

# 5 Reasons Why Base Building Is Essential Training For Endurance Athletes

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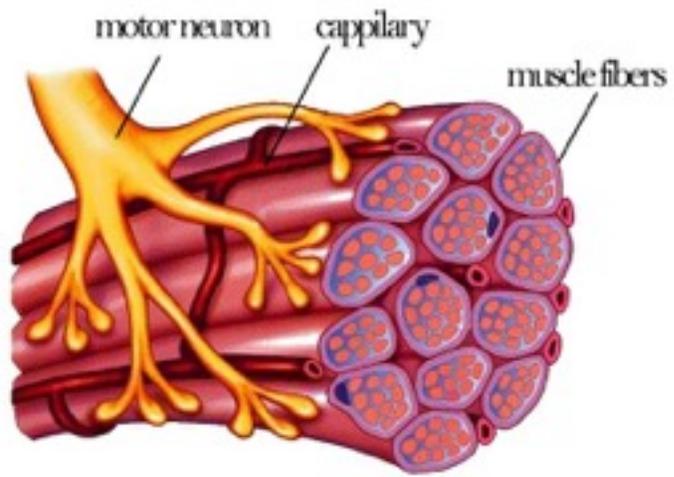
## #1 - You Want To Change Your Body

The power and importance of building a good base at the start of any training plan can not be over-stated. None of the training that happens after base building will be as effective if the base is not secure, like the very foundation of a building. Weak or shallow foundation, and the entire structure is suspect.

This is why the winter makes the best time to do this - no distractions of competition or competing interests outside (except for some ski slope time now and then), and so it is the perfect time to build that base. The beauty of Winter Training is that no matter what sport you engage in, if it has an aerobic component, it requires base building and this is where Winter Training shines. Winter Training will not only make you better for the Spring and Summer that follows it, but year after year you can expect to get stronger and stronger, fitter and fitter.

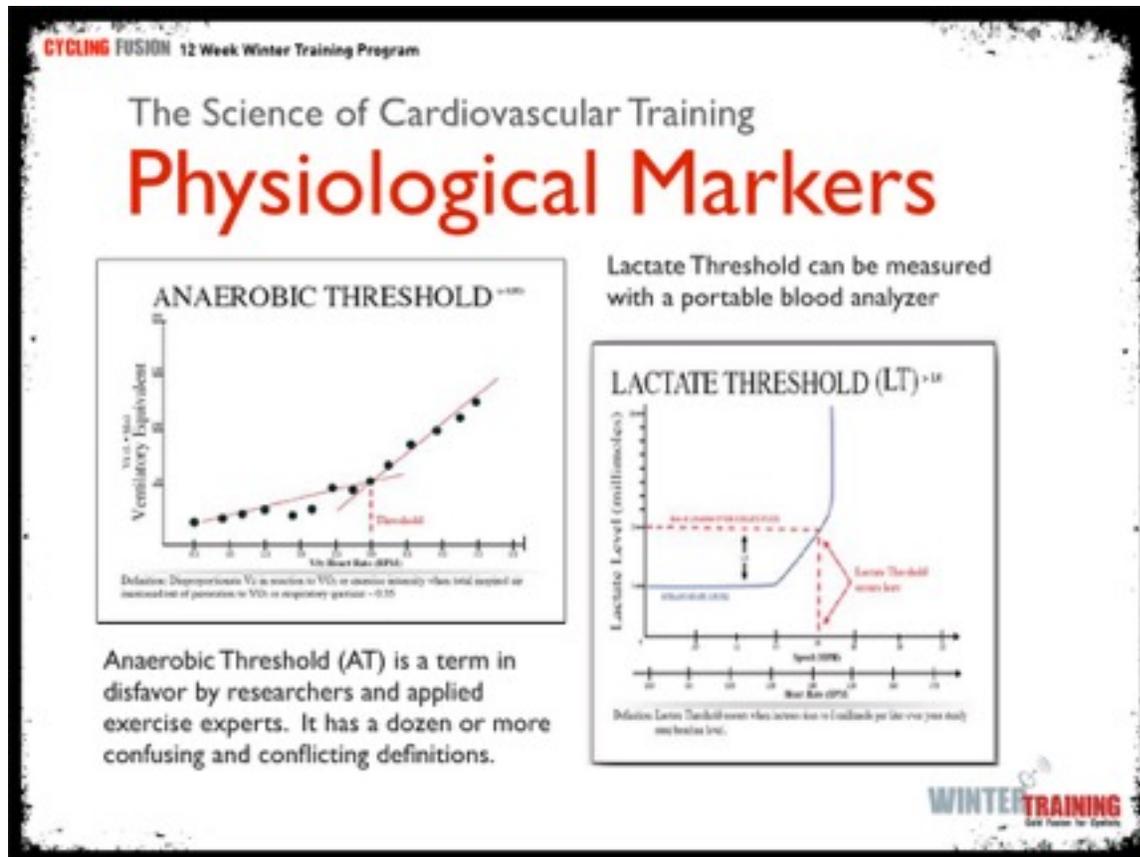
Research has shown consistently that training just below the first aerobic threshold produces enlarged mitochondria (the transport containers for Oxygen) and increased capillary density (more pathways for those containers to travel on). Thus the gains of a true Periodized Based Building program (Cycling Fusion's Winter Training is a prime example) are at the cellular level. *Translation?* It's literally changing your physiology.

So rather than just improving how your body responds to exercise stimulus, ie, your performance, we are making positive, physiological, healthy improvements - and you thought you were just spinning your legs. However, that's not to say we are not improving your fitness or performance. It's just that the improvements are specific to a particular level of exertion or intensity; specifically while you are working in Zones 2 and 3 of your Heart Zones - the continuum of your personal and specific cardiovascular capabilities.



## #2 - You Want To Be More Efficient At Lower Heart Rates

While I have discussed numerous personal stories with a variety of our regular Winter Training participants, there is substantial independent, university based research to support the need to know both your LOW threshold (often referred to as aerobic threshold) as well as your HIGH threshold (previously considered the only threshold). The graphic below shows how the research has evolved over time.



Also one of the many studies on training below T1 has proven the expansion of capillaries which is essentially enlarging your aerobic engine: “Indices of capillarization increased 30%-40% in group “A” and 20%-30% in group “B” and were elevated at post training as well compared with pre- and midtraining in both groups.

J Gerontol A Biol Sci Med Sci. 2011 Sep;66(9):957-64. doi: 10.1093/gerona/glr096. Epub 2011 Jun 29. Adaptations in capillarization and citrate synthase activity in response to endurance training in older and young men.

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### #3 - Learn How To Not Waste Time Training

If there is a universal trend that seems to cross all known cultures in modern societies everywhere is the premium now put on **TIME**. The value of time has begun to exceed even the value of money in many cases. So it's only natural that we have been inundated with everything from ill-conceived workout fads, to solid, effective training techniques in the fitness industry. The graphic I have here was the result of searching the phrase "**quick workouts**".

I'm not passing judgment on societies propensity to always be in a hurry, since the reasons why are truly moot at this point. The fact that it is true. Consequently, it's in our best interest to use our time wisely. While being with someone you love, or playing with your dog, or (INSERT your favorite leisure activity here) is its own reward and may need nothing beyond the enjoyment of that moment, when you are training, this is not what you are looking for. In the context of real training, nothing is worse than spending an hour (or more) of your very finite and precious resource of **TIME**, and not gaining ground on your goals.

The 5-4-3-2-1 Workout

- 5 minutes**
  - any cardio you want, walk, run, elliptical, bike
  - if you're at home
    - 1 min high knees
    - 1 min jumping jacks
    - 1 min front kicks
    - 1 min jumping jacks
    - 1 min run in place
- 4 minutes**
  - 1 min lunges or walking lunges
  - 1 min mountain climbers
  - repeat for 4 minutes
- 3 minutes**
  - 10 pushups / rest
  - 15 tricep dips / rest
  - repeat for 3 minutes
- 2 minutes**
  - 30 seconds regular squats
  - 30 seconds jump squats
  - 30 seconds regular squats
  - 30 seconds jump squats
- 1 minute**
  - plank

total time 15 mins; intermediate repeat for 2x through;  
advanced repeat for 3x through;

drink H2O + take breaks whenever you need them;  
fitfabcities.com

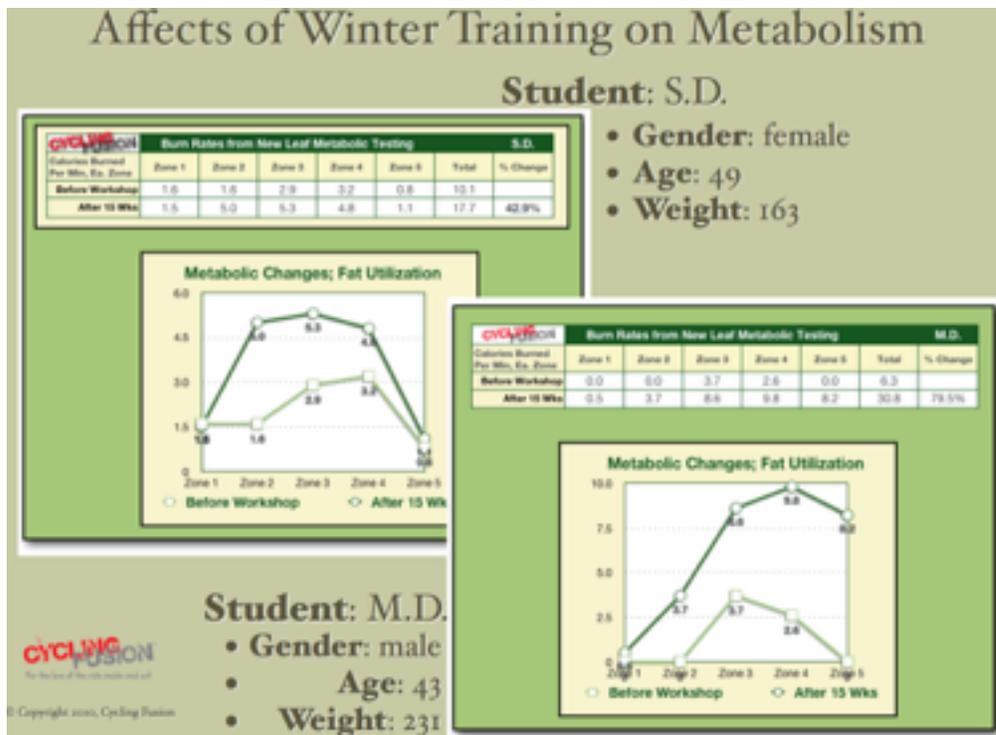
If you think that as long as you are "working out" it's all good - that would only be true if you are willing to lump that into the aforementioned description of those activities that "need nothing beyond the enjoyment of that moment". I actually love the feeling I get when I'm training, and a case can be made for that. However, if you want to get faster, or suffer less when you are riding your bike, running the track, swimming laps, sculling your boat or even paddling your paddle board, you need some education and guidance to insure that your efforts translate into this end result. Otherwise, you might as well play the lottery - you have an equal chance of coming out on top in both activities.

## #4 - You Will Train Your Metabolism To Prefer Fat For Fuel

In the “old days” pro riders used to do something we now call “glycogen deficit training”, certainly a different more “cool name” was used back then but it’s basically riding without fuel. Yes, purposely training while in a “*bonked*” state. The principles of which are also discussed in two related articles: “[How We Lose Fat](#)” by Leigh Peele and a research study titled “[Training with low muscle glycogen enhances fat metabolism in well-trained cyclists](#)” done at the School of Sport and Exercise Sciences, University of Birmingham, Birmingham, United Kingdom.

In practical application, the pros applied it like this - start your training ride first thing in the morning without eating, making sure you run out of glycogen within the first 30 to 40 minutes, and then KEEP riding for another 2 hours or so to force your body to burn fat. This isn’t just theory, it does work, and there have been numerous studies to prove how the body’s enzymes react to trigger fat burning instead when glycogen has been depleted (Yeo *et al.* 2008, Hansen *et al.* 2005). However, it’s really miserable training, and yet there are those who LOVE to suffer. If that’s you, you may want to try this training, it could just provide the right amount of misery.

However, if you would rather train *smarter*, not *harder*, consider this. Train for 6 to 12 weeks with at least 70% of your time spent below the first ventilatory threshold or “T1”. This will produce the same effect and this too has been studied and validated at the university research level as well. The two case study graphs below show the **calories being burned per minute**, while in each of the 5 heart zones - before and after Winter Training.



By doing consistent and significant volume in the lower heart zones, specifically before the first ventilatory inflection, you will train your metabolism to burn more fat (*Esteve-Lanao J, Foster C, Seiler S, et al.*).

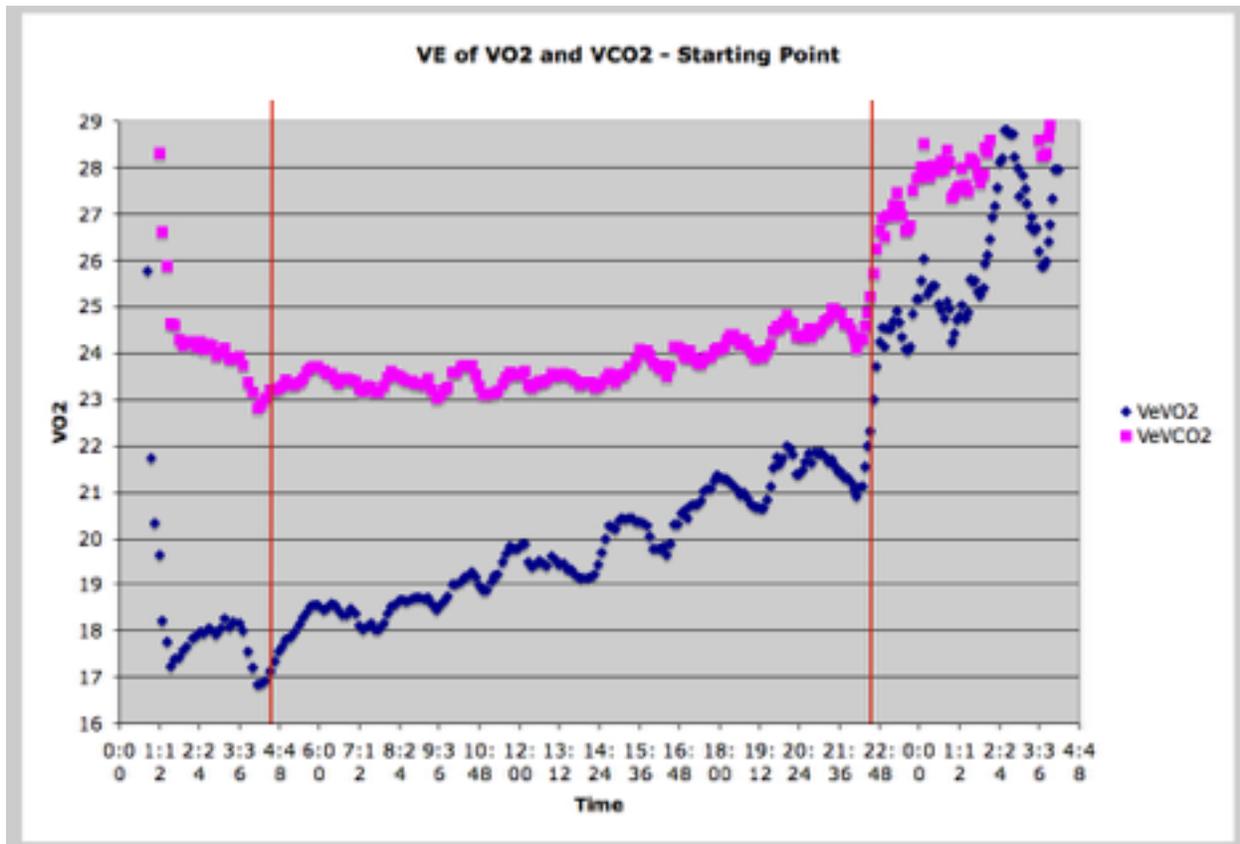
The big difference is that you can do that easily indoors and **enjoy it a LOT more!** This is true Base Building. While Winter Training is not 100% Base Building, we do look for about 60%-70% to be below T1 or the first Threshold for at least the first 6 weeks. This ultimately gets your body to prefer fat to glycogen, and thus produces the net effect of increasing your percentage of fat burned in the lower zones, and holds on to the higher percentage of fat burning longer as the heart rate increases.

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## #5 - Training To Delay The Onset of Fatigue.

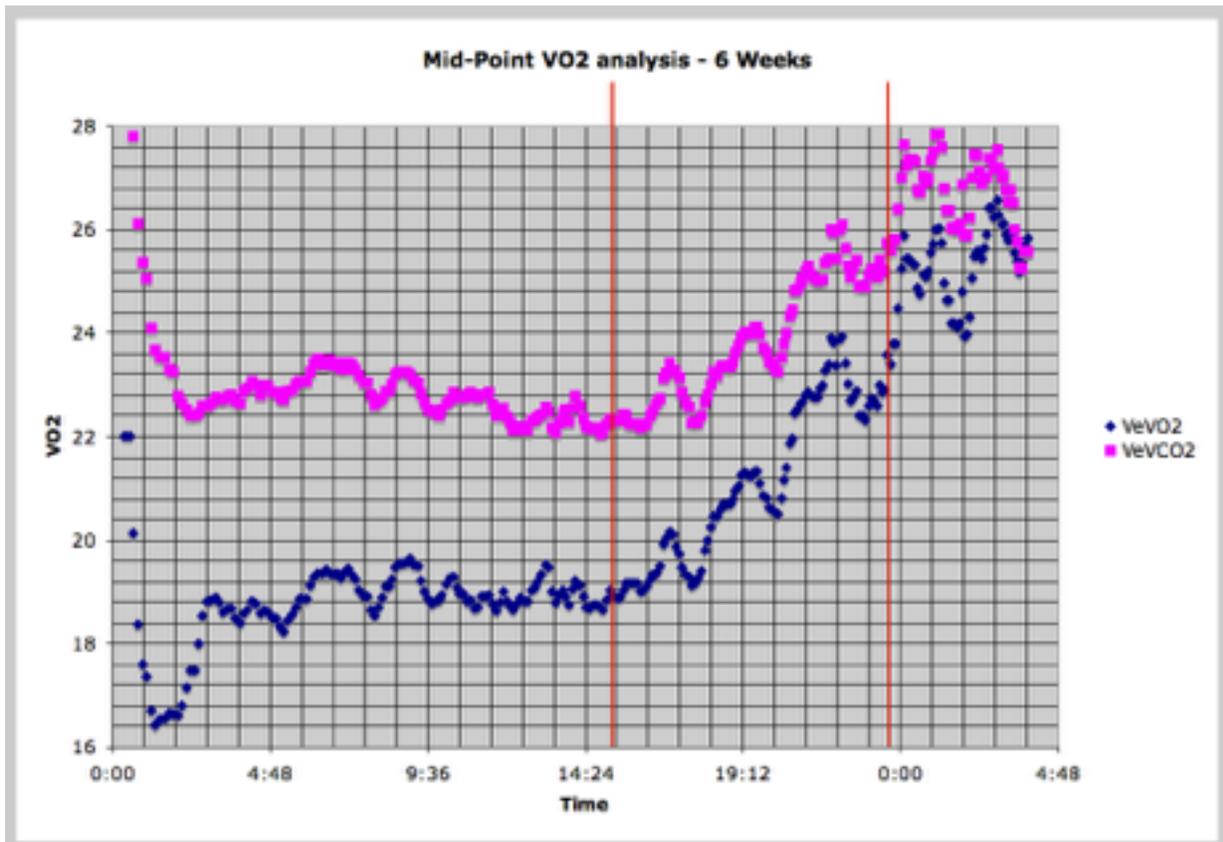
In addition to burning more fat for fuel, something we all want to do regardless of our varied goals and objectives is to be able to ride longer before you begin to feel tired. This is one of the best reasons of all to work long and purposefully in the lower zones.

By preferring fat, and burning fat longer, we can impact our first Threshold or T1 to actually move to the right, that is to re-establish it at a higher BPM (heart beats per minute or heart rate). The first inflection in breathing is our indication that the workout or ride is “becoming more difficult” and that the body is beginning to feel the stress.



The graph above represents a new Winter Training participant or the "before graph". This is the typical shape of a graph often seen by pure "spinning" riders, or cyclists who do lots of criteriums or MTB races - almost as soon as they start riding, their body goes on alert and aims for the glycogen burning heart zones - the "high powered fuel". This is due to the pattern of intense workouts being so regular, that this is what the body has come to expect, and thus it knows it must deliver and deliver quickly!

Contrast that to the graph shown below. The "after graph" shows the effect of just 6 weeks of good base training under T1 – a movement in the first Threshold by 37 bpm – while this may be an extreme example, it was from a rider who almost never rode in the lower zones and such a dramatic result was almost predictable.



Translate this into "normal folk speak" and it simply means that the after graph shows that his body allowed him to elevate his heart rate as he rode either faster or over some mild climbs for a good 14:24 minutes or 37 heart beats per minute before it started to "stress out" and start grabbing for the high test fuel - which of course is a very limited fuel source.