



This newsletter is brought to you by sore forearms (I jumped in a boat for Head of the Charles this past weekend!), steep powerline trails, and squid ink pasta. If you enjoy this newsletter, I'd be grateful if you could share it with one or two others!

Trail and Tri circuits

Just how there are different circuits/race series like the Diamond League, World Athletics Tours, and the World Marathon Majors in track and field and road running, there are different circuits/series in trail running and triathlon. I'll outline them and highlight some recent/future events here:

Trail Running

The major series are: Ultra Trail du Mont Blanc (UTMB) World Series (all distances), Western States 100/Golden Ticket Races (ultra distances), Golden Trail World Series (sub-ultra distances), Skyrunner World Series (usually sub-ultra), and World Mountain Running Association World Cup (sub-ultra).

The Golden Trail World Series had its finals this past weekend. I recommend watching some of the running -- I usually skip around and watch for form differences and inspiration (mens race [here](#); womens race [here](#)).

Triathlon

The major series are: Ironman Triathlon (both Ironman and Ironman 70.3 distances), World Triathlon Championship Series (mostly Olympic distance), Professional Triathletes Organization (PTO) Tour (mostly middle-long distances), and XTERRA (off-road triathlon).

Looking Forward

This weekend I'll be watching a couple races unfold: the Men's Ironman World Championships, which you can watch [on Outside TV](#) on Saturday October 26th, and the Javelina Jundred, a 100-mile Golden Ticket Race in Arizona, which you can watch on [Mountain Outpost](#) (it'll be a 30-hour stream!) on the same day.

Coaching snapshot: muscle fiber typology!

Question: "Why are people talking about different muscle fiber types? How do I know which ones I have?"

Great question! Muscle fiber type is an important consideration in individualizing training. Knowing your muscle fiber dominance (i.e. Type I vs Type II-dominant) can help you understand and adjust training [load](#), fueling, and [recovery](#). Below is just an introduction. As always, there's lots of nuance and a lot more that hasn't been studied or explained in research yet.



In humans there are three [muscle fiber types](#) as categorized by a certain protein content (myosin heavy-chain): Type I ("slow-twitch" with oxidative ability), Type IIa ("fast-twitch" with oxidative and glycolytic abilities), and Type IIx (another "fast-twitch" but fully glycolytic and only a small proportion of fibers). Oxidative means that the muscle fiber uses oxygen and participates in aerobic energy metabolism (e.g. easy running). Glycolytic means that the cells use anaerobic metabolism (e.g. sprinting). "Slow-twitch" means that the fiber literally has a slower muscle contraction speed/"twitch" when stimulated by the neuron, whereas "fast-twitch" means it has a faster contraction speed. Type I fibers are fatigue-resistant, whereas Type II fibers are quickly fatiguable but can produce more power. Endurance athletes generally have a higher proportion of Type I muscle fibers (60-80%), whereas power athletes and sprinters have a higher proportion of Type II (60-80%). Though a lot of muscle fiber typology is [genetically determined](#), muscle fibers do have the ability to [switch](#) fiber type and size.

The [Wingate Test](#) is the most popular non-invasive, non-technical method for understanding an athlete's capacity for anaerobic work, and by extension Type II vs. Type I muscle typology. This is a 30-second all-out from the gun cycling sprint. Measures of peak power, average power, fatigue index, and time to fatigue are useful for phenotyping. In short, if an athlete's power decays [more and faster](#), and they require more recovery time, they likely have more Type II muscle typology. Note, muscle typology [varies a lot](#) within and between muscles, so for an upper-body sport, it would make sense to do an arm-bike test instead. As with other tests, like the ones for heart rate I mentioned [a couple weeks ago](#), this evaluation is just another data point that can help us understand an athlete's overall profile.

What questions do you have about training and racing? Reply to this newsletter or [email me](#), and I'll answer one next week!

Also, let your friends know that I'm taking more athletes! I'm looking to work with runners and triathletes and depend on you to help spread the word :) Send them to my [website](#) to submit an inquiry or just pass along my email.



Halloween cupcakes!

If you're looking for some colorful cupcakes for Halloween, try these pistachio ones! To make them even greener, you can add some food coloring. Not sure these constitute as scary, but you could definitely get creative with the decorating.

For icing, I usually do 7-minute frosting:

Whip 4 egg whites, 150 grams granulated sugar, and 1 tsp vanilla in a pot over low heat. Whip until thickens and you have soft peaks, about 7 minutes. Remove from heat and continue whipping to form stiff peaks.

[Pistachio Cupcake recipe](#)

Order pickup or delivery!

S.S. Endurance is done vending at the Harvard Farmers Market for 2024. Instead, I have a new pickup system! [Order online](#) 24 hours in advance for pickup. Remember, I also do delivery or pickup from spots determined by you! For updates, make sure to follow me on Instagram [@coach_serena326](#). For questions, feel free to email me by responding to this email!



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