



Hunter Allen

Introduction to Fatigue Profile

After you have done your Power Profile testing and reviewed your data in TrainingPeaks WKO+, then what's next? Good question! What you have now learned about yourself are your gross strengths and weaknesses, which is good thing and certainly helpful in designing your training, but if you are a sprinter, then what kind of sprinter? Are you a sprinter that has a blisteringly fast snap and no one can beat you in the final 100 m dash to the line? Or are you a sprinter that can go from 350 m out and then go so fast that no one can even come around you? Or what if your strength is $VO_2\text{max}$ and your 5 min power is good, but your 3 min power is way above and beyond your category? Or maybe your power at 5 min is okay but your power doesn't really drop off much at all when you get all the way out to 8 min? Figuring out that strength might have a profound impact on your training plan and could also impact your racing strategy and tactics. We had these questions as well and in an effort to further drill down into the data, we came up with the "Fatigue Profile", which helps you to figure out exactly which part of your strengths are really 'strengths' and which part of your weaknesses are really 'weaknesses'.

Learning whether or not have you better fatigue resistance in your sprint and maybe below average fatigue resistance in your lactate threshold could really make a difference in the types of races you might specialize in and then in the tactics that you employ for those races. Learning more about your fatigue resistance can help you determine a specific 'hole' in your fitness that needs to be filled in, which you



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might not find out from just doing the Power Profile test.. When considering your fatigue profile, you must consider all of the training levels from Level 4(lactate threshold) to Level 7 (neuromuscular power) and that means testing at each level. For Level 4, make sure you do your 20 minute average power test, and then ‘cherry pick’ some data from your power data for your best 60 minutes Normalized Power and best 90 minutes Normalized Power. For Level 5, do a 3, 5 and 8 minute test to assess your fatigability in the VO2 max system and for Level 6, you’ll need to give it your all for 30 seconds, 1 minute and 2 minutes. Lastly, to determine what kind of a sprinter you are, test your 5 seconds, 10 seconds and 20 seconds sprints and look for your best power at each..

Some considerations to make when doing these tests and looking at your fatigue profile. Your numbers could be skewed if you are tired when you do the tests and if you just ‘cherry pick’ the data from your current data set, be careful when looking at your fatigue profile as well, as you could have done an all out 2 minute effort pacing yourself for that best 2 minutes and therefore you didn’t give it your all for 30seconds, so I suggest that you treat each test separately and give it your best for each individual time periods. This will at least be consistent over time and allow you to compare yourself throughout the year.

For more information on Fatigue Profiling, refer to Chapter 4 of the 2nd Edition of “Training and Racing with a Power Meter” by Hunter Allen and Dr. Andrew R. Coggan. Order an autographed copy here. www.PeaksCoachingGroup.com/store



Using the Fatigue Profile widget

Based on the charts presented in Chapter 4, of “Training and Racing with a Power Meter”, the percentage drop from one time period to the next determines your fatigue resistance. The first time period at each level (5sec, 30 sec, 3 min, 20 min) all represent 100% of your best in that training zone and ‘anchor’ the fatigue resistance categories. For example, an athlete that cracks out 1800watts for 5 seconds, but then only 1100w for 10 seconds and 500 watts for 20 seconds has “Well Below Average” fatigue resistance, and you might think that someone that can crack out 1800 watts for 5seconds would be a great sprinter, but we aren’t accounting for weight differences between athletes, so this rider could weigh 250lbs(113kg) and therefore not have such a great sprint. Similarly, a very light rider(121lbs, or 55kg) that only knocks out 1000watts for 5 sec and then maintains 900watts at 10seconds and then 850watts for 20 seconds, would have “Well Above Average” fatigue resistance, and also a blistering sprint. So, it’s important to remember that you are ‘anchoring’ your fatigue resistance with that first time period and then looking at the percentage drop-off from there in order to determine your fatigue profile.

More about the Fatigue Profile in upcoming articles.....