

Peaking to Race

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An issue that most athletes find mysterious is coming into competitive “form” at the times in the season when their most important events are scheduled. Form is a vague concept used by athletes in some sports to describe when they are ready to compete. The word has its roots in eighteenth-century horse racing when sheets, or “forms,” would be provided for race track bettors showing the past performances of each horse.

Exercise scientist Andrew Coggan, Ph.D., defines form as the timely combination of fitness and freshness. Fitness has to do with how well the body’s many systems function at a given point in time. A fit endurance athlete has optimized the cardiovascular, metabolic, respiratory, muscular and nervous systems. A fresh athlete is one who is rested and ready to go. It’s possible to be fit but not fresh due to lots of heavy training but not much resting leading into an event. You’re tired. It’s also possible to be fresh but not fit. You’ve been taking it easy for too long and are undertrained. Bringing fitness and freshness together at the same time is called “peaking” and is the underlying purpose of training for the competitive athlete in the last few days and weeks before a race.

To increase freshness as you get closer in time to the competition you cut back on the training workload by reducing the duration and frequency of workouts. You

include more easy, recovery workouts or days off each week. As a result you become more fresh. To maintain the fitness created over the previous weeks and months of training you do a few key workouts at race intensity and otherwise train easily between them. Getting the intensity of your workouts right is why your heart rate monitor, powermeter and/or pacing device is so critical to peaking.

How Peaking Works

Actually, sports scientists don't fully understand the physiology of why tapering the training load by increasing the amount of rest over a few days or weeks before a race results in increased fitness. But they do know of several changes that occur in the body with such reduced training. The most notable is an increase in strength and power. Others are reduced blood acidity, increased blood volume, greater red blood cell concentration for oxygen transport, increased carbohydrate storage in the muscles and sharper mental skills.

Although tapering the training load before important competitions is widely practiced by top athletes, many are afraid that cutting back on training will cause a loss of fitness. They are wrong. There are numerous research studies that support reduced training. Several using athletes in many sports have found that reducing training by more than half of what was normal for two to three weeks produced no losses of fitness or performance. Others have shown improvements in performance when the taper was done in a certain way.

In a classic study conducted at the University of Illinois a group of runners and cyclists who greatly cut back on their training by reducing the frequency and duration of workouts while keeping their intensities the same improved their aerobic capacities, an important measure of fitness, and endurance performance significantly. Those who reduced intensity but kept frequency and duration the same lost fitness. Do *not* decrease the intensity of training as you approach your most important races.

Take special note here of the ingredients for a successful taper according to this and similar research studies—reduced weekly volume (freshness) and an emphasis on intensity (fitness). So the key to tapering is keeping workout intensity—heart rate, power, pace effort—at high levels while resting more.

The tapering of duration and frequency occurs during the final two periods before the competition—the Peak and Race mesocycles.

The Peak Mesocycle

The Peak mesocycle typically begins about two or three weeks prior to the competition. The length of this mesocycle varies by sport, fitness level and nature of the targeted event. Sports that are orthopedically stressful, such as running, require a long period of tapering. Reducing frequency and duration starting three weeks or even more before an important competition is common for runners. A sport such as swimming that does not have any hard surface pounding

associated with it can benefit from a shorter taper period. For swimmers seven to fourteen days of tapering is common. Other sports, such as rowing and cycling, will fall between these two extremes. A triathlete will taper each of the three sports at different rates.

The greater your fitness is the longer the taper should be. Another way of looking at this is that if your fitness is poor due to, perhaps, getting started late in preparing for your event, you need all of the time you can get to build fitness. So in this situation the Peak period is shortened in favor of a longer Build period. The taper may only be for ten days.

The longer the event is you are training for the longer the taper should last. For example, a runner may taper for three weeks for a marathon but only taper ten days for a 5km race. Longer races usually mean greater training loads with an emphasis on long-duration workouts. Long workouts take a greater toll on the body than short workouts and so more time is necessary to recover and rebuild reserves.

During the Peak mesocycle reduce training volume by twenty to thirty percent every three to four days. The shorter the taper length is, the greater the reduction should be. Again, do not decrease the intensity (heart rate, power, pace, effort) of your workouts, only the duration.

The frequency of your workouts, how often you train, may also be slightly decreased while tapering so long as you have been doing at least five or six workouts in a sport in a normal week during the preceding Build mesocycle. A triathlete, for example, who has been doing three swims, three bike rides and three runs weekly should not decrease the frequency of these sessions as it is already marginal. When the frequency of training gets too low you may experience a loss of economy—how efficiently you move. Essentially, your movements may become sloppy as the muscles forget how to move economically. Swimmers call this losing their “feel” for the water.

The basis of the training structure for the Peak period is to simulate the intensity of a portion of the targeted race every 72 to 96 hours until seven days before the event. To do a simulation workout you select a segment of the event that is critical to your success and practice exactly how you will gauge output (power or pace) and input (effort and heart rate) for that segment. For example, there may be a hill on the course that is critical to how well you perform on the day. Find a similar hill, warm up and then simulate the intensity you plan to use in the race. Or it may be that the course is flat and you need to maintain a specific intensity to reach your goal. Rehearse that intensity in each of the simulation workouts. That intensity could be based on heart rate or on pace, power or perceived exertion as compared with heart rate.

Whatever you decide is the portion of the race that is critical make the simulation a dress rehearsal in as many ways as possible. This may be clothing, equipment, mental approach, refueling or anything else that is a part of your race-day strategy. One or two of the simulation workouts in the Peak period may be a C-priority race done as a tune-up.

Note that while the intensity of your simulation is critical to the success of your Peak period going beyond the targeted race intensity is not beneficial and may even be counterproductive. For example, a marathoner who sets a goal of running a seven-minute pace in Zone 3 should do simulations only at this intensity—not at six-minute pace in Zone 5.

So if you do a race simulation every 72 to 96 hours in the Peak period what is done in the two or three days between these workouts? You do short, easy, recovery workouts or take a day off. The idea is to be fully recovered and ready to go again for the next simulation.

Joe Friel is the founder and President of Training Bible Coaching and the author of numerous books on training. He may be reached at jfriel@trainingbible.com.