Recovery Nutrition for High School Athletes

By Jacqueline Berning, Ph.D., R.D.

It's 8:45 p.m. on a school night and you and 35 athletes are loading on a bus and heading back to school after an away game. Like many high school athletes, your team didn't eat much before the game, and now they are complaining that they're hungry and thirsty. As a coach, what do you do? If you stop to eat on the way home, it will take another hour to get there. Some of the athletes have homework to do, while others need the extra sleep. If they don't eat, you know that they're performance will suffer. Research shows that the decision you make will have an impact on their ability to play and compete at their peak.

Recovering from Exercise

Not eating and drinking after competition and training can have negative consequences on future athletic performance. For instance, many coaches don't realize that it can take up to 36 hours to reload the muscles of athletes who delay refueling their bodies. Such a delay means that the athletes will not have the energy to meet the demands of their sport. This is especially true for sports that have repeated competitions such as tournament play in volleyball, basketball, soccer, swimming or tennis. Parents and coaches need to recognize that an intense game or a hard interval-training session can be just as exhausting as running a marathon. Athletes who fail to refuel and/or rehydrate during these activities will not have the optimal level of energy the next day.

What to Eat

Carbohydrates

Muscle glycogen is the predominant fuel for energy during exercise. As carbohydrate (glucose) is the primary source of muscle glycogen, it is the most efficient source of energy for the body and should make up approximately 50-55 percent of an athlete's diet. Depending on the size of the athlete, that could amount to anywhere between 300 to more than 600 grams of carbohydrate each day. Carbohydrate-rich foods include whole-grain breads, rice, pasta, fruits, vegetables and sports drinks.

A carbohydrate snack consumed within minutes after the competition or practice will allow the body to start the recovery process faster. In addition, players need to consume a carbohydrate-rich meal within one hour after the recovery snack. This ensures that the muscles continue to load with carbohydrate energy. For most high school athletes, that means eating a meal soon after they get home from competition or practice.

Protein

Protein also plays an important role in recovering from exercise. Although carbohydrates are the primary source of energy for muscles, consuming a small amount of protein shortly before and/or after exercise may help the body recover from exercise in a different way, by stimulating muscle repair and growth. This is backed by research that found that adding protein to the recovery snack does not enhance the muscle's ability to store energy, but instead, this extra protein is used by the muscles to rebuild after exercise.

Note that it does not take large amounts of protein to get these results. In fact, when athletes eat a combination of carbohydrates and protein post-exercise, the carbohydrates are used to refill the muscles with fuel, while the protein is used to help build and repair muscle tissue.

What to Drink

Athletes need to replace the fluids they lose through sweat to fully recover from exercise. The easiest way to do this is to consume a sports drink, as sports drinks have flavour to encourage drinking and contain electrolytes, such as sodium and potassium to maintain fluid balance in the body. For instance, if an athlete drinks plain water and does not eat any salty foods for the two hours after exercise, a significant portion (25 to 50 percent) of what they drink will be excreted as urine. However when an athlete rehydrates with a drink that contains both sodium and potassium at the proper levels, then 65 to 80 percent of the fluid is retained by the body, helping to better rehydrate the player.

A Coach's Story

Like many high school coaches, Chad Allen, who coaches the men's soccer team at Douglas County High School in Castle Rock, Colorado, was frustrated with the amount of time it took to feed his players after an away game. While the Huskies' road trips are generally not over an hour, stopping and feeding both the JV and Varsity teams added another hour to the trip. A late afternoon game with travel and eating would mean the bus did not arrive back at school until nearly 8:00 p.m.

To solve this problem, Chad implemented a strategy where parents provide snacks for his players to consume on the way home, thus eliminating the late trips and the problem of finding someplace to eat after the game. The strategy is working, as he has noticed an improvement in their performance. Their attitudes and moods are also better. “It used to be that the kids were so hungry and thirsty that they were quite irritable,” states Chad. “Now, we have the chance to relax on the bus ride home, knowing we will have something healthy and satisfying waiting for us to eat.”

Quick Tips

- Athletes who fail to refuel and/or rehydrate during and after activities will not have the optimal level of energy to play at the same intensity the next day.
- To help in the recovery process, athletes should eat a high-carbohydrate snack within minutes after practice or competition and a healthy meal one hour later.
- Carbohydrates are the most efficient source of energy for muscles and they should make up approximately 50-55% of an athlete's diet.
- Sports drinks are an ideal way for athletes to rehydrate during and after exercise.
- Having parents provide snacks and sports drinks for the bus trip home after an away game is an excellent way to help athletes recover from exercise.

Recovery Foods

Here's a sample of healthy foods to help athletes recover from exercise:

- Sports drinks, like Gatorade Thirst Quencher
- Granola, energy or breakfast bars
- Bagels with peanut butter
- Sub sandwiches
- Crackers and cheese
- Burritos
- Fresh fruit like apples, bananas, oranges, grapes
- Vegetables such as carrots and celery
- Fruit smoothies (prepackaged)
- Rice cakes or trail mix
- Chocolate milk
- Animal crackers

Here are a few resources for information and links to nutrition professionals:

www.gssiweb.org

Gatorade Sports Science Institute® – for scientific and practical information on sports nutrition and athletic performance.

www.coach.ca

Coaching Association of Canada – for coaching, training and nutrition tips.

www.dietitians.ca

Dietitians of Canada — locate a local registered dietitian by specialty.

For more information on sports performance and nutrition, visit the Gatorade Sports Science Institute® at www.gssiweb.org or email GssiCanada@QTGCanada.com.

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