



HOW TO OPTIMIZE FAT UTILIZATION AND WHY IT'S IMPORTANT FOR EXERCISERS.

I am going to define and describe four terms that are important for any person involved in an aerobic sport or aerobic conditioning – from the elite to the newbie just trying to shed a few pounds. A person's body utilizes 2 energy sources – fat and carbohydrates (of course that's besides caffeine and sugar!) and the terms below help explain how to best utilize these two energy sources.

The terms are;

- Aerobic Base
- Anaerobic Threshold
- VO2Max
- Heart Rate Training

AEROBIC BASE (AB) is defined as the maximum rate at which you burn fat during aerobic exercise. It represents your body's ability to utilize fat during a cardiovascular workout. Since fat is the most efficient fuel your body can burn, finding the Aerobic Base and training your body to use it maximizes your fuel efficiency.

- **Why is knowing the Aerobic Base important for the losing/managing weight?** Do we have to explain further? Why not use what you're trying to lose!
- **Why is knowing the Aerobic Base important for the elite athlete and competitive amateur runner?** The more your body utilizes fat, or the Aerobic Base along different intensity levels, the greater your aerobic capacity can become. If you've experienced significant soreness after cardio workouts or your race times haven't improved over the last several years, you may be training at too high an intensity level and burning more carbohydrates than fat (the classic overtraining scenario).

ANAEROBIC THRESHOLD (AT) is defined as the intensity level at which you maximally use any kind of energy, fat and carbs.

VO2MAX is defined as Maximal Oxygen Uptake. Simply stated, the measurement that defines the body's ability to utilize oxygen.

HEART RATE (HR) TRAINING. Alright, I've just described the Aerobic Base and defined Anaerobic Threshold and VO2Max. You may be asking yourself how in the heck do I know what these are and how do I track them? AB and AT can be determined at certain heart rates. Once HR zones are determined, the AB and AT can be monitored with a Heart Rate Monitor (HRM). A HRM is a device consisting of a chest strap unit and a wrist unit. The chest strap unit is worn around the lower chest (just under the xiphoid process), measures your heart rate, and transfers that information to the wrist unit. The wrist unit not only looks like a watch, it is one.

How do you determine your heart rates? Your heart rates can be found in a number of ways although some methods are more accurate than others.

1. Heart rates can be determined by age approximate levels agreed on by certified health organizations, such as the ACSM® (American College of Sports Medicine). ACSM® states that one's age predicted HRMax is $220 - \text{your age} (\pm 10 \text{ beats per minute})$. Exercise intensity is then determined by taking 65% - 90% of your max, with 65% representing optimal fat utilization. This is not the most accurate way considering many variables such as a person's conditioning, weight, exercise modality, etc.
2. Manufacturers of Heart Rate Monitors have programs that approximate your heart rate ranges by predicting one's VO2Max via resting heart rate and exercise heart rate. This method, while better than the first, is still based on approximations.
3. Equipment is available that analyzes your oxygen and CO2 output while exercising that more accurately measures AT and AB. Active Metabolic (or dual gas analyzation) assessments are available at several specialty fitness centers and physician offices in the Central Ohio area as well as various cities throughout Ohio.

Now you know that **Aerobic Base, Anaerobic Threshold, and VO2Max** are measurements that can be very useful not only for the elite athlete and competitive amateurs but also an individual that is exercising to manage or lose weight. Metabolic assessments and monitoring your AB and AT via a Heart Rate Monitor is a very accurate method of training. Heart Rate Monitors can be purchased at most sporting goods stores, running stores, or fitness clubs. There is a broad selection of styles and features ranging from a monitor that just tells your heart rate and time to ones that can track your calories lost, miles run, and can actually record and download your exercise program to your PC or laptop!

Knowing this information and then working with a heart rate monitor is truly one of the best tools available today to improve aerobic capacity and manage weight. If you notice more and more runners and cyclists wearing a watch that beeps and is a little more bulky than normal with a black strap around their lower chest, it's probably someone who's training on the heart rate philosophy!

Matt Maglicic
ACSM, cPT
Director of Assessments, Good Bodies Fitness and Wellness

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(Good Bodies Fitness and Wellness, Inc. is a Personal Training Studio in Dublin, OH specializing in personal training, Muscle Activation Techniques™, Metabolic and Body Composition assessments, and nutrition counseling. Good Bodies has the Active Metabolic (dual gas analyzation) equipment described in the article and will perform assessments for the general public. Contact information is 614-889-2282 and www.goodbodiesfitness.com).