

This newsletter is brought to you by Sweet Disposition radio playlists, Marin daydreams, and sweating over football games. If you enjoy it, I'd be grateful if you could share with one or two others!

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## Arbitrary challenges!

Chipotle and Strava partnered to form a Chipotle x Strava challenge: whoever completes the most segments (I believe these are segments in front of a specific Chipotle in certain cities) in the month of January gets free Chipotle for a year. It's silly. It's arbitrary.

Jamil Coury, an ultra runner and head of Aravaipa Running (a great racing organization), is documenting his attempt in Tempe on YouTube ([this video](#) had 18k views at the time of my writing this!). Kevin Russ, another ultra runner, stepped up to compete, and the two have been trading off leading. The other day they both ran over 50 miles in pursuit of this challenge! Why?!

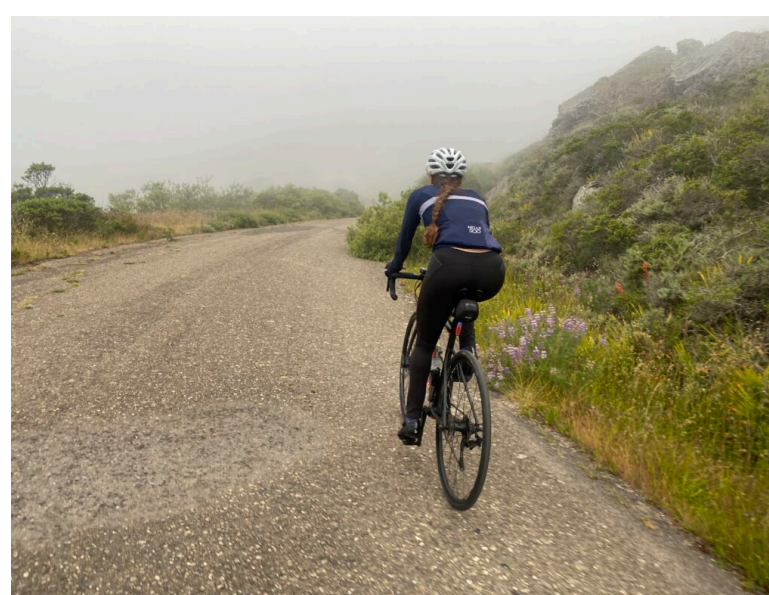
Maybe they really like Chipotle, which is totally valid. But also, it's okay to set arbitrary goals. It's okay to do something just 'cause.

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## Coaching snapshot: cycling cadence!

This question came from a triathlete about cycling, but the discussion of cadence is relevant to all endurance sports. *"I noticed that I can ride at the same power but a lower heart rate if I'm at a lower cadence. Should I be training at this lower cadence, or should I be shooting for 90 rpm?"*

Cadence in cycling, as in running or racing a single scull, is individual. As you progress as an athlete, you will find the cadence that optimizes your output and effort for the situation at hand. By "optimal cadence" I mean the cadence at which energy expenditure is minimized for a given power output. So, no need to shoot for 90 rpm all the time! In fact, the optimal cadence for whatever situation might not be 90 rpm.



This [2024 study](#) published in *Frontiers of Physiology* held power output constant and examined the effect of cadence on heart rate, blood lactate concentration, and oxygen uptake. They calculated optimal cadences based on these metabolic factors for each power output. These ideal cadences ranged from 66 rpm (at the low end of aerobic intensity) to 84 rpm (near maximal aerobic intensity). At higher outputs, higher cadences were more efficient. For longer duration events, optimal cadence also likely increases. This is the body finding balance between

stressing the [neuromuscular system and stressing the metabolic system](#).

However, for training, there is no need to do all your training at the optimal cadence! [It's hypothesized](#) to be beneficial to practice low cadence work to improve muscle recruitment and high cadence work to improve pedal stroke technique (both are also widely practiced by pros). Practicing both will let you easily adapt to different situations, like climbing hills or going for a multi-hour ride.

- In contrast to cycling, there have been few studies done in rowers to evaluate optimal stroke rate. [This study](#) from 2009 found that efficiency was unrelated to stroke rate, but the researchers only tested stroke rates 28, 34, and 40.
- In running, there is [some evidence](#) showing that a self-selected cadence is the most metabolically efficient cadence, and a faster cadence can decrease mechanical stress. Further, [a study done in 2011](#) found that increasing cadence by 5-10% substantially reduces hip and knee joint loads, which could reduce injury risk. It seems logical to me that optimal cadence will also increase as power output/speed increases, but I couldn't find as clear a study done in runners as in cyclists.

If you've got a question or idea, reply to this newsletter or [email me](#), and I'll answer or reflect on it in a few weeks!

**Let your friends and club networks know I'm taking more athletes! Send them to my [website](#) to submit an inquiry or just pass along my email. Thank you so so much!**

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## Carrot cake!

Ingredients: 11 oz finely chopped carrots,  $\frac{2}{3}$  cup oil, 4 eggs, 3 tbsp molasses, 3 oz chopped walnuts, orange zest, 2 cups all purpose flour,  $1\frac{1}{2}$  cups sugar, 2 tsp baking soda, 2 tsp cinnamon, 2 tsp ginger, 1 tsp allspice,  $\frac{1}{4}$  tsp cloves.

Prepare: Combine all wet ingredients plus the sugar and all dry ingredients separately. Stir the dry into the wet. Pour into buttered bundt pan. Bake ~40 minutes at 350°F.

Optional to make cream cheese frosting: beat together 4 oz cream cheese, 3 tbsp butter, 1 tsp vanilla, 1 cup confectioners sugar, and optional coconut flakes. Add sugar until you reach the desired texture. Spread and enjoy!



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