



Thank you for purchasing a General Plan from Optimize Endurance Services (OES). Please take the time to read through this detailed document that outlines the structure of the plan. After you have completed this and also looked through the plan on Training Peaks, write down any questions you might have and give us a call or e-mail, so we can answer them. For more extensive interaction on questions or integration of this plan into your schedule please consider purchasing a [Coaching Consultation](#) with one of our certified coaches.



## ACKNOWLEDGMENT OF RISK, RELEASE OF LIABILITY AND AGREEMENT

**1)** I am applying for admission to a coaching program by Optimize Endurance Services and associated activities being fully aware that these activities involve risks. I understand that before engaging in any exercise program, it is recommended that I consult with my health care provider and be cleared to perform such activities. I accept all the risks of training and racing, even if they are created by the carelessness or negligence of Optimize Endurance Services or anyone else. "Risks" include physical exertion, potentially hazardous conditions, due to the environment or manmade, on the roads, in the training facilities, or at the training or racing sites that the coach may recommend the athlete attend, and possible harmful interaction with other athletes, bystanders, animals, automobiles, the coach, or any other objects during training and competition situations. I know there are other risks and accept those also.

**2)** I fully release, discharge and waive any Claims I may have, now or in the future, against the Released Parties, even if Claims are based on the carelessness or negligence of a Released Party or anyone else. ("Claims" as used in this document means all claims, demands, and legal actions, arising out of damage, injury or death of participant while engaging in training and competition as recommended by Optimize Endurance Services and individual coaches, or any of its associated activities, which I or my heirs or personal representative could make. "Released parties" as used in this document means Optimize Endurance Services, other coaches on staff with Optimize Endurance Services and any other personnel working in conjunction with Optimize Endurance Services, including, but not limited to, volunteer assistants, any sponsors of Optimize Endurance Services, and any agencies that lend their certification to Optimize Endurance Services, and individual staff.)

**3)** I agree not to sue Released Parties for Claims, even if the Claims arise from the carelessness or negligence of a Released Party or anyone else. I agree to indemnify (protect against loss) and hold harmless each Released Party, from any loss or liability (including any reasonable attorneys fees they may incur) defending any Claim made by me or by anyone making a Claim on my behalf, even if the Claim is alleged to or did result from the carelessness or negligence of a Released Party or anyone else.

**4)** I acknowledge that training and racing recommendations are only recommendations to be accepted or declined as I see suitable to my physiological, mental, and emotional status and will accept those recommendations and engage in training and racing of my own free will and choice. Furthermore, I acknowledge that any recommendations on nutrition, medical care, or other self care are recommendations only and I should seek further input by a qualified professional in that field. I am aware that it is advisable to consult my health care practitioner prior to commencing training, and at any time I feel my health is compromised.

**5)** I grant my permission to Optimize Endurance Services and any transferee or licensee of them, to utilize any photographs, motion pictures, videotapes, recordings and any other references or records of my training and racing activities while under contract with Optimize Endurance Services which may depict, record, or refer to me for any purpose, including training recommendations for other athletes, and marketing and commercial use by Optimize Endurance Services, its sponsors and their licensees.

**6)** I have fully read and understand the statements I have made by signing this document. No warranties or representations have been made to me about the race or activities that are not stated on this form. I understand and intend that this document act as the broadest and most inclusive assumption of risk, waiver, release of liability, agreement not to sue and indemnity as is permitted by the laws of the State of Colorado. If any portion of it is held to be invalid, I agree that the rest of it shall continue in full force and effect.

**By purchasing this plan you confirm that you have read, understood and agree to the above waiver.**

## Zone Training

At OES we coach our clients based on zones set up from a lactate threshold test. Please find the training zones provided in this document. Below is an excerpt about the test:

A lactate threshold test consists of a graded exercise protocol to simulate increased workload on the individual. This test can be done easily on a bike or treadmill and generally is 30-45 minutes in length. This test should be completed at the end of a recovery period so that the overall training fatigue is low and can be considered part of the training. The appearance of lactate in blood is measured from a pin prick on the finger with an analyzer that gives a reading in mmol/L (millimoles per liter).

At a cellular level when the processes of fuel production increase the cell becomes more acidic due to the buildup of H<sup>+</sup> (hydrogen with a positive charge) and this is termed acidosis. This acidosis upsets the balance of the cell and to manage or buffer it shuttles the H<sup>+</sup> outside to the blood stream with the help from lactate. Once in the blood stream it is called blood lactate and this is what is being measured in the test. The body manages the blood lactate by removal through breath, sweat and urine as well as a fuel source.

The lactate threshold test is determining the point at which the human body falls behind in buffering and struggles to stay efficient. Above this marker the production of byproducts far outpaces the removal and this leads toward the inability to continue increased intensity for extended periods of time. Knowing this point can assist in setting up training zones to optimize recovery as well as the lactate threshold.

We know that not everyone can or is interested in this type of testing but we hope that you will have a test done. We feel very strongly about the level of improvement that can come from an individual test such as this. Review the [Physiology Testing Pricing and Online Scheduling](#).

If you would rather complete a field test to help you set up your heart rate training zones to match ours the field test description is as follows:

**Field test**-this can be done on a trainer or outside. If done outside you'll need an uninterrupted section of road with light traffic. For control of the test it is best done inside with help from a friend or family member. Data capture is best done with use of lap function of your heart rate monitor. You will need to record average heart rate of 1<sup>st</sup> interval and 2<sup>nd</sup> interval.

**Warm-up**-10-20 minutes with several all out efforts for up to 1 minute near the end of the warm-up.

Helps to raise heart rate and prepare legs for all out effort during test intervals.

**1<sup>st</sup> test interval**-all out as fast as you can/10k (6.2miles) or 15 minutes if you can't measure distance.

Capture average heart rate of this distance or time and rate of perceived exertion.

**Recover**-10 minutes.

**2<sup>nd</sup> test interval**- all out as fast as you can/10k (6.2miles)or 15 minutes if you can't measure distance.

Capture average heart rate of this distance or time and rate of perceived exertion.

**Cool down**-minimum of ten minutes. Bring heart rate back to resting levels before stopping.

**Data analysis to determine zones**-calculate the average of the two intervals and subtract 5% to get your estimated threshold heart rate.

**Example**-1<sup>st</sup> interval average 175; 2<sup>nd</sup> interval average 179.  $175+179=354/2=177 \times 5\%=8.85$  round up in this case to 9 and subtract from 177 to get **168 threshold heart rate**

**Making your estimated zones**-with the example 168 as the start of the threshold (Zone 4) you can now map out your estimated zones. Follow the steps below:

Z4 168 subtract 5 to get the **No Go zone 163-168**

Next subtract 20 from 163 to get the **Z3 143-163**

Next subtract 20 from 143 to get the **Z2 123-143**

Next will be **Z1 which is anything below <122**

Add ten to 168 to get the range for **Z4 168-178**

Next will be **Z5 which is anything above >178**

Complete sequence: Z1 <122
Z2 123-142
Z3 143-162
NG 163-167
Z4 168-178
Z5 >179

**OES suggests to type out Zones in 9 font using Word and tape it to your handle bar for reference.**

## Workout Descriptions

Periodization is the principal used for the design of the plans which entails different forms of on-bike training as well as strength training. On each day you will have description of the workout and task to accomplish. Planned hours are what have been set for each week, this may be above, below or the actual hours. Actual hours show what you have completed by imputing your data from each workout.

There are codes that show up on each workout. Understand the coding and at a glance you'll be able to know the goal for the day. Only concern yourself with the first letter of the code. For example E2g60 is an **Endurance** workout.

**Endurance**-goal to improve ability to sustain long term movement (Zones 1-3)

**Force**-goal to improve ability to apply power to the pedals for climbing (Zones 1-4)

**Speed**-goal to improve pedal efficiency which leads to greater power output (Zones 1-2)

**Muscle Endurance**-goal to improve ability to ride at or above lactate threshold (Zones 3-5)

**Anaerobic Endurance**-goal to improve ability to do work without oxygen (Zones 4-5)

**Power**-goal to improve ability to produce large amounts of power for short time (Zones 1-2)

**Testing**-goal to measure progression of training

## Strength Training

There are codes that show up on each workout. Understand the coding and at a glance you'll be able to know the goal for the day. Read below for descriptions of the types of workouts this plan has.

ST days are your choice and can be moved/modified from their placement on Tuesday/Thursday/Saturday, just keep them in similar placement to each other from week to week to allow for proper alignment of the periodization. Look for the downloadable PDF documents for further descriptions, found on each day. The printed doc can be used to track progress by writing down completed sets/reps/weight.

T = Transition

H = Hypertrophy

S = Strength

P = Power

E = Endurance

M = Maintenance

## Day Off

General Plans usually have every Monday and some Friday's off from training. These days are important in the design to allow for adequate rest physically and mentally, also giving the working person flexibility on the more hectic days of the work week. The weekends will have the longer rides while the weekdays will consist of shorter more manageable time frames. If you need to move/modify the days off, try to do it so they remain in similar placement to each other.

## **Benchmark (Self Test)**

This design has self-test Benchmark rides built into it on the recovery weeks. This ride is performed at the end of the week to allow for some freshness for the test. Take these weeks seriously, because the adaptations of physiology happen during recovery and the test can show you how you are progressing. The Benchmark is designed to take an hour and be done on a trainer to have a controlled environment.

## **Mountain Area**

For mountain area you'll need to have sustained climbs of 30 minutes or more. Climbs like this produce the ability to simulate many of the climbs for the event you're preparing for. The longer the climb the better preparation a rider will have for practice of feeding and maintenance of heart rate. Elevation is not factored into the plans, so the best way to acclimate is to actually perform work at high altitude or do your workout in a high altitude tent.

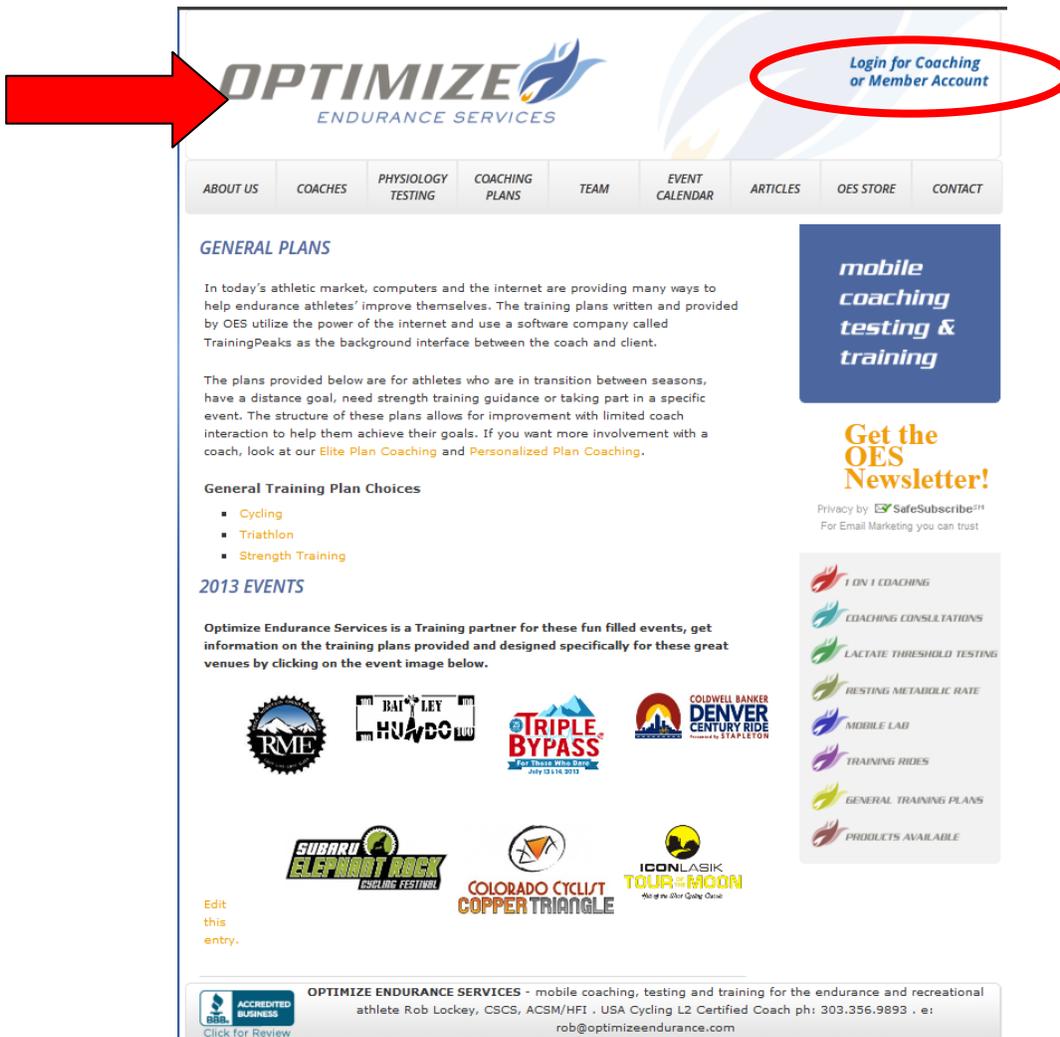
## **Flat land Area**

For flat land area you won't have the ability to do a sustained climb of 30 minutes or more. This doesn't mean you can't get better at climbing hills. First, embrace the wind; it is your friend to help you improve your ability to apply force to the pedals. This translates to higher ability to climb. Second, push a bigger gear than normal for some rides, same as a windy day. Third, perform hill repeats on a climb under thirty minutes; even though you get recovery on the downhill, doing repeats helps to simulate sustained climbs. Fourth, apply indoor trainer modifications, such as, apply higher resistance and stack books under front wheel to a height that simulates climbing. This will put you in the body position of climbing and can help get you used to long periods of muscle activation on a slope. Lastly, structure from a training plan can provide the needed level of adaptations to succeed even if you can't specifically train on the course.



## Training Plan On-line Interface

1. Go to the OES website at [WWW.OPTIMIZEENDURANCE.COM](http://WWW.OPTIMIZEENDURANCE.COM)
2. Login link is located at the top right of every page. The page this link directs you to will provide access to TrainingPeaks (Coaching) and OES-Zenplanner (Membership account)
3. For coaching Login with your Username and Password. From here you'll be routed to the Training Plan interface that will show your Calendar screen.



The screenshot shows the homepage of Optimize Endurance Services. At the top, the logo is on the left and the navigation menu is on the right. The navigation menu includes: ABOUT US, COACHES, PHYSIOLOGY TESTING, COACHING PLANS, TEAM, EVENT CALENDAR, ARTICLES, OES STORE, and CONTACT. The main content area is divided into two columns. The left column features a 'GENERAL PLANS' section with introductory text, a 'General Training Plan Choices' list (Cycling, Triathlon, Strength Training), and a '2013 EVENTS' section with logos for RME, HAYDOCK, TRIPLE BYPASS, COLDWELL BANKER DENVER CENTURY RIDE, SUBARU ELEPHANT ROCK ENDURANCE FESTIVAL, COLORADO CYCLIST COPPER TRIANGLE, and ICON LASIK TOUR OF THE MOON. The right column contains a blue box for 'mobile coaching testing & training', a 'Get the OES Newsletter!' section, and a vertical list of services: 1 ON 1 COACHING, COACHING CONSULTATIONS, LACTATE THRESHOLD TESTING, RESTING METABOLIC RATE, MOBILE LAB, TRAINING RIDES, GENERAL TRAINING PLANS, and PRODUCTS AVAILABLE. A footer at the bottom contains an 'ACCREDITED BUSINESS' logo, contact information for Rob Lockey, and the website URL.

This software is quite extensive and will take some time to get used to. Please use the [help functions](#) or [help videos](#) to get questions answered about TrainingPeaks or give us a call so we may help you.

## Calendar Screen

Logout takes you back to OES

OPTIMIZE ENDURANCE SERVICES

My Settings Classic Mode Forums Help Logout

Calendar Spreadsheet Dashboard

09/14/2009 Today Month Print

Current User QES Bike Strength Training Macrocycle (52 Weeks)

Mon, Sep-14 Tue, Sep-15 Wed, Sep-16 Thu, Sep-17 Fri, Sep-18 Sat, Sep-19 Sun, Sep-20 Week Summary

ST (Ta) Transition Phase Workout a 2setsx15reps weeks1-4 Strength Custom P: 60 min

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Core/Arm/Leg maintenance program for runners and cyclists Strength Core Maint P: 60 min

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ST (Ta) Transition Phase Workout a 2setsx15reps weeks1-4 Strength Custom P: 60 min

ST (Hb1) Hypertrophy Phase 1 Workout b 2setsx12reps weeks5-8 Strength Custom P: 60 min

ST (Hc1) Hypertrophy Phase 1 Workout c 2setsx15reps weeks5-8 Strength Custom P: 60 min

ST (Hb1) Hypertrophy Phase 1 Workout b 2setsx12reps weeks5-8 Strength Custom P: 60 min

ST (Hc1) Hypertrophy Phase 1 Workout c 2setsx15reps weeks5-8 Strength Custom P: 60 min

Quick View: Strength - Wed, 09/30/2009

Summary Equipment Exercises & Intervals

Title: ST (Ta) Transition Phase Workout a 2setsx15reps Copy Cut Delete

Planned Duration Actual Duration

Planned Distance (mi) Actual Distance (mi)

Speed (mph) Pace (/mile)

Calories (calories) Energy (kj)

Temperature (F) Elevation gain (ft)

Upload new device file

Warm-up

Barbell should with squats

Leg Curl using Machine

Calf raises

View all Details Save and Close

Description

Transition phase lasts 1-4 weeks and consists of higher rep/lower weight lifting. Helps give the body rest from a completion of a season or prepares the body for the start of strength training.

Perform reps and sets at a 1 to 1 ratio of work to rest (ex: 30sec lifting:30sec rest)

Pre-activity comments

You will need to log into your account to view the workout structure.

Please follow the exercise structure and do each set for a given exercise before

Week Summary

(P): 3:00:00 Strength(P):3:00:00

Calories: 0 Carbohydrates: 0g Fat: 0g Protein: 0g

Week Summary

(P): 3:00:00 Strength(P):3:00:00

Calories: 0 Carbohydrates: 0g Fat: 0g Protein: 0g

Week Summary

(P): 3:00:00 Strength(P):3:00:00

Calories: 0 Carbohydrates: 0g Fat: 0g Protein: 0g

Week Summary

(P): 3:00:00 Strength(P):3:00:00

Calories: 0 Carbohydrates: 0g Fat: 0g Protein: 0g

Week Summary

(P): 3:00:00 Strength(P):3:00:00

Calories: 0 Carbohydrates: 0g Fat: 0g Protein: 0g

Internet | Protected Mode: Off

By scrolling over the workout icon you can view information about that workout in the quick view, or view all details on the dashboard.

## Dashboard screen

OPTIMIZE ENDURANCE SERVICES

My Settings Classic Mode Forums Help Logout

Calendar Spreadsheet Dashboard

File Share Tools View

Workout Details

Save Close

Current User QES Bike Strength Training Macrocycle (52 Weeks)

Details Map & Graph

Workout Builder

Exercises Workout Media

Completed as planned

Hide all details View all details

Warm-up

Notes: Use a bike, row machine, treadmill, etc.... on't need to kill yourself here, just get the blood flowing to the muscles

Set 1: Duration: 5-15 min

Barbell should with squats

Notes: Begin shoulder width apart and hold both hands to the sides. Slowly squat down to 90 degrees and return to the start position. Make sure front of the knees doesn't go over toes and that you drive from the heels and look high on the wall in front of you to keep proper upper body form. Best done in a squat rack for safety.

Set 1: Reps: 15

Set 2: Reps: 15

Leg Curl using Machine

Summary: Wed, 09/30/2009

Strength ST (Ta) Transition Phase Workout a 2setsx15reps weeks1-4

Planned start time: 12 : 00 : AM

Actual start time: 12 : 00 : AM

Planned duration: 1 0 0

Actual duration: hh mm ss HH:MM:SS

Planned distance: --

Actual distance: -- miles

Calories burned: -- calories

Energy: -- kilojoules

Temperature: -- fahrenheit

Elevation gain: -- feet

Description

Transition phase lasts 1-4 weeks and consists of higher rep/lower weight lifting. Helps give the body rest from a completion of a season or prepares the body for the start of strength training.

Perform reps and sets at a 1 to 1 ratio of work to rest (ex: 30sec lifting:30sec rest)

Pre-activity comments

You will need to log into your account to view the workout structure.

Please follow the exercise structure and do each set for a given exercise before moving onto the next. Modify where you need to based on equipment available to you.

Pods available in this view allow for access to the exercise and workout media when available as well as the full description in the summary pod.

# TRAINING ZONES

<p><b><u>Zone 1 – Recovery</u></b> <span style="float: right;"><b><u>RPE 6 to 8</u></b></span></p> <p><i>For Rate of Perceived Exertion (RPE) equivalencies please refer to the chart below.</i></p> <p><b><u>Physiological Adaptations:</u></b> Recovery training allows the body to actively recover and replenish its glycogen stores while working out the effects of DOMS (Delayed Onset Muscle Soreness). It also improves the body's circulatory characteristics in the muscles which will help to rid muscle cells of waste product build up and increase blood flow and oxygen to the working muscles. This is a great time to focus on form and skills.</p>	<p><b><u>No Go Zone</u></b></p> <p><i>This is the area above your base lactate profile trend line and just below your functional lactate threshold.</i></p> <p><b><u>Physiological Adaptations:</u></b> While this zone is fine for maintaining fitness, it is not effective for periodized training. Training in the No Go Zone is at too high an intensity to benefit the cardio vascular and aerobic efficiency areas focused on in Zone 2 and Zone 3, but is also at too low of an intensity to progress your speed at lactate threshold to higher levels.</p>
<p><b><u>Zone 2 – Overdistance</u></b> <span style="float: right;"><b><u>RPE 9 to 11</u></b></span></p> <p><b><u>Physiological Adaptations:</u></b> Overdistance training increases the body's ability to consume oxygen, increases the size and number of mitochondria, increases the size and number of capillaries and improves aerobic enzyme functioning that allows carbohydrate and fat to metabolize more efficiently, especially fat while exercising in this zone. This type of training will be at a slightly higher intensity than the Recovery zone but is still aerobic.</p>	<p><b><u>Zone 4 – Lactate Threshold</u></b> <span style="float: right;"><b><u>RPE 15 to 18</u></b></span></p> <p><b><u>Physiological Adaptations:</u></b> Lactate threshold training improves the body's ability to sustain high levels of muscle acidosis. In addition, this intensity of training improves power and/or speed at lactate threshold and can move lactate threshold closer to maximal work capacity.</p>
<p><b><u>Zone 3 – Endurance</u></b> <span style="float: right;"><b><u>RPE 12 to 14</u></b></span></p> <p><b><u>Physiological Adaptations:</u></b> Endurance training improves the body's ability to manage and clear acidosis build up in the muscles and increases the efficiency of the circulation and cooling systems of the body. Endurance intensities improve the athlete's ability to continue exercise activity at a faster pace for a longer duration of time.</p>	<p><b><u>Zone 5 – VO2Max</u></b> <span style="float: right;"><b><u>RPE 19 to 20</u></b></span></p> <p><b><u>Physiological Adaptations:</u></b> VO2max training increases the body's anaerobic and buffering capacity as well as increasing the volume of blood the heart pumps with each heart beat (a.k.a. stroke volume). Also improves athlete's acidosis tolerance.</p>

## TRAINING ZONES REFERENCE (CONT.)



### Borg Rate of Perceived Exertion (RPE) Chart

<u>RPE #</u>	<u>Breathing/Sensation</u>	<u>Exertion</u>
6	Resting	
7		Very, very light
8	Talking is easy	
9		Very light
10	Still can talk but with more effort	
11		Fairly light
12	Breathing is starting to become challenging	
13		Somewhat hard
14	Breathing is challenging/don't want to talk	
15		Hard
16	Panting hard/talking broken into single words	
17		Very hard
18	Breathing out of control/takes effort to respond to questions	
19		Very, very hard
20	Cannot sustain this intensity	Maximum

### Notes:

- It is best to determine the heart rate ranges corresponding to these training zones with a Lactate Threshold test. RPE can be used to estimate exercise intensity. Age based HR prediction charts are not recommended.
- Heart rate can be altered because of environmental conditions (heat), dehydration, stress, illness, and lack of sleep. It is best to monitor heart rate along with rating of perceived exertion (RPE) and power/pace if possible.
- Heart rate during a 5K or 10K running race or a 40K cycling race will be approximately 5-20 beats per minute above lactate threshold heart rate.
- Running pace during a 5K or 10K race will be approximately 10-45 seconds per mile faster than lactate threshold pace
- During a 40K cycling race, power output can be 5-10% higher than lactate threshold power output.

Optimize Endurance Services

303 356-9893 [www.optimizeendurance.com](http://www.optimizeendurance.com)



The coaches at OES appreciate your trust in our products and look forward to assisting you with achieving your goals in fitness. Please don't hesitate to reach out to us with questions or take part in further services that we offer by using the image links below.

**HELPING ATHLETES ACHIEVE**

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