

FITNESS CENTER/HEALTH PROMOTION NEWSLETTER

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Run Smarter, Not Harder

Article Written by: Will Saultes, Health Promotion Manager

When you exercise do you know what energy system you are training? If you don't, you may consider having a general understanding. Knowing this will help you train smarter, reduce injury and help you become a fat burning machine that passes the 1.5 mile run every time.

First, let me simplify a somewhat complicated subject by using Air Force terminology. Think of the aerobic system as the C-5 a massive aircraft with big engines that can carry the most cargo the furthest. The F-16 is much smaller sleek, powerful and fast, we can compare this aircraft to our ATP-PC system. This system is used when we need to produce a lot of power or speed very quickly, but we have a very limited supply before we convert to the anaerobic glycolytic system. Consider the B-52 for reference, it doesn't have the big engine of the C-5 and it can't produce the speed and power of the F-16, but has versatility and does great at completing its mission. All three aircraft are great at their mission and vital for Air Force dominance. But, much like our energy system we shouldn't expect the B-52 to replace the C-5. I'll provide more context on why this reference is important to your training program in a moment.

In comparing energy systems to aircraft, I can't leave out the vital mission of the KC-135. Our bodies also recognize the importance of refueling our energy system for optimal performance. Also, much like aircraft, we should only be refueling our bodies with the best sources available. Opting for

a sugary processed snack might be slightly cheaper, it may fill the tank

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momentarily, but definitely not recommended for optimal performance. A better option would be a nutrient dense piece of fruit, some vegetables or a handful of nuts and seeds.

Back to my original point. If your aerobic system is deficient, it is often associated with fatiguing quickly or chronic fatigue, increased fat (less fat is used for energy and more remains stored throughout the body). Also, aerobic deficiency means the anaerobic system is working harder causing resting heart rate to elevate and rise rapidly during even light exercise. This elevated rise in heart rate will transition us from a nearly endless supply of ATP, fat burning aerobic system to the sugar burning fatigable anaerobic glycolytic system. **Since the heart rate has risen significantly, the body senses stress causing high levels of the stress hormone cortisol and a reduction in estrogen and testosterone.

Depending too much on your anaerobic system, could lead to overtraining and injuries and isn't a training program I would recommend. A training protocol I would suggest, is to purchase a reliable heart rate monitor and

observe your heart rate during exercise. The goal of monitoring your heart rate is to stay within your target heart rate. I generally use, a simple equation, Dr. Phil Maffetone's, maximum aerobic heart rate. With this method, you will subtract your age from 180. If you're running time is excellent 90-95 add an addition 5 heart beats. If you're score is 95-100 add an additional 10 heart beats. On the other end of the spectrum, if you are barely passing subtract 5 and if you are not passing or have been exempt from the run 6 months or greater, subtract 10 from your optimal heart rate. (i.e. An Airmen 30 years old scoring 100 on his last fitness assessment $180-30=150 + 10 = 160$. Therefore, this Airmen's optimal aerobic training zone is 150-160).

For some, this will be a walk, for others it could be a 5:30 or 6:00 minute mile. It all depends on you and the efficiency of your aerobic system. Monitor your heart rate consistently and the walker will soon find themselves needing to increase their intensity to promote the same heart rate response.

Now that we have established a target heart rate. How often should you train the aerobic system? My formula is once again fairly simple. If you struggle passing the PT test,

■ I would recommend training the aerobic system almost exclusively for a minimum of 3-6 months, add a strength routine 2-3 days a week.

■ If you are scoring satisfactory in the run component, you should focus on the aerobic

system 3-4 times per week, incorporate 1-2 days of high intensity along with 2-4 days of strength training.

■ If you're scoring excellent in the run component, whatever you are doing is working, stick with it. But, I highly recommend no more

than 3 high intensity days a week (3 might be too much for most).

You need to be wise with your training protocols, listen to your body, understand your military environment and the expectations placed on you and always be ready and resilient.

Until next time keep moving!

DAILY NUTRITION STRATEGIES FOR ENDURANCE

Article suggested by Alyson Kresser – Health Promotion Registered Dietician

Many people **only** think about performance nutrition in terms of what to eat just before or after a competition. However, the effect of nutrition on your training and performance starts long before. **Performance nutrition really begins during training**, when you consistently fuel your body with the proper amounts and kinds of calories and nutrients. The nutrition information in this article is meant to provide a solid foundation to help you train for sporting events, military operations, training events, or rucks lasting longer than 60 minutes.

Fundamental tips for success

- The human body performs best on a regular schedule. No matter what your goal, skipping meals is never the answer. Those who skip meals are more likely to have trouble losing weight, have a higher percentage of body fat, and are more likely to reach for energy drinks or supplements to re-energize when their body craves energy from food. For optimal performance, **make nutrition a priority** no matter how busy you are.
- **Fad diets are bad for performance.** They're typically used for a quick fix, such as rapid weight loss. Many omit an entire food group, such as grains or dairy. Unless you have a special medical condition, omitting a food group is more harmful than helpful and could lead to nutrient deficiencies.
- Finally, it's fine to have a few "go-to" meals, but the more variety in your diet the better. **Eat balanced meals.** This includes eating grains, fruits, vegetables, protein, and dairy every day. The United States Olympic Committee's [Athletes Plate](#) provides a good visual of what a moderately active person's plate should look like.

Fueling your training

Proper fueling allows you to train hard for multiple days without wearing your body down. Fueling tactics need to be tailored to individual needs, but there are some basic guidelines for the basic nutrients.

Carbohydrates: Before and during endurance training, carbohydrates are your most important fuel source. They're in a variety of foods, including grains (such as bread, rice, pasta, and cereal), fruits, starchy vegetables (such as beans, corn, peas, and potatoes), and dairy products (milk, yogurt, etc.).

Include carbs at each meal and, if needed, in additional snacks to meet your training needs. Some easy high-carbohydrate meals include a sandwich, fruit, and yogurt at lunch, and pasta or rice, chicken, side salad, fruit, and milk at dinner.

Carbohydrates are classified as simple (fast) or complex (slow). Simple carbs (fruit, juice, honey) break down quickly and often are best right before or during training. Complex carbohydrates (starches and whole grains) take longer to break down, so incorporate them into your meals. A balance of simple and complex carbohydrates is best to help you stay focused and fueled.

Protein: Both protein and fat take longer than carbs to break down, which is why they aren't considered primary fuel sources for exercise. Protein is important for muscle repair and recovery. The recommended (minimum) daily amount (RDA) of protein is 0.8g/kg body weight, but most endurance athletes need 1.0–1.4 g/kg body weight of protein daily.

Some people eat too much protein and not enough carbs for endurance training. There is no benefit to eating extra protein. **After** hard workouts, you need a balanced mix of protein and carbs. For most people, 20–25g of protein and 60g of carbohydrate is sufficient.

Fat: Fat is an important part of a well-balanced diet, but you don't need extra fat before, during, or after training or competition. It's best to consume fats as part of balanced meals. Approximately 20–25% of your daily intake should be from fat.

The finish line

Fueling for endurance events starts by eating a balanced diet, high in variety. Consuming carbs from various sources before training and throughout each day will keep you energized. Protein after your workouts will help you recover from your workout so you can train again tomorrow.