

The Origin of Triphasic Training

By now, it may have been a while since you've read Triphasic, so it's important you remember the origin story.

The initial revelation that spurred the creation of Triphasic Training dates back to a small weight room experiment that I conducted during the Fall of 2003 on a couple of track and field throwers I had at the time. The first thrower, let's call him Tommy, was a stereotypical Division I shot putter, he had trouble breaking 55 feet on most days. The second thrower, we'll call Ben, was a 65-foot shot putter, who had potential to be world class. What was perplexing about these two is they both used the same weight room loads, yet, there was a large discrepancy in throwing distance. At first glance, I had trouble distinguishing why Ben was so good, and why Tommy struggled. I had a feeling it came down to each athlete's rate of force development, but I wanted to see specifically how it applied to each athlete. I was interested in what physiologically made the difference between the average athlete and world-class talent.

Fortunately, I had access to a \$20,000 force plate that the university's engineering department was gracious enough to let a meathead like me play with. I decided to test each athlete's rate of force development using the bench press, because it is relatively specific to the shot put, and both athletes just happened to have the same one-rep max, at 415 pounds. This helped eliminate the variable of maximal strength that would affect their RFD measurements. Additionally, we used the method of compensatory acceleration in the form of added band tension, so maximal effort could be applied through the entire range of motion, instead of having to decelerate the bar half-way or risk having the bar fly out of their hands, skewing the results of the experiment. We loaded the bar with 205lbs, 50% of their 1RM, and then another 90lbs of band tension, 20% of their 1RM, leaving them with 70% of their 1RM at the top of the lift. Both athletes were instructed to bring the bar down fast, stop the bar on their chest, and move the bar upward as fast as possible.

The graph below shows the results from the force plate testing. The horizontal axis represents time, while the vertical axis represents power in watts. Overall,

the graph shows force absorbed and displaced over the duration of the bench press movement. The actual repetitions were completed during the “V” portion of the graph. The descending and ascending lines depict the eccentric and concentric movements, respectively, while the very bottom of the V depicts the isometric.

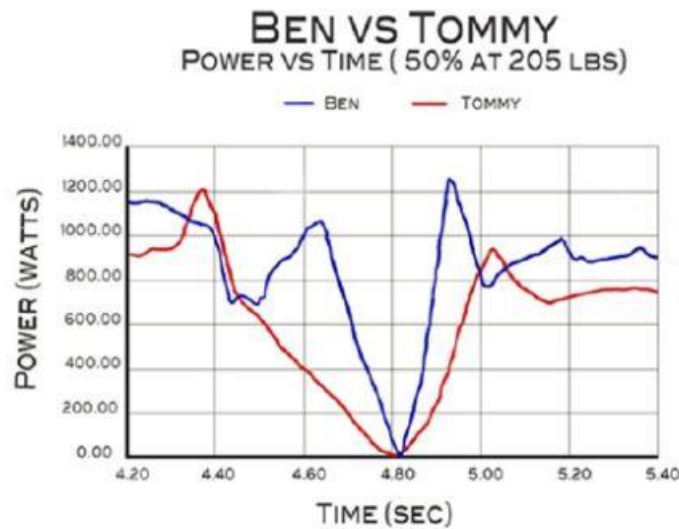


Figure 0.1: Graph comparing the ability of Ben and Tommy to absorb and displace force during a maximal dynamic contraction.

I looked at the results print out, and I knew exactly what separated Ben and Tommy. Both athletes could produce the same amount of maximal force, but the graph shows that Ben could absorb more force faster, and then turn it around and apply more force to the bar, allowing him to accelerate the bar faster. Ben had a higher RFD due to his greater ability to eccentrically load his muscles, and thanks to an efficient isometric phase, expel that force rapidly through the concentric portion of the lift. The same idea could be applied to throwing, Ben was better able to store energy eccentrically and isometrically, allowing him to apply more

force to the implement before it left his hand. Ben's shot put might as well have been powered by a jet engine, while Tommy's shot was powered by a propeller engine.

This opened my eyes, I now knew the key to improving sport performance. It wasn't about who was the strongest, although many coaches believe this. It's about producing more force in less time. When an athlete can absorb more force faster, he can in-turn apply higher levels of force in less time. The eccentric, isometric, and concentric phases all play a vital role in high rates of force development. Simply put, the athlete with the narrowest V wins!

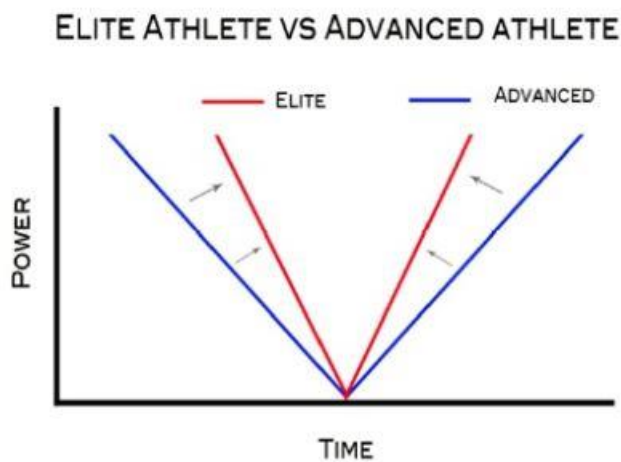


Figure 0.2: Graph showing the Triphasic "V" of an elite athlete (red) versus an advanced athlete (blue). This holds true for any maximal effort, dynamic contraction.