**How Fat Provides Energy for Sports**
Fat provides the highest concentration of energy of all the nutrients. One gram of fat equals nine calories. This calorie density, along with our seemingly unlimited storage capacity for fat, makes fat our largest reserve of energy. One pound of stored fat provides approximately 3,600 calories of energy. While these calories are less accessible to athletes performing quick, intense efforts like sprinting or weight lifting, fat is essential for longer, slower lower intensity and endurance exercise such as easy cycling and walking.

Fat provides the main fuel source for long duration, low to moderate intensity exercise (endurance sports such as marathons, and ultra marathons). Even during high intensity exercise, where[carbohydrate is the main fuel source](http://sportsmedicine.about.com/od/sportsnutrition/a/Fat.htm), fat is needed to help access the stored carbohydrate (glycogen).

Using fat for fuel for exercise, however, is dependent upon these important factors:

* Fat is slow to digest and be converted into a usable form of energy (it can take up to 6 hours).
* Converting stored body fat into energy takes time. The body needs to breakdown fat and transport it to the working muscles before it can be used as energy.
* Converting stored body fat into energy takes a great deal of oxygen, so exercise intensity must decrease for this process to occur.

For these reasons, athletes need to carefully time when they eat fat, how much they eat and the type of fat they eat. In general, it’s not a great idea to eat fat immediately before or during intense exercise.