Name: Date: 2/18/15 Class: Gold 1

**Score: /20**

***Directions:*** Go to my *Weebly🡪 Biology🡪G1 Announcements🡪 Sub Day: Heart Disease*

Go through the posted powerpoint and complete this handout. Use the blue coursebook pages 185-194 to supplement information as needed.

**Part 1: Background Information**

The heart and circulatory system like any organ or system are prone to damage or disease. Unfortunately, if the heart becomes damaged, this can have severe implications for the individual involved.

Coronary Heart Disease (CHD) is currently the biggest killer in the USA, claiming more lives than the likes of cancer and lung disease.

Atheroma

This disease may also be known as atherosclerosis and is often linked to other types of heart disease.

1. What is atherosclerosis?
2. Produce a flow diagram to describe the stages of atheroma formation in an artery.
3. Draw a series of diagrams to show how the progression of an atheroma would look inside the lumen of the artery. (Hint: look at Figure 11.6 on page 187 of your textbook)
4. Describe how an atheroma can be harmful or dangerous for a person’s health.
5. Explain how the formation of an atheroma in the coronary arteries may lead to a myocardial infarction. This should include biological reasons.

Other Cardiovascular Diseases

***Thrombosis***

Thrombosis is the medical term for a blood clot.

1. Describe the stages of a thrombus inside a blood vessel.

***Stroke***

1. What is a stroke?

***Myocardial infarction***

1. What is a myocardial infarction? How does it happen?

Risk Factors

1. Define the term risk factor.
2. In the space below, produce a concept map to identify as many risk factors linked to heart disease as you can. Feel free to attach an additional sheet of paper.
3. For the following risk factors, research and provide mechanisms for how each can increase the risk of a named heart disease (eg: atheroma) and ultimately an early death.

*Hint: use coursebook pages 187 & 190-191*

1. High cholesterol intake
2. Cigarette smoking (discuss both nicotine and carbon monoxide)
3. Lack of exercise

**Part 2: Data and Heart Disease**

Use the data tables and graphs from the powerpoint slide to answer the following questions.

* ***Example 1: Figure 1-14***

1. What conclusions can be drawn from the study?
2. Explain these conclusions you have drawn using biology content.

* ***Example 2: Table 1***

1. What conclusions can be drawn from the study? Explain these conclusions you have drawn using biology content.

* ***Example 3: Table 2***

1. What conclusions can be drawn from the above study? Explain these conclusions you have drawn using biology content.

* ***Example 4: Table 13-1***

1. What conclusions can be drawn from the study? Can you explain possible reasons for these conclusions?

* ***Example 5: Fig. 2-2***

1. What conclusions can be drawn from the study? (there are a good number possible here)

* ***Example 6: Figure 1-8***

1. What conclusions can be drawn from this study?

**Part 3: Practice Problems**

1. Atheroma, thrombosis, aneurysm and myocardial infarction are four types of heart disease. Link each of the following descriptions to one of these diseases.
2. Commonly known as a heart attack
3. Build-up of fatty deposits
4. The formation of a blood clot
5. Stretched region of an artery wall
6. State three ways in which high blood pressure increases the risk of heart disease.
7. A smoker with high blood pressure wishes to reduce his risk of heart attack. If he could only alter one factor, would he be better giving up smoking or reducing his blood pressure? Explain your answer.
8. Suggest why diet influences the development of heart disease. [6]
9. Cardiovascular diseases such as coronary heart disease (CHD) and stroke are major causes of illness and death throughout the world. People diagnosed with these diseases often require expensive treatments such as surgery or long-term drug treatment.
   1. Explain the difference between CHD and stroke. [2]
   2. Outline how coronary by-pass surgery is used in the treatment of CHD. [2] (See page 192 of coursebook)

The treatment of people with cardiovascular diseases costs the countries of the European Union (EU) about 10% of their total expenditure on health.

* 1. Describe the steps that health authorities and governments could take to prevent people requiring this expensive treatment. [6]
  2. Discuss the difficulties in reducing the number of people who develop cardiovascular diseases. [4]