

Lactate Threshold (LT): point at which lactate accumulates faster than it can be cleared and begins to accumulate in the muscles

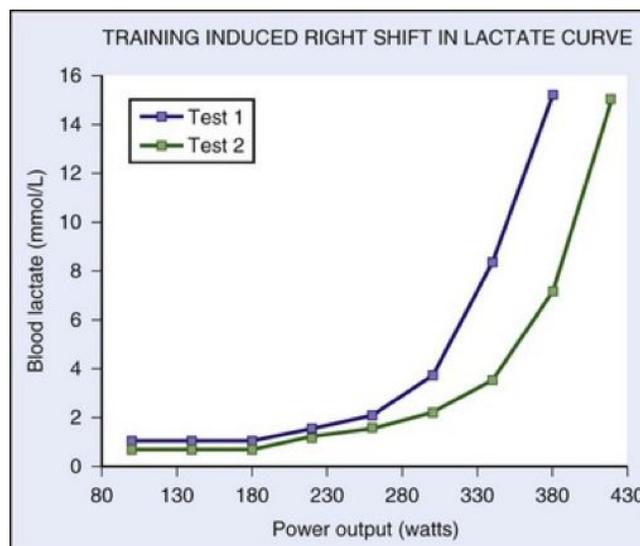
- Shift from predominantly aerobic energy systems to anaerobic energy systems

Why is it Important? Why should we do Level 3 (LT) training?

- Increase our EFFICIENCY
 - Improving our body's ability to clear out lactate, allowing us to maintain our intensity/pace with minimal fatiguing
- If the pace you can hold at your LT is faster than the pace your competitor can hold at their LT: you will WIN
 - Your increased efficiency will allow you race at a faster pace without accumulating lactate
 - Race pace is closely tied to the lactate threshold with 5km races typically being completed at or just above the lactate threshold.

With consistent, smart training progression you can continue to move your threshold closer to maximal output.

- Measure this with re-assessments each year:
 - Elite Athletes: Every spring/summer, at the end of fall training, repeat yearly
 - Junior Athlete: Every spring/summer, repeat yearly
 - Birkie Athletes: Every few years at the beginning of summer training



Test 1= Beginning of season, Test 2= following a period of effective training progression

5 Training Zones/Levels:

| ZONE | % of Max HR | Lactate (mmol/L) | Energy | Purpose | Duration in Zone (Approximate) |
|------|-------------|------------------|--------------------|------------------------------------------------------------|--------------------------------|
| 1 | 60-70% | 2 or less | Aerobic | Recovery and Over Distance | 1-6 hours |
| 2 | 70-80% | 2- 3 | Aerobic | “No training Zone” | |
| 3 | 80-90% | 3.5-5 | Aerobic/ anaerobic | Threshold and Endurance Speed (Lactate Threshold Training) | 30 min to 1 hour |
| 4 | 90-95% | 5-10 | Anaerobic | Endurance race pace and max VO2 | 2 to 6 min, 6 to 10 min |
| 5 | 95-100% | 8+ | Anaerobic | Max Speed | 5-15 sec |

Field Tests to Determine your Max Heart Rate and Lactate Threshold:

Determining your Max Heart Rate:

- Find a long hill (takes approximately 2 + minutes to climb)
 - Wear your chest strap HR monitor
 - Short Warm-up
1. First time up the hill: Build up to a pace you could maintain for 20 minutes; Recover
 2. Second time up the hill: Build up to a 3km pace; Recover
 3. Third time up the hill: Run a pace you could maintain for 1 min (run only half of the hill)
 - Check for max HR and Calculate HR zones based on Max HR

Determining Lactate Threshold:

- Following a short warm-up, complete a 30 minute solo time trial (TT)
 - After first 10 minutes of the TT, hit “lap” on watch and record heart rate for the final 20 minutes of the TT
 - The average HR over the last 20 minutes will be approximately HR of Lactate Threshold (L3)
 - Determine zones based on this HR