Why 'Endurance' Training Lacks Staying Power

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The biggest mistake endurance athletes make in their training program is falling into the trap that their sport is about who can go the longest. It's not. It's STILL about who can go the fastest. They give medals for the first athlete to cross the 5K/10K/ marathon/ ultra marathon finish line -- not the athlete who crosses it and can keep on going. There's a reason it's 26 miles and 385 yards. There's an END point. And whoever gets there the fastest will be the winner.

Traditional endurance training programs reflect that fallacy. They are based around a lot of mileage to increase your 'endurance'.

As a sports scientist -- let me break this down. Endurance in my field -- is the ability to maintain a constant sub maximal output -- to maintain a lower percentage of your max output. In other words -- your ability to run/bike/swim slower than you are able to, for longer periods of time.

So if your ability to run fast (at maximal speed) merits a hypothetical 'score' of 100 units -- you may be able to run a 10K race at 70% of this or 70 units.

Typical endurance training involves you running at this 70% for long periods of time, hoping that somehow -- when it comes to race day -- you'll be able to run at 75%! This will never happen. If you can run a six minute mile -- and you train for 12 weeks running 3-4 miles at a time, at 6min mile pace -- what do you predict you'll run on race day? That's correct -- a six minute mile. You've trained for 12 weeks and produce the same speed you were capable of before you trained.

(Real world example: I was hired to conduct the strength training portion of a program for some of the LA Sheriff's department as they prepared for the annual law enforcement Baker to Vegas relay run. I was given a copy of their running regime, written by a TOP name in the endurance training field and was actually very disappointed in what I saw. First off the volume in my opinion was excessive -- with the team running 7 days per week. But more surprising was the QUALITY of those sessions. There was one fartlek workout per week for speed, and one hill workout to develop strength, and therefore speed. The other FIVE workouts were all listed as 'slow pace', 'easy pace' and 'moderate pace'. I asked one of the runners for his personal best mile pace for the five mile section he was running. He was running a 5:30. After reviewing his training log, we established that with all this volume -- he was averaging a 7 min mile pace in training. His goal? To run a 5:15 pace. How on earth are you going to run a 5:15 in competition, when your average pace in training is a 7 min mile? Where is the speed going to come from if you don't train for it? Needless to say we revamped the training program and he was successful in reaching his goal)

Here's the modern system -- if you can maintain 70% of your max pace (again - assuming 100 as your max) -- if I raised that max pace to 120, even without any direct endurance training, that 70% would now be 84 'units'. So because you built more "power" in your running engine -- we automatically increase your capacity to run long at a sub maximal pace.

(Example: Max speed: 6 min mile. Running a seven minute mile is cruising -- you are working way below your limit. But if your max speed was a 5 min mile -- then running a six and a half minute mile would be even easier than the first example.)

So if we accept that endurance is all about maintaining a lower percentage of your max output -- then increasing that max output is the key to increasing your endurance.

Modern "endurance" training should begin with high intensity work -- not slow low intensity work.

Still not a believer -- consider the following:

One recent study, which is soon to be published in the US, concluded that 10-km running performance could be predicted from a combination of 300m time trial performance and plyometric leap distance; both of which have explosive power as a determining aspect. Hmmm. The ability to predict an "endurance" time based upon a speed and power component. Interesting. Another study done by researchers in Finland several years ago showed that 5-km run time could be significantly improved by supplementing run training with explosive power and speed sessions.

TRAINING ROUTINES

With the above philosophy in mind, there are several high intensity methods that we can use to train for ANY endurance activity.

This month we are focusing on the triathlon. Triathlons used to be primarily aimed at retired swimmers or runners. But now -- triathlon has some into its own -- it's an Olympic sport and has its own subculture and training methods.

Here's our "dummies guide" to triathlon training:

1) You must get technical preparation for the swim event. Running and cycling are probably easier for you in that you know what to do. The swim event will require some more work.

2) At some point -- you need to train at least two modes on the same day. The hardest part of a triathlon for many is getting off the bike with your legs DEAD and having to run. You need to train for this unique sensation.

3) There is no need to do the full distance in training PHYSIOLOGICALLY. We prepare the body to handle the full distance, and based on science, we know that it is possible. However for PSYCHOLOGICAL reasons -- a lot of athletes like to 'know' they have the conditioning to do the entire distance and like to schedule a practice 'event' prior. There is no harm in this, but psychologically on race day you'll be a wreck anyway, so in our opinion it offers little benefit in the real world.

All distances and modes in the below examples can be adjusted. Feel free to substitute swimming for running etc.

Diminishing rest interval method

Here's the premise: Split the distance you are running / biking up into three -- four periods (so if you are running three miles, we'll use a mile)

Run that first distance (one mile) as hard as possible.
Rest for at least 50% of the time it took you to run the mile (we are looking for almost full recovery).
Repeat for two more sets (until you've covered the full distance).

Perform twice a week. Each week -- reduce the rest interval by 30 seconds. So be week four, you've cut two minutes of your rest time.

Here's the concept: You can run a six minute mile. But when you do three miles you average 21 mins or a 7 min mile. If we prepared you by running only 3 miles -- we only reinforce that slower speed. So running three miles trains you to run at the slower speed.

With this method -- we work on the quality, the speed of your run. We maintain a much higher speed, and a much more intense workout, and develop the endurance by cutting back on the rest period -- as opposed to slowing down the pace.

Sprint Repeats

Select a 60m area -- straight as possible. Starting at one end -- sprint maximally to the 60m mark -- should take under 10 seconds. Turn and jog back, taking approximately 20 seconds. Perform a total of 4 circuits to complete one set (this is approx 2 minutes). A session should be as follows: three sets with a one minute rest between each (9 minutes); rest for two minutes and repeat for a total of a 20 minute workout. This is not for the faint hearted. Obviously this workout can be performed over a longer distance -- just maintain the ratio between work and rest periods, and understand the concept. We are trying to develop our ability to go long, by increasing our capacity to go hard. Going at 70% of 100mph is still faster than 80% of 70mph.