



Mark your calendars and buy your tickets for Tri Fusion's End of Season Social on Friday, November 19th!!!

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### Changing of the Board

In the last newsletter and at the membership meeting in July, we discussed the upcoming Board of Directors elections. This month, we will place our votes. Please find below the "job descriptions" and the name of each individual that is interested in serving as a director on our Tri Fusion Board=>

1. **President:** The president oversees it all, from relationships with our sponsors, scheduling events, planning meetings, and networking to mentoring the rest of the board of directors. Returning candidate: Roger Thompson
2. **Vice President:** Typically this position is responsible for seeking and scheduling our meeting's guest speakers and formalizing those plans. Change of positions candidate: Greg Gallagher
3. **Secretary:** The secretary for Tri Fusion is our communicator in all areas of multi-sport, from answering/fielding email correspondence with members to coordinating our meeting venue and heading up events as well. Returning candidate: Jessi Thompson
4. **Uniform Director:** Since our clothing line has already been designed, this position will require a person to be highly organized in soliciting new orders, submitting, taking care of payments and delivery of all clothing orders. Returning candidate: Tiffany Byrd
5. **Mentor Director:** Essentially, the mentor director connects potential new members with current, active members that are willing to "show them the ropes" of our club. New candidate: Eric Byrd

6. **Social Director:** Our club's social director is responsible for planning and facilitating: our end-of-the-season party, Fitness Fanatic nights and a few other family/friends Tri Fusion fun events throughout the year. Change of positions candidate: Natalie Gallagher
7. **Sponsorship Liaison:** The liaison is someone that can maintain the club's sponsor relationships. Change of positions candidate: Steve Anderson
8. **Membership Director:** Responsibilities of this position include; welcoming and communicating with new members for completion of applications, updating the club roster and maintaining relationships. New candidate: Adam Little
9. **Website Director:** Tri Fusion's website is a huge hit, and wouldn't be if not for the efficient and continual upkeep of current and upcoming events, a race calendar, sponsor and supporter links, the Tri Forum, gallery pics, and other valuable contact, newsletter and e-store connections. Returning candidate: Ben Greenfield
10. **Newsletter Director:** The newsletter is currently a monthly publication that requires a person that can solicit articles about all things multisport, healthy recipes, race reports, sponsor info., a current calendar and other need-to-know data. New candidates: Ali Stitt and Jay Huskinson
11. **Treasurer:** Tri Fusion's treasurer is a very detail-oriented, conscientious, organized, number-lover that can keep the books straight. New candidate: Jennifer Little
12. **Tri Fusion Kid's Club Director:** Basically, this position is one that coordinates all things "kids" within our club. New candidate: Danielle Warnock

## Post-Workout Nutrition Musings by Ben Greenfield

I recently read an article about Post-Workout Nutrition that I thought was a bit off. Here's what the article said:

"What do you think is the most crucial time of a training session? Is it the first few minutes, the very end, the warm-up, or somewhere in the middle of your workout that is the most important? It may surprise you to know the most important time is the 30 minutes directly after your workout is finished. The time from your warm-up to the conclusion of your workout is obviously important. Improper form, too low an intensity, too high an intensity, unsafe behavior, and other factors can ruin the effectiveness of a workout. But even if do all of that perfectly, you can still negate the benefits of a workout by not using the 30 minute window to replenish nutrients lost during your training session. During a training session you are taxing your body and using up its energy stores (glycogen).

Once your workout is finished, you must replenish what you lost in order for your body to begin the process of repair. In the 30 minutes immediately following your workout, your insulin sensitivity is at its highest and when your body is in this state, whatever nutrients you take in will be easily transported directly to your muscles, liver, and wherever else it is needed. You will suck it up like a sponge. If you do not eat or drink the right things soon after your workout,

the window of opportunity will close and it will take you much longer to replenish glycogen stores and other nutrients. This will dramatically increase the time it takes for you to recover from that workout, decrease the performance benefit of the workout, and affect your next workouts.

The more recovery time between workouts, the fewer workouts you can do in a period of time. Fewer and lower quality workouts means less opportunity for fitness gains and slower race times. Can you see why post workout nutrition is so important? Now you know why it's important, but what should you eat or drink after a workout?

The three things you need to focus on replenishing after a workout are muscle glycogen, water, and electrolytes. To replace muscle glycogen, you should consume something with easy to digest carbohydrates, about 1 - 1.2 grams per pound of body weight. Simple to digest carbs include some fruits, sports drinks, white bread, simple sugar, etc. To aid in the absorption rate of the glycogen and prevent muscle catabolism (breaking down muscle tissue for energy), 10-20 grams of easy to digest protein is ideal. Stick with whey protein for this, or even better, hydrolyzed whey, which is already pre digested and made for easy absorption. You can find whey protein at any nutrition store.

To replenish electrolytes, a sports drink is your best bet unless you are planning on eating a salty meal soon after your workout. Electrolyte is basically a fancy word for sodium or salt.

You should continue the carb, protein, electrolyte consumption every two hours or so until your next major meal. If I know I am eating an hour or two after my workout, I find that chocolate milk is a great post workout drink. It has sugar in the milk and the chocolate to replace muscle glycogen and protein in the milk to aid in absorption. You can get away with a bad warm-up, bad form, or improper intensity to some extent and still have a good workout, but failing to consume proper nutrition can make your workout a waste of time, and in some cases, even damaging. Just remember the 30-minute window of opportunity and plan ahead to make sure you get proper nutrition in before the window closes."

### So initially, here was my response:

The unfortunate fact is that I used to preach this all the time, and most nutritionist and coaches do, but the research on post-workout is wholly lacking when a pre-workout meal is present. In other words, research on pre-workout meals in the absence of post-workout meals shows that insulin sensitivity, carbohydrate and amino acids in bloodstream are still peaking from the pre (and during) workout nutrition - thus eliminating a need for post-workout nutrition for any bouts that are not glycogen depleting.



## Post-Workout Nutrition (cont'd)

Furthermore, contrary to what is stated in the article, the purpose of post-workout nutrition would not be to replenish glycogen stores (which are replenished within 6-8 hours just by you eating your normal meals), but rather to enhance protein uptake through the consumption of simple carbohydrates. However, very few of such carbohydrates are needed (100-200 calories suffice), contrary to, for a 200 lb. man, the 800 calories of carbohydrate the article suggests!

Finally, electrolytes are not "sodium". They are the full range of minerals and electrical constituents necessary for neuromuscular contraction, including potassium, magnesium, chromium, etc. OK, my rant is done! Mostly a good article, but I just wanted to throw in my 2 cents to help folks out a bit.

After that, I received some questions about how and what *should* be eaten post-workout, after regular workouts, after distance workouts, etc...so I wanted to share with you my response to that.

First of all, let me begin by saying that David Warden will graciously be allowing me to guest host an episode of the Tri Talk podcast to discuss the post-workout feeding issue in more detail. So stay posted for that, along with some more talk about this on my podcast at <http://www.bengreenfieldfitness.com>.



An example of one of the first studies to investigate whether mixing carbohydrate and protein is better than having carbohydrate alone can be summarized as follows: Post exercise protein-carbohydrate and carbohydrate supplements increase muscle glycogen in men and women. Tarnopolsky, M. A., M. Bosman, J. R. MacDonald, D. Vandeputte, J. Martin, and B. D. Roy. *J. Appl. Physiol.* 83 (6): 1877-1883, 1997. We have previously demonstrated that women did not increase intramuscular glycogen in response to an increased percent of dietary carbohydrate (CHO) (from 60 to 75% of energy intake) (M. A. Tarnopolsky, S. A. Atkinson, S. M. Phillips, and J. D. MacDougall. *J. Appl. Physiol.* 78: 1360-1368, 1995). CHO and CHO-protein (Pro) supplementation postexercise can potentiate glycogen resynthesis compared with placebo (K. M. Zawadzki, B. B. Yaspelkis, and J. L. Ivy. *J. Appl. Physiol.* 72: 1854-1859, 1992). We studied the effect of isoenergetic CHO and CHO-Pro-Fat supplements on muscle glycogen re-synthesis in the first 4 h after endurance exercise (90 min at 65% peak O<sub>2</sub> consumption) in trained endurance athletes (men, n = 8; women, tested in midfollicular phase, n = 8).

Each subject completed three sequential trials separated by 3 wk; a supplement was provided immediately and 1-h post exercise: 1) CHO (0.75 g/kg) + Pro (0.1 g/kg) + Fat (0.02 g/kg), 2) CHO (1 g/kg), and 3) placebo (Pl; artificial sweetener). Subjects were given prepackaged, isoenergetic, isonitrogenous diets, individualized to their habitual diet, for the day before and during the exercise trial. During exercise, women oxidized more lipid than did men ( $P < 0.05$ ). Both of the supplement trials resulted in greater postexercise glucose and insulin compared with Pl ( $P < 0.01$ ), with no gender differences. Similarly, both of these trials resulted in increased glycogen re-synthesis (37.2 vs. 24.6 mmol · kg dry muscle<sup>-1</sup> · h<sup>-1</sup>, CHO vs. CHO-Pro-Fat, respectively) compared with Pl (7.5 mmol · kg dry muscle<sup>-1</sup> · h<sup>-1</sup>;  $P < 0.001$ ) with no gender differences. We conclude that post exercise CHO and CHO-Pro-Fat nutritional supplements can increase glycogen re-synthesis to a greater extent than Pl for both men and women.

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This, and the studies that have been done since then (like this one that you geeks can read in full for free: <http://www.ajcn.org/cgi/content/full/72/1/106>), suggest primarily the reason that the carbohydrate will enhance protein uptake is due to the insulin response with the sugar intake.

## Post-Workout Nutrition (con'td)

Insulin is an anabolic hormone that causes energy uptake and storage, and is essential to stimulate the uptake of amino acids. There is also a vice-versa effect - protein can act as a "chaperone" to assist with the carb absorption. The rub is this: MOST folks aren't exercising hard enough or long enough to justify re-fueling when they already have enough amino acids and sugar on board from pre and during workout feeding. You can figure out whether you need a post-workout meal pretty easily. Start by estimating about how much storage carbohydrate energy you have on board to start with. Your maximal carbohydrate storage is approximately 15 grams per kilogram of body weight [15 grams per 2.2 pounds]. So a 175-pound athlete could store up to 1200 grams of carbohydrate [4,800 calories]; enough energy to fuel high intensity exercise for quite some time.

So let's say this 175lb person eats a bowl of oatmeal with some peanut butter (~600 calories), then goes on a 2 hour bike ride at 600 calories per hour. They arrive home at a 600 calorie deficit. Meaning they have 4200 calories of storage carbohydrate STILL ON BOARD. Now, they hear about this post-workout need, and rush off to eat so they can have a "good workout the next day", but is that really necessary. Let's look at how long it would take to replace glycogen, or storage carbohydrate.

Unfortunately, in the scientific literature, glycogen restoration rates are measured in funky units like glycosol per gram or  $\mu\text{mol/g wet wt} \cdot \text{h}^{-1}$ , or  $\text{mmol/kg}$  - tough to translate into actual real world numbers for us normal folks. But I'm going to try.

5mmol of glucose is 1 gram. Assuming the glycogen is cleanly broken down into glucose, then 5.5mmol of glycogen is 4 calories, since there's 4 calories in a gram. Post-exercise glycogen re-synthesis rates fall right around the 10mmol/kg/hr range, which is 4.5mmol/lb/hr, so for a 175lb individual, you looking at 785mmol/hr, which is 157g/hr, which is 630 calories per hour. In other words, a conservative rate of glycogen re-synthesis for you is 630 calories per hour, for up to 2 hours after exercise. So why the heck would you be trying to replace glycogen stores by shoving 800 calories of carbohydrate down the hatch just 20-30 minutes after exercise? Your goal after a typical workout should instead be to A) re-hydrate and B) elevate amino acids to limit muscle catabolism by consuming 0.25g protein per lb of body weight, with a small amount of sugar to elevate insulin levels. So, for example, the 175lb person could eat about 45g of protein power mixed into 100-200 calories carbohydrate (i.e. a couple bananas with a couple scoops whey protein).

What about for a more serious, glycogen depleting workout, like a 100 mile bike ride, followed by a run later in the day? That's when you can and should focus on maximizing carbohydrate restoration. Here's a good rule to follow based on research:

Simply multiply your weight in pounds by three. Divide the result by 16 to determine the number of grams of carbohydrate to eat every 15 minutes.

Example: You weighs 175 pounds.  $175 \times 3 = 525$ .  $525/16 = 33$  grams or 132 calories of carbohydrate, which should be ingested every 15 minutes. And you do that for 4 hours. Notice I said "based on research". If you're not a lab rat and can't mow through a bottle of Gatorade every 15 minutes for 4 hours, then just figure out way to creatively consume 2000 calories of about 25% protein, 75% carbohydrate in the 4 hours following your workout, and try and finish that eating about 2 hours before you start your next workout. I'll wager a bet that you can creatively figure out how to eat 2000 calories in 4 hours. And remember, that's for "Ironman style" two-a-day workouts, so it's mostly the pro triathlete that's going to be worrying about this.

OK, I'm done ranting! Here's where I do end with a shameless plug - you should read my book "Holistic Fueling For Ironman Triathletes" if you haven't yet - so you can learn how to eat lots of calories without destroying your body - get it at <http://www.mindsettriathlon.com> or as part of my program at <http://www.triathlondonator.com>

## Ironman Canada, Eh! Race Report by Matty Cusack

It's been a long road here but the journey was worth it and enjoyable!

We drove up on Thursday, following the Gallaghers' car up to Penticton, which contained them and Craig & Erica. In our car was my dad, Jessie, and myself. We had an amazing crew up there to support, cheer and race. On Friday my mother, her fiance, his daughter and her boyfriend joined us.

Shortly after getting up there, we went for a swim in Okanagan Lake (same as race). There were floating docks with blue slides a bit off shore, so our decision was easy: swim to each then go down the slide and then on to the next. This was also a bit challenging since there was strong wind that was creating some sweet white caps.



Friday

came and it was time to head to the expo and register for the race, meaning get my bracelet, gear bags and all that fun stuff. Then 2010 athlete's were given the option to sign up for 2011, so we didn't have to wait in line on Monday for hours, this is a little sneaky on their part being that they get you before you are in pain from the race ;) but without hesitation I signed up for 2011! It was enjoyable to go through the registration process with Craig and Erica, it helps to have people there that know the process.

On Saturday, I spent this day was filled with getting organized for Sunday: eating, dropping off my bike and gear bags, eating, and relaxing. Up to this point my nerves weren't too bad.

### Race Day:

Surprisingly I actually slept the night before the race, often this will not happen for me when not in my own bed, so that was a big plus! But wake up time came all too fast anyway at 3:50am.

I got up, ate my normal breakfast, then got the rest of my gear together, slept walked to the car and was off to downtown Penticton. In line for body marking I ran into a friend from Spokane which was nice, since when you chat it's easy to forget what the day has in store for you, ever so shortly.... Laura seemed ready and excited to tow the line as well!

Prior to the swim there was a short list of things I had to do, some of which I forgot to do (more on that later). I donned my Xterra Vendetta wetsuit and started to walk down to the beach, after I walked under the archway, I noticed I forgot to take off my flip flops...which isn't a surprise since they are darn comfy. So I had to go back in to put them in my bag and then was lucky enough to hook up with Craig and Erica again.

### Swim:

I started out to the right, since it looked less crowded than the right side of the beach. This is an interesting start since the water is so shallow you can actually walk/run/swim for 200ish yards or so if you would like. I started off at a pace slower than my goal pace, then settled into my goal effort, but when the group that started on the left converged with us, I got beat up and pushed around, swam over, and started to have what felt like a bad asthma attack (which I don't have) and I got nervous since I could barely breath. I tried to stop for a second, but saw a lot of people right behind me that would soon be swimming over me if I didn't move. I backstroked for a few strokes, then tried to swim again, but still had breathing issues, repeated the last steps again. Finally, I started to swim again, but slow enough that I didn't get clobbered. I was able to calm my breathing down and then settle back into my pace and soon forgot about the close call. I told myself if things went wrong, when they were over - not to dwell on them and just leave them behind me like the miles I would be leaving behind all day. After the second turn (at the second houseboat) it was 1.8k back to the beach, so I picked up the effort a little and for the most part I was able to find feet or better yet, sit in a pack. I made sure not to waste energy, if I was swimming at the same speed as someone side by side I would get behind them and be smart :) We had a good wind out there so it was a tad quicker coming back in which was sweet.

**Swim Time 1:03**

### Bike:

In T1, I donned some arm warmers and headed off for a beautiful 112 miles through the Okanagan and over 2 mountain passes. The plan was to start eating asap on the bike and keep it going the entire ride. I wanted to go through four flasks of First Endurance Liquid Shot and 1-2 bags of Chomps throughout the ride on 20-30 min. feedings and at the 2 hr. and 4 hr. mark, eat 4-5 chomps to trick my mind a little with the chewing.

## IM Canada RR (cont'd)

Once I was settled in, I just cranked away at my targets and enjoyed the ride out of town with people cheering everywhere. I felt like a celebrity, with people I didn't know yelling "Go Matty!" What an amazing feeling! James passed me at the 10k mark on the bike looking solid as always and he stayed solid the entire day! Shortly after this I was surprised when the Gallaghers pulled up to shoot pics and have a quick chat with me to see how I was and give me my swim split. The great surprise was my beautiful wife was with them :) I asked them if they noticed anything missing from the back of my bike...shortly before I had noticed I forgot to attach my blow out kit. I rode very cautiously all day to best ensure my flat-less ride! My group of supporters popped up at various locations all day, it was great having them out on the bike course, usually in perfect spots!

When we hit the Husky station I was excited, this is where the first major climb starts and it's a great one, Ritcher Pass! So I settled in and climbed at the target HR and Power per what Dirk suggested. The climb went fast (about 12.5 k climb) and I was soon descending into the valley where the Seven Bitches are (a series of rollers). After them we made our way into Cawston Flats where the out and back for Special Needs was. In the out and back I found an extra gear and started to pull away from the people I had been riding around for the past 2ish hours. A few times, I tried to pee while riding, but I couldn't relax enough (something to work on) but I wasn't going to stop either :) My HR and power were right where they needed to be and I was feeling great! I picked up my special needs bag quickly on the fly and was off to make my way up to the Yellow Lake climb. By the time I hit the false flats near the climb, the temp was dropping and ominous clouds lurked near, but before I knew it I was in a total downpour before the climb began. When I started to climb, the massive crowds helped to forget the cold temps (42 degrees F) and the downpour as they cheered everyone up this mountain pass. As I neared the summit, a bigger group of people lined the street, much like you see in the grand tours of cycling. I felt like a star (a cold and wet one) and I even felt emotional. It was a tough and special moment for me in my race and life there near the summit of Yellow Lake. When the descent started I knew it was going to be tough, but how tough it was I didn't expect. By the time I was about 1/3 of the way down, I was shivering uncontrollably which was so bad it caused my front wheel to shake so I had to slow down a lot. I tried to keep taking in calories but it wasn't easy since my muscles were still numb from the cold. I did my best to keep my spirits up and not have any negative thoughts. This is a long day and you need to approach each obstacle with care as well as with the best outlook as possible. Although, I was nervous about getting hypothermia, I never thought about stopping or quitting, but with the shakes I was going pretty slow down hill.

As I approached town, I noticed the lack of dark clouds in the distance :). When I was about eight miles out, the rain stopped and the temps got warmer but my shivering didn't stop. I knew once I started to run, I'd warm up. I still felt a presence of the winds that I had been dealing with ALL day. I did my best to keep moving and get to T2. I was cold, but I was on a mission to get out on to the run -> then to the finish line! Coming onto Main Street, the crowds started to come back, it was great to feed off their energy. Close to T2 I saw my mom and that group screaming for me :) The 20-25 miles of cold rain cost me some time on the bike and probably some energy as well, but that was over and this was no time to dwell on it - just time to run MY run and enjoy every stride of it.

**Bike: 5:52**



### Run

After a LONG pee in transition, I was off for my first marathon. Surprisingly, right away I found my stride and felt great, I reeled myself in and kept a

smart pace while watching my HR too. Running through the crowds screaming my name was amazing and better was seeing all the familiar faces. It's hard being out there so long, almost lonely, being away from the ones you love, so it's great to see them pop up A LOT.

Once I got along Skaha Lake, I started to see the Gallaghers on their bike popping up a lot with words of encouragement and friendly smiles. Honestly they rock, all day they were out there making me smile and offering support. Along the lake I was still clipping away at a good pace and making sure to take in calories at all stations and thank everyone I ran by.

I knew after mile nine the run would get harder and I was planning on slowing down there. Before I hit the hills, I caught a good friend that had some stomach issues, so I decided to run with her for a mile or so, which also helped me to slow down on the hills. After a little while, she told me to go. Even though I felt guilty leaving a friend in need I decided to go. After the hills we ended up in Ok Falls where the turn around is, as well as Special Needs. Coming in I saw my beautiful wife cheering, as well as my Dad, as I picked up my SN bag, the lady (volunteer) said there was a note someone put in there. Now I am glad she told me, since I didn't need most of what was in there, it was more of back up stuff...just in case. Happily, I found a sweet note from my wife which quickly brought a smile to my face and some emotions too.

## IM Canada RR (cont'd)

After the turn around, I saw two friends that drove all the way up to cheer! When I left Ok Falls it was time to hit the hills again, man did they hurt. After the first climb my legs started to hurt pretty badly, I went through the next station treating it like a buffet line, but the calories didn't help much. I saw Greg shortly after and I think he could see it on my face that I was trying my hardest to move forward. After 1/2 mile I started to walk the hills, run the flats and down hills. I was hoping I could snap back, but once you start to walk it changes everything. Soon enough Erica caught me back, I stayed with her and we ran the last 11-12 miles together leaning on each other (not literally) and pushing each other to keep moving forward and reminding each other about the important things. Sharing this with her meant a lot to me, she caught me at my lowest point of the race and pulled me out of it. The rest was a struggle, but when you have someone to share it with, it seems all the more bearable.



When we hit downtown I told her, "We need to run it all, I will talk her through it and we need to feed off the energy of the amazing fans." The fans on Main Street were amazing: they were there after the swim, after the bike and now after the marathon! We pushed, paying attention to anything but how we felt, talking each other through what seemed like every step. I kept her up-to-date on how much we had to go, when

we hit Lakeshore, I felt like I was on a cloud and could cry at any given moment. There were people EVERYWHERE, our supporters started to pop up again and again like as if they were teleporting from place to place with lightening fast speed to share our finish with us. I did everything I could to stop the emotions from pouring out. Then at the finish turn around on Lakeshore we saw another teammate closing in on us, so we picked it up which was still not fast, but felt like I was flying! We soaked up the glory of finishing 140.6 miles together, crossing the line side by side. It was a euphoric feeling, almost like a blur. The catcher got us, then started to bring us over to the photo area, we then literally leaned on each other to support our tired legs. After I made my way through the finishers' area, I found my supporters and thanked them and shared the glory with them.

We all felt emotional and the other feelings I still cannot explain, but as Greg said, "Just let it go," and I did. I felt like I was in a daze, I didn't really know what to do, but I wanted to be around the people that I was away from all day. I wanted to feel their love that I have been so far away from. But I also wanted pizza :) Hearing the words, "You Are an Ironman!" were more than I thought they would be, because it's not the distance that's a struggle, it's the bumps in the journey and during that individual race that shapes that feeling at the finish line.

**Run: 4:23**

**My first Ironman finish time: 11:26**

A big shout out to James, Erica, Craig, Chris, Rocky, Heather, Michael, Kara, Laura, Kathi, Bryan, Jayne, and Janine!

My on course supports: you were there all day, popping up right where you were needed, saying the right things and sharing that finish with me. Thank you, I will never be able to repay how you made me feel.

2011 Ironman Canada, here I come!!!



## The Workout: Weekend Warrioring

### From Chuckie V's blog

I myself have a job, helping to assure my own survival (though it's never fully assured). What's more, if I don't do what I'm paid to do, I will not only fail myself but also those who've hired me. But, to this end, I'd scavenge neighboring garbage bins if I had to; pride does not intervene. Nor would it you, if your survival depended on it. Survival is not always a matter of pride, save for the lions. And like the animals, we work to survive. For me, it's coaching and living off savings gathered from years back. (Incidentally, my plan is to live forever. So far, so good.)

Segue aside, the intent of this particular write-up is to talk about the time we're not working, when we finally get to "balance" all that work with play. "Play" has plenty of meanings, but for those of us who like to touch base with our animalistic instincts (particularly those fight-and-flight responses hardwired into our very being) we do nutty things like, well, Ironmans. Some of us, it seems, like to play as hard as we work.

And here's to you!

On Saturday you'll ideally want to incorporate your toughest training day of the week, a challenge that closely relates to your goal race and all that it necessitates. For the Ironman athlete this essentially means a brick, whether it's a swim/bike/run ordeal or a bike/run challenge. The goal, of course, is to emulate the demands you'll face during your goal race, both in terms of effort and environmental conditions. Of course racing involves a sympathetic nervous system/adrenaline response that won't necessarily take place here, but it's important to make this workout as race-like as is possible: the early morning start, your fueling and hydration practices, your pacing tactics (yes, you should incorporate tactics even in training), employing "mock" competitors, the conditions (by over-dressing if necessary), your transitions and your overall execution. If you're finishing the bulk of your workouts slow and hungry you need to investigate and instigate the necessary changes here on this day. Think of this as race practice. After all, that's what training is. We don't train to get better at training. We don't train to improve specific physiological metrics. We don't train because it's fun. We train to compete.

Now, if you happen to wake up on Saturday and feel like a ton of bricks---instead of doing a brick---you can postpone this workout until Sunday.

Assuming Saturday went without a hitch, Sunday would simply be a "Cavemanesque" bike ride, entirely done by feel, or as I like to say, "as you see fit" (to teach you to develop a more intimate rapport with your body). The goal on this day is to scare the body into believing it has to sustain this type of weekend workload (i.e., a serious dose of iron) for days to come. It does not, as all that would do is ensure that you get fired from your job or divorced from your spouse, in addition to prolonging your training recovery. But "stacking" training days like this every so often is precisely what an Ironman insists upon. They ain't easy, folks!

So, in full (and as shown in my previous two blogs), your "optimal" Ironman training week might look a little like this (and probably should, if you care to do well)..

Monday: Run (1:00) + Swim (1:00) (detailed in previous blogs)

Tuesday: Ride (1:00) (detailed in previous blogs)

Wednesday: Time-consuming Run (2:00) + Swim (:45) (detailed in previous blogs)

Thursday: Ride (1:00) (detailed in previous blogs)

Friday: Run (1:00) + Swim (1:15) (detailed in previous blogs)

Saturday: Time-consuming Brick (4:00 Ride + 1:00 Run)

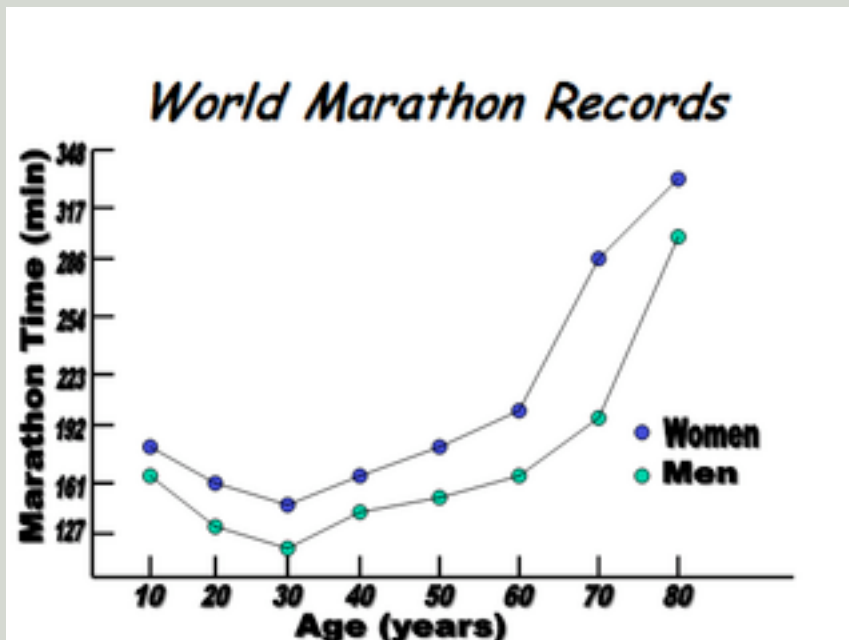
Sunday: Time-consuming Ride (4:00)

Oh, and you'll note there is no weight-training in the mix. This is because you're on a time-crunch and have better ("better" as in more beneficial) things to do with your time. If you're not on a time-crunch, swim, ride or run more. When you've maximized your training load (and your potential) with these activities then consider the gym.

## Aging and Performance

from Joe Friel's blog

We're obviously all getting older and that has implications for performance and for training. Around age 30 endurance athletes seem to reach a peak in performance. After that there is a slow decline year after year. At first it is so slight that the athlete may not even notice or may mark it up to poor training or bad luck. But by the early 40s it is generally apparent to most that performance is going the wrong direction. And the trend continues after that. The accompanying chart of "World Marathon Records" illustrates what has happened to the best marathon times in the world by age group (this chart is a couple of years old now so please forgive me if I've missed a new record). Realize that the runners who set these records are the cream of the crop. They are undoubtedly blessed with remarkable genetics and have most likely trained very well in order to produce their best-ever-in-the-world times. Notice the steady increase in marathon race times until about age 70 when the change is rather abrupt. I've seen this same trend in age-group records for cycling and swimming also.



Some of this dramatic change around age 70 may be due to societal effects. The leading edge of the "baby boom" generation is just now reaching their mid-60s. In the early 1970s when that generation was just in their late 20s the running and fitness boom began. Many from that group are those who are now breaking age records in all sports. The generation that came just before the baby boomers (did they have a name or is that something relatively new?) didn't have the same exposure to sport and fitness. The Great Depression and WWII probably had a lot to do with shaping that generation's mores and lifestyle. My point here is that we may soon see the world records in all sports for the 70-year-old category drop as the next generation "ages up."

The rate of decline in endurance performance appears to accelerate after age 60. What is the cause of this decline and how can you train to moderate it?

Before getting into all of this let's review the basics of training for endurance sport because when it comes to modifying how you train in order to reduce the negative effects of aging on performance you need to first know what your options are. Actually, there isn't a whole lot of research on aging related to athletic performance. The few studies and literature reviews I've come across that seek a cause for the declines in competitive endurance performance with advancing age point the finger of blame at aerobic capacity as the most likely reason (3,4). One implicated lactate threshold as a primary cause (1) while others found this to be of secondary importance (3,4). None suggest that economy is not an issue.

The best studies for topics such as aging are longitudinal as opposed to cross-sectional. The latter research looks at a large group of people of various ages at a given point in time. Such research assumes that a 60-year-old athlete studied today would have performed 20 years ago the same as a 40-year-old athlete also studied today. On the other hand, a longitudinal study follows a group of subjects over several years to see what changes occur. These are the most revealing but for obvious reasons are rare.

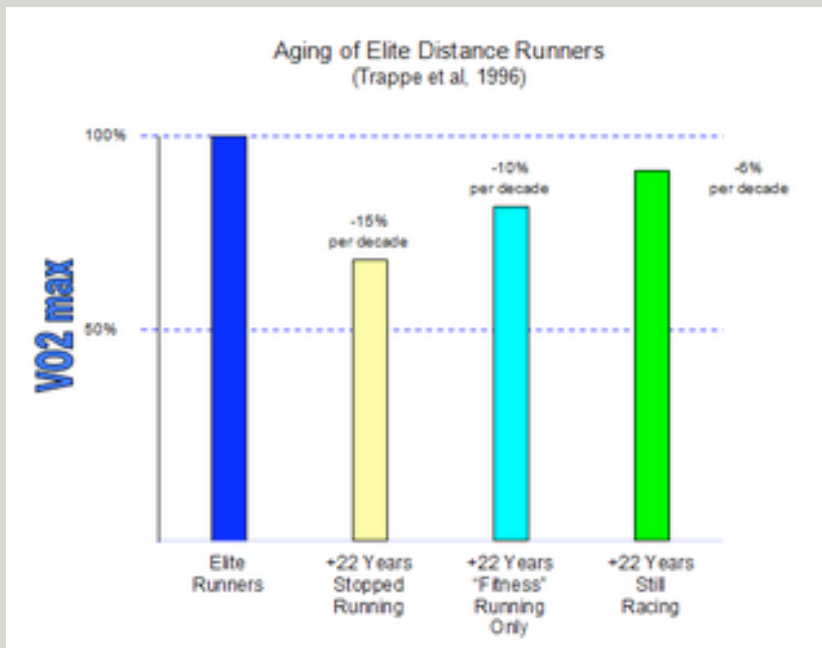
One such longitudinal study out of the University of Zurich measured the change in VO<sub>2</sub> max over a 15-year period in a group of 27 elite endurance runners (2). They were first tested in 1973 with a follow up in 1988. In the follow-up the athletes would have been in their late 30s to early 40s, so hardly what you might call "old." Over the years, however, they had changed their exercise routines.

Nine of them had become fitness joggers. Their rate of decline in VO<sub>2</sub> max was 16% per decade. That's a lot of change. Sedentary folks' loss of aerobic capacity is generally thought to be around 10% per decade. Some research suggests that athletes who cut way back or stop training altogether tend to lose VO<sub>2</sub> max as they age at a faster rate than their sedentary peers (3). This is probably due to the athletes' higher starting point when the cut back began.

## Aging (cont'd)

In the Zurich study the five most active who were still training and racing at a high level maintained or even increased their aerobic capacities. Remarkable! The 13 athletes in the middle group who trained but were less concerned with performance showed a rate of decline of 7% per decade. The changes were found to be mostly the result of changes in training mileage (fewer miles), average running pace (slower), and body composition (as body fat increases VO<sub>2</sub> max is likely to decrease).

Another such longitudinal study comes from the human performance lab of acclaimed exercise physiologist David Costill, PhD, at Ball State University in Indiana (I started my grad work there in 1971). Talk about longitudinal! This study followed a group of 53 elite male runners over 22 years (5). They were first tested in the late 1960s and early 1970s. All experienced a loss of VO<sub>2</sub> max. The accompanying chart illustrates how great the changes were. Notice that those who kept on racing had the lowest rate of decline on average, but somewhat more than the Zurich study's racers. The training mileage was higher for those who continued racing, their average pace was greater and they gained less weight than the athletes who ran only for fitness. (Side note: It's reported that Dr. Costill, a collegiate swimmer in his youth, actually improved his swim times by his 50s.)



In summary, it appears that aerobic capacity (VO<sub>2</sub> max) and lactate threshold are the most likely culprits when it comes to slowing down as we get older. And there is considerable evidence that VO<sub>2</sub> max does indeed decline. However, researchers appear to be less interested in studying lactate threshold. So where does this leave you when it comes to your long-term training? In part 3 of this series I'll get into what I think is the best way to maintain performance with advancing age.

But first I'm off to Bangkok for a few days to speak at a seminar. I'll come back older (and perhaps wiser) with answers to this question. I hope.

## References

1. Allen, W.K., D.R. Seals, B.F. Hurley, et al. 1985. Lactate threshold and distance-running performance in young and old endurance athletes. *J Apply Physiol* 58(4): 1281-1284.
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3. Tanaka, H. and D.R. Seals. 2003. Invited Review: Dynamic exercise performance in Masters athletes: Insight into the effects of primary human aging on physiological functional capacity. *J Appl Physiol* 95(5): 2152-62.
4. Tanaka, H. and D.R. Seals. 2008. Endurance exercise performance in masters athletes; Age-associated changes and underlying physiological mechanisms. *J Physiol* 586(1): 55-63.
5. Trappe, S.W., D.L. Costill, M.D. Vukovich, J. Jones and T. Melham. 1996. Aging among elite distance runners: A 22-yr longitudinal study. *J Appl Physiol* 80(1): 285-90.

## Giant Chocolate Chunk Cookies: LIGHT!

adapted from [www.myrecipes.com](http://www.myrecipes.com)

### Ingredients

- 1 + 1/4 cup whole wheat flour
- 1 cup white flour
- 1 teaspoon baking soda
- 1/2 teaspoon salt
- 1/2 cup Blue Agave nectar
- 2/3 cup light brown sugar
- 1/2 cup butter OR 1/2 cup no sugar added applesauce (low-fat version, delish:)
- 2 teaspoons vanilla extract
- 2 large egg whites
- 2 tablespoons milled flaxseed + 6 tablespoons warm water (whisked well)
- 1/2 cup milk chocolate chips
- 1/2 cup peanut butter OR butterscotch chips
- 1/2 cup chopped nuts (walnuts, pecans or peanuts - if making chocolate/peanut butter chip version)
- olive oil spray



### Preparation:

Heat oven to 350 degrees. Thoroughly coat cookie sheets with olive oil spray.

In a medium bowl, mix together: flours, baking soda and salt. Set aside. In a large bowl combine: Blue Agave nectar, brown sugar and butter or alternative, using mixer. Mix until fluffy. Add vanilla and thoroughly beaten eggs + milled flaxseed/water combo. Slowly add flour mixture to large bowl ingredients and mix thoroughly. Add chips and nuts, stirring with a spoon or spatula. Cover and refrigerate at least one hour before baking.

Place cookie dough in large tablespoons full on cookie sheet and bake for 13 minutes or until golden brown. Cool on pan for three minutes and then completely cool on wire rack.

I made these cookies with all of the low-fat, low-cal alternatives - using milk chocolate chips + peanut butter chips + crushed peanuts. They are absolutely fluffy and delicious!

# The Board of Directors, Sponsors and The Calendar of Upcoming Events...

## Board of Directors

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We would like to extend a  
generous thank you to our  
truly amazing sponsors!



## Sept./Oct. Calendar

### Training Opportunities:

- Whitworth Masters Swim: on Mon-Wed-Fri @ 8:30-10 PM. For more information contact [KevinWang@spokanewaves.org](mailto:KevinWang@spokanewaves.org)
- Outdoor rides/runs are happening! Watch the Tri Fusion Forum (training) and the Tri Fusion Facebook updates daily & find a training session and group to connect with your teammates!
- If you want to invite your teammates to join you on a training swim/ride/run, be sure to post the information on our Tri Fusion forum, Facebook page and/or send out an email!

### Races:

- Sept. 18th: Club Championship Race at Grand Columbian Triathlon in Grand Coulee, WA
- Sept. 19th: Scenic Half Marathon @ Sandpoint, ID
- Sept. 25-26th: Black Diamond Festival of Races @ Enumclaw, WA
- Oct. 2: Fallen Leaf 5K Run @ Spokane, WA
- Oct. 3rd: BRRC X-C 5K Run @ Bear Lake, WA
- Oct. 10th: Spokane Half & Full Marathon @ Spokane, WA
- Oct. 17th: BRRC X-C 5K Run @ 7-Mile, WA

### Upcoming Events:

- Tri Fusion's Annual Greenbluff family social is coming in October! We will enjoy another fun time picking pumpkins, drinking cider, visiting the farms and gathering together. Exact date TBA via email, FB, & the forum.
- Tri Fusion's End of Season Social is on Friday, November 19th @ 7:00 PM @ the Spokane Country Club! Tickets are on sale (\$25/each) at both membership meetings in September & October and via mail in. Find more information on [www.tri-fusion.com](http://www.tri-fusion.com), on the forum!

### Next Membership Meeting:

- Our next membership meeting is on Wednesday, October 20th @ the north side Twigs restaurant @ 6:30 pm.