

Your Immune System – Jennifer Gibson, March 2006

Being sick. We all hate it and we all want to avoid it. For athletes, illness can have a devastating effect on performance. It can affect your training and development for the upcoming season. It can affect your placing at an event and even cost you a medal. It sets you back in a big way and needs to be avoided to optimize achievement. Due to training demands, athletes walk a tightrope between extreme health and weakened immunity. Intense, strenuous exercise helps to prepare the body to operate at peak performance. Exercise also causes increased levels of stress hormones like adrenaline and cortisol, which have an immunosuppressive effect on the body, thus increasing risk of illness (Gleeson et al., 2004).

In addition to heavy training, lack of sleep, mental stress and improper nutrition, are all factors that affect the overall health of one's immune system. When it comes to what you eat, adequate intake of many macro and micronutrients is imperative for optimum immune function. Protein, carbohydrates, vitamins A, C, E, B6, B12, iron, zinc, copper and selenium play important roles. Nutrition recommendations suggest that athletes should choose nutrient-rich foods and liquids from a variety of sources to meet increased energy needs. This takes careful planning and timing. You want to ensure the right fuels are consumed in order to promote recovery and aid performance.

Body Boosting Foods How They Work

Whole wheat grains instead of white flour. Try multigrain or seeded breads, high fibre cereals, brown rice and whole wheat pastas. These foods are jam packed with energy filled carbohydrates, B vitamins, vitamin E and fibre. Go for colour when it comes to fruits and vegetables. Fill your plate with dark red, green, orange and yellow vegetables. Fresh fruit is a portable and nutrient dense snack option. Fruits and vegetables contain free radical scavenging antioxidants, carbohydrates and fibre. First place protein foods include lean cuts of meat, fish, eggs, dairy, soy and nuts. Try to ensure you have a source of protein at breakfast, lunch and dinner. Protein is packed with amino acids and minerals like iron and zinc which help muscle repair and recovery. Antibodies, the cells that fight against illness, are all made from protein.

For athletes whose meal planning is sub-optimal, choose a multivitamin-mineral supplement that is high in vitamins A, C, E, B6, B12, iron, zinc, copper and selenium.

A vitamin supplement should not be used as a crutch for poor eating habits. Look for a supplement with an athlete guarantee. Be sure the supplier is confident that their products will not result in a positive urine test. Remember, food is the number #1 source of high-density nutrients.

Take Home Messages

Choose fresh, nutrient dense foods, packed with immune boosting protein, carbohydrates, vitamins and minerals. Go for variety and colour on your plate. Eat a diet providing adequate fuel for training and recovery. Ensure you're consuming enough carbohydrate before, during and after exercise to combat illness. Learn to manage your physical training loads and your daily activities. Manage your psychological stress better. Talk to a mental trainer or team psychologist. Allow adequate time for rest and sleep. Minimize germ exposure by practicing good hygiene.

A recent scientific review by Micheal Gleeson PhD, a professor of sport and exercise sciences at Loughborough University in Leicestershire, England found that athletes in a carbohydrate depleted state have a higher level of stress hormones. A recent British study found that consuming carbohydrate during exercise (30-60g per 2.5hours of cycling) actually prevented a decrease in immune system markers (Lancaster, 2003). Although research is still emerging in the area, it seems that the importance of carbohydrate fueling not only effects performance, but may



Your Immune System – Jennifer Gibson, March 2006

possibly prevent illness. It is imperative that athletes ensure they are properly fueled with carbohydrates before, during and after exercise.

Don't forget your body's golden windows for carbohydrate fueling.

2-3 hours before exercise (high carbohydrate meal) choose foods that are easy to digest.

Try: cereal with milk, toast with jam and peanut butter, pancakes and syrup, bagel and fruit, lean meat sandwich. Don't forget your fluids!

30 minutes before exercise 1 cup sport drink or gel.

During exercise water (1 cup every 20 minutes).

Exercise 1st hour or longer Sports drink or fruit or energy bar.

Aim for 30-60g of carbs per hour.

15 minutes post workout high carbohydrate foods with some protein and fluids.

Try: lean meat sandwich, meal replacement bar, chocolate milk and fruit, yogurt and a bagel, sport drink.

2-3 hours post workout have a mixed meal with 3 of the 4 food groups. Ensure foods are carbohydrate rich.

Try: tofu and vegetable stir-fry with rice, chicken breast with salad and baked potatoes, low fat chili with bread roll, whole wheat pasta with ground turkey and yogurt with fresh fruit for dessert.
