

## Eating in “The Zone”

Bob Seebohar, MS, RD, CSSD, CSCS

Improving athletic performance is a blend between implementing correct physical, mental and nutrition principles throughout the training year. Eating for health should be the primary focal point for any athlete since a high level of performance cannot be supported without an optimal level of health. With that in mind, nutrition begins far sooner than most athletes think. In fact, without proper daily nutrition, training sessions will be sub-par and recovery will take longer.

Interestingly, I read Dr. Sears book, *The Zone*, early in my career and schooling and found myself agreeing with his methods. It made sense and even to this day as you will read, his philosophies are very similar to mine in which I use with Olympic, age-group and young athletes.

### Daily Eating

“What should I eat during the day?”. That is, by far, the most popular question I am asked on a weekly basis from athletes of all levels. Of course it will depend greatly on what you enjoy, where you live, what training cycle you are in, what your body weight/composition goals are and any food intolerances or allergies. The main goal for all athletes in their daily nutrition should be to balance blood sugar. It sounds very simple and even with the amount of foods that are available today to help with this, it still seems that athletes have a tough time with its implementation. I have devised three very simple steps in navigating your road to optimal health and performance. I fully believe that simple is sustainable and these steps support that.

#### Step 1: Maintain blood sugar

I am a big supporter of teaching athletes about their hunger and eating when they know their bodies need nutrients rather than eating from habit or relying on a clock. Blood glucose ebbs and flows about every three hours so while it is important to eat frequently, it is more important to identify the hunger response and rely on your body cues to eating. However, it is difficult to do this if you aren't putting the proper fuel in your body throughout the day.

By using a few basic nutrition concepts, this becomes much more simple than you may think. Using the concept of “macronutrient shifting”, similar to Dr. Sears' combination of carbohydrate, protein and fat, will provide a higher satiety response which will keep you fuller longer throughout the day. This will also regulate blood sugar levels better and provide a consistent amount of energy without the afternoon “crash” typically seen in athletes.

Macronutrient shifting mimics Zone eating closely as it ensures that a lean protein, healthy fat, fruit and/or vegetable and a whole grain is eaten at every feeding. The combination of the protein and fiber from fruits, vegetables and whole grains will stabilize blood sugar very well and will increase the satiety factor, leaving you fuller for a longer period of time. An additional benefit that I have noticed with the athletes whom I

have worked with is that eating this way also helps to improve blood lipids and control body weight.

Putting this into action is much easier than you may think. The first step is to take a piece of paper and divide it into three columns by drawing two lines vertically. Label the top of the first column as “lean protein and healthy fats”, the second column “fruits and vegetables” and the third “whole grains”. Next, list the foods you enjoy and will eat in each column. Lastly, to put it together as a menu and/or shopping list, choose one from each column. Yes, it is that simple! Depending on which physical training cycle you are in, you may not need as many whole grains if your training load and stress is low. The most important thing to remember is to always combine a lean protein and healthy fat and a fruit and/or vegetable each time you eat. This in itself will regulate your blood sugar very nicely.

#### Step 2: Reduce inflammation

Not many athletes think of inflammation until an injury happens but the fact of the matter is that we have inflammation occurring at all times. Simple blood tests confirm that when athletes are in a high volume and/or high intensity training cycle, inflammation is increased. What this means to the athlete is that with increased inflammation, comes less blood flow delivery to and from muscles. This translates into less nutrients getting to the muscles and a decreased efficiency in transporting waste away from the muscles. In addition to sport, inflammation is a cause of some disease states. The good news is that you can reduce the inflammatory response through smart nutrition, specifically by consuming the correct fats.

Saturated and unsaturated fatty acids are the two classifications of fat. Saturated fats are very detrimental to heart health because they contribute to high levels of cholesterol in the body. Unsaturated fats (mono- and polyunsaturated) have many positive health outcomes. An inappropriate balance of essential, polyunsaturated fatty acids (PUFA's) can contribute to the development of disease while a proper balance helps maintain and even improve health.

Omega-6 and omega-3 fatty acids are essential PUFA's, which cannot be made from scratch by body cells; nor can the cells convert one to the other. They must be provided by the diet.

Essential fatty acids (EFA's) have many very important functions, most notably as acting like hormones, regulating blood pressure, blood clot formation, blood lipids, the immune response, and the inflammation response to injury and infection. EFA's also serve as structural parts of cell membranes, constitute a major part of the lipids of the brain and nerves, and are essential to normal growth and vision in infants and children.

The omega-6 fatty acid, linoleic acid, is found in many popular vegetable oils and is consumed in excess in our society. This could lead to significant health problems because a high consumption of linoleic acid can lead to an increase in the production of

eicosanoids that are involved in inflammatory, cardiovascular and immunological diseases.

The omega-3 fatty acid, alpha-linolenic acid, is not as abundant from food as linoleic acid but it is readily available in supplementation. This omega-3 fat has very positive health outcomes including some of the following:

- Decreasing risk for coronary artery disease
- Decreasing hypertension
- Improving insulin sensitivity for individuals with Type 2 diabetes
- Reducing tenderness in joints with individuals with rheumatoid arthritis
- Assisting with proper development of the brain cerebral cortex
- Assisting with proper retina formation for proper vision
- Decreasing inflammatory disorders
- Protecting against stroke caused by plaque buildup and blood clots
- Lowering triglycerides and raising HDL levels

Omega-6 fats are converted to arachadonic acid in the body. Omega-3 fats are converted to eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). EPA and DHA, found primarily in cold-water fish such as tuna, salmon, and mackerel, are the byproducts of alpha-linolenic acid oxidation that produce the positive health outcomes mentioned previously.

Omega-6 and omega-3 essential fatty acids are best consumed in a ratio of 3:1 to maximize positive health benefits. Unfortunately, the ratio that exists in modern Western diets ranges from 10-30:1. The reason that a low ratio is important is because the omega-6 fatty acids compete with the omega-3 fatty acids for the same desaturation and elongation enzymes to be broken down. Because Western diets include such a high level of omega-6 fats compared to omega-3 fats, very little omega-3 fats are converted into the healthy EPA and DHA compounds.

For most athletes, the easy take-home message is to eat cold-water fish 2-3 times per week and begin the use of a high quality, clinically validated and tested omega-3 fat supplement (also called fish oil supplements). Normal dosing of these supplements ranges from 3-10 grams per day for cardioprotective benefits and 1-2 grams per day for those not needing higher doses for any cardiovascular issues. The omega-3 supplements provided by the Zone are of high quality and safe for athletes to use, even the elites who undergo frequent drug testing.

### Step 3: Decrease free radicals

Free radicals have an unpaired electron and seek to find an electron to make it stable. However, they react quickly with other compounds trying to steal their electrons. Once this happens, the other compound becomes a free radical and begins a horrible chain reaction in the body leading to more free radical and cellular damage. A little exercise is good for the body but an excessive amount of exercise at higher intensities and/or at altitude or in polluted areas, will increase free radical production in the body.

To counterbalance these effects, it is important to introduce compounds that help quench these free radicals, namely antioxidants. Antioxidants neutralize free radicals by donating an electron which ends the free radical electron stealing cascade of events. Even though the antioxidants donate an electron, they do not become free radicals because they are stable. Their primary role is as scavengers which help to prevent cell damage. Eating your fruits and vegetables takes on a whole new meaning now.

My recommendation is then to eat in the order of 10 servings of fruits and vegetables per day. I can guess your response after you read that sentence as I receive the same from every athlete with whom I work. Realistically, try to eat as many fruits and veggies that you can daily and consider taking a good antioxidant supplement. Even more so if you are in a high volume and/or training cycle.

### Eating for Competition

Of course, the reason to pay such close attention to the three daily nutrition steps is to have a positive carry-over into your competitions. Once you adopt the “eat to train, don’t train to eat” mantra, navigating race nutrition becomes much easier. By paying special attention to maintaining a stable blood sugar level throughout the day, you will become more metabolically efficient. This means that your body will be able to utilize fat and carbohydrate stores more efficiently. Through proper nutrition periodization and macronutrient shifting, you can teach your body to use more of its stored fat at higher intensities of exercise. This will reduce the reliance on supplemental carbohydrates needed during exercise or competition which, in my experience with hundreds of athletes, will reduce the risk of gastrointestinal (GI) distress. Metabolic efficiency should be a goal for every athlete throughout the year.

### Before Competition

Athletes should not significantly change their nutrition program prior to a competition. The concept of nutrition periodization becomes very important as GI safe and familiar foods should be the focal point without introducing anything new. I recommend athletes consume the same balance of lean protein, healthy fat, and carbohydrate sources before an event. For some athletes with sensitive stomachs or those who have “issues” during competition, I recommend tapering fiber intake down 2-3 days before competition. This means reducing the amount of high-fiber foods such as whole grains, fruits and vegetables for these few days. It is important to remember that you must implement a reverse fiber taper after your event. Just as you gradually decreased your fiber intake prior to your race, gradually increase your fiber back to normal levels in the 2-3 days following the race.

I am asked quite often about carbohydrate loading the night or two before a race. In most cases, I am not a fan of this. The simple reason is because this completely alters your normal eating that you have worked so hard at implementing in the build up to your race season. By introducing a large amount of carbohydrate and displacing protein and fat, blood sugar will be altered and your energy levels will be all over the place-the last

thing you want the day or two before the race. Stick with what has worked for you in the months leading up to your race season.

#### During Competition

In some races, it may be difficult to maintain your normal daily eating routine since protein and fat are more slowly absorbed and may lead to GI concerns. Certainly in longer endurance events, consuming a bit of protein and fat can be beneficial but in shorter events, carbohydrate, fluid and electrolytes are the main constituents that should be in your nutrition plan. The term, "it depends", will apply frequently when asking "what", "how much" and "when" but a few general guidelines will get you started:

**Hydration:** consume about 3-8 ounces of fluid every 15-20 minutes. It is better to take larger drinks because it will empty out of your stomach faster.

**Carbohydrate:** current research indicates that some individuals may be able to absorb up to 90 grams of carbohydrate per hour. This is 360 calories and quite honestly, I prefer athletes follow the "less is more" mantra for the simple reason of reducing the risk of GI distress. Longer endurance events will lead to a large amount of calories being burned; however, the body is only able to consume about 30-35% of the energy expended. This is a generous estimate as most athletes can get nowhere near this amount and when they do, cramping and intestinal distress rear their ugly heads. It is better to improve your metabolic efficiency throughout the year during normal eating and training times and depend on this high efficiency of using fats during your race. This will lead to a reduced need for refined carbohydrates that can cause stomach problems.

**Electrolytes:** current research indicates that consuming 500-700 milligrams of sodium per liter of fluid should be adequate for athletes. However, in reality, I have found this to be far too low for endurance athletes. I recommend beginning at a minimum of 800 milligrams per hour and adjusting accordingly based on your sweat rate, sweat sodium concentration and environmental conditions. For athletes requiring a large amount of electrolytes, supplements will be needed. Look for one with a full electrolyte profile.

#### After Competition

Replacing the "fab 4" is important after a race. This includes fluid, sodium, carbohydrate and protein. It is important to consume these nutrients within 15-60 minutes of finishing to ensure a rapid nutritional recovery. Real foods can be easily used during this time remembering the "fab 4" concept. Simply choose a source of each and put them together. I have often used milk based fruit smoothies with a pinch of salt or low-fat chocolate milk and half of a lean meat sandwich in the post-workout window.

After this feeding, simply return to your normal, blood sugar balancing, metabolically efficient eating plan and enjoy a quick recovery.

#### Wrapping it Up

Navigating your daily eating in The Zone is greatly beneficial as I have mentioned throughout this article. There are many health and performance benefits associated with combining the right foods at each meal and it is such a simple method that any athlete can implement. It is paramount to combine this with a good nutrition periodization plan where you are matching your nutrition to your training cycle and their corresponding physical goals.

Bob Seebohar, MS, RD, CSSD, CSCS, was formerly the Director of Sports Nutrition at the University of Florida and most recently was a sport dietitian for the US Olympic Committee. He traveled to the 2008 Summer Olympic Games as a US sport dietitian and served as the sport dietitian for the USA Triathlon Olympic Team. Bob is also a trained exercise physiologist, strength and conditioning coach and an elite triathlon coach who is the personal coach of Sarah Haskins-Kortuem, 2008 Olympian. Practicing what he preaches, he is also an endurance athlete and focuses on ultraendurance running and cycling. He now owns and operates his independent sports nutrition business, Fuel4mance, LLC. For more information, contact Bob at [coachbob@fuel4mance.com](mailto:coachbob@fuel4mance.com)

