Threshold

Training

Theory and Application

1. Threshold Training?
1. Benefits
2. Application


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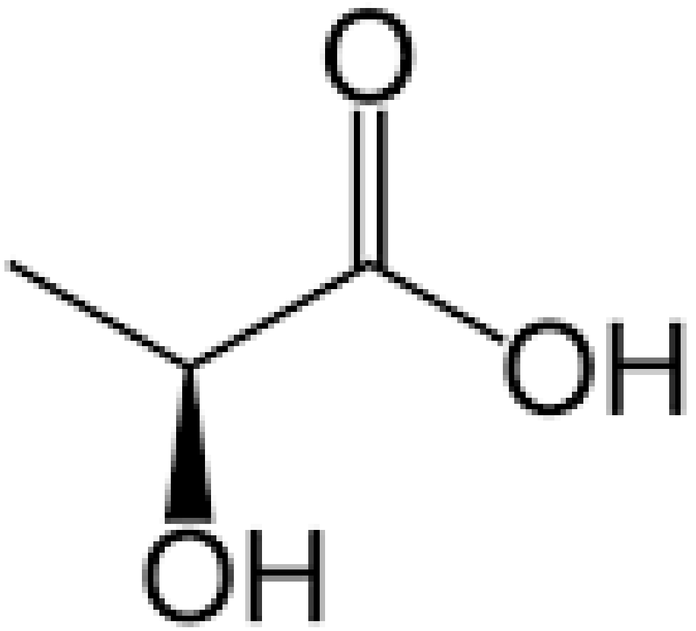
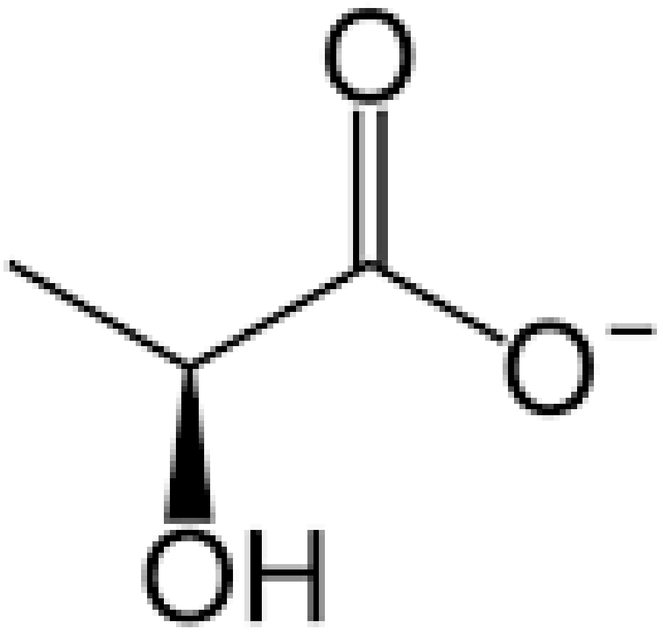


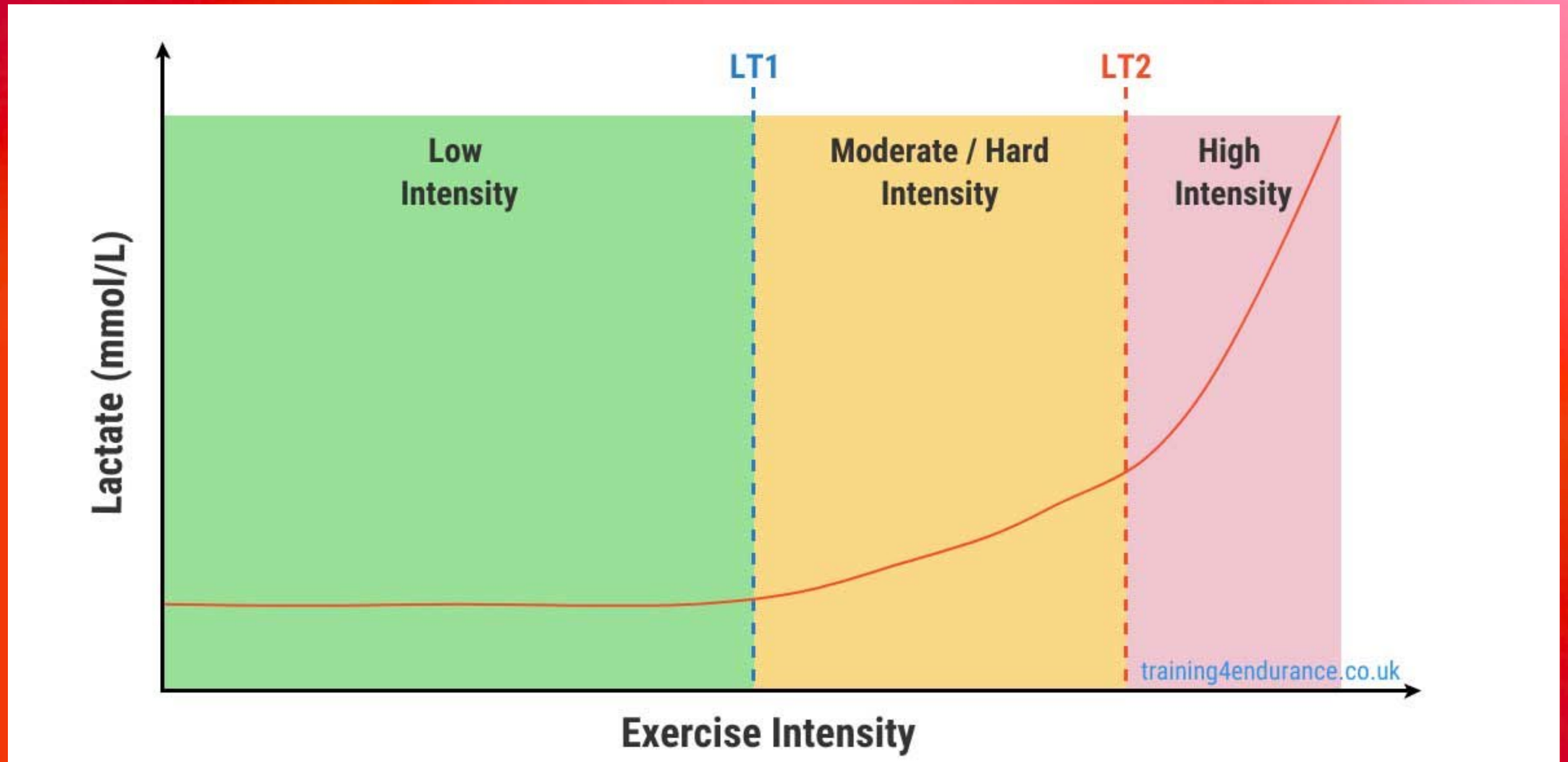
Lactic acid

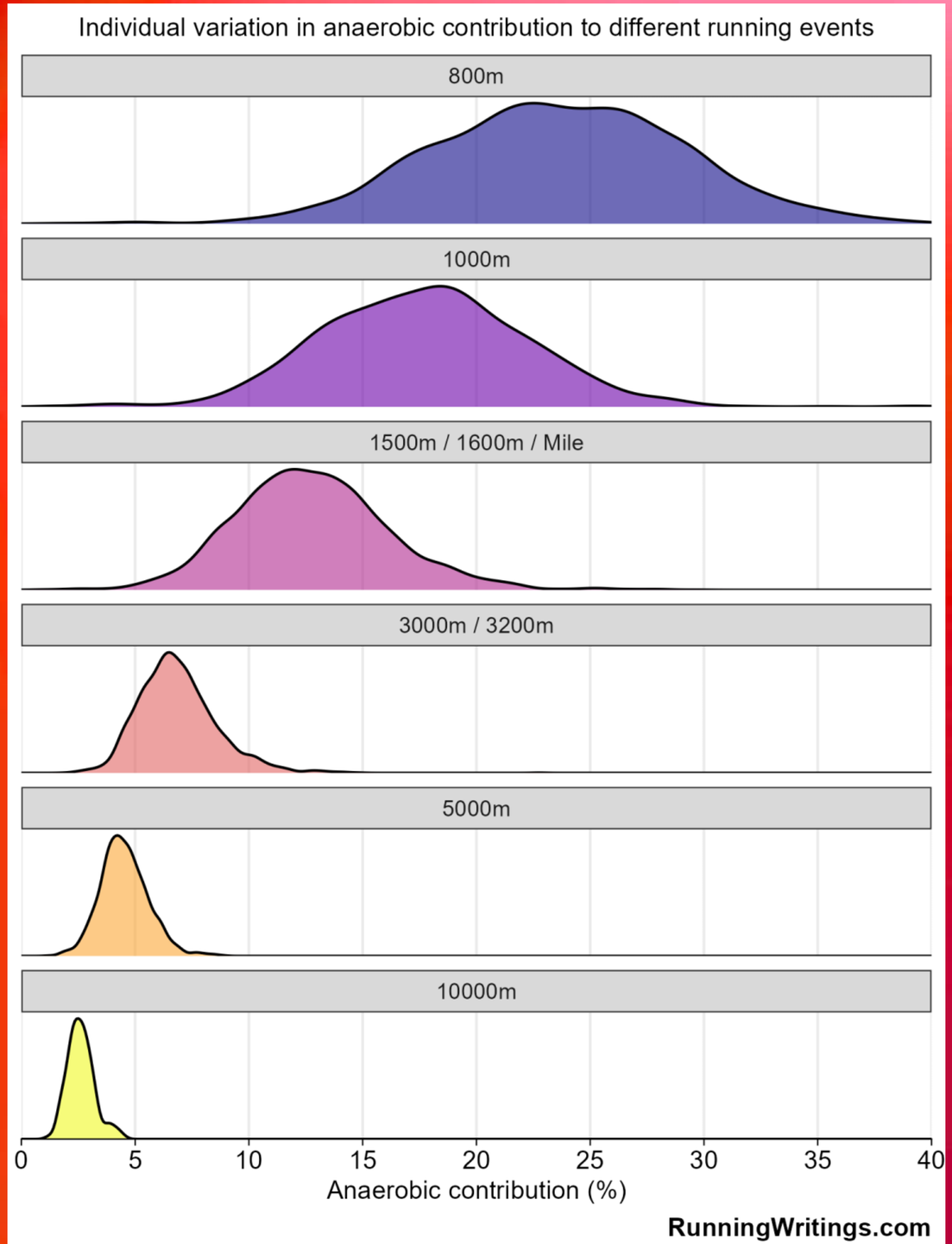


Lactate

“Threshold”

What is it & why should you care.


LT1
LT2
Low Intensity
Moderate / Hard Intensity
High Intensity
Lactate (mmol/L)
training4endurance.co.uk
Exercise Intensity


Individual variation in anaerobic contribution to different running events
800m
1000m
1500m / 1600m / Mile
3000m / 3200m
5000m
10000m
0
5
10
15
20
25
30
35
40
Anaerobic contribution (%)
RunningWritings.com

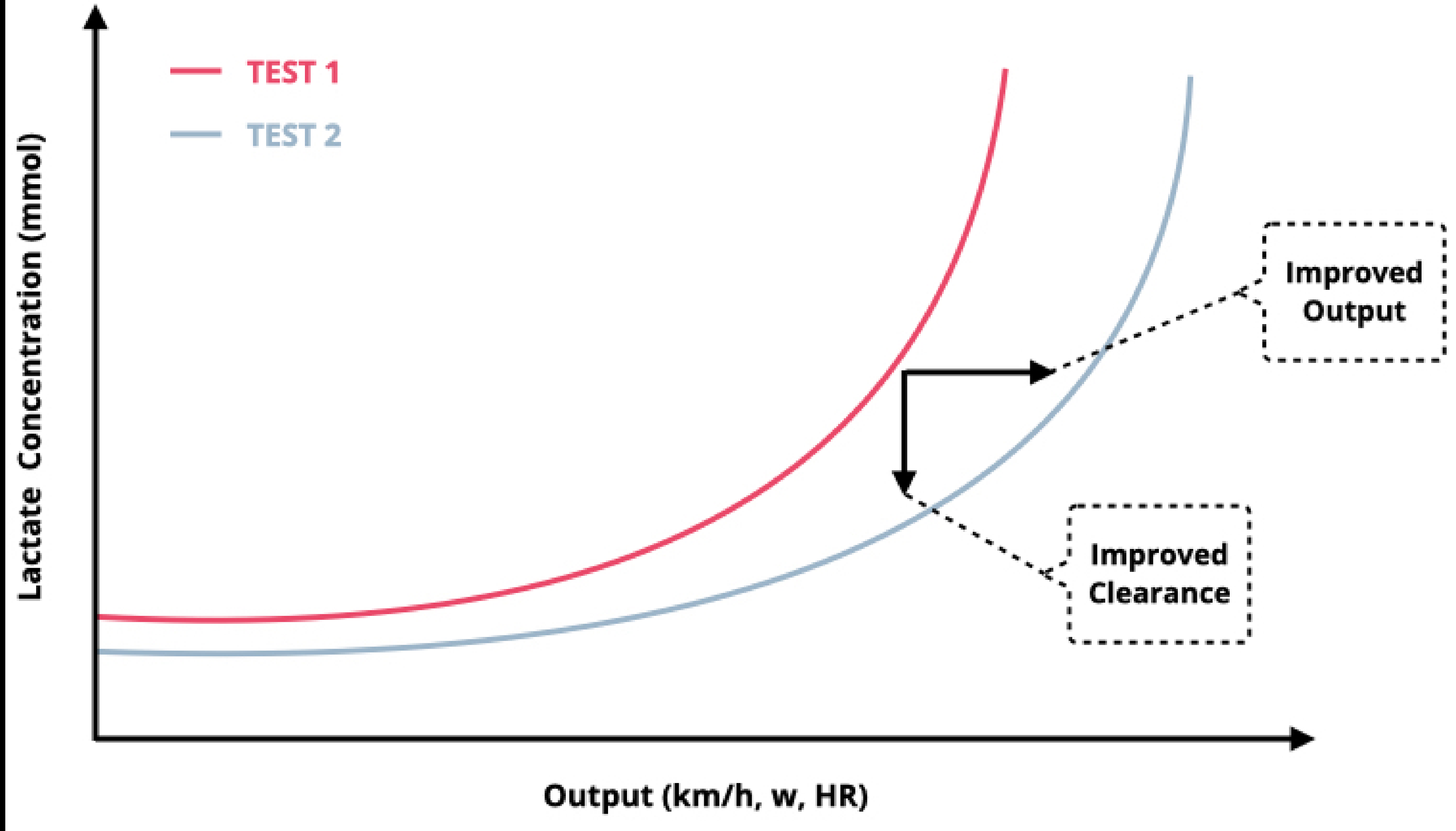
Threshold Cont.

Threshold training represents the top of the aerobic intensity scale with the lowest possible lactate levels.

It's been made popular in recent years by Jacob Ingebritsen & the "Norwegian Method"

Primary benefits come from trading intensity for 'large' volumes.

What does it do and why does it work?


TEST 1
TEST 2
Lactate Concentration (mmol)
Improved Output
Improved Clearance
Output (km/h, w, HR)

Clearance

- Lactate is a fuel source and by training in this “Zone” we increase the rate at which we can use lactate as a fuel.
- Muscles become better at clearing waste products from fast paced running.

Capacity

- Ability to tolerate high levels of lactate is increased.
- Total work capacity is much higher due to low relative levels of intensity.

Benefits

Threshold training is sustainable - generally requiring shorter recovery windows and less chance of injury

Flexible application - can be differentiated for different types of runners

-Improved Sustainable Speed
- Improved endurance
- Improved Efficiency
- Can build other qualities while doing this training

Application

Application

Application can be quite different based on training goals / athlete strengths.

EG - 800m Specialist

We can manipulate rep length/rest to get get a threshold workout from running that is relatively close to race pace.

In season it's best used as a "bridge" between harder training sessions. Build first, then maintain.

Application

- Application differs for 800/1600 and 1600/3200 runners quite markedly.
- Our goal is to create a sets and reps scheme that creates just enough of a response to move our fitness forward without overloading the system.
- Highly variable between athletes based on their age and training history.
- Threshold training is typically easier than the athlete thinks it is. Strong priority on intensity control.
- Again, best used as a bridge between race specific training sessions and/or races.

800m runners

- Typically we group 800m runners into two different categories.

- For our “speed based” 800m runners sometimes this training can be the ‘most difficult’.

- We are trying to insert an aerobic component into their training schedule, in a way they are going to understand. Groups of short intervals with short rest @ slower than 800m pace are perfect.

- 3 x (6 x 150m) w/ 50m walk between reps, 3-4’ between sets. 150’s @ 800 pace + 2.5-3.5 seconds.
  2:00 800m = 25-26 second 150’s
  2:35 800m = 30-31 second 150’s

800m Cont.

3 x (6 x 150m) w/ 50m walk between reps, 3-4’ between sets.

Extend

3 x (8 x 150m) w/ 50m walk between reps, 3-4’ between sets.
3 x (10 x 150m) w/ 50m walk between reps, 3-4’ between sets.

Intensify

4 x (5 x 150m) w/ 50m walk between reps, 3-4’ between sets.
5 x (3 x 150m) w/ 50m walk between reps, 3-4’ between sets.

MD examples

- 10 x 300 w/ 100m easy jogging rest. Done @ 1600 pace + 8-10 seconds per 400m

4:45 -> 300’s in 61->63
6:00 -> 300’s in 75-77

Extend

2 x (7 x 300m) w/ 100m easy jogging rest, 3-4’ between sets.

Intensify

3 x (5 x 300m) w/ 100m easy jogging rest, 3-4’ between sets. Done @ ~3200m pace.

1600m / 3200m

- Threshold training for athletes skewing towards 3200m looks much more like traditional T workouts you might find in training books.

- Our goal is to have a relatively high volume of medium effort running.

- Typically easier than the athlete thinks it is. Strong priority on intensity control. We'd rather miss slow than miss fast.

- In the early season this may take priority for the 1600m / 3200m athlete and as we approach the mid/late season we just need it for maintenance.

- General Guideline for pacing. Date 1600m SHAPE + 1:10 to start.
- 4:40 -> 5:50
- 5:45 -> 6:55

1600m / 3200m

General Guideline for pacing. Date 1600m SHAPE + 1:10 to start for mile repeats.

- 4:40 -> 5:50
- 5:45 -> 6:55

Every distance down subtract ~ 10 seconds per mile.
1600 repeats - 5:50
1200 repeats - 5:40 pace (4:15)
800 Repeats - 5:30 pace (2:45)
400 repeats - 5:20 pace (1:20)

Rest guidelines - Short recoveries. Can build these over time. Start w/ :90 and cut over weeks to :60.
1600 repeats on :60 to :90
1200 repeats on :60 to :75
800 repeats on :45 to :60
400 repeats on :30 to :45

Thank you!