How Much Do You Know About Calories?

A calorie is the unit used to measure the energy-producing value of food. Technically, a calorie is defined as the amount of heat necessary to raise the temperature of one gram of water one degree centigrade. There are four major sources of energy in food: carbohydrate, protein, fat, and alcohol. When burned (metabolized), they provide different amounts of energy:

- **Carbohydrate** = 4 calories per gram
- **Protein** = 4 calories per gram
- **Alcohol** = 7 calories per gram
- **Fat** = 9 calories per gram

The calorie content of food depends on the amount of carbohydrate, protein, fat, and alcohol it contains. As you can see, fat is the most concentrated source of energy and yields more than twice as many calories per unit weight as carbohydrate and protein. Keep this in mind when eating foods rich in fat such as butter, whole fat milk and cheese, red meat, nuts, oils, mayonnaise, fried foods, and many sweets.

How Many Calories Do You Need?

Calories contained in food are transformed into different kinds of working energy by metabolic reactions in the body: electrical for conduction of nerve impulses, mechanical for muscle contraction and movement, chemical for metabolic processes, and heat for maintenance of normal body temperature. Thus, two factors determine your calorie needs: 1) basal metabolic rate (BMR), which is the energy needed to maintain your body's basic physiological functions at rest, and 2) level of physical activity. Your calorie needs per day can be estimated based on your healthy body weight (HBW) and your activity level.

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Calorie Needs Per Day

<table>
<thead>
<tr>
<th>Formula</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBW x 10</td>
<td>to meet your BMR</td>
</tr>
<tr>
<td>HBW x 13</td>
<td>to meet your BMR and a sedentary lifestyle</td>
</tr>
<tr>
<td>HBW x 15</td>
<td>to meet your BMR and light activity</td>
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<tr>
<td>HBW x 17</td>
<td>to meet your BMR and moderate activity</td>
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<tr>
<td>HBW x 20</td>
<td>to meet your BMR and heavy activity</td>
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</tbody>
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**When Calculating Your Calorie Needs, Remember:**

- BMR differs depending on genetics, age, sex, height, body composition, and activity level. For example: an active person with a low percentage of body fat and a high percentage of muscle will have a higher BMR than a sedentary person of the same weight who has more fat and less muscle. Muscle burns many more calories at rest than fat.

- The activity level refers only to physical work. Mental work requires an insignificant increase in energy needs. The exhaustion you experience after studying is all psychological. A light to moderate level of activity includes 20-60 minutes of exercise performed three to five times per week. Most students fall into this category.

**What Is Energy Balance?**

The body is in a state of energy balance when the amount of calories eaten is equal to the amount of calories expended. If energy supplied by foods exceeds that which is utilized, the excess energy is stored in the form of glycogen (carbohydrate) or fat. Glycogen is stored mainly in the liver and muscle tissue. When the glycogen storage capacity is fully utilized, any excess energy is stored as fat. The body uses these energy sources when the energy provided by food is inadequate to meet the body's needs.

To find out more about your body's calorie needs and a healthy weight for you, please pick up a SNAC Supplementary Information Sheet.