

Fundamentals of Training for Cycling

Improving fitness and
avoiding injury



Who Am I?

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Overview

Building Aerobic Endurance

The cornerstone for any endurance activity

Getting Faster

Increasing speed requires a combination of structured training, proper nutrition, and recovery.

Avoiding Injury

Because if you are injured, you can't ride your bike.

Rule #1: It Depends

Personalization

Every cyclist's needs are different. It is important to realize that your needs, and how you adapt to training, are not the same as someone else's. Personalizing your training program can help you achieve your goals more efficiently and avoid injury.

Goal Setting

Be clear about what you want to get out of your cycling. That should guide how you target your approach

Training Variables

Training variables such as volume, intensity, frequency, and recovery can be adjusted to personalize your training program. By adjusting these variables, you can optimize your training and achieve your goals more efficiently.





Building Aerobic Endurance

Aerobic endurance is built primarily through volume. Primarily relatively easy to moderate (Zone 1-2) riding, gradually increasing over time. Targeted intensity helps, but shouldn't be the main focus



Gradually Increasing Volume Over Time

Progressive Overload

Progressive overload is key to building endurance. Gradually increasing the volume of your training over time helps your body adjust to the increased workload and build endurance.

The 10% Rule

Increasing volume 10% per week (or less) is a good rule of thumb to minimize the risk of overdoing it.

Intensity

Introducing more intensity into your training can help you build fitness faster. However, it is important to gradually increase the intensity over time to avoid injury and burnout. Too much will also negatively impact your endurance.



Out of time

Eventually, you will run out of time in the week, or interest in riding more.

At this point, the only way to continue to improve (Progressive Overload) is by modulating intensity.

This can be done both by increasing the amount of time you spend in Zone 2 vs Zone 1, and by add some higher intensity riding.



Zone 2

For Aerobic Endurance

Zone 2 is the ideal intensity for building aerobic endurance. It is associated with your maximal fat oxidation (FatMax), and targets mitochondrial adaptation.

Finding Your Zone 2

Finding your Zone 2 heart rate or power is crucial for effective endurance training. This can be accurately assessed through physiological testing, but simply finding the intensity at the upper end of “conversational” will get you in the right ballpark..

Getting Faster

Volume of Z1-2 Riding

Riding in Zone 1 and 2 is an effective way to build endurance and support aerobic development, which is a key foundation for getting faster.

Introducing Intensity

To get fitter, sometimes ride hard.

Targeted Intervals with Progressive Overload

You will eventually adapt to whatever training you repeat. To continue to improve, the stimulus you send must increase.

Supporting Specific Adaptations

Tailoring your approach to address your specific goals and limiters will help maximize your efforts.





Introducing Intensity

Benefits of Intensity Workouts

Intensity workouts can help improve speed, endurance, and overall fitness by challenging the body to adapt to higher levels of exertion.

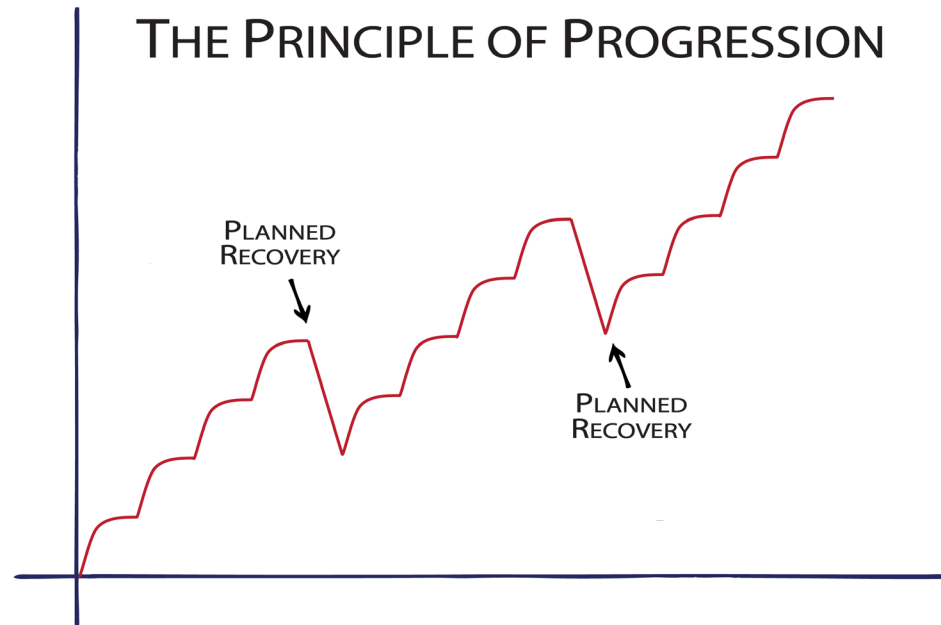
But what exactly should I do?

It depends! The easiest way is to gradually introduce more free-form types of intensity such as fartleks, fast finishes, and city limit sprints.

Hilly rides, or group ride can add some spice as well.

Reminder: most of your focus should be on gradually building up volume of Zone 1 and 2 training

Targeted Intervals with Progressive Overload



Progressive Overload

Progressive overload is a training principle that involves gradually increasing the intensity, volume, or frequency of exercise to continue making progress and avoid a plateau.

Interval Workouts

Interval workouts involve periods of high-intensity exercise followed by periods of rest or lower intensity exercise. These workouts can improve speed, endurance and overall fitness.

Designing Effective Workouts

Designing effective workouts involves selecting the appropriate exercises, intensity, and rest periods. Monitoring training load is helpful for proper progression.

Supporting Specific Adaptations



Targeting Specific Adaptations

Cyclists have different strengths and weaknesses. By targeting specific adaptations, cyclists can improve their overall performance and reduce their risk of injury.

Example: Pulling vs Pushing the Threshold

Larger volumes of training just below your threshold (e.g. sweet-spot training) can be very beneficial for some people, where other may benefit more from shorter intervals just above threshold (e.g. $VO_2\max$).

Example: Funnel Method

The idea of targeting a specific adaptation by focusing on the areas of fitness that support the adaptation, and gradually getting more specific

Motivated Intensity

Benefits of Group Rides

Group rides offer a great way to add motivated intensity to your training program. Riding with others can improve your skills, help you stay motivated, and challenge you to push your limits.

Finding the Right Mix

While groups rides are great for motivating you and pushing your limits, they aren't ideal for a controlled progressive overload approach.

They are also indispensable for learning to ride in a pack, so don't skip them completely.



Avoiding Injury



Rule # 1: Rubber Side Down

Self explanatory.

Aerobic Riding and Proper Progression

Not over emphasizing intensity and keeping the focus on a solid aerobic base, as well as appropriate increases in training load are key to avoiding injury

Bike Fit

Proper biomechanics is essential for minimizing injury risk.

Flexibility/Mobility

Adequate range of motion help ensure you are not causing undue stress to you muscles and connective tissue.

Stability

The ability to properly stabilize and align the back, hips, knees and shoulders is crucial to improved comfort and reduced injury risk.

The Benefits of a Good Bike Fit

Improves comfort.

Reduced injury risk by optimizing alignment.

Can also increase power and efficiency.





Adequate Recovery

Rest and Active Recovery

Rest and active recovery are essential components of injury prevention and overall wellbeing. Incorporating both into your training program can help improve your performance and reduce the risk of injury.

Importance of Nutrition

Nutrition plays a vital role in injury prevention and recovery. Consuming a balanced diet that includes adequate protein and other essential nutrients can help speed up the recovery process and reduce the risk of injury.



Flexibility/Mobility

Importance of Flexibility and Mobility

Flexibility and mobility are important for overall health and injury prevention. Maintaining good flexibility and mobility can help prevent injuries and improve performance in daily activities and sports.

Stretching

While cycling is not an activity that needs a large range of motion, have sufficient flexibility to maintain your posture on the

Foam Rolling

Foam rolling is a self-massage technique that can help release muscle tension and improve muscular function.

Stability

Midline Core Stability

Midline core stability is essential for efficient and injury-free cycling. It is critical for power transfer between the upper and lower body, such as when climbing out of the saddle or sprinting.

Pelvic Stability

Pelvic stability is critical for efficient pedal stroke and injury prevention. Knee alignment starts with the glutes.

Thoracic Mobility/Scapular Stability

Thoracic mobility/scapular stability is essential for upper body alignment, optimizing breathing and minimizing neck pain.



Midline Core Stability Exercises for Cycling

Midline core stability is critical to efficient and injury-free cycling

- Anti-extension exercises: Plank Variations, Dead Bugs, Hollow Body Holds
- Anti-rotation exercises: Pallof Press, Chop and Lifts
- Anti-lateral flexion exercises: Side Planks, Suitcase Carry





Pelvic Stability for Cyclists

Pelvic stability is critical for efficient pedal stroke and injury prevention. The pelvic stabilizers help control and align the entire lower leg, helping prevent, knee, hip and even low back pain.

- Clamshells, Lateral Leg Raises, and Fire Hydrants.
- Standing Fire Hydrant, Lateral Band Walks

Strength Training

Importance of Strength Training

Strength training is essential for good health and injury prevention. It helps to maintain and increase muscle mass, improve bone density, and reduce the risk of injury.

Cycling alone is not enough

While cycling is a great cardiovascular exercise, it is not sufficient to maintain muscle mass. Strength training is necessary to balance out the loss of muscle mass with aging.

Incorporating Strength Training

Incorporating strength training into your training program can be accomplished in a variety of different ways, from bodyweight exercises to barbells. Your specific approach will depend on your goals.





Thank you for your time

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