Effective Training for Cycling

Vary the Intensity

By John Hughes

www.coach-hughes.com

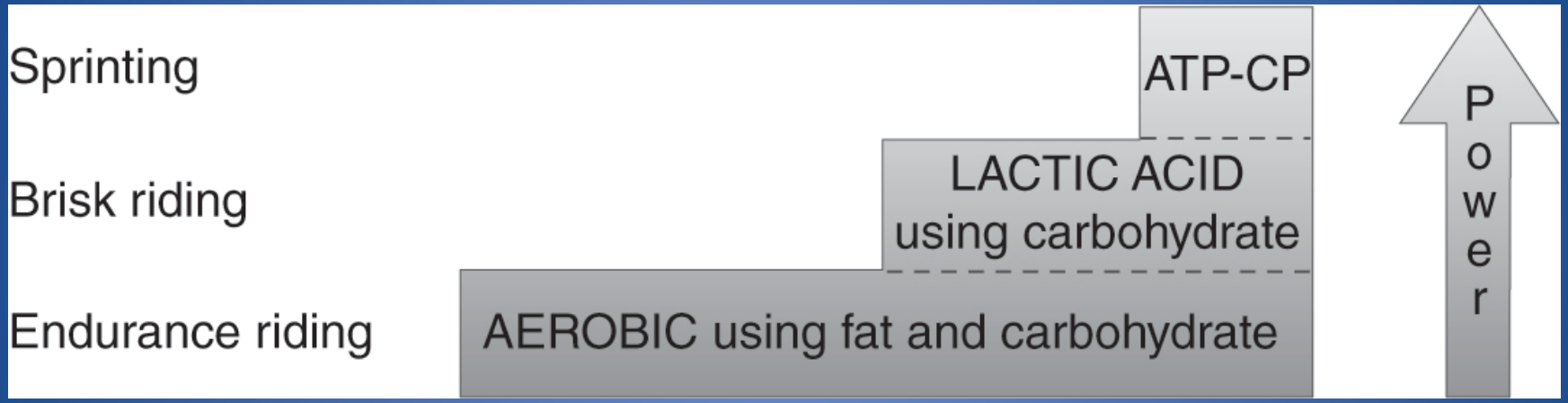
Six Factors for Success in Athletics

- Self-assessment and planning
- Physical training
- Healthy nutrition
- Appropriate equipment
- Skillful technique
- Mental skills

Cycling Performance Requirements

- Physiological endurance
- Cycling economy
- Muscular power
- Core strength
- Flexibility

Energy Systems



(from *Distance Cycling)*

Principles of Training

Overload → Stress → Recovery → Adaptation

Continued improvement requires progressive overload:

- *How much* one rides
- *How often* one rides
- *How hard* one rides

Principles of Training

Overload *and* recovery:

- Increase just one type of overload at a time: volume, frequency or intensity.
- Mix hard, moderate, easy and days off each week.
- Build training for 3 or 4 weeks and then cut back for a recovery week.
- Every 2-3 months take a physical and mental break for a week.

Gauging Exertion

- Rate of Perceived Exertion (RPE)
- Lactate Threshold (LT)
- Power Meter (watts)

Rate of Perceived Exertion (RPE)

Purpose	Hughes RPE	1-10 RPE
Aid recovery	Digestion pace	1-2
Build endurance	Conversation pace	2-3
Increase riding speed	Hill climbing pace	3-4
Increase power	Subbarf pace	5-6

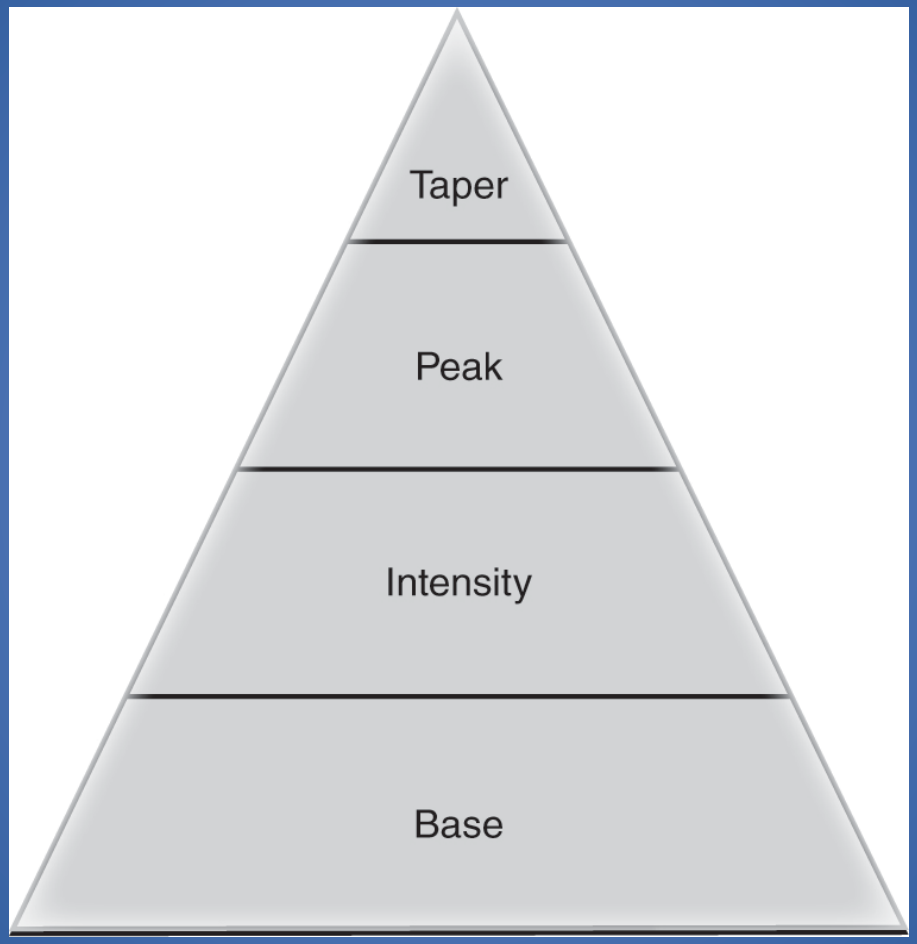
Lactate Threshold (LT)

- Riding without enough oxygen, i.e., anaerobically.
- Region in which you start to accumulate significant lactic acid in blood.
- Estimate with 30-minute all-out time trial. Average HR is very close to LT.

Intensity Levels and Workout Types

Purpose	Workout	Hughes RPE	1-10 RPE	Heart Rate
Aid recovery	Recovery	Digestion pace	1-2	<75% LT
Build endurance	Endurance	Conversation pace	2-3	75-87% LT
Increase riding speed	Tempo	Headwind pace	3-4	88-94% LT
Increase power	Intensity	Subbarf pace	5-6	95-100% LT

Training Phases



from *Distance Cycling*

www.coach-hughes.com

Base Training Improves Endurance

For example, the RMCC weekend rides at a *conversational pace.* Endurance riding improves:

- The endurance of the cycling muscles by increasing the number of mitochondria. the subcellular structures in the muscles where aerobic energy is produced.
- The respiratory system, providing more oxygen to the blood supply.
- The efficiency of the heart so it can pump more blood to the muscles.

Base Training Improves Endurance, cont.

- The capacity of the liver and muscles to store carbohydrates.
- The neuromuscular efficiency of pedaling.
- The capacity to burn fat during long rides.
- The thermoregulatory system by increasing the blood flow to the skin.

Ed Burke, *Serious Cycling,* Human Kinetics, Champaign, IL, 2002

Intensity Training Improves Power

For example, the RMCC weeknight hill climbs at a very hard effort. These:

- Improve ability to recruit fast twitch muscles.
- Improve ability to process glycogen for fuel without enough oxygen.
- Increase overall power.
- May increase lactate threshold.

Peaking Phase Improves Mastery of Event

Practice each aspect of key event(s):

- Similar terrain and conditions
- Simulation rides
- Test all equipment, clothing and food.
- Prepare mentally

Taper Allows Full Recovery

During the taper:

- Cut back 1-2 weeks before a big event.
- Can’t get any fitter right before event.
- Cut back volume, but keep most of the intensity.
- Get extra rest.

Weekly Mix of Types of Riding

(includes warm-up and cool-down)

Phase	Purpose	Recovery Pace	Endurance Pace	Tempo Pace	Intensity Pace
Preseason	Get used to exercise	20-30%	70-80%		
Base	Build endurance	10-20%	60-80%	10-20%	
Intensity	Increase power	10-20%	50-70%	10-20%	10-15%
Peak or main season	Ride events and have fun	10-20%	Main rides	5-15%	5-10%

Plus core strength and stretching exercises

Rules of Thumb

- Increase total week to week volume by 10-20%.
- Increase monthly volume by 15-25%.
- Increase weekly long ride by 10-20%.
- Weekly long ride is no more than 1/2 to 2/3 of total weekly volume, except during event weeks.

Rules of Thumb, cont.

- Build weekly long ride until distance is (at least) 2/3 to 3/4 the duration of the target ride
- Every 4 to 6 weeks cut back weekly volume by 10-25% for a recovery week.
- Every 2-4 months include a *very* easy week as a physical and mental break.

Effective Training for Cycling

"An athlete should do the least amount of properly timed, specific training that brings continual improvement."

– Joe Friel, The Cyclist's Training Bible

- Least amount
- Properly timed
- Specific training
- Continual improvement

Resources

- Free webinar "Kickstart Your Century and 200K Training", Thursday, March 29, 2012, 11:00 a.m. - 12:00 p.m. CDT, www.humankinetics.com/webinars
- Resources section at www.coach-hughes.com
- www.RoadBikeRider.com free weekly eLetter
- Hughes eArticles at RBR, www.roadbikerider.com/all-Coach John Hughes
- Hughes & Kehlenbach, *Distance Cycling*