

Rest for the Weary - Tapering

Sit back, relax and run a PR

By Aaron Coe

Priming for a big race should start weeks in advance, especially for those who run hard or far. Experts agree that a restful tapering period is a key to unlocking the wealth of speed and endurance accrued in the labors of training, but less consensus exists concerning the finer points of a successful taper. While the experts continue to debate details, nailing down tapering's essentials can arm you to go the distance and run a great race when it counts.

What is tapering?

Tapering refers to a period of reduced training, usually before a race. Tapering runners change their routines most noticeably by decreasing mileage, but other factors, such as workout frequency and intensity, can also be manipulated. Training style and physical constitution matter; athletes also adapt to training sessions at different rates. These personal factors affect the taper's structure and duration, so an ideal taper varies from runner to runner.

"Tapering is as much an art as a science," explains Toby Schwarz, the head cross-country and track coach at Whitworth College in Spokane, Washington. "Everyone does not react to tapering the same."

Reasons to taper

Despite its complexities, tapering is worth the effort. It doesn't produce additional fitness gains, but **lets you take fuller advantage of work already exerted**. By providing additional rest, a taper eliminates the fatigue and microscopic muscle damage of hard training, giving you time to recover and heal. Besides, it makes little sense to suffer through tough workouts immediately before a race or big adventure, since most benefits from a training session don't occur for about two weeks.

While resting and tuning up for your target event, you gain other benefits, too. Glycogen stores have a chance to fill up and full hydration is easier to attain. According to Brian Mackenzie, a nationally accredited British running coach, athletes also experience increases in blood plasma (essential for hydration and sweat), red-blood-cell density (bringing more oxygen to the muscles) and enzyme activity in the leg muscles (improving the muscles' ability to use oxygen).

Neuromuscular improvements, which can accrue in a day or less, produce a nervous system better able to coordinate faster running. Come race day, your body is primed for optimal performance.

Still, **nothing can replace a positive mental outlook**.

"Confidence in the taper is as important as the physical effects," says Schwarz. "A scientific taper or even lack of taper won't matter if an athlete 'feels' tired." This presents a special danger for many trail runners, who often run for enjoyment and closely associate foot travel with sanity.

The negative thoughts and stress that pop up with curtailed mileage are potentially the most daunting obstacles a resting runner faces. "It takes a lot of self-

control to sit in your hotel room watching the television, when you could be out seeing what's on the other side of a hill," agrees Paul Low, a U.S. Mountain Running Team member. Achieving this sort of relaxed focus lays a strong foundation for a balanced training regimen.

Tapering Variables

Structure

The taper itself includes several components, including your method of reducing mileage. Training loads can be reduced in a linear model, exponentially, or in a "step," where the runner cuts back a certain amount and maintains that rate throughout the taper. The exponential structure, where runners reduce their training more and more as the taper progresses, is the favored method by many coaches, as it has produced the best results in studies. For example, you might run 10 percent less the first week, then 30 percent less, then 60 percent less the final week before an event.

Length

Studies have found positive effects from tapers as long as 28 days and as short as four. Two-time Olympic marathoner Pete Pfitzinger and the English Institute of Sport both recommend about three weeks for the marathon distance. Other authorities suggest slightly built runners can taper for as little as 10 days for races over an hour. Generally, more highly trained and more heavily muscled athletes need a relatively longer taper, while their recreational and reedy counterparts require less tapering. There is also a general gender difference. "Men tend to require a longer taper than women," says Schwarz. "This does have to do with muscle mass, but also the relative intensity and volume that most men undergo in training."

The key to this variable is to find the middle road: abridged tapers leave insufficient time to reap benefits, and tapering too long leads to eventual fitness losses. "It is wise to err on the side of tapering too much," Pfitzinger advises, "since any one workout gives you far less than one percent fitness improvement, but a well-designed taper can improve race performance much more." Still, psychological distress may counteract any physical benefits of a long taper for those who can't stand it, so don't force yourself off the trails unless you can tolerate it mentally.

Volume

Emil Zatopek, a mid-20th century Czech distance star, grew violently ill and convalesced in hospital for two weeks before the 1950 European Games. Leaving the dispensary only two days before the meet, Zatopek subsequently won the 10K by 400 meters and the 5K by 23 seconds. This astonishing feat was dubbed the "Zatopek phenomenon."

"Reducing the amount you run has the greatest impact on reducing accumulated fatigue to improve racing performance," says Pfitzinger. Few runners would consider tapering with such abandon, though; many agree with recent Pikes Peak Ascent winner Simon Gutierrez's remark, "I feel sluggish if I back off too much." Pundits commonly advise a 50 to 60 percent peak volume reduction, but still, some advocate running only 10 to 20 percent in the final week of the taper. Some studies support this latter position, as does outstanding trail racer Matt Carpenter, who whittles his training down to about 20 percent the week before handily winning major races.

Frequency

"High training frequencies seem to be necessary to avoid detraining and/or 'loss of feel' in highly-trained athletes—especially in more 'technique-dependent' sports—but training-induced adaptations can be kept with very low training frequencies in moderately trained individuals." Here the authors of the *Peak Performance* newsletter identify a partial answer to the sluggishness some hard-training runners associate with tapering. Unlike volume, the frequency of training sessions should be kept up around 80 percent by these runners, whereas those with easier regimens can run one-third to one-half of their usual workouts without adverse effects.

Also, trail running may necessitate a higher training frequency during tapering compared to track and road running, as the former is slightly more "technique dependent." I have experienced this loss of feel on relatively tame college cross-country courses, so avid mountain runners will likely feel an even greater effect.

Intensity

Training intensity should not be cut. "I actually increase, slightly, my intensity during a taper," Low states. "I also tend to do a higher percentage of my total volume as speedwork." The strategy might seem strange at first, but studies indicate that little or no benefits arise from reducing intensity, and a small boost in intensity can be helpful. A crucial aspect of tapering, staying speedy enhances neuromuscular coordination and keeps you fit to run fast. "Maintenance of training intensity is necessary to avoid detraining, as long as reductions in other training variables allows for sufficient recovery to optimize performance," says *Peak Performance*. So keeping the pace up helps, but you don't need to run all-out 500-meter repeats every day (although one study found this very effective for cross-country runners), and definitely don't introduce formal speedwork into your training now for the first time.

If you do include intervals and the like, be sure to get plenty of recovery. This will enable you to keep the intensity without introducing extra fatigue. It is also another part of the neural improvement equation, which relies on rested muscular and nervous systems to enhance coordination.

Tapering is only as good as the training before it, so you won't turn super-fast overnight. Most studies show an average three percent improvement, which may sound

modest, but knocking 1:30 off a 50-minute effort or nine minutes off a five-hour race is not too shabby. You'll find that kind of progression is worth the (reduced) effort.

The Rest of the Rest

What else are you doing? Be aware of non-running activities while tapering. Filling the "extra time" with rigorous yard work, for example, will not help your taper. Make sleep a high priority, too. Finally, "DON'T DO ANYTHING NEW!" shouts Whitworth College cross-country and track coach Toby Schwarz. "Change produces stress, and stress can cause soreness or injury. Keep it normal."

What are you eating? Running less burns fewer calories. So unless you eat less, too, you'll probably gain weight and lack energy. You might have to be deliberate about your food choices during this time. "I have always found that my appetite lags behind my actual metabolic need by about a week," says mountain running champ Paul Low.

What are you running on? Trail runners should also pay attention to the terrain they run during a taper. Long, steep, hilly loops are not the best option. Low and Simon Gutierrez, another mountain running ace, both stick to flatter surfaces when tapering.

Tapering Nuts and Bolts

- Taper to maximize training benefits, maintain fitness and minimize fatigue
- Maintain or slightly increase training intensity
- Reduce training volume by 50 to 90 percent
- Cut training frequency as low as 80 percent (highly trained runner) or even down to 33 percent (less trained)
- Individualize taper duration between four and 28 days based on training and event
- Reduce mileage progressively more as event approaches
- Expect performance improvement of about three percent

Duration-A Starting Point

Establishing a timeframe is one of the trickiest parts of tapering due to individual variance. Use these times as a general guideline:

- 5K-12K 7-14 days
- 12K-25K 10-20 days
- 25K-50K 10-30 days
- 50K and up 14-30 day

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This article appeared in *Trail Runner* magazine, issue #44 (MARCH 2007).