

AI-01429 Torque vs Cadence

| | |
|----------------|---------------------------|
| 👤 Owner | © Rigel Arcayan |
| ☰ Tags | SwimBikeSleep |
| 🕒 Created time | @January 23, 2025 9:42 PM |

Explain Torque vs Cadence Training

Sure! Here are the key points from the document "Torque vs Cadence":

Introduction

- **Pedaling Mastery:** Essential for cyclists to optimize performance.
- **Cadence Definition:** Speed of pedal rotation, measured in revolutions per minute (rpm).

Ideal Cadence

- **Power Output:** Product of force and cadence.
- **Muscle Function and Fatigue:** Lower cadences increase muscle fatigue; higher cadences increase cardiovascular stress.
- **No Universal Ideal:** Optimal cadence varies among individuals.

Typical Cadence Ranges

- **Beginners:** 65-85 rpm.
- **Experienced Cyclists:** 75-95 rpm for various intensities.
- **High Cadence:** 95-110 rpm for high-intensity efforts.

Cycling Economy vs. Mechanical Efficiency

- **Cycling Economy:** Oxygen cost of producing power.
- **Mechanical Efficiency:** Ratio of mechanical work to energy produced.
- **Training Impact:** Improves both economy and efficiency.

Benefits of Different Cadences

- **High Cadence:** Useful for sprints, attacks, and high-power efforts.
- **Low Cadence:** Useful for muscular endurance and high torque.

Cadence in Different Disciplines

- **Mountain Biking, Gravel Racing, Cyclocross:** High torque important.
- **Triathletes:** Lower cadences to conserve energy for running.
- **Road and Track Racers:** High peak and average cadences crucial.

Training Drills

- **High Cadence Drills:** FastPedal, High Speed Sprints.
- **Low Cadence Drills:** PowerStart, MuscleTension Intervals.

Conclusion

- **Cadence Agility:** Ability to transition between cadences is key for performance.

Feel free to ask if you need more details on any specific section!

Explain the Types of Drills

Sure! Here are the detailed explanations of the training drills from the document:

High Cadence Cycling Drills

FastPedal

- **Objective:** Improve neuromuscular coordination and pedaling mechanics.
- **Method:** Use a light gear to keep resistance low but not too light. Pedal as fast as possible without bouncing in the saddle.
- **Routine:** Start with 3-5 efforts of 1 minute each, with 2 minutes of moderate-cadence recovery in between. Progress to 3-minute efforts with 5 minutes of recovery.

- **Tip:** Focus on smooth pedaling by thinking about kicking your foot forward over the top of the stroke and scraping it back through the bottom.

High Speed Sprints

- **Objective:** Enhance sprinting ability and high-speed pedaling.
- **Method:** Find a downhill section of road. In a medium gear, get rolling to about 15-20 mph, then sprint for 20 seconds.
- **Routine:** Complete 5-8 sprints with 5 minutes of rest between each.
- **Tip:** You can do these sprints standing or seated. Seated accelerations are important for races as they are less obvious to competitors.

Low Cadence Cycling Drills

PowerStart

- **Objective:** Develop high power for accelerations from slow speeds.
- **Method:** Roll to a near standstill at 2-3 mph in a big gear. Accelerate as powerfully as possible without changing gear.
- **Routine:** Continue for 10 seconds or until the gear is spun out. Rest for 5 minutes between efforts. Complete 5-8 repetitions.
- **Tip:** Focus on keeping your core stable and preventing your back from rounding.

MuscleTension Intervals

- **Objective:** Build climbing speed and muscular endurance.
- **Method:** Pedal slowly (about 50-55 rpm) against heavy resistance during climbs.
- **Routine:** Perform intervals lasting 5-10 minutes. Total time-at-intensity should be around 20 minutes for beginners, 30 minutes for intermediate riders, and 40 minutes for advanced riders. Recovery between intervals should be equal to the duration of the efforts.

- **Tip:** Use a steady climb with a 1-2% grade if possible. Divide the total time into manageable intervals, such as 4× 5-minute intervals with 5 minutes of recovery between each.

These drills are designed to improve different aspects of cycling performance, from neuromuscular coordination to power and endurance. Let me know if you need more details on any specific drill!