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COURSE NAME:

**(Human Body)**

Assignment Title:

**(AIU Exam)**

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**AIU Exam – Human Body**

**Introduction**

This chapter aims to explain our human bodies in relation to what we eat. It talks about how the Hypothalamus Prompts Hunger in Response to Various Signals and what happens to the food when we eat.

Furthermore, the chapter explores how the body accomplishes chemical digestion and how the digested nutrients are absorbed and transported around the body. Then it also covers the body’s coordination and regulation of digestion.

The chapter concludes with a look at Disorders that are related to Digestion, Absorption, and Elimination which touched on Crohn’s disease and colitis among others.

**Chapter 3 questions**

**1.** Which of the following processes moves food along the entire GI tract?

**b.** peristalsis

**2.** Bile is a greenish fluid that

**d.** emulsifies lipids.

**3.** The region of brain tissue that is responsible for prompting us to seek food is the

**c.** hypothalamus.

**4.** Heartburn is caused by

**a.** seepage of gastric acid into the esophagus.

**5.** Which of the following foods is likely to keep a person satiated for the longest period of time?

**d.** a tossed salad with oil and vinegar dressing

**6.** Hunger is more physiologic, and appetite is more psychologic. **True**

**7.** The nerves of the GI tract are collectively known as the enteric nervous system. **True**

**8.** Vitamins and minerals are digested in the small intestine. **True**

**9.** A person with celiac disease cannot tolerate milk or milk products. **False**

**10.** Intestinal villi are composed of numerous specialized absorptive cells called enterocytes. **True**

**11.** Explain why it can be said that you are what you eat.

**When we eat any type of food, the nutrients contained therein such as carbohydrates, proteins, lipids, vitamins and minerals are absorbed for different uses in the body. These essential nutrients become the building blocks for different cells, tissues, organs, tissues and systems in the body. For example, proteins are used for muscle repair and growth. Additionally, the nutrients found in the food we eat play a major role in our overall health and well-being.**

**12.** Imagine that the lining of your small intestine were smooth, like the inside of a rubber tube. Would this design be efficient in performing the main function of this organ? Why or why not?

**No, a smooth lining like the inside of a rubber tube would not be efficient in performing the main function of the small intestine because it would massively minimize and affect the nutrient absorption, digestion, and overall efficiency of the small intestine which is as a result of the natural occurring villi and microvilli.**

**13.** Why doesn’t the acidic environment of the stomach cause it to digest itself?

**Because the lining of the stomach secretes a thick mucus layer which coats the inner surface of the stomach, and acts both as a protective barrier, as well as prevents the acidic gastric juices from making direct contact with the stomach walls.**

**14.** Create a table comparing the area of inflammation, symptoms, and treatment options for celiac disease, Crohn disease, and ulcerative colitis.

**Comparison between Celiac disease, Crohn’s diseases and Ulcerative colitis**

|  |  |  |  |
| --- | --- | --- | --- |
| **Disease** | **Celiac disease** | **Crohn’s disease** | **Ulcerative colitis** |
| **Area of inflammation** | Small intestine | Any part of the digestive system from mouth to anus | Large intestine |
| **Symptoms** | Chronic diarrhea, Fatigue, Abdominal pain, Bloating, Anemia, Skin rashes, Joint pain | Abdominal pain, Diarrhea (usually bloody), Loss of Weight, Fatigue, Fever, Mouth sores, Skin problems | Bloody diarrhea, Abdominal cramps, Urgent need to defecate, Tenesmus (feeling of incomplete evacuation), Fatigue, Weight loss |
| **Treatment options** | A strict gluten-free diet which avoids wheat, barley and rye | -Anti-inflammatory medications (e.g. corticosteroids)  - Immune system suppressors  - Biologic therapies and,  - in severe cases, Surgery | Anti-inflammatory medications (e.g. corticosteroids)  - Immune system suppressors  - Biologic therapies and,  - in severe cases, Colectomy (removal of colon) |

**15.** After dinner, your roommate lies down to rest for a few minutes before studying. When he gets up, he complains of a sharp, burning pain in his chest. Offer a possible explanation for his pain.

**The pain he is experiencing in his chest is known as heartburn and was caused by hydrochloric acid flowing back into the Esophagus and irritating its lining.**

Read… NUTRITION DEBATE on page 108,

Should All School-Age Children Be Screened for Celiac Disease?

Answer these questions on page 109…

1. Now that you’ve read the arguments for and against routine screening of American children for celiac disease, do you think that all children should have the test? Why or why not?

**No, not all children should be tested for celiac disease because according to the National Institutes of Health Consensus Development Conference on Celiac, there are insufficient data at this time to recommend routine screening for celiac disease. Instead, the Conference recommended further research into the benefits and cost-effectiveness of screening in the general population.**

1. If you said yes, who should pay for it? Parents? School districts? The public health department?

**The public health department**

1. Given the number of children who are home-schooled or in private schools, how could we ensure that all families were offered screening?

**Conduct routine screening of all children when they reach a certain age, especially between 6 to 59 months.**

1. Would you be in favor of routine screening of children for type 2 diabetes, hypertension, obesity, and other disorders? **Yes**
2. What factors seem most important to consider when deciding which diseases we screen for in American children?

* **When the prevalence of the disease is high enough to be of general concern.**
* **When doctors and healthcare providers are more knowledgeable about the disease**
* **When the screening involves simple, low-cost screening tests**
* **When there is a financial incentive for laboratories to make the antibody test more widely available, benefiting all Americans.**

**Conclusion**

By the end of the chapter, the student was able to clearly distinguish between appetite and hunger, as well as describe the mechanisms that stimulate each of them. The student was also able to learn and describe how each of the gastrointestinal tract organs contribute to the digestion, absorption, and elimination of food, identify the source and function of the key enzymes involved in digesting foods as well as Identify the four major hormones involved in the regulation of the gastrointestinal tract and describe their primary action.

Additionally, the student was also able to understand the roles of the gallbladder, pancreas, and liver in digestion, absorption, and processing of nutrients, list and describe the four types of absorption that occur in the small intestine, and also describe the causes, symptoms, and treatments of gastroesophageal reflux disease, ulcers, food allergies, celiac disease, diarrhea, constipation, and irritable bowel syndrome.

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