Why Should I Speed Train?

One of the most common errors I see with athletes both young and old is the mistake in always training the systems they are already strong in and disregarding the systems they may regard as obsolete in their sport.

"Speed" and "Endurance" are fairly vague terms to any sport professional and in order to train it properly throughout a Yearly Training Plan we often opt to include speed and endurance as their physiological systems. Let me define these systems briefly:

Anaerobic A lactic System (AAP/AAC)- used to fuel top performances of 1-10 seconds. Fairly inefficient energy system as it works without the use of oxygen and depletes rapidly. System is highly important for 100M Runners. Creatin Phosphate (CP) and Adenine Tri-Phosphate (ATP) help supply much of the energy to this system.

Anaerobic Lactic System (ALP/ALC) – used to fuel top performances lastly 10-45 seconds. This system also depletes quickly. This system is highly important for the 200M, 400M, 110M (H), etc. It is important for athletes to realize that this system even in highly trained athletes will only sustain itself for 45 seconds. It is a myth that you can do a long truly- anaerobic run/ride and so is the untruth that you can push out a short 800M with the use of only the anaerobic system. In reality these athletes will occasionally hit the ALC/ALP system but spend most of their time in the AC/AP system. However in testing runners with a high anaerobic lactic System will often outperform runners with a high lung volume (VO2 Maximum). Why? I will get to the answer in a moment.

Aerobic System (AC/AP) – this is the system that provides oxygen to the heart, lungs, and legs of all runners. In regards to the Aerobic Power system (AP) think of it as the system that fuels a track workout and relies heavily on Liver Glycogen as fuel, while the Aerobic Capacity system (AC) is what fuels a run exceeding 10 minutes. Short tempo runs are usually fuelled by muscle Glycogen while longer/slower runs rely on both glycogen and fat stores in your body.

So now that we know some terms why is it important to train the Anaerobic System and why does it play such an important role in bringing home personal best performances?

Think of the Lactate threshold as a thin imaginary line and above the thin line is a thicker line. The thicker line will stop any PB Performance and it often referred to as the WALL. When you pass into this anaerobic system (AKA Thin Line) your legs will get heavy and as a result will produce both Lactic Acid and waste products called metabolites. Your body will try to work harder and bring in more oxygen, which will increase your breathing rate. Your body will be working too hard to allow entry of the Oxygen and eventually slow down (AKA THE WALL) to allow oxygen entry into your working muscles.

Back to the question of: Why are the ALC/ALP systems so important to runners? If you have ever tried to pick up the pace and notice that your legs get tired first and then your

heart rate and breathing rate increases. This is a sign that you need to start training your legs more in short duration. Whereas if you start to breath hard first before your legs feel heavy then you need to get out there more often at a slower pace for some longer runs.

We have talked about Energy Systems. Why else should I train speed? Speed is more than simply doing sprints and repeats. Interval training helps train the systems by providing additional stress in the same plane (Forward and cyclical), but, If you rely only on a forward running motion you will eventually risk injury as your body will not be working all the muscles that support movement from side to side, backwards, or rotational.

Here are some other points to ponder when talking speed:

Muscle Fibre Recruitment- Three main muscle fibres found in humans. Fast Twitch Glycolic, Fast Twitch Oxidative, and Slow Twitch Oxidative. Less than 5 % of humans have Fast Twitch Glycolic and without continued speed training you will become reliant on slow twitch fibres. Genetics determines a great deal of what you start with and proper training determines the rest.

Agility - When you work on agility you are challenging the body to become efficient multi-directionally rather than simply uni-directionally. Agility reduces injuries dramatically and increases your ability to do other sports. Want to run free in the woods. Do some agility work first.

Footwork/Turn-over/ Technique – Runners spend far too little time working on Technique. First you get good and then you get fast! In shorter sessions you can work on hips, arms, back angles, footwork, etc. I think the most overlooked technique in runners is that of the foot. Any long distance runner who hits hit mid-foot (you noisy buggers) will lose efficiency over time. Excessive pro-nation can be partially controlled by properly concentrating on getting proper foot strike and release.

Injury Prevention/Stretching – How often do you do dynamic stretching? Strides? Lunges? Hops? Jumps? Step-ups? Harnesses? Agility Ladder? Etc. If you are tired of sitting and stretching a muscle why not make it more interesting. Static stretching prior to a run has never proven to be of any benefit. Stretching cold muscles actually increases likelihood of injury.

Overall Strength – You want to be able to climb hills better? Do you have a large frame and want to keep up with the lightweights? Do you want to win the final 200M-vanity sprint at the end of a 10KM? You increase your strength any time you do a short program with an increased workload.

Yes, there is a lot to be learned about doing speed workouts properly but remember it is about quality workouts and not quantity. FastandFit.ORG is currently collecting names for anyone over 30 who might be interested in some sessions.

Derrick MacLeod

Derrick.MacLeod@Rogers.com
Chartered Professional Coach
CFC, B.Kin, Member of National Coaching Institute
Creator of FastandFit.ORG