

USC  
NEWS

October 2016

# ULTIMATE *Sports Coaching*

SUPERIOR ATTITUDE. SUPERIOR STATE OF MIND.

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## CADENCE

by Jane McGrath

Cyclists are sometimes identified as "mashers" or "spinners." A masher is someone who likes to race by pedaling hard on high gears with low or moderate cadences. A spinner, on the other hand, races on low gears with high cadences.

One might assume that there's one optimal cadence -- or an ideal cadence -- that perfectly balances power and endurance that every cyclist should strive for, allowing the human body to be its most efficient. Interestingly, some studies that examined cadence concluded that a lower cadence -- about 60 rpm -- is the most physiologically efficient, even though the best cyclists pedal at higher cadences -- usually over 85 rpm. However, more recently, some have decided to test this again, accounting for some flaws in the earlier studies. These

follow-up studies found that, with a high power output, 80 to 100 rpm cadences can be the most efficient.

According to one theory, the aerobic performance is best at these higher cadences. This could be a result of the body delivering more blood to and from the heart while pedaling at such a high rate. This means that blood will have higher oxygen levels, improving aerobic performance. So, some argue that this is because optimal cadence can be different depending on the individual.

Lance Armstrong, for instance, achieves very high cadences on lower gears because of his high aerobic capacity. In his discussion of optimal cadence, Dr. Stephen Cheung likens it to walking - the ideal walking cadence can

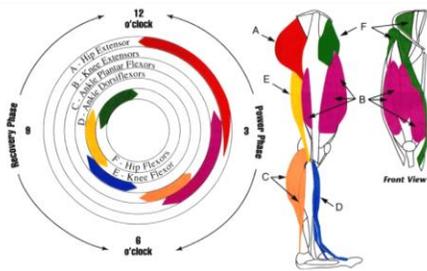
depend on the individual's body size and simple preference.

The optimal cycling cadence also has a lot to do with the two types of muscle fibers: slow-twitch fibers and fast-twitch fibers. Mashers use more fast-twitch fibers, which offer a lot of power but fatigue quickly. Spinners, on the other hand, use more slow-twitch fibers, which don't fatigue as quickly. Slow-twitch fibers also don't produce as much lactic acid or burn as much glycogen as fast-twitch fibers. Although optimal cadence can depend on the person cycling coaches generally encourage mashers to push themselves to a higher cadence on a lower gear.



Considering what we've learned about cadence, if you're interested in trying your first triathlon or just want to improve your performance, you might want to try cadence drills.

But before we dive into the drills, we should mention that, if you're serious about improving your cadence, the experts recommend getting a cadence meter. These devices can attach to your bike and will be an invaluable tool to help you easily monitor your cadence at a glance. More expensive gadgets will display cadence along with other factors, including speed or even heart rate.



The simplest drill merely involves practicing a specific portion of the course in a lower gear than what you would naturally choose. Increase your normal cadence only 5 rpm at a time.

Several cycling experts recommend a particular high-cadence drill using the same basic steps, with only slight variations. Begin by cycling on a low gear at your normal cadence, and gradually increase your cadence until you start to "bounce" in the saddle. At this point, you can start to reduce your cadence slightly so that you no longer bounce. Sustain this cadence for 1 or 2 minutes before gradually slowing the cadence back down to your normal pace.

Some cycling training books discuss improving the mechanics of your pedaling method while

focusing on cadence - in particular, the upstroke. It may seem inconsequential, as the down stroke is really where you get your power, but experts say your upstroke is important to improving efficiency alongside cadence. It's good to pull back at the rise of an up-stroke, with a motion as if you were scraping mud off your shoes. Author Thomas Chapple argues, for instance, that just as cadence allows your muscles to contract and relax "in harmony," so does a good full pedal stroke in this scraping-mud method.

Now that we understand the basics of cycling cadence and how it affects your performance, you should have a good idea of how to incorporate this in your training.

*USC COACHES NOTE ~*

*"Be sure to pay careful attention to the indoor efficiency sets I give you guys to do! I know they can become tedious but in the bigger scheme of things those one-leg drills and cadence drills are so important. Do not neglect these sessions, it's the small things that count to you becoming a more efficient cyclist!"*

## NEW USC CYCLING KIT

I am excited to announce arrival of new cycling kit made by [SALIRE](#). As most of you know comfortable and quality cycling kit is hard to find but I have tried and tested Salire's kit and I must say it's bum fabulous! 'Excuse the pun'!



"All of us at SALIRE HQ have had the privilege of being involved in the industry for quite some time.

A great mix of people that come from sales, distribution and marketing in the industry, and for good measure we even have a couple of ex-pros, coupled with great business, financial and creative minds and a team in our product department that eats, sleeps and breathes apparel technology.

Our great love and passion for this amazing sport in conjunction with our expertise, has led to us further pursuing perfection in the cycling apparel space.

We have travelled extensively, sourcing the best fabrics and chamois which our design team could utilize when designing and developing our cutting edge ranges. We enjoy producing superior quality products with our expert partners, both in South Africa and Europe."

Once the artwork has been approved I will send you all the designs, prices and order forms!



# OCTOBER GROUP TRAINING SESSIONS JHB

## MONDAY

HILL TRAINING  
ST PETERS COLLEGE  
5PM

## TUESDAY

4/7KM TIME TRIAL  
RIVONIA RECREATION CENTRE  
6PM

## WEDNESDAY

TRACK RUNNING  
RUIMSIG STADIUM  
5:30AM

OR

ST PETERS COLLEGE  
5PM

## THURSDAY (NOTE THIS WILL START 20<sup>TH</sup> OCT)

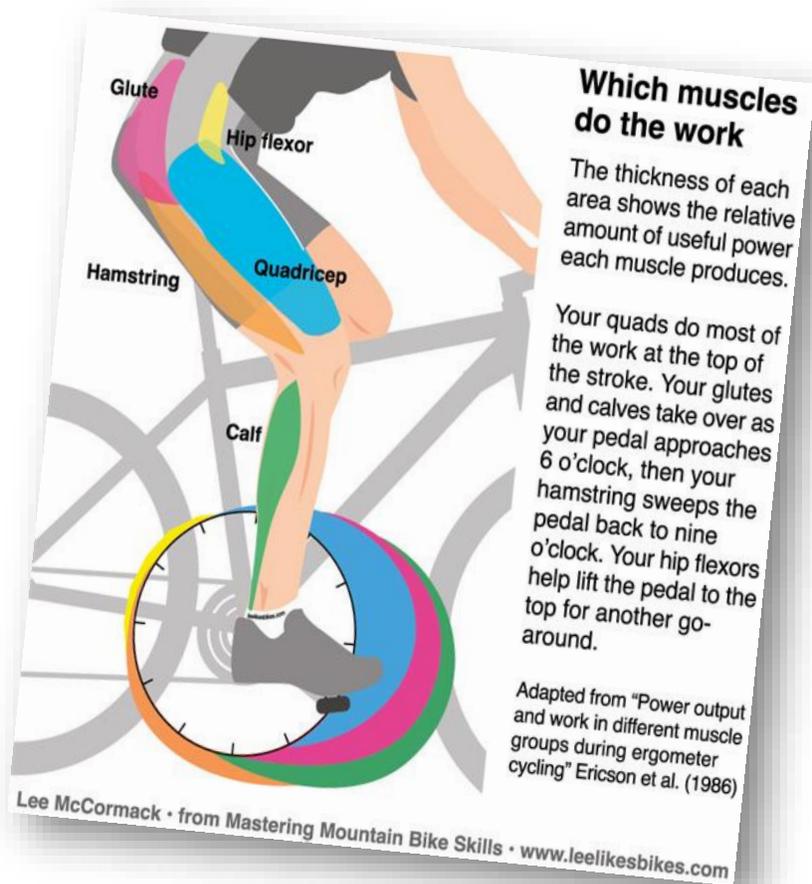
NORTHCLIFF HILL RIDE 1HR – 1HR30  
CRESTA VIRGIN ACTIVE  
LIGHTS REQUIRED!  
5:20AM

## SATURDAY

LONG RIDE & BRICK RUN  
BROADACRES PAPPACHINOS  
6AM FOR 6:30

## SUNDAY

RACE DAY  
OR  
OPENWATER SWIM 1 – 3KM  
EMMERENTIA DAM CANOE CLUB  
11AM



## UPCOMING RACES

- SATELLITE CYCLE CLASSIC** – 22<sup>ND</sup> OCTOBER
- KAAPSEHOOP 42, 21 & 10KM** – 5<sup>TH</sup> NOVEMBER
- TRINITY SPRINT & OLYMPIC TRIATHLON** – 6<sup>TH</sup> NOVEMBER
- 32KM TOUGH ONE** – 27<sup>TH</sup> NOVEMBER
- MIDLANDS ULTRA** – 27<sup>TH</sup> NOVEMBER
- ROCKMAN OFF ROAD TRIATHLON** – 4<sup>TH</sup> DECEMBER
- DURBAN ULTRA** – 5<sup>TH</sup> MARCH
- IRONMAN SOUTH AFRICA** – 2<sup>ND</sup> APRIL
- TWO OCEANS ULTRA** – 15<sup>TH</sup> APRIL
- COMRADES MARATHON** – 4<sup>TH</sup> JUNE

## COACHES NOTE ~ SAVE THE DATES 2017

IRONMAN JHB TRAINING CAMP – 10 – 12<sup>TH</sup> MARCH

