

## Path to the “Maillot Jaune”



At POTENTRx, we understand the specific demands required for cycling and how to help you maximize your potential. Our cycling-specific services are designed to improve overall performance, reduce risk of injury, aid in recovery, help achieve specific training goals and make training more enjoyable

In order to determine where you are, where you need to be and how to get there, we recommend a three-tiered approach; 1) Start with a physiological assessment to determine your “starting point,” 2) Optimize your biomechanics through our biomechanical services and 3) Improve your performance through our customized cycling prescriptions.

Cycling-Specific Services | We recommend these services for optimal performance

### Physiological Fitness

#### • AEROBIC CAPACITY

Is the maximum capacity of your body to transport and utilize oxygen during incremental training, which reflects your level of physical fitness. This is important in determining your capacity to perform sustained training and when correlated to heart rate, it can be used to develop training zones. Having a high aerobic capacity can help reduce the effect of fatigue throughout a race.

#### • BODY COMPOSITION

Provides an accurate measure of fat and lean mass, both of which are vital aspects of cycling performance. To ensure accuracy and reliability, the staff calculates body composition through three different methods – girth and proportionality, a four-site skin fold measurement with calipers, and bioimpedance.

#### • HEART RATE TRAINING ZONES

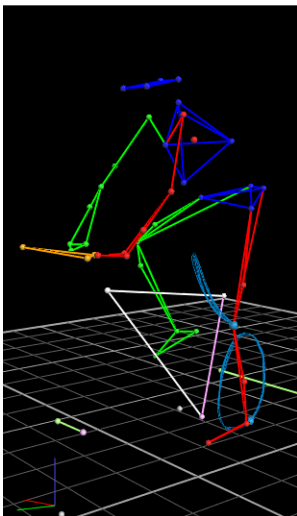
Different training intensities require an individual to exert specific kinds of energy. By correlating your heart rate (HR) with a  $VO_{2\max}$  test, we can determine what system you’re using relative to your own heart rate. Determining your heart rate zones is the key to becoming a more efficient and faster racer.

#### • THRESHOLD TESTING

This test is designed to determine the aerobic and anaerobic thresholds. The aerobic threshold is the point at which anaerobic pathways begin to contribute to the energy demands of the activity being performed. The anaerobic threshold is where lactate accumulation arises dramatically and the point at which you will experience rapid fatigue or the onset of fully anaerobic activity. These thresholds can be directly determined through blood lactate samples or indirectly through gas exchange.

#### • MUSCULAR STRENGTH TESTING

Maximal muscle strength (or 1RM) is a valid indicator for performance potential and serves as the baseline for designing resistance training programs. Using computer monitored strength training equipment, our staff can determine a 1RM for each cycling-specific exercise, assess muscle strength imbalances and proportionality, compute maximal power and decay of maximal power (fatigue profile) and thus determine the precise number of repetitions that can be performed without significant fatigue to the desired metabolic system. For cycling, we will choose the exercises based on the individuals goals and/or race needs.



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- **BIOIMPEDANCE**

Staff connects standard ECG sensor pad electrodes to your wrist and ankle while lying down and measure resistance and reactance of the current as it passes through the body. The Biodynamics analyzer computes the intracellular and extracellular water content of your body critical for maintaining cellular health and preventing over-training plus calculate resting metabolic rate and fat-free mass, critical variables for optimizing nutrition and body composition factors of successful performance.

## Biomechanics Optimization

- **MUSCULOSKELETAL EXAM**

Musculoskeletal function is concerned with bones, joints and muscles and is associated with range of motion and the flexibility of muscles allowing for freedom of movement without pain or restraint. Using observation, palpitation, and selected functional tests, a physical therapist conducts a 65-point assessment of posture, balance, reflex mechanisms, muscular strength symmetry, range of motion (flexibility) in all three planes, dynamic capacity and kinetic chain stability that result in a clear understanding of your musculoskeletal integrity.

- **3-D BIKE FIT**

A Vicon computerized six-camera system is used to analyze mechanics in three dimensions. By placing reflective markers on the joints, the cameras provide the data to set up a 3-D model of your cycling movements. This data gives to our staff precise information about loads to joints, tendons, and ligaments, angular velocity of each movement, and the sequence and magnitude of muscle contraction that enable them to make finite but critical adjustments to reduce injury or improve performance.

- **2-D BIKE FIT**

Using a High-speed 2-D video camera and specialized Dartfish editing software, our staff films you from several different angles while you ride and reviews your movements from head to toe, looking for abnormalities that are creating problems or are caused by a problem. Modification are made depending upon the results of the 2-D analysis.

## Performance Improvement

- **CATERED MILEAGE BUILDUP SCHEDULE** Once you know your heart rate zones, our staff can design a mileage buildup schedule based on your current mileage and your heart rate training zones.

- **CUSTOM WEIGHT-TRAINING PROGRAM** Instead of going to the gym and guessing at what weights to use and exercises to perform, this service provides you with direction on which exercises to focus on and what loads, reps, sets and rest periods correlate with those exercises to help you achieve your strength goals.

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For more details about the services listed in this flyer, please call (206) 432-9436



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## POTENTRx Affiliates

American Council on Exercise (ACE) • Bainbridge Fire Department • Club ZUM • Cosmed • Pocock Rowing Foundation • Precor • Rainier Vista Boys & Girls Club • Seattle Fire Department • Seattle Sockeye • Seattle Thunderbirds • Seattle University Athletic Department • Skillshow • Snohomish Fire Department • Technogym USA • USA Rowing • USA Rugby • Vicon • Washington Athletic Club • Waypoint Outdoor • YMCA of Greater Seattle