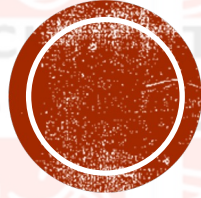
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**Membership Meeting — January 18, 2023**





# WELCOME!

[www.stlouistriclub.com](http://www.stlouistriclub.com)



**Membership Meeting — January 18, 2023**  
**7:00 PM CST**



# Agenda

- Welcome
- Club Updates
- Board Election Results
- Big Shark Outdoor Sports Series
- Feature Presentation



- ❖ Jim Schneider/Mike Ludwig
  - “Training Zones – What, Why, How”

- Attendance Prizes

Past President - Chris Ahl

2022 President – Mike Duchek

2023 President – Trevan Michael

Treasurer – Dave DeJean

Secretary – Devlin Murray

Members At Large – JP Palmer, Bob

Ericson, Suzie Easton



# Club & Coordinator Updates

- Membership – Marian Holtz
  - New member introduction
- Clothing – Dave DeJean
  - New 2022 kits and 75% off on past year's items



**Wilkerson Volunteer Challenge – Mike Duchek or ?**

**Races to be  
announced soon!**



# Club Challenge

## KolbeCo Club Challenge

- Gina Goebel – Suzie Easton

- **Races to be announced soon!**

# Icy Iron

## 2021

Those who participated last year earned  
2 logo “buff”s, a logo beanie or both!

Pickup your 2021 swag from Mike Duchek



## 2022

You rocked it!

Cool swag is here!





# 2023 SLTC Board

- President-Elect – **Sarah Tyndall**
- Vice President – **Daniel Hillman**
- Treasurer – **Dave DeJean**
- Secretary – **Marian Holtz**
- Member-at-Large
  - **Jennifer Meyer**
  - **Cheryl Ritzman**
  - **Suzie Easton**
- *President – Trevan Michael*
- *Past President – Mike Duchek*



Find Updates at  
[www.stlouistriclub.com](http://www.stlouistriclub.com)





# Big Shark Event Services

Big Shark Outdoor Sports Series  
12 Months of Programming



# The Why

## Local Programming:

Creates relationships

Creates goals

Builds Communities

Builds the Big Shark Brand

Attracts visitors to STL

Invests in the region

Builds equity over time

Helps ALL related businesses



S T . L O U I S



# January

The Nippy Niner Trail Race,  
January 29<sup>th</sup>, 9 Miles or 9K

Roddy's Dirty Spaghetti  
Gravel Ruckus Training Ride  
(Top Secret)





ALL ABOARD THE PAIN TRAIN  
PASTARIA BIG SHARK  
TEAM TIME TRIAL  
SUNDAY FEB 12TH

February

Pastaria-Big Shark Racing & Friends

All Aboard the Pain Train

Team Time Trial

February 12<sup>th</sup> (You are invited!)



# March

The Vann Knight Tuesday  
Night World Championship  
Criteriums

March 14<sup>th</sup> – August 29<sup>th</sup>  
(25x)

The Tour of St. Louis, 3/18  
& 3/19

Time Trial and 2 x  
Criteriums





# April

The Chain of Rocks Bridge Duathlon,  
April 30th

The World Wide Technology Raceway  
Criterium, April 15th

The Tilles Park Criterium, April 16<sup>th</sup>

Support: MSE America's Cup Tri  
MS Society Walk Support x 3







May

New Town Open Water Swims, May 6<sup>th</sup> - June 24<sup>th</sup>

The Vino Fondo Gran Fondo and Grindo Fondo, May 20<sup>th</sup>

The St. Charles Golden Games & STL Senior Games

The Highland Biathlon & STL Tri Support



# June

Open Water Swims – Con't

Tuesday Crits – Con't

Shop Rides – Con't

Charity Training Rides PTC and Trailnet

MSE Racing Innsbrook Tri Support

Chesterfield Youth Triathlon Support





# July

The New Town Kids Triathlon, July  
8th

The New Town Adult Triathlon, July  
9th

The Tour des Sharks, July 16th

The Tour de Kirkwood Triathlon,  
July 23rd

MSE Springfield Triathlon Support





# August

The Missouri State Championship  
Time Trial, Aug. 5<sup>th</sup>

The Missouri State Championship  
Criterium, Aug. 6<sup>th</sup>

The Inkwel Clayton Kids  
Triathlon, Aug. 20<sup>th</sup>

Moonlight Ramble Support, AUG.  
20<sup>TH</sup>

MSE Lakeside 370 Triathlon  
Support





# September

The Gateway Cup PRO Races, Labor Day Weekend

The Tour de Lafayette

The Tour de Francis Park

The Giro della Montagna

The Benton Park Classic

The Run for Reconciliation

Gateway Cup Kids Races x 4

The Ride to Unite Charity Ride

Pedal the Cause Charity Ride

Bike MS Charity Ride







# October

The Bubba Memorial Cyclocross Series, x 10

The FREE Bubba Cyclocross Clinic

TRAILNET Ride the Rivers Century Support

MO Bike Fed - Tour de Wildwood Support



# November

Bubba Cyclocross Series,  
Con't

The Gravel Growl Weekend  
Rides

The Oreo Roubaix Gravel  
Ride



# December

The Missouri State Cyclocross  
Championship, Dec. 3rd  
US National Championship  
Viewing Party, TBD





# Training Zones – What, Why, How



Because Results Matter... Power Up!



# Cycling Training Zones

- **Zone 1 – Recovery**
- **Zone 2 – Steady State / Endurance**, conversational pace, aerobic capacity
- **Zone 3 – Tempo / Medium**, labored conversational pace, hard but sustainable, aerobic endurance
- **Zone 4 – Threshold**, speak in phrases (start to hear yourself breathing), maximum pace that can be maintain for 1 hour effort
- **Zone 5 – Above Threshold**, one word answers, anaerobic capacity
- **Zone 6 – V02 max – Max**, anaerobic capacity,. ATP-CP





# Running Training Zones

- **Zone 1 – Recovery**
- **Zone 2 – Steady State / Endurance**, aerobic base, conversational pace
- **Zone 3 – Tempo / Medium**, aerobic endurance
- **Zone 4 – Threshold**, maximum pace that can be maintain for 1 hour effort
- **Zone 5 – VO2 max - Max**, anaerobic capacity / speed



# Why Training Zones

- **Progressive overload** - build fitness gradually (Progression is more than just volume, it is intensity also.)
- **Avoid over-training** (Recovery is a critical part of training.)
- **Optimize training time**
- **Specificity** – train at the pace you are going to race at
  - ≤Olympic – zone 4
  - 1/2 IM – mid – high zone 2 / low – mid zone 3
  - IM – mid – high zone 2





# Definitions

- **VO<sub>2</sub> max** – maximal aerobic capacity - the highest rate of O<sub>2</sub> consumption during large muscle activity.
- **Lactate threshold (LT)** – the exercise intensity at which there is an exponential increase in blood lactate concentration because the breakdown of glycogen in the muscles exceeds the body's ability to metabolize it.
- **Functional Threshold** – average power, pace &/or heart rate that can be maintained for a 1-hour maximal effort on fresh legs.
- **Heart Rate Reserve** - max HR – resting HR

# VO<sub>2</sub> max test



- Exercise step test (power/pace increases a fixed amount at a fixed time interval) to failure measuring exhaled and inhaled gases plotted against heart rate.
- Output of the test is heart rate training zones based on O<sub>2</sub> consumed vs. CO<sub>2</sub> expired. Very accurate measure of metabolic activity.

Because Results Matter... Power Up!



# VO<sub>2</sub> Results



- Average non-trained male achieves a VO<sub>2</sub> max of roughly 30 to 40 mL/kg/min. The average non-trained female scores roughly 27 to 30 mL/kg/min.
- World class male athletes VO<sub>2</sub> max can climb up as high 90+ mL/kg/min, while female athletes to up to 80 to 77 mL/kg/min.

Score	Athletes with The Highest VO2 Max Records
97.5	Oscar Svendsen, cyclist
96.0	Espen Harald Bjerke, cross-country skier
93.0	Kurt Asle Arvesen, road cyclist.
92.5	Greg LeMond, cyclist
92.0	Kilian Jornet, ultra-endurance runner.
92.0	Matt Carpenter, marathon runner.
92.0	Tore Ruud Hofstad, cross country skier
91.0	Gunde Svan, XC-skier.
91.0	Harri Kirvesniem, cross country skier
88.0	Miguel Indurain, cyclist
88.0	Anders Aukland, cross country skier.
87.4	Marius Bakken, runner.
87.0	Jon Anders Gaustad, cross country skier.
86.4	Edvad Boasson Hagen, road cyclist.
86.0	Thor Hushovd, cyclist.
86.0	Ole Einar Bjørndalen, biathlon, skier.

WWW.RUNNERSBLUEPRINT.COM

# What is Lactate?



- **Lactate is a bi-product of Fast (Anaerobic) Glycolysis**
  - Lactate is then transported to liver to be converted back into glycogen via The Cori Cycle
  - Accumulation of lactate in the blood is an reliable indicator of anaerobic activity
- **Some Common Misconceptions:**
  - Lactate does not cause fatigue or muscle soreness from exercise
  - Lactate does not cause the “Burning” sensation you feel during exercise. Hydrogen ions are the culprit
    - Splitting of ATP outside the mitochondria is primarily responsible of H<sup>+</sup> ions



# Lactate Threshold (LT) Test

- LT Test is an step test (power increases a fixed amount at a fixed time interval). At each interval, heart rate, rating of perceived exertion (RPE) and your blood lactate are recorded.
  - Note: Blood Lactate is collected through a small prick either from the subject's finger or ear.
- The data points are plotted to determine your Lactate Threshold.

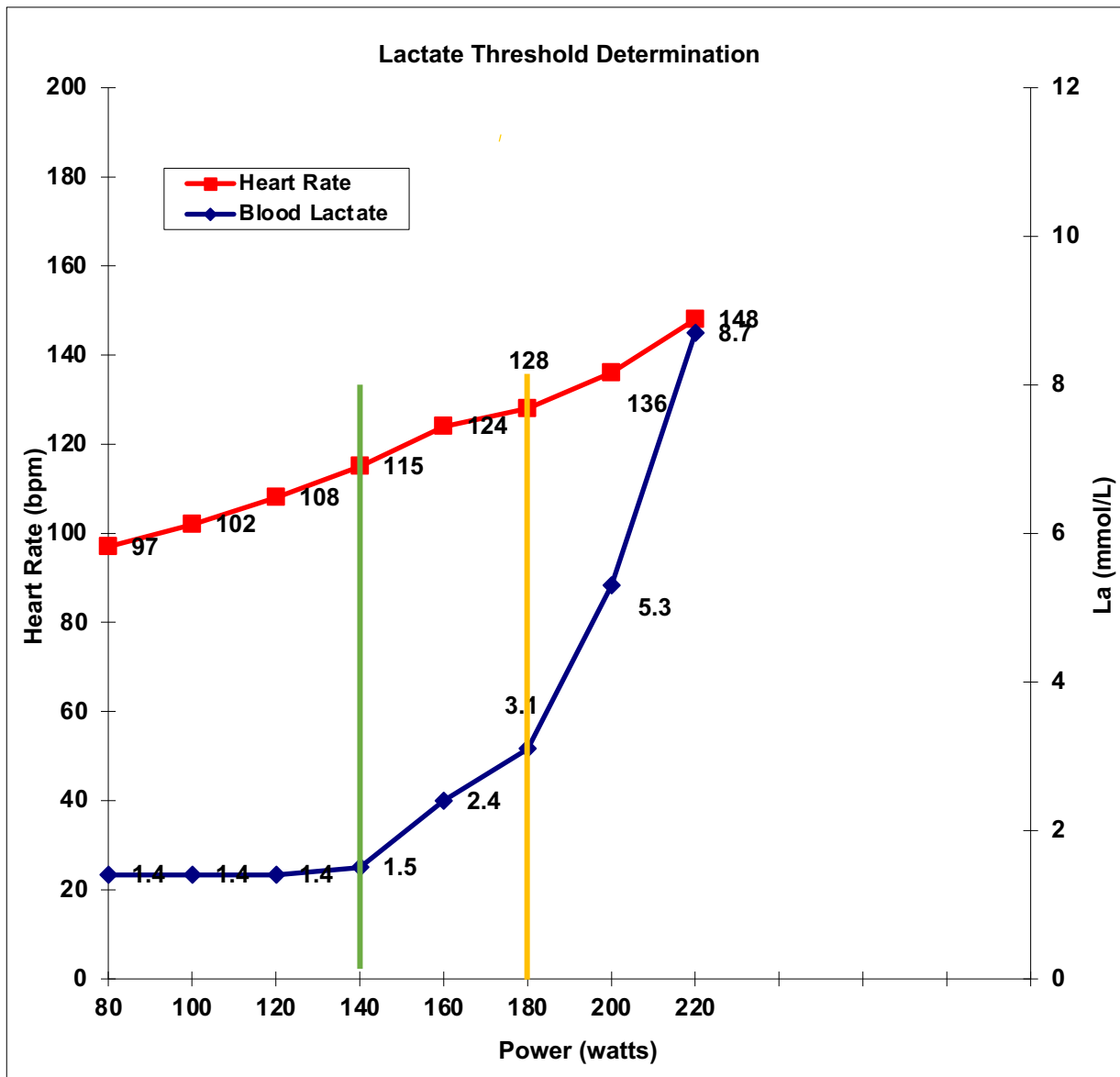




# What are Aerobic & Anaerobic Lactate Thresholds?

- **Aerobic Lactate Threshold - LT1**
  - Intensity at which the concentration of Lactate begins to increase
    - Primarily Aerobic Metabolism
- **Anaerobic Lactate Threshold - LT2**
  - Onset of Blood Lactate Accumulation (OBLA)
    - Intensity where the production of Lactate exceeds uptake.
    - The 2nd significant increase in the slope





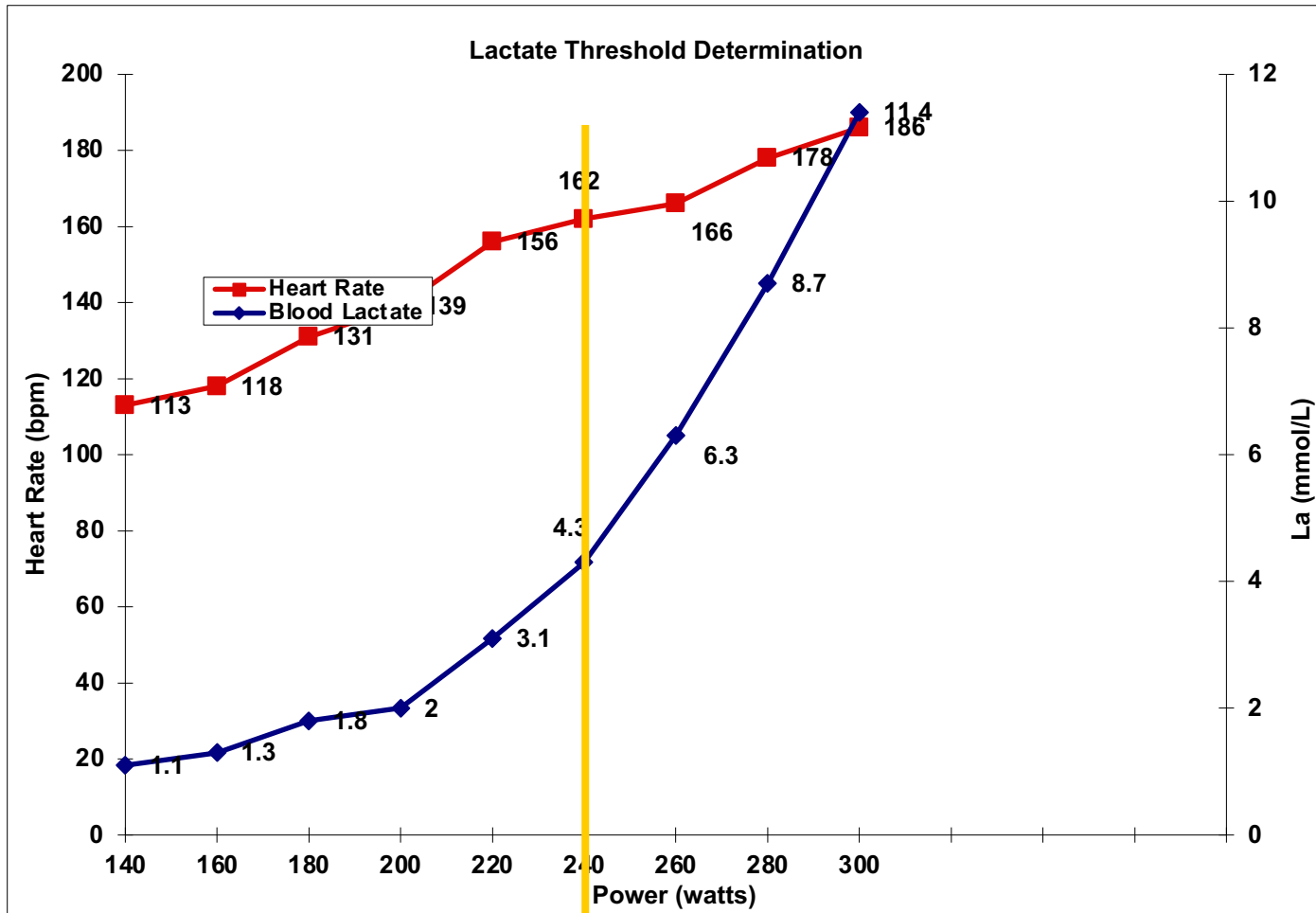
Because Results Matter... Power Up!

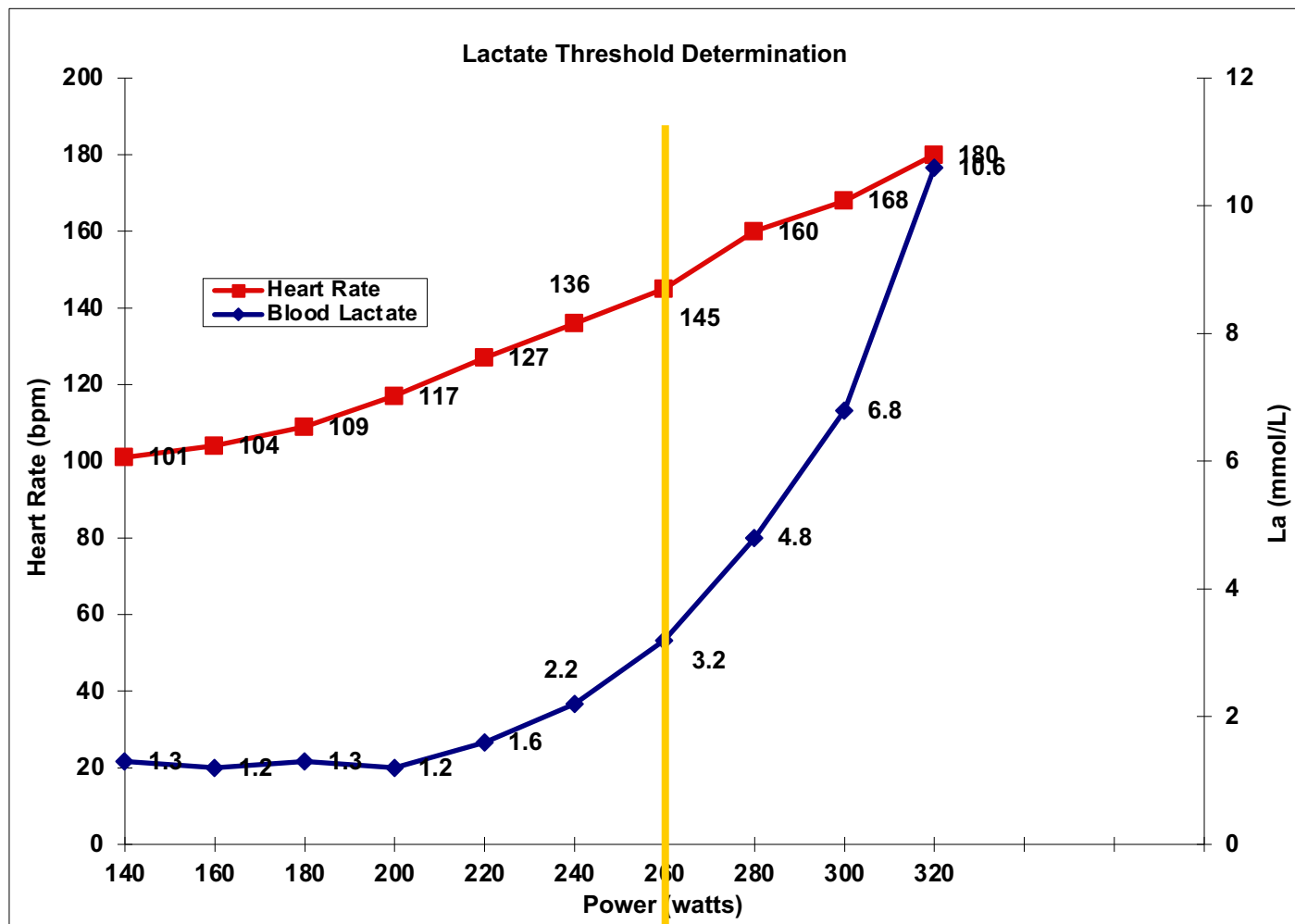


## VO<sub>2</sub> max & LT Tests

- A VO<sub>2</sub> max and LT tests provide insight into what is happening within your body from a physiologically. You are able to see at which workload you are primarily relying on which energy system.
  - Depending on your goals, you will know exactly the type of training you need to focus on to optimize your performance.

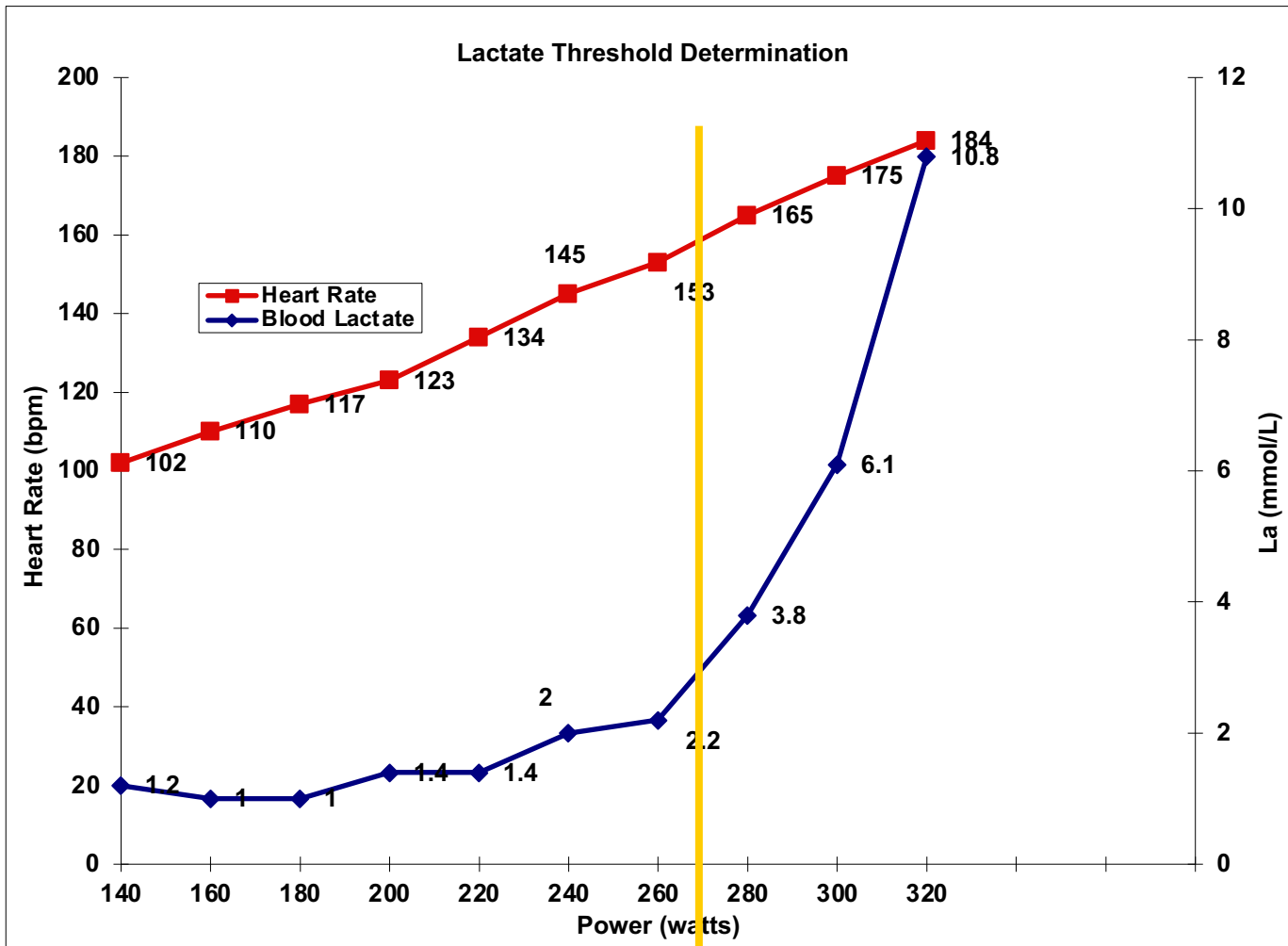




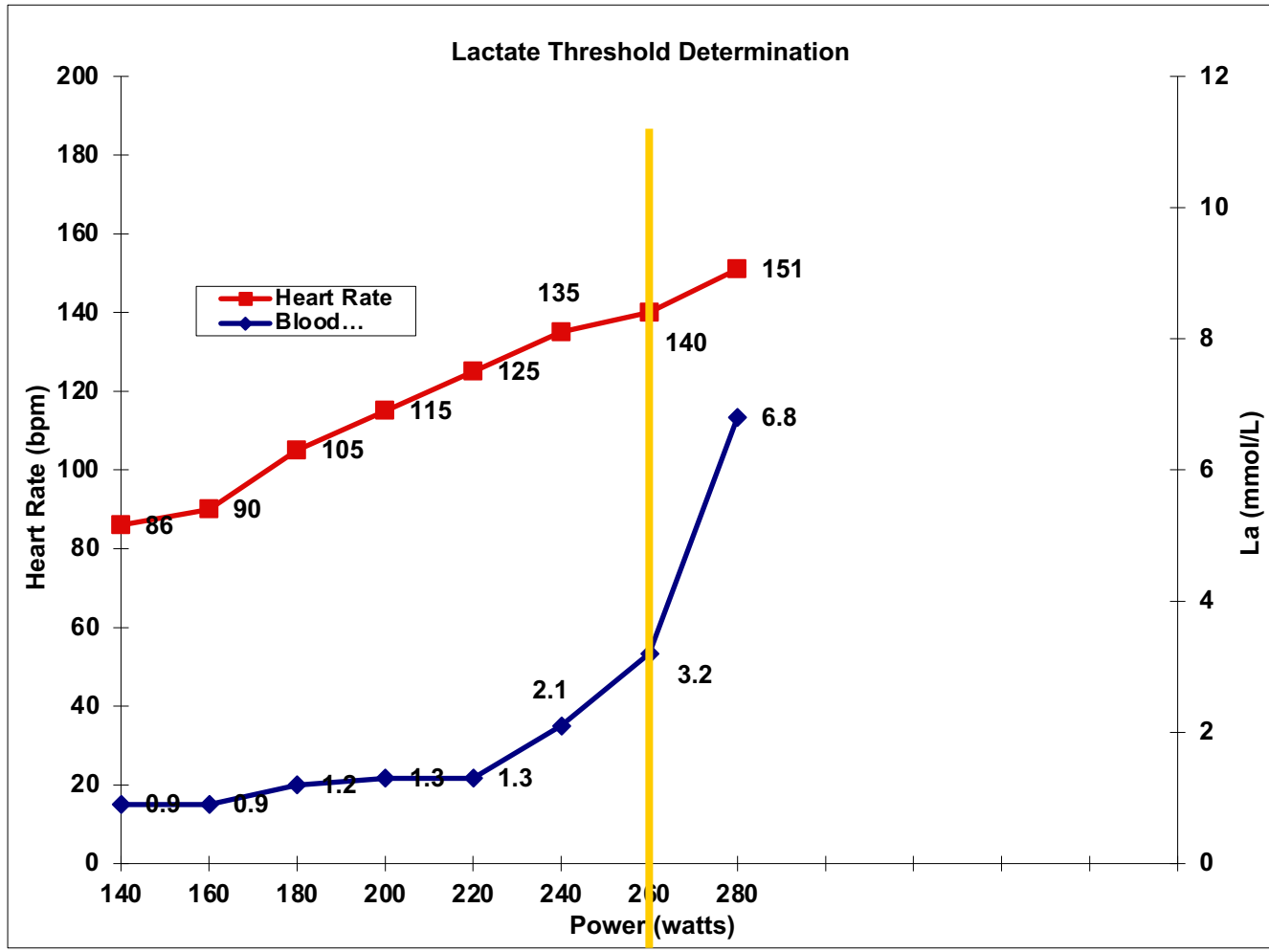




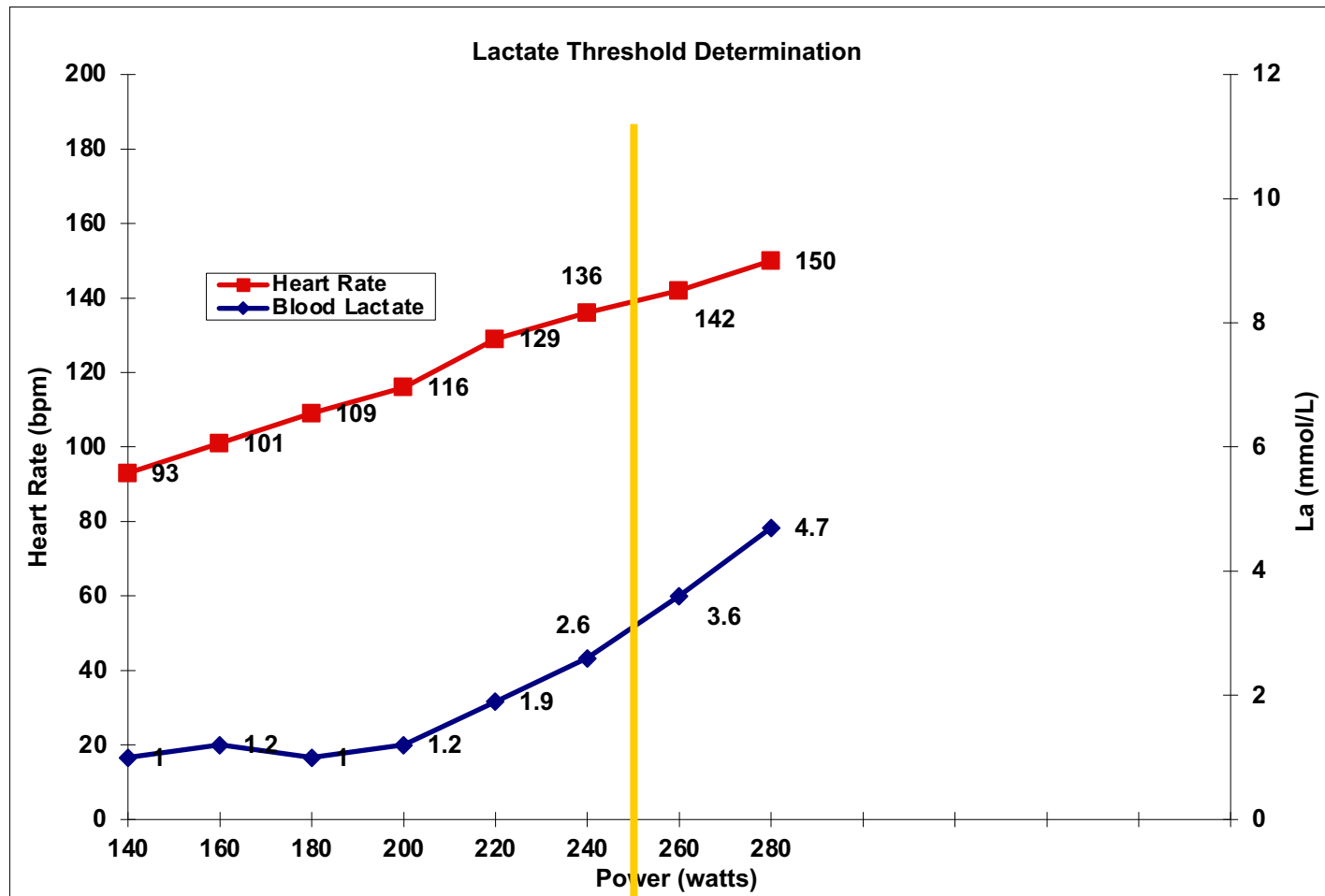
Client 2- Early Spring 2018



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# Functional Threshold Power Test

- **A Functional Threshold Power (FTP) test**
  - Protocols vary – ramp test, 2 x 8 min, 20 min, 30 min or 1 hour – all are max efforts.
  - Measure average watts for the effort and apply correction factor to determine FTP
- It was developed as a “field” test to determine athletes threshold.
- Power is good metric for interval training because feedback is instantaneous.



# Heart Rate Reserve

- **HRR = max HR – resting HR**
  - **Karvonen formula: Target HR = (HRR x %) + RHR**
    - **Zone 1: <60%**
    - **Zone 2: 60% - 70%**
    - **Zone 3: 70% – 80%**
    - **Zone 4: 80% – 90%**
    - **Zone 5: 90% - 100%**
  - **Resting HR – 1st thing in morning prior to getting out of bed**
  - **Max HR protocol: 15 min warm-up gradually increase to 5k pace; 4 x 2 min max efforts with 1 min rest**





# Comparison of Test Methods

	Advantages	Disadvantages
<b>VO<sub>2</sub> max test</b>	<ul style="list-style-type: none"> <li>• Running &amp; cycling</li> <li>• Most accurate determination of zones</li> <li>• HR &amp; power/pace zones</li> <li>• AeT &amp; AT</li> <li>• Physiologic parameters</li> </ul>	<ul style="list-style-type: none"> <li>• Not accessible to all athletes - done in lab</li> <li>• Cost</li> </ul>
<b>Lactate Threshold test</b>	<ul style="list-style-type: none"> <li>• Running &amp; cycling</li> <li>• HR &amp; power/pace zones</li> <li>• AeT &amp; AT</li> <li>• Physiologic parameters</li> </ul>	<ul style="list-style-type: none"> <li>• Not accessible to all athletes – done in lab</li> <li>• Results are sometimes hard to interpret</li> <li>• Cost</li> </ul>
<b>Power (FTP) test</b>	<ul style="list-style-type: none"> <li>• Does not require lab equipment</li> <li>• Can be self administered</li> <li>• Cost</li> </ul>	<ul style="list-style-type: none"> <li>• Cycling only</li> <li>• Power zones only</li> <li>• Measures how much work being done not how hard body is working.</li> <li>• Can both under estimate or over estimate threshold due to a psychological factor, anaerobic component, &amp; correction factor.</li> </ul>
<b>HRR</b>	<ul style="list-style-type: none"> <li>• Does not require lab equipment</li> <li>• Can be self administered</li> <li>• Cost</li> </ul>	<ul style="list-style-type: none"> <li>• HR zones only</li> <li>• Least accurate zones. Can both under estimate or over estimate.</li> </ul>

Because Results Matter... Power Up!



- Personal Coaching
- Indoor Cycling Classes
- Camps & Clinics
- Private Group Training
- Physiologic Testing

[stltraining@powerupcycling.net](mailto:stltraining@powerupcycling.net)

636-875-4334



# Next Meeting

**WEDNESDAY, Feb 15, 2023**

**7:00 to 8:30 PM**

**@ The Heights**





# Tonight's Attendance Prizes

**Big River / Big Shark**

# 2023 Club Sponsors

