

## NUTRIENT TIMING

An often overlooked strategy in developing strength, power, and ultimately creating a healthy and athletic body is not only choosing quality food, but also consuming nutrients at the most beneficial time. So, understanding that the positive physical adaptations from an exercise session do not occur during the workout, practice, or game, we take a look into exercise science research.

We know “what to eat” to support our athletic development, and now there is a deeper understanding of physiology, nutrition, and exercise metabolism. Research has now shown that the *timing* of meals just might be the missing link to maintaining a healthy and positive adaptation to our workouts.

There is a phase of muscle cell activity immediately after exercise (approximately 45 minutes) when cells are sensitive and receptive to the growth effects initiated by the release of insulin. Consuming quality carbohydrates during this time enhances the restoration of muscle glycogen. This process is essential in the repair of existing muscle fiber and synthesis of new fiber. An excellent choice at this time would be to drink chocolate milk which contains a preferred ratio of 3:1 or 4:1 carbohydrates to protein.

This “metabolic window” begins to close approximately 45 minutes after exercise, resulting in a negative effect on recovery. At that point, another phase of metabolism proceeds, if and only if carbohydrates, proteins, and healthy fats are consumed. This is essential to further positive processes at cellular levels. In this next phase the continuation of glycogen replenishment enhances tissue repair and muscle growth as the breakdown of muscle fiber shifts to repair and building.

A third phase, in which the majority of gains in muscle and strength occur, is the remaining 18-24 hours of the day. This time period is significantly influenced by dietary choices and sleep. A future article will tackle the ever elusive “sleep and the athlete, is there ever enough time”.

Scientific research has led us from “what to eat” to “when do we eat.”

A thought to consider after a game, practice or workout: take your muscles back to resting length by stretching; feed them immediately and appropriately; and, allow them to rest. Following that protocol, your body will be front and center the next day, ready to go!

*Are you consuming the proper amounts of carbohydrates, protein, fats, water, vitamins, and minerals to sustain our growth and healthy athletic development?*

Work Consulted:

Nutrient Timing / The Future of Sports Nutrition by John Ivy, Ph.D. & Robert Portman, Ph.D.