



This newsletter is brought to you by lots of Ezekiel bread. Enjoy!

A couple records

There were a few long-standing records broken in the past week or so in the ~running~ world.

1. First, David Roche broke the Leadville 100 course record held by Matt Carpenter since 2005. [Here](#) is a cool account of training and racing from Matt Carpenter when he broke the record. David Roche has also shared a lot about his training and racing, both on his [podcast](#) and on Instagram. (He's also a coach I derive a lot of coaching inspiration from, so I'd recommend checking out the [SWAP](#) website!)
2. Yesterday, Jakob Ingebrigtsen broke the 3k outdoor track world record held by Daniel Komen since 1996! He looked so shocked when he crossed the line. The replay linked below is really worth a watch (or two...).
3. Don't forget to tune into the [Paralympics](#) that start tomorrow! There are lots of long-standing records waiting to be broken.

[Ingebrigtsen 3k world record replay](#)

WE HAVE SHIRTS!!!

If you're interested in supporting the business, please consider buying a shirt! I'm selling them at a discounted price, for only \$20. They are unisex tech/sweat-wicking shirts and come in pink as well as blue! And the best part is that they say "Climb mountains. Eat cookies." and have a cookie that is supposed to emulate the sun/a gold medal at the middle mountain peak. My graphic design skills are excellent, huh? Thank you all!!

P.S. They come in small, medium, and large, and I have no idea what those sizes correspond to. If you're unhappy with it and return it, you will get a refund!

[Buy now](#)



Science snapshot!

Question: "I did some calculations and realized I was only taking in about 300mg of sodium in total over a 3-hour run the other day. I felt fine, but I read somewhere that I should be taking in that much per hour. So how do I know how much salt I should be consuming during training?"

Thank you for this question! It's awesome that you're building awareness about your fuel and nutrient intake during training. Overall, it can be difficult to figure out how to avoid under- or over-hydrating. Like training and like fueling, it takes experimentation and patience to figure out what works best for you individually.

Let's take a look at this 2022 [Review article](#) published in the *International Journal of Environmental Research and Public Health* for some more information. Some key takeaways:

- Exercise-associated hyponatremia (low blood sodium) is a result of too much fluid intake with insufficient salt intake and can lead to dizziness, low urine, cramps, and vomiting.
- Sweat rates vary widely by individual, from 0.3-2.4 liters per hour. Sweat salt concentration also varies widely but averages around 1 gram per liter of sweat (range 200-2000mg per liter!).
- Make sure you are drinking enough fluids along with any salt intake to avoid dehydration by hypernatremia (high blood sodium).

- The American College of Sports Medicine recommends 300-600mg of sodium per hour for exercise over 2 hours.

There are also some tests you can do to estimate your fluid and salt losses. At home, you can weigh yourself before and after exercise to see how much fluid you lost. There are also some companies that do sweat tests. Either way though, don't forget that heat, humidity, and training intensity also feed into the hydration equation!

400mg of sodium over the 3-hour run is on the low end, especially if it was in the heat or if it was an intense session. Perhaps experiment with more sodium next time and report back!

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

[Email me!](#)



Oat blueberry muffins

Blueberry and oats are a power couple. These muffins are super moist and can easily be made vegan (since they don't require any eggs)! Blueberry season is in full swing, so let's celebrate that!

[Recipe here!](#)

New pickup system!

S.S. Endurance is done vending at the Harvard Farmers Market for 2024. Instead, I have a new pickup system! I am offering pickup **Tuesday mornings at 6:30am at Weeks Footbridge, Cambridge side** of the river. [Order online](#) by 8pm Sunday night for Tuesday pickup. 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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