The ketogenic diet was developed in the 1920’s to reduce the number of seizures in children with epilepsy. From its medical roots the “keto” diet has now spread in popularity among the general population as a method to lose weight.

The Basics
The keto diet significantly restricts the amount of carbohydrates in favor of eating high fat foods. Below are examples of variations and a breakdown of the percentage of calories from each macronutrient.

<table>
<thead>
<tr>
<th>Diet</th>
<th>Carbohydrate</th>
<th>Protein</th>
<th>Fat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classic keto¹</td>
<td>4%</td>
<td>6%</td>
<td>90%</td>
</tr>
<tr>
<td>Modified keto</td>
<td>6%</td>
<td>12%</td>
<td>82%</td>
</tr>
<tr>
<td>Normal</td>
<td>45-55%</td>
<td>10-35%</td>
<td>20-35%</td>
</tr>
</tbody>
</table>

Carbohydrate Sources
Foods which contain carbohydrates also contain other vital nutrients and dietary components. By following the keto diet and limiting carbohydrate intake, the intake of other nutrients will likely be impacted as well. Examples include:

- Grains: Fiber, B vitamins, folic acid, zinc, and protein
- Fruits: Fiber, vitamins A, B, C, and E, potassium, phosphorous, magnesium, zinc
- Vegetables: Similar to fruit with the addition of calcium and vitamin K
- Dairy: Protein, calcium, vitamins A and D, potassium

How It Works
The keto diet hijacks the body’s metabolism by changing the way it uses energy. Normally the body uses its preferred energy source, glucose, which is obtained through carbohydrates. Without glucose, the body enters what is known as a fasted state leading to ketosis. During this state, the body must find an alternate source of energy, and it finds this alternate source in the form of ketones. Ketones are produced from stored fat, and it is this using up of fat that appeals to individuals wanting to lose weight.

Effects of Keto

Fat and Weight Loss.² When compared to a normal calorie reducing diet, the keto diet does not result in increased fat or weight loss. Upon starting a keto diet, rapid weight loss may occur, however, much of this is due to a shift in the body’s stored glucose and its impact on water weight. After the initial water weight loss, additional losses trend to plateau. Rapid weight loss can sometimes lead to muscle loss. Nutrition experts recommend weight loss of no more than 1-2 pounds per week to avoid lean body tissue loss.

Negative Side Effects. The lack of glucose can lead to low blood sugars and a set of symptoms known as the keto flu. Symptoms include fatigue, dizziness, brain fog, muscle soreness, irritability, and gastrointestinal disturbances.

Relationship with Food.³ By almost entirely eliminating carbohydrates can cause an unhealthy obsession with food and could even lead to the development of eating disorders in those individuals already prone to developing one.

Weight Cycling.⁴ Diets which promote quick and rapid weight loss are normally not sustainable long-term. After the diet ends, weight is re-gained 95% of the time within 1-2 years. In many cases the amount of weight re-gained is often more than the amount of weight which was lost.

References
Establishing Lifelong Healthy Eating Habits
Eating healthfully and creating balanced meals looks different for everyone. Before starting a diet, it helps to be informed about the potential benefits and risks. For more information about nutrition, or to set up a nutrition coaching session, follow the link to visit the OSU Student Wellness Center Nutrition Coaching page.

1.