

Just what is a “Taper” anyway?

“Thus, training intensity is of paramount importance to maximize training adaptations in both untrained subjects and highly trained athletes.”

Mujika, Scandinavian Journal of Medicine and Science in Sports, 20 (suppl 2) 2010

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We’ve all heard the term taper used prior to a big competition, but what exactly is a taper and how should you use it to maximize your performance? Exercise Physiologist, Inigo Mujika, from northern Spain has spent a lot of time researching the taper phase of endurance training. He defines the taper as “a progressive, nonlinear reduction of the training load during a variable period of time that is intended to reduce physiological and psychological stress of daily training and optimize sport performance” (Mujika & Padilla, 2003). Training load (volume) is reduced during a taper to allow for recovery to occur, but it’s extremely important to maintain intensity to avoid detraining your body during this time.

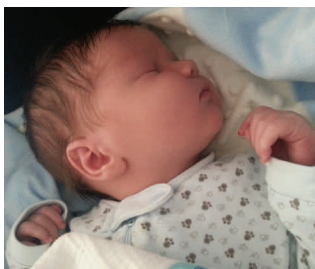
Since every athlete responds differently to a taper based on their previous training loads, the number of peaks and tapers during a season, and the ability of their body to recover. Here are a few things that you can do to maximize your recovery during a taper thus increasing the effectiveness of a taper:

- 1– Work with your coach to determine how much training volume you should decrease while using training intensity to avoid detraining your cardiovascular system. After your race, provide your coach with feedback regarding your taper.
- 2– Use of sports massage therapy and compression garments have been shown to increase recovery after intense workouts and during a taper.
- 3– Stress during training decreases the activity of the Autonomic Nervous System (ANS) which helps regulate normal body functions. Sleep duration and quality has been shown as one of the best reactivation of the ANS.
- 4– Come into competition well hydrated (minimum of 48 hours prior to your event) and with your muscles loaded with glycogen and you will succeed!

Mujika, I. (2011). Tapering for triathlon. *Journal of Human Sport and Exercise* 6 (2), 264-270.

Some fun facts you may not know about me...

My husband, Jake, and I just welcomed our second child, Levi Brixton Miller, on July 8th weighing in at an astonishing 9 lbs, 2 oz. We are extremely thankful for a healthy baby (and momma). After being pregnant for nine months, I am looking forward to getting back to running and riding regularly! I’m planning to get back in shape and lose the baby weight by setting my sights on competing in the Silverman 70.3 triathlon this coming October in Las Vegas!





Upcoming CTS Events

- ◆ **July 21-26: Hors Category Climbing camp — Colorado**
- ◆ **July 24-27: High-Altitude Ultrarunning Camp—Col Springs, CO**
- ◆ **Sept 17-20: Climbing Camp— Brevard, NC**
- ◆ **Oct 9-12: Giro Women's Camp —Santa Ynez, CA**
- ◆ **Oct 15-18: Fall Mileage Camp— Santa Ynez, CA**

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“For athletes that are trying to lose or maintain their weight, hydration is **REALLY** important during and especially after a workout...as our brain sends us only one signal post workout...**FOOD!** When in fact we probably need **WATER!**”

Feed Zone Portables by Biju Thomas & Allen Lim

Nutrition Tips: How much to eat and when...

Most athletes know that nutrition and hydration are KEY to succeeding in endurance sports, but the question for many athletes remains - how much should I eat and drink before, during, and after a workout? The answer to this question depends on a variety of factors including gender, the intensity and duration of the workout, the temperature and humidity during the workout, and so forth. If your workout is less than 90 minutes you can eat 100-300 calories 1-2 hours prior and drink normally. If your workout is going to last longer than 90 minutes here are some basic guidelines that you can start with and make modifications from there to suit your specific needs.

Nutrition Guidelines: Prior to exercising longer than 90 minutes –

3-4 hrs prior to exercise: Consume a full meal containing carbohydrates. Aim for 1.5 grams of carbs per pound of body weight or about 900-1200 calories.

1-2 hrs prior to exercise: Consume a smaller meal, containing carbohydrates (yogurt and granola or oatmeal with fruit or toast with peanut butter). Aim for 0.5-1.0 grams of carbs per pound of bodyweight or about 300-600 calories.

0-60 minutes prior to exercise: Consume 0.5 grams of carbs per pound of bodyweight or about 150-300 calories. This can be in the form of fluid calories (hydration drink), gel, and/or piece of fruit

Nutrition/Hydration Guidelines during a workout longer than 90 minutes:

Hydration: drink 20-40oz per hour (If humidity and/or temperature are high you would be more towards the 40 oz). Set a reminder/alarm on your GPS or watch to eat and drink every 15-20 minutes.

Sodium: 400-900 mg per hour (A “salty” sweater you would be towards the higher end)

Nutrition/Calories: Consume 200-300 calories (30-60 grams of carbs) per hour. Aim to take in about one third of your total calories burned. So if you burn 3,000 calories during a ride, you would want to take in about 1,000 calories while you are exercising (keep in mind this takes practice to finely tune your digestive system).

Nutrition/Hydration Guidelines - Post exercise:

Women mobilize more fat DURING exercise but not during RECOVERY. Women have about a 3 hour window post exercise before their metabolism returns to normal (men have about 21 hours). Regardless of gender, you need to refuel post exercise with carbs and protein within 30 minutes and eat a normal meal within 3 hours. The goal is to consume 0.75g of carbs per pound of body weight. For example, a 140lb woman would need 105 grams of carbs and 175lb man would consume 131 grams. To rehydrate you want to consume 150% of the fluid lost during training. The specific amount of fluids to replace after exercise is best calculated by weighing yourself before and after intense exercise.

Sources: Oosthuyse T. & Bosch A. (2010) The effect of the menstrual cycle on exercise metabolism: implications for exercise performance in eumenorrhoeic women. *Sports Medicine* 40(3), pg. 207-227.
<http://www.eatingfree.com/newtrition/nutripedia/did-you-know/nutrition-for-endurance-cycling.aspx>



For more information on saddle sores check out the entire article by USA Triathlon Team coach, Gale Bernhardt at: http://www.active.com/a3_articles/20cf8acb-505e-4ae5-84db-b94dcf0c0d6c/1?page=2

Did you know??? That astronauts in space stay in shape by riding a bike! Check it out at : <http://www.bikerumor.com/category/training/>



A real pain in the butt...How to deal with saddle sores

It's the time of year that many people are riding their bikes A LOT, and with the major gains in fitness and enjoyment, sometimes come the NOT so pleasant experience of having a saddle sore. Improper bike fit, saddle or chamois shape, and not using chamois cream are some of the common consequences that can lead to the development of a saddle sore. Even for the experienced cyclist that removes their bike clothing immediately after a workout to prevent bacteria build-up and additional chaffing, a saddle sore can still appear. You need to resolve this issue as soon as possible to resume your training and avoid a longer term issue with a potential cyst likely to develop without proper treatment and care. Here are a few home remedies that I've come across:

- **Tea Tree Oil:** Its medicinal properties include antiseptic, antibacterial, antifungal and antiviral.
- **Noxema:** The active ingredients have a slight local anesthetic, antimicrobial, anti-inflammatory, and analgesic (pain relief).
- **Vagisil** (not just a feminine product, gentlemen): The active ingredients include a local anesthetic and topical pain reliever as well as an antiseptic and disinfectant.
- **Tegaderm:** This is a thin, transparent wound dressing that is a wound care product that some cyclists have found helpful when covering and treating saddle sores.

Posture and the endurance athlete—The missing link!

You spend countless hours on your bike (or running and swimming) focusing on improving your power, speed, and becoming a stronger athlete. You focus on proper nutrition, hydration and sleep yet one thing that all of us can work to improve is our posture both during exercise and during the rest of our day. Our bodies fight against gravity all day long, and if we aren't aware of where we are in space (also referred to as kinesthetic awareness) our muscles may be working overtime to keep us from getting injured. "Every inch forward your head is from midline adds ten pounds of pressure on your cervical spine" (Chris Burnham). The Center for Disease Control reports that back pain is the leading cause of disability in Americans under the age of 45 (CDC, 2006). Here are a few tips to keep in mind next time you are on a bike ride, run, sitting at your desk, or driving your car:

- Where are my ears in relation to my shoulders? They should be directly in line with your shoulders, and your shoulders should be relaxed in a back and downward position so that they are directly above your hips.
- Picture the space directly behind your head and envision your head relaxing into that space versus coming forward. The use of kinesio tape on your neck can also give you additional feedback of where you are in space.
- While riding, make sure that your core is tight and shoulders are relaxed.