Daniel Caulfield

California University of Pennsylvania

Cross Country/Track & Field Head Coach

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"I am a 60% coach. Someday I hope to be an 80% coach."

A quote for my first collegiate coach, Dr. Joe I. Vigil, when he was retiring from collegiate coaching at the age of 63. He was referring to the fact that in coaching he got things right 60% of the time. He had already coached teams to win over a dozen national titles, in addition to being the 1988 US Olympic distance coach. A year earlier he had coached me from a 2:04 high school runner to a 1:48 collegiate freshman.

As you read the following, please be aware that your willingness to read this paper and/or attend the session is what will lead to greater success for you and your athletes. Basically, your willingness to learn and possibly even challenge existing beliefs is going to pay dividends in the future. None of us are "100% coaches", but the closer we get to that point, the more success we will achieve.

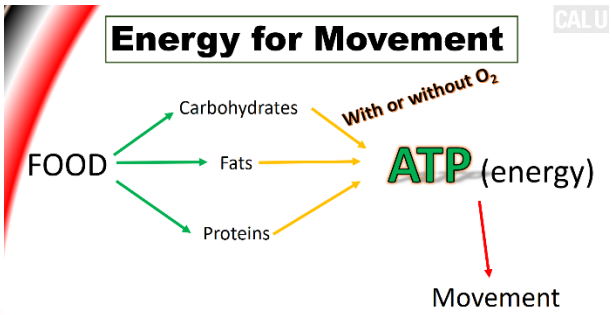
One of the goals of a coach should be to get his/her athlete to the starting line with the best chance of success. This will be achieved through optimal preparation. However, optimal preparation does not mean perfect preparation! Having coached Olympic Trials qualifiers and All-Americans in events from the decathlon to the marathon, I have yet to have an athlete that had perfect preparation. In some cases, I was certainly the reason for that fact! However, oftentimes this lack of perfect preparation is due to the fact that my athletes are not professionals, and they have multiple stressors in their lives in addition to the physical stress I ask them to accept. That being the case, keep in mind that frequently the best physical workout, is some lesser percentage of what was originally planned.
One final note before we continue, I personally believe that athletes RARELY over-train. Instead, I believe they usually under-recover.

[During the clinic session, my goal is to give you something of benefit, so the following is just some basic information regarding 800m training and racing]

Like all races, the 800m has similarities and differences to many other events, and therefore it has similarities and differences in its training.

The 800m race, like all human movement, needs ATP (Adenosine Triphosphate) for muscle contraction. ATP could be considered our gasoline, and it is created through various methods in our body. Racing and training for the 800m necessitates utilizing the following energy systems:

1. Anaerobic Alactic (ATP-PC and ATP Store)
2. Anaerobic Glycolysis (Lactic Acid)
3. Aerobic Glycolysis



The ATP-PC system is powerful but only lasts for a few seconds. It is the system you use when running at full speed (maximum velocity). You use it at the start of many races, and sometimes throughout.

The Lactic Acid system is next in terms of power production. It can last over a minute, but has a byproduct of lactic acid, and more importantly, hydrogen ions (H^+). This accumulation of H^+ leads to a reduction of power output and as a result, reduction of speed.

Finally, the last energy system involved with the 800m is the Aerobic glycolytic system which can last a few hours depending on the intensity. It is unquestionably the major energy system in events from the 1000m to the marathon, but its level of importance in the 800m is very much in debate and is dependent on the athlete (and the coach).

In decades past, the main training method was to train each of the three systems based on how much you used it in a race. For example, if you believed that 40% of the race was Aerobic in nature, then 40% of your weekly training would be aerobic in nature. An athlete who ran 30 miles in a week would therefore run 12 miles at an aerobic effort (significantly slower than race pace / heart rate roughly 125-170bpm), and the rest would be spent training the ATP-PC and Lactic Acid Systems (close to race pace or faster / heart rate above 170bpm).

Regarding the differences in energy system utilization in races, some believe that the 800m is as much as 70% aerobic, and 30% anaerobic (ATP-PC & Lactic Acid), some believe it to be the exact opposite – 30% Aerobic and 70% Anaerobic, and most believe it's somewhere in between.

When I was an athlete, over the course of a year, I spent over 6 months training 70% aerobically (see slides at the bottom), and would only reach a 50/50 balance in the last few weeks of the outdoor track season. More recent research is highlighting the fact that the 800m (and even the 400m) utilize much more aerobic glycolysis than previously thought.

Energy system contribution during 200- to 1500-m running in highly trained athletes (2000) - MATT R. SPENCER and PAUL B. GASTIN Human Performance Laboratory, Department of Human Movement and Sport Sciences, University of Ballarat, Ballarat, Victoria, AUSTRALIA; and Victorian Institute of Sport, Melbourne, Victoria, AUSTRALIA

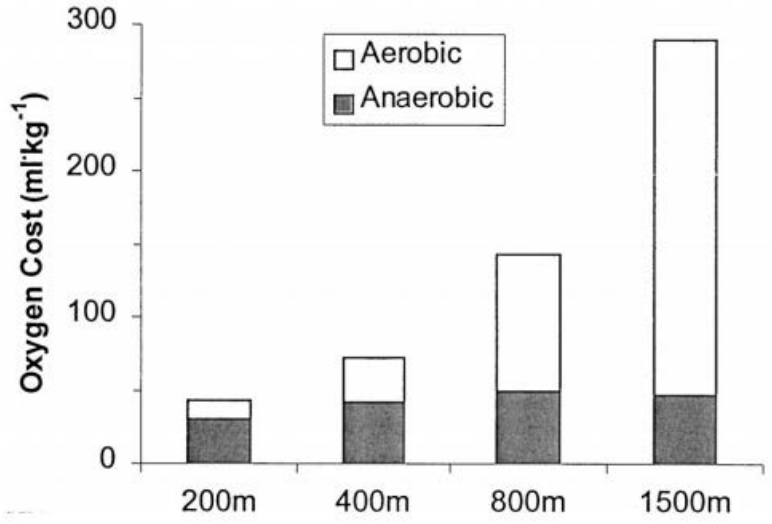
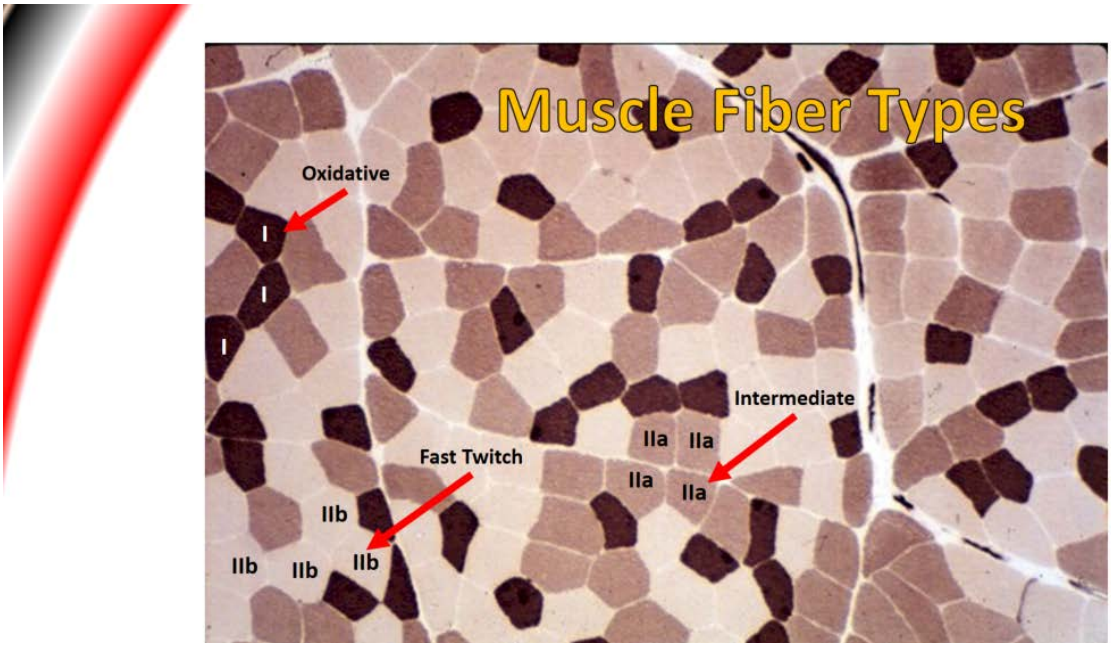


FIGURE 3—Aerobic and anaerobic contribution to the total oxygen cost of the 200-, 400-, 800-, and 1500-m runs. Data are mean values.

So why the difference in 800m training?

In general, we historically have divided 800m runners into 2 categories: 1. the 400/800 athlete, and 2. the 800/1500 athlete. These differences are usually attributed to muscle fiber type differences. Very simply stated for the sake of coaching (*because this is a debatable statement!*), there are 3 different types of muscle fiber types.

Type I - Oxidative (also known as slow twitch)
Type IIa - Intermediate (aka Fast Twitch Oxidative/Glycolytic)
Type IIb - Fast Twitch



One theory on muscle fiber types is that you are born with a specific percentage of Fast twitch and Oxidative fibers, and that you can change the Intermediate ones through training. Basically, Usain Bolt has probably a higher percentage of Fast Twitch fibers (type IIb) than you or I, and Paula Radcliffe has probably a higher percentage of Oxidative fibers (type I) than us. So if you're born with more Fast twitch fibers, then you would do more anaerobic training for the 800m, and if you were born with more Oxidative fibers, you would train more like a 1500m runner and do more aerobic work. So most coaches or athletes make a decision on whether an athlete is a 400m runner that can move up to the 800m, or a 1500m/1600m runner that possesses enough speed to 'move down'. In the end**, I believe that it really doesn't matter how you classify your training**, providing you train the necessary systems involved while also addressing areas such as motivation, training age, recovery (sleep, rest, nutrition, etc…), physical maturation, training/racing psychology, running form (including ground contact time and stride frequency), and the overall wellbeing of the athlete.

Below are my workouts during my first year at Adams State (under Coach Vigil). Despite having raced since the age of 5, and been training since the age of 9, I made dramatic improvements under Coach Vigil's program. PR's prior to my freshmen year were 400m – 54.9 split / 800m – 2:04 / 1600m 4:28. At the end of my freshmen year my PR's were 400m – 50.1 split / 800m – 1:48.72 / 1600m 4:08* *[I'll discuss other reasons, and possibly more important reasons, for my dramatic drop in times at the clinic]*

The Workouts…

FALL *(first 9 weeks)*

Su – 12 miles

M – 2 miles; 16x650m jog 150m; 2 miles

T – 10 miles up a mountain (1 up, 1.5 down, 7.5 up)

W – 10 miles 8x100m

Th – 2 miles; 6x1 miles (actually 1503m) rest 3 minutes; 2 miles

F – 8 miles 8x100m

Sa – 2 miles; 4 miles AnT run; 2 miles

The Workouts…

FALL *(next 4 weeks)*

Su – 12 miles then 11, 10, & 8

M – 2 miles; 12, 10, & 8 *(plus 3x300m)* x650m jog 150m; 2 miles.

On the fourth Monday we did an all out 'altitude mile'.

T – 10 miles in the mountains doing 6-8x800m uphill at some point

W – 8-10 miles 8x100m

Th – 2 miles; '2 mile' time trial followed by 3-1x1503m rest 3 minutes; 2 miles

F – 6-8 miles 8x100m

Sa – 2 miles; 4 miles AnT run or intrasquad 5 mile race; 2 miles

The Workouts…

Winter Break

Su – Build up to 10 miles

M – 2 miles; 1-3 sets of 4x400m rest 1 minute; 2 miles

T – 2 miles; hill repeats; 2 miles

W – 8-9 miles

Th – 8 miles 8x100m

F – 2 miles; 4 miles AnT run

Sa – 8 miles 8x100m

The Workouts…

During the season

Su – Build up to 8-10 miles

M – 2 miles; *4(3x300m)* *OR* 4(4x200m) *OR* 8x400m; 2 miles

T – 2 miles; hill repeats; 2 miles

W – 7-8 miles

Th – 2 miles; 4x1503m r3; 2 miles

F – 3-5 miles 3-4x100m

Sa – Race or 20 minute AnT run

The Workouts…

Last 3 weeks of season

Su – Build up to 8-10 miles

M – 2 miles; 2 sets of (300m, 200m, 100m all-out) *OR* 200→300m *OR* 4x400m; 2 miles

T – 2 miles; 200m hill repeats; 2 miles

W – 7-8 miles

Th – 2 miles; 8x150m *OR* 100→200 ; 2 miles

F – 3 miles 3-4x100m

Sa – Race