

Dietary Fat and Athletic Performance

In the previous article (The Facts on Dietary Fat), we learned fat plays a vital role in temperature regulation, blood clotting, and brain development. Today, we will focus on the ability of fat to provide energy to fuel performance, making it an essential component of an athlete's diet.

Fat and Energy

All three macronutrients, carbohydrates, protein, and fat contain calories that can be utilized by the body for energy. Fat is the most energy dense, providing 9 calories/gram; carbohydrates and protein provide only 4 calories/gram. The high-energy fat molecule is typically reserved for powering basal (basic) metabolic needs in the body such as hormone regulation, blood circulation, temperature regulation, digestion, and cell growth. For athletes, fat stores not used for basal needs can be called upon to meet energy demands.

Fat Oxidation (Stored Energy → Usable Energy)

In general, people store large amounts of fat throughout the body. A majority of these stores can be found within adipose (fatty) tissue and muscle fibers. When needed, these stores can be utilized for energy through a process called oxidation. Fat oxidation is a chemical process that involves the breakdown of stored fat into free fatty acids, or a usable form of energy. These fatty acids are then taken up by muscle tissue and used to meet increasing energy demands, as occurs with exercise.

Fat Utilization During Exercise

In comparison to carbohydrates, stored as muscle glycogen, the oxidation of fat during exercise is a relatively slow, multi-step process. Because of this, carbohydrates remain the body's preferred source for immediate energy. The contribution of fat to energy regulation is primarily influenced by exercise intensity and duration. However, gender, current fitness level, and dietary intake before workouts will also have an effect on this.

In general, fat utilization during exercise breaks down to this:

Fat is used to fuel the body:

- At rest (basal metabolic needs)
- During Low Intensity Exercise: At or Below 50%max heart rate
- During consistent-pro-longed exercise > 60 minutes

Fun Fact!

- When Oxygen is readily available, your body has enough fat stores to power low intensity exercise for DAYS!

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The current recommendation for endurance athletes (soccer players) is no less than 1 g/kg/day of fat. As discussed in the previous article, the majority of fat intake should come from unsaturated sources (oils, fish, nuts, seeds, dairy). Snacks are the easiest way to incorporate fat into your daily eating pattern. For example, one of my go to post breakfast-pre-lunch snacks is baby carrots with natural peanut butter:

1 Vitamin-A rich Veggie + 1 Omega-6 rich fat = a simple, yet delicious snack 😊