Changing lives through learning

# Access to Higher Education Unit

This unit forms part of an Access to HE Diploma. If delivering the graded version of this unit, please refer to the Provider Handbook for details on grading descriptors and the application of these across units within your programme.

**Unit Title:** Human Cardiovascular and Respiratory Systems

**Graded Unit Reference Number:** GA36BIO34

**Ungraded Unit Reference Number:** UA36BIO34

**Module:** Biology; Health Studies; Human Biology

**Level:** Three [3]

**Credit Value:** Six [6]

**Minimum Guided Learning Hours:** 60

**Units barred for selection against this unit:**

- **Human Cardiovascular System (GA33BIO14 / UA33BIO14)**
- **Exchange and Transport of Gases (GA33BIO15 / UA33BIO15)**

| Learning Outcome (The Learner will): | Assessment Criterion (The Learner can): |
|---|---|
| 1. Understand the structure of the human cardiovascular system | 1.1 Identify the main structures and blood vessels of the human heart and explain their roles in maintaining circulation |
| | 1.2 Discuss the structure of arteries, veins, and capillaries in relation to their functions |
| | 1.3 Explain the importance of double circulation for humans |
| 2. Understand the control of the cardiac cycle | 2.1 Identify the conductive tissues in the heart and explain the roles of these in the cardiac cycle |
| | 2.2 Explain the differences between systolic and diastolic blood pressure |
| | 2.3 Identify, using examples, circumstances of normal and abnormal blood pressure readings |

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| Learning Outcome (The Learner will): | Assessment Criterion (The Learner can): |
|---|---|
| 3. Understand the structure of the human respiratory system | 3.1 Identify the main structures of the respiratory system |
| | 3.2 Explain how the main structures of the respiratory system are adapted for efficient gas exchange |
| | 3.3 Explain the adaptations of red blood cells in relation to their role in transporting oxygen |
| 4. Understand how the functions of the cardiovascular system and respiratory system are interdependent | 4.1 Using the example of exercise, explain:<br>a) How mechanisms of breathing change from tidal breathing at rest to forced exhalation during exercise<br>b) The influence of the nervous system on breathing rate and cardiac output<br>c) How oxygen and carbon dioxide are exchanged in the lungs and tissues in the body<br>d) How the cardiovascular and respiratory systems adapt in response to regular exercise |
| 5. Understand the consequences of a dysfunctional respiratory system and/or cardiovascular system | 5.1 Discuss causes, symptoms, and treatments of two disorders of either the respiratory system, or the cardiovascular system |
| | 5.2 Using one disorder from AC5.1, evaluate its impact on another system.<br>E.g., if two disorders of the respiratory system are chosen for AC5.1, evaluate the impact of one of those disorders on the cardiovascular system for AC5.2. If two disorders of the cardiovascular system are chosen in AC5.1, evaluate the impact of one of those disorders on the respiratory system for AC5.2 |

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