

Digestion and Nutrition

Healthy Human Body Series

Subject Areas: Science, Life Science, Biology, Health

Synopsis: Watching young people wall climbing and playing soccer, viewers are shown how the digestive system works and how to eat healthy, nutritious food in countries where there is plenty to eat. High-tech cinematography clearly reveals all the physiological details.

Learning Objectives:

- Objective 1)** Students will be able to describe the construction and function of the digestive organs and how they transport nutrients throughout the human body.
- Objective 2)** Students will be able to understand which problems can appear with digestion.
- Objective 3)** Students will be able to describe basic nutrition information to promote a healthy body.

Pre-Viewing Questions and Discussion:

Ask the students to answer the following questions:

- What does “food” mean?
- What is the difference between “nutrients” and “food”?
- What does “digestion” mean?
- What parts of the digestive tract can the students name?

Post-Viewing Questions and Discussion:

Write the following terms so students can see them, and describe the relevant scientific and health facts about each: the food chart, flour products, fruit and vegetables, protein, oil and fats, water, incisors, molars, saliva, esophagus, stomach, gastric juice, hydrochloric acid, heartburn, enzymes, small intestine, intestinal wall, nutrients are absorbed by the blood, whole grain foods, fibers, large intestine, water is absorbed by the blood, rectum, healthy teeth, tartar, too much sweet or fat food, carbohydrate, Vitamin D, sports are good for digestion.

Additional Activities:

- 1) Research further how digestion helps maintain all body functions. For instance, a body must constantly repair damage from wear and tear. The skin, for example, wears out. Also the body must repair itself from sickness and wounds. A person also moves, uses his eyes and brains, must stay warm and take care that breathing and heartbeat continue. For all of these, energy is necessary, that must also be taken from food during metabolism. Before food is suitable to use it must first be made smaller, refined and made soluble in order to be able to pass the intestinal wall and after that to be transported through the blood. What do metabolism and soluble, as well as the other terms, mean?
- 2) Research further how the mouth and gullet work. As dentures cut large pieces into small pieces, hard food is flattened and ground between the teeth, and during the chewing process, three pair of glands add saliva. The saliva contains enzymes that turn flour meal into sugar. When the food has been chewed long enough, it is pushed backwards, touches the uvula and palate, after which the swallowing reflex takes action.

- 3) Research the meaning and function of the following terms in connection with the small intestine: the twelve-finger intestine, the gall bladder, the pancreas, the small intestine muscles, gland cells in the intestinal wall, sugars such as glucose, amino acids, fatty acids, the intestine-flocks, and food fibers.
- 4) Research the meaning and function of the following terms in connection with the large intestine and rectum: the blind intestine, the appendix, appendicitis, diarrhea, the rectum, vitamins, gases, excreted feces, and the anus.
- 5) Research the problems that arise when we eat too much or consume unsuitable things, because they taste good. What do food processors do to make foods attractive to us? What can we do to combat unhealthy eating habits? What do our bodies do to combat nutrient deficiencies?
- 6) Research the connection of digestion with blood circulation. How are food particles made so small that they can pass through the wall of the intestine and enter the blood circulation? What is the portal vein? How does the liver work? How is a surplus of sugar turned into reserve material, liver starch? How do living cells take what they need? What are glucose and amino acids?

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