



Food and Fitness Virtual Workshop

Activity Five:  
**Servings and  
Choices**

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**Virtual Workshop: Food and Fitness (Activity Five) – Servings and Choices**

Activity Five: Servings and Choices, of the instructional unit, Food and Fitness, gives students an opportunity to document their own eating habits and to learn whether their eating patterns match their energy needs.

Science and health concepts covered in this activity include the following.

- A person's daily Calorie intake should match his or her daily Calorie expenditures.
- Nutritional requirements vary with body weight, age, gender, activity level and body functioning.

The complete Food and Fitness Activities Guide for Teachers may be downloaded as a PDF file from the Teacher Resources menu on BioEd Online.  
<http://www.bioedonline.org/resources/nsbri.cfm>

Viewing this presentation fulfills part of the requirements for completing the Virtual Workshop on Energy, Food and Nutrition ("Food and Fitness"), offered for professional development contact hours on BioEd Online.

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Center for Educational Outreach, Baylor College of Medicine:  
<http://www.ccit.bcm.tmc.edu/ceo/>

National Space Biomedical Research Institute: [www.nsbri.org](http://www.nsbri.org)

National Aeronautics and Space Administration: <http://www.nasa.gov>

**Image Reference**

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## What is Your Daily Food Intake?

- Make a list of everything you eat during a typical day, OR keep a food diary for 24 hours and write down everything you eat.
  - Include all meals, snacks and drinks.
  - Record the name of each food and how much you consumed.
- Use the Servings Sizes and Calories sheet or other reference to estimate how many Calories are in each item on your list.
- Add all the Calorie values to calculate your total daily intake.



Super-sized Portions	
Small order of french fries	210 Calories
Large order of french fries	450 Calories
Super-sized order of french fries	540 Calories



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### Virtual Workshop: Food and Fitness (Activity Five) – What is your daily food intake?

This activity is designed to help students understand the importance of balancing Calorie consumption and expenditure, and to allow students to examine their own eating patterns. Students may make lists of typical foods they eat in a day or they may keep an actual food diary for 24 hours. It is important for students to include all of their snacks and beverages. Sweetened drinks are a significant source of hidden calories in many teenager's diets. In addition, students should record the amounts of each item that they eat or drink.

When making their lists, students may have to think about the components of some items. For example, a ham sandwich might consist of two slices of whole wheat bread (140 Cal); 1/2 cup of ham (185 Cal); and 1/2 cup of lettuce (5 Cal).

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## **Image Reference**

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## Calories In Versus Calories Expended

- Compare your daily Calorie intake to recommendations, based on Basal Metabolic Rate (BMR) and activity levels.
  - If Calories eaten > Calories used, excess energy is stored as fat.
  - If Calories eaten = Calories used, a constant body weight is maintained.
  - If Calories eaten < Calories used, fat is burned to make up the difference.

### Better Choices

- Whole wheat bread instead of white bread
- Olive, canola or flaxseed seed oils instead of butter, margarine or shortening
- Fresh fruits and vegetables over manufactured cookies, cakes, crackers and snacks
- Low-fat dairy products instead of those made with whole milk or cream



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### Virtual Workshop: Food and Fitness (Activity Five) – Calories In Versus Calories Expended

Food provides the energy necessary for our daily activities. However, it is important to balance the energy taken in through food with the energy spent through physical activity and metabolism. In other words, to maintain a constant weight, Calorie intake must match Calorie expenditures. When too many Calories are taken in, the excess energy is stored as fat. When fewer Calories are taken in than are expended, stored fat is “burned” (metabolized) to make up the energy difference.

Ways to decrease Calorie intake include paying attention to portion sizes and avoiding “super-sized” portions; avoiding sweetened soft drinks and juices; and eating fewer high fat or greasy foods, such as fried foods, cakes, cookies and snack crackers. Substituting whole grain breads, whole grain cereals, fruits, and vegetables for snacks and high fat/high sugar foods is an effective way to improve nutrition and reduce total Calorie intake.

Students can compare their daily Calorie totals to the standard BMRs and activity levels they calculated in Activity 3, or they can calculate their own BMRs and activity levels to determine their actual Calorie needs. Conclude the

activity by asking students to think of ways in which they could improve their eating habits. Discuss changes they could make in their daily activities and in the amounts and types of foods they eat each day. Students should save their lists for further use in Activity 6.

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## Fats

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- Fats and oils are concentrated energy sources.
  - Fats have nine Calories (kcal) per gram.
  - Proteins and carbohydrates have four Calories (kcal) per gram.
- Some fats are important for health.
  - Omega-3 fats from fish and flaxseed oils may help protect against cardiovascular disease.
  - Unsaturated fats, such as olive, peanut, canola, or corn oil can help raise levels of HDL (“good”) cholesterol.
- As a general rule, liquid vegetable oils are the healthiest choices.



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### **Virtual Workshop: Food and Fitness (Activity Five) – Fats**

The properties of fats are related to their chemical make-up. While all fats yield the same amount of Calories (nine per gram), some fats are much healthier than others. As a general rule, it is best to avoid fats that are solid at room temperature. Examples include lard, butter, vegetable shortening and margarine. Better choices are liquid vegetable oils, such as olive peanut, canola, soybean and corn oils. These mono- and polyunsaturated vegetable oils can help lower LDL (“bad”) cholesterol in the body, while raising levels of HDL (“good”) cholesterol.

Cholesterol is a wax-like substance made in the liver. Low-density lipoproteins (LDLs) carry cholesterol from the liver to the rest of the body. When too much LDL cholesterol is present in the blood, it can end up as deposits on the walls of arteries in the heart. Because it contributes to blockage of arteries, LDL often is referred to as “bad” cholesterol. High density lipoproteins (HDLs) carry cholesterol from the blood back to the liver, which processes the cholesterol for elimination from the body. Since HDL makes it less likely that excess cholesterol will build up inside arteries, HDL cholesterol sometimes is called “good” cholesterol.

Students can investigate the relative amounts of fats in different foods by placing equal sized portions on brown paper over night and comparing the sizes of the “grease” spots left on the paper by each food.

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**Reference:**

Harvard School of Public Health. (2004). *Fats and Cholesterol - The Good, The Bad, and The Healthy Diet*. Retrieved July 14, 2004 from <http://www.hsph.harvard.edu/nutritionsource/fats.html>