

UW Sports Medicine 2009 Cycling Advantage Series

Strength Training for Cyclists



To wait, or not to weight...

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“The definition of insanity is doing the same thing over and over again and expecting different results”.

Albert Einstein

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“The dictionary is the only place ‘success’ comes before ‘work’. Hard work is the price we must all pay for success.”

Vince Lombardi

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Goals for this presentation

Discuss:

1. The debate surrounding the pros and cons of weight lifting.
2. The role of muscular strength building (weight lifting and resistance training) as it relates to building muscular power for cycling.
3. Strength training ‘on the bike’ versus ‘in the weight room’.
4. The importance of strength training for the masters aged cyclist.

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Pros & Cons

Pros:

- ▶ Off season conditioning variation
- ▶ Does more than build cycling power
- ▶ Studies

Cons:

- ▶ Specificity argument
- ▶ Time argument
- ▶ Studies

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Strength/Resistance Training is not...

- ▶ It is not a replacement for on-the-bike training
- ▶ It is not “weight” training, think of it as “strength” and “resistance training.”
- ▶ It is not endless hours in the gym
- ▶ It is not endurance training
- ▶ It is not the answer for all cyclists
- ▶ It is not quick
- ▶ It is not a permanent fix

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Goals of Strength Training

- ▶ Improve performance on the bike.
 - To do this, improve power on the bike
- ▶ Strength training side benefits
 - Retard muscle reduction as we age
 - Improve overall fitness & stability
 - Reduce muscular imbalance
 - Reduced injury risk



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Strength Training Focus

- ▶ For cycling power development
- ▶ Cycling specific
- ▶ Hip & Knee extensions (not flexion)
- ▶ Little contribution from lower leg
- ▶ Upper body contribution/Core
- ▶ Some traditional weight training exercises are a waste of your limited time
 - Leg Press
 - Leg extension

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Strength Training is a 3 Step Process:

1. Prepare your muscles for strength training
2. Strengthen muscles
3. Convert newly developed strength to power

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Frequency & duration

- ▶ The key is to make optimal use of the time you have to train
- ▶ Most cyclists can improve power using a program of strength training that takes less than 1 hour, 1-2 times per week
- ▶ For women and masters cyclist, strength training should be done year round, not just during the off season
- ▶ Strength training should be 'periodized'
- ▶ Progression is necessary

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Periodized Schedules

Road Race Season Example

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40	41-44	45-52	1-4	5-8
Preseason			Race Season				Off Season		Pre Season		
Strength		Power	Maintenance				Transition		Foundation		

Cyclocross Season Example

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
41-44	45-52	1-4	5-8	9-12	13-16	17-20	21-24	25-28	29-32	33-36	37-40
Off Season		Pre Season				Race Season					
Transition		Foundation	Strength	Power	Maintenance						

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Common workouts

- ▶ Legs
 - Squats
 - Lunge
 - Step-ups
- ▶ Core
 - Pull ups
 - Back extensions
 - Planks
 - Bent over rows
 - Bird dog
 - Crunches (on the ball)

Common workouts (continued)

- ▶ Upper Body Pushing
 - Push ups
 - Bench Press (inclined)
 - Lunge
- ▶ Upper Body Pulling
 - Pull ups (chin up, inclined)
 - Bent over row (1- arm DB row)

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Plyometrics

- ▶ Power = Force X Velocity
- ▶ Plyometrics prestretch the muscle prior to contraction.
- ▶ Plyometric movement has 3 phases; prestretch, amortization and contraction.
- ▶ You don't need a lot.
- ▶ Proceed with caution.

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Flexibility

- ▶ A number of disciplines can provide this:
 - Yoga
 - Stretching
 - Pilates
- ▶ Needs to be done daily.
- ▶ Must be done correctly.
- ▶ Focus should be on hamstrings, glutes, back, neck, & shoulders.
- ▶ Stretch warm muscles.

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Strength Training & 'Masters'

- ▶ After age 40 we start losing muscle mass (sarcopenia)
- ▶ We also can experience age-related loss of bone strength (osteopenia)
- ▶ Regular weight bearing resistance exercise has been shown to slow down the rate of muscle loss
- ▶ Resistance training should be done with your feet planted on the ground (weight bearing)

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Precautions:

- ▶ Undergo physical and medical check up before starting.
- ▶ Seek qualified guidance to insure proper form.
- ▶ Do no more than 3 strength workouts per week.
- ▶ Pay attention to proper warm up
- ▶ Use collars and spotters when doing heavy or risky lifting
- ▶ Do a cool down after training

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Gordon Paulson...

...is a USA Cycling certified coach working for Peaks Coaching Group of Bedford, VA. Peaks Coaching is world renowned for integrating power measurement devices with athlete training. Gordon has coached athletes to State and National championships. He is an active Category 1 road cyclist. His personal racing achievements include eight National Championships, ten State Championships and success racing locally, nationally and internationally as a Master's racer (racing age over 30). He is a member of the US Cycling Federation Board of Trustees and President of the Wisconsin Cycling Association.



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