

# A&P 01 Human Body Anatomy & Physiology Essay

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## 4. Chapter: A&P 01 Human Body Anatomy & Physiology Essay

### 1. A&P 01 Human Body Anatomy & Physiology Essay Questions

4.1.1. View this animation (<http://openstaxcollege.org/l/metabolic>) to lea...

Author: OpenStax College

View this animation (<http://openstaxcollege.org/l/metabolic>) to learn more about metabolic processes.

What kind of catabolism occurs in the heart?

- Fatty acid catabolism.

Check the answer of this question online at QuizOver.com:

Question: [View this animation http://openstaxcollege.org/l/metabolic](http://openstaxcollege.org/l/metabolic) OpenStax College Anatomy

#### 4.1.2. Water concentration in the body is critical for proper functioning....

Author: OpenStax College

Water concentration in the body is critical for proper functioning. A person's body retains very tight control on water levels without conscious control by the person.

Watch this video (<http://openstaxcollege.org//H2Ocon>) to learn more about water concentration in the body.

Which organ has primary control over the amount of water in the body?

- The kidneys.

Check the answer of this question online at [QuizOver.com](http://QuizOver.com):

Question: [Water concentration in the body is critical OpenStax College Anatomy](#)

#### 4.1.3. A CT or CAT scan relies on a circling scanner that revolves around ...

Author: OpenStax College

A CT or CAT scan relies on a circling scanner that revolves around the patient's body.

Watch this video (<http://openstaxcollege.org/l/CATscan>) to learn more about CT and CAT scans. What type of radiation does a CT scanner use?

- X-rays.

Check the answer of this question online at QuizOver.com:

Question: [A CT or CAT scan relies on a circling OpenStax College Anatomy Quest](#)

#### 4.1.4. A patient undergoing an MRI is surrounded by a tubeshaped scanner.

...

Author: OpenStax College

A patient undergoing an MRI is surrounded by a tubeshaped scanner.

Watch this video (<http://openstaxcollege.org/l/MRI>) to learn more about MRIs.

What is the function of magnets in an MRI?

- The magnets induce tissue to emit radio signals that can show differences between different types of tissue.

Check the answer of this question online at QuizOver.com:

Question: [A patient undergoing an MRI is surrounded OpenStax College Anatomy](#)

#### 4.1.5. PET relies on radioactive substances administered several minutes b...

Author: OpenStax College

PET relies on radioactive substances administered several minutes before the scan.

Watch this video (<http://openstaxcollege.org/l/PET>) to learn more about PET.

How is PET used in chemotherapy?

- PET scans can indicate how patients are responding to chemotherapy.

Check the answer of this question online at QuizOver.com:

Question: [PET relies on radioactive substances OpenStax College Anatomy Quest](#)

#### 4.1.6. Name at least three reasons to study anatomy and physiology.

Author: OpenStax College

Name at least three reasons to study anatomy and physiology.

- An understanding of anatomy and physiology is essential for any career in the health professions. It can also help you make choices that promote your health, respond appropriately to signs of illness, make sense of health-related news, and help you in your roles as a parent, spouse, partner, friend, colleague, and caregiver.

Check the answer of this question online at QuizOver.com:

Question: [Name at least three reasons to study OpenStax College Anatomy Quest](#)

#### 4.1.7. For whom would an appreciation of the structural characteristics of...

Author: OpenStax College

For whom would an appreciation of the structural characteristics of the human heart come more easily:

an alien who lands on Earth, abducts a human, and dissects his heart, or an anatomy and physiology student performing a dissection of the heart on her very first day of class? Why?

- A student would more readily appreciate the structures revealed in the dissection. Even though the student has not yet studied the workings of the heart and blood vessels in her class, she has experienced her heart beating every moment of her life, has probably felt her pulse, and likely has at least a basic understanding of the role of the heart in pumping blood throughout her body. This understanding of the heart's function (physiology) would support her study of the heart's form (anatomy).

Check the answer of this question online at [QuizOver.com](http://www.quizover.com):

Question: [For whom would an appreciation of the OpenStax College Anatomy Quest](#)

#### 4.1.8. Name the six levels of organization of the human body.

Author: OpenStax College

Name the six levels of organization of the human body.

- Chemical, cellular, tissue, organ, organ system, organism.

Check the answer of this question online at QuizOver.com:

Question: [Name the six levels of organization of OpenStax College Anatomy Quest](#)

#### 4.1.9. The female ovaries and the male testes are a part of which body sys...

Author: OpenStax College

The female ovaries and the male testes are a part of which body system? Can these organs be members of more than one organ system? Why or why not?

- The female ovaries and the male testes are parts of the reproductive system. But they also secrete hormones, as does the endocrine system, therefore ovaries and testes function within both the endocrine and reproductive systems.

Check the answer of this question online at QuizOver.com:

Question: [The female ovaries and the male testes OpenStax College Anatomy Quest](#)

#### 4.1.10. Explain why the smell of smoke when you are sitting at a campfire d...

Author: OpenStax College

Explain why the smell of smoke when you are sitting at a campfire does not trigger alarm, but the smell of smoke in your residence hall does.

- When you are sitting at a campfire, your sense of smell adapts to the smell of smoke. Only if that smell were to suddenly and dramatically intensify would you be likely to notice and respond. In contrast, the smell of even a trace of smoke would be new and highly unusual in your residence hall, and would be perceived as danger.

Check the answer of this question online at QuizOver.com:

Question: [Explain why the smell of smoke when you OpenStax College Anatomy](#)

#### 4.1.11. Identify three different ways that growth can occur in the human body.

Author: OpenStax College

Identify three different ways that growth can occur in the human body.

- Growth can occur by increasing the number of existing cells, increasing the size of existing cells, or increasing the amount of non-cellular material around cells.

Check the answer of this question online at [QuizOver.com](http://QuizOver.com):

Question: [Identify three different ways that growth OpenStax College Anatomy](#)

#### 4.1.12. When you open a bottle of sparkling water, the carbon dioxide gas i...

Author: OpenStax College

When you open a bottle of sparkling water, the carbon dioxide gas in the bottle form bubbles. If the bottle is left open, the water will eventually "go flat." Explain these phenomena in terms of atmospheric pressure.

- In a sealed bottle of sparkling water, carbon dioxide gas is kept dissolved in the water under a very high pressure.  
When you open the bottle, the pressure of the gas above the liquid changes from artificially high to normal atmospheric pressure.  
The dissolved carbon dioxide gas expands, and rises in bubbles to the surface.  
When a bottle of sparkling water is left open, it eventually goes flat because its gases continue to move out of solution until the pressure in the water is approximately equal to atmospheric pressure.

Check the answer of this question online at QuizOver.com:

Question: [When you open a bottle of sparkling water OpenStax College Anatomy](#)

#### 4.1.13. On his midsummer trek through the desert, Josh ran out of water. Wh...

Author: OpenStax College

On his midsummer trek through the desert, Josh ran out of water. Why is this particularly dangerous?

- The primary way that the body responds to high environmental heat is by sweating; however, sweating requires water, which comes from body fluids, including blood plasma. If Josh becomes dehydrated, he will be unable to sweat adequately to cool his body, and he will be at risk for heat stroke as his blood pressure drops too much from the loss of water from the blood plasma.

Check the answer of this question online at QuizOver.com:

Question: [On his midsummer trek through the desert OpenStax College Anatomy](#)

#### 4.1.14. Identify the four components of a negative feedback loop and explain...

Author: OpenStax College

Identify the four components of a negative feedback loop and explain what would happen if secretion of a body chemical controlled by a negative feedback system became too great.

- The four components of a negative feedback loop are: stimulus, sensor, control center, and effector. If too great a quantity of the chemical were excreted, sensors would activate a control center, which would in turn activate an effector.  
In this case, the effector (the secreting cells) would be adjusted downward.

Check the answer of this question online at QuizOver.com:

Question: [Identify the four components of a negative OpenStax College Anatomy](#)

#### 4.1.15. What regulatory processes would your body use if you were trapped b...

Author: OpenStax College

What regulatory processes would your body use if you were trapped by a blizzard in an unheated, uninsulated cabin in the woods?

- Any prolonged exposure to extreme cold would activate the brain's heat-gain center. This would reduce blood flow to your skin, and shunt blood returning from your limbs away from the digits and into a network of deep veins. Your brain's heat-gain center would also increase your muscle contraction, causing you to shiver. This increases the energy consumption of skeletal muscle and generates more heat. Your body would also produce thyroid hormone and epinephrine, chemicals that promote increased metabolism and heat production.

Check the answer of this question online at QuizOver.com:

Question: [What regulatory processes would your body OpenStax College Anatomy](#)

#### 4.1.16. In which direction would an MRI scanner move to produce sequential ...

Author: OpenStax College

In which direction would an MRI scanner move to produce sequential images of the body in the frontal plane, and in which direction would an MRI scanner move to produce sequential images of the body in the sagittal plane?

- If the body were supine or prone, the MRI scanner would move from top to bottom to produce frontal sections, which would divide the body into anterior and posterior portions, as in "cutting" a deck of cards. Again, if the body were supine or prone, to produce sagittal sections, the scanner would move from left to right or from right to left to divide the body lengthwise into left and right portions.

Check the answer of this question online at [QuizOver.com](http://www.quizover.com):

Question: [In which direction would an MRI scanner OpenStax College Anatomy](#)

#### 4.1.17. If a bullet were to penetrate a lung, which three anterior thoracic...

Author: OpenStax College

If a bullet were to penetrate a lung, which three anterior thoracic body cavities would it enter, and which layer of the serous membrane would it encounter first?

- The bullet would enter the ventral, thoracic, and pleural cavities, and it would encounter the parietal layer of serous membrane first.

Check the answer of this question online at [QuizOver.com](http://QuizOver.com):

Question: [If a bullet were to penetrate a lung which OpenStax College Anatomy](#)

#### 4.1.18. Which medical imaging technique is most dangerous to use repeatedly...

Author: OpenStax College

Which medical imaging technique is most dangerous to use repeatedly, and why?

- CT scanning subjects patients to much higher levels of radiation than X-rays, and should not be performed repeatedly.

Check the answer of this question online at [QuizOver.com](http://QuizOver.com):

Question: [Which medical imaging technique is most OpenStax College Anatomy](#)

#### 4.1.19. Explain why ultrasound imaging is the technique of choice for study...

Author: OpenStax College

Explain why ultrasound imaging is the technique of choice for studying fetal growth and development.

- Ultrasonography does not expose a mother or fetus to radiation, to radiopharmaceuticals, or to magnetic fields. At this time, there are no known medical risks of ultrasonography.

Check the answer of this question online at [QuizOver.com](http://QuizOver.com):

Question: [Explain why ultrasound imaging is the OpenStax College Anatomy Quest](#)