



# Tapering in Sport

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One of the most fascinating art forms in elite sport coaching is the subtlety of the competition taper.

However, it is also one of the most misunderstood parts of the season. Tapering is receiving a lot of attention in the youth market at the moment and parents are constantly looking for ways to help provide their child with the competitive edge in today's crazy world of school sport. Understanding the taper and the effects of the taper will help parents make a better, more educated decision as to when to plan rest phases in the yearly plan. The term taper is widely used around in the world of sport these days to prepare athletes to their major competitions but is everyone talking about the same thing?

Scientific literature would suggest we are NOT. Houmard (1991) clearly differentiated between the concepts of reduced training and tapering. Houmard said that reduced training occurs when the frequency, intensity, load, duration or combination of these elements are reduced in the constant degree. In a taper however, these elements are manipulated in a systematic, progressive fashion. Mujika identified four types of tapering:

1. Linear Taper
2. Exponential Taper ( Fast decay )
3. Exponential Taper ( Slow decay – My recommendation with female athletes )
4. Step Taper

No matter taper model you choose to adopt, the key aspects to consider are:

- Reduction of the training load
- Management of fatigue and physiological adaptations
- Type of taper ( Model )
- Taper duration
- Performance goals

What is the aim of tapering?

The aim of the taper is simple  
- Peaking.

"The performance enhancement that usually takes place with the taper is related to recovery of physiological capacities that were impaired by past training and to restoration of the tolerance to training, resulting in further adaptations during the taper (Mujika)." Or, to put it another way, the key objectives for an effective taper are to :

- Maximally reduce accumulated physiological and psychological

stress of daily training and

- Restore training tolerance and further enhance training-induced adaptations

Tapering can be incredibly effective when used correctly. It is very important to note that every discipline with in the sport science support base will have their model for the taper and peaking. It is important the team of coaches and scientists sit down together to plan each aspect of the taper and the time allocation to each. Everything helps and everything is effective. A good coach monitors every aspect, listens to his athletes and tries many different interventions to improve the Peaking process.

How does the taper effect performance?

The taper has many aspects that helps improve performance. We can see the effects of the taper by monitoring our athletes in different situations to make sure we are getting the correct physiological and psychological adaptations. The best tool in have work with in terms of predicting the peak is the Testosterone/Cortisol ratio. Some of the adaptations cause by the taper.

### Psychological

- Reduces the perception of effort
- Reduced global mood disturbance
- Reduced perception of fatigue
- Increased vigor

### Hormonal

- Increased Testosterone
- Decreased cortisol

### Hematological

- Increased Red cell volume
- Increased hematocrit
- Increased hemoglobin
- Increases reticulocytes

### Biochemical

- Decreased blood creatine kinase

How many times a year can I peak?

Peaking is an incredible art form that takes most coaches a lifetime to master. Unfortunately, the saying "Even a broken watch is right twice a day" applies here. Sometimes coaches feel they got it right once or twice with one or two athletes, and now they understand and know the process. Nothing could be further from the truth. The taper is one aspect that allows the athlete to get the opportunity to get bearings. It gives his systems a chance to recovery and is simply there to get them to Peak. Peaking is an effective and important part of elite level sport but it is very difficult. Athletes can only peak a few times in a yearly cycle. It is important that all the sciences communicate on the timeline and that the coach dictate clearly where they would like their athletes at their best. Due to the nature of the taper and the systematic load reduction, the taper comes with a degree of physiological detraining, leaving the athlete in the worse conditioning post major competition. Due to the detraining process, planning too many peaks in a year means your athletes with not have enough time to build up enough training stress and get enough practice to keep improving performance. Maintaining performance is easy but steadily

improving the athletes PB over 4-8 years takes patience. Slow gains are better and improve retention. Planning too many peaks shows an impatience for progression and tends to lead to stress injuries.

Does tapering have a place in Youth Sport?

This is the part of the conversation that I would like to spend most of my time. When we look at tapering and peaking and all the benefits it has, it is difficult to find reasons as to why it shouldn't be a part of school sport. Especially to parents when the child's financial future is on the line. I believe that there is a time and place for everything. Parents need to distinguish between two aspects of the child's development. Learning and competing. The more time the young athletes spend learning, the better off they will be for the future. Every time we try taper and look to peak, we need to decrease practice load, this means that we are depriving the young athlete the opportunity to practice and improve their skills they will need to benefit them in the future.

### The Ipad theory

I like to think of us as massive ipads, when we start out, we are an incredible device ready to be used in any fashion needed by the user. As we use the device, we load on different apps (skills) to help us operate the device more efficiently. Soon we learn that if we load more apps onto the device, we can use the device for more than we expected. We start becoming more productive with this tool. And it is at this point that all ipad users realize why they should have bought the 64gig storage space as this is the limitation on how many apps I can run and store, similarly to human cognitive intelligence. The problem is not all apps are the same size and therefore do not take the same amount of time to download onto the device for use.

Another problem is, just because we have the app, does not means we are skilled at using the app. In the same way, just because I can throw a tennis ball to someone, does not mean I can

go pitch in the Majors. It is not until we use the app and play around, try new things and orientated ourselves within the app that we know whether or not we enjoy the app. Once we have decided we enjoy it, we use it every day and become proficient. This is called practice. Another issue is that there are many apps that take care of the same task, in the same way, we have many techniques to achieve the same skill. Which app works for you? With these questions in mind, it leads us to believe that the more time we spend playing and utilizing the device, the more we increase our chances of becoming proficient. We allow ourselves the opportunity to make an informed decision on which app the download and use (which technique), allows us not to waste time learning to use an app that might not be beneficial later on (productivity). But this means we need to be patient in our planning and our interventions.

If we are constantly looking to peak and taper our athletes, we are depriving them of the opportunity to learn and master skills necessary for athletic success. The bigger the learning base, the stronger the foundation! In modern society, we are constantly looking for the quick fix and instant gratification but this is not possible in nature. Nature will follow its course, we can try imposing interventions to cause adaptation that may be beneficial to the athlete but unfortunately, we do NOT get to decide when the athlete will reach each developmental point. We are currently destroying our young athletes due to an uneducated approach to growth and puberty. Another topic for a different day. I believe that we will be much better off following a well-planned periodization setup by the coach and trainer to optimize learning.

By constantly setting outcome based goals for our athletes and within our sporting structures, it increases the importance of peaking and tapering in youth sport. This increases the need for results in the short term which is detrimental to long term learning.

Change lies in the conscious; Success lies in the unconscious!!!