, treat or counsel Anna Garcia