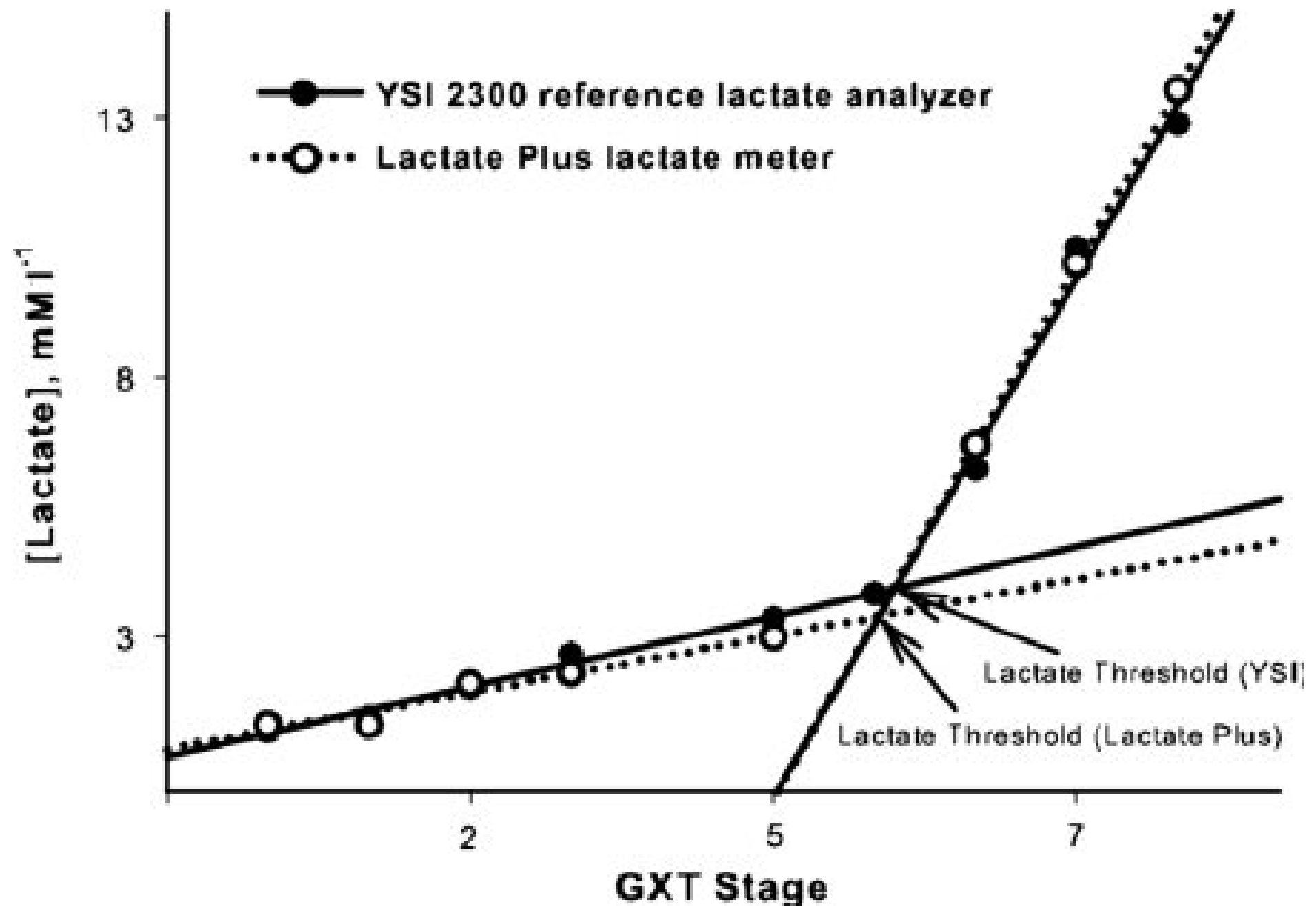


Training with threshold pace and marathon pace

Janne Holmén

What is threshold pace?

- Half marathon pace.
- Pace you can keep during one hour continuous running.
- Lactate 4 mmol/l. (3 mmol/l ?)
- 85 % of maximum heartrate .
- 75% of Vo₂ max.
- "Somewhat hard" (13 on the Borg scale from 6 to 20).
- Pace where lactate begin to accumulate at a rapid rate.



From laboratory to training

- (Prehistory in 1920s-1950s of research on VO₂max)
- 1959: Hollmann, "point of optimal ventilatory efficiency"
- "anaerobic threshold", "lactate threshold"-1960s.
- "threshold pace", "training at AT" -1980s.
- "lactate meter"-1990s.
- (East German use of lactate meters in training already in 1970s-1980s?).

Relationship to marathon pace

- 3min/km => 63.18 half marathon
- 3.10 => 2.13.37 full marathon
- Maybe 10 seconds/km difference between Half marathon/threshold pace and marathon pace for an elite runner.
- Pace for specific marathon training around 3.05 for this runner.

Why threshold training?

- Builds a base for long distance runners 1500-10000m.
- Race specific for half marathon-marathon.
- A large base of threshold training allows runners to sustain harder pace during race specific training and competitions, leading to better results.
- Is threshold pace more efficient than other paces slightly slower or faster?

How has "threshold training" been done?

- Central European tradition 1950s-1960s: Large amount of intervals on track. Zatopek (400m), Igloi. (Longer intervals, "Fresh swing tempo") 60% of effort.
- Lydiard 1960s-1970s: "TV-kova", Tempo runs (10miles-16km)
- African tradition: Fast pace towards end of everyday runs.
- "Norwegian tradition", Bakken, Ingebrigtsen: Large amount of medium long intervals with lactate measurements. Double sessions.
- Marathon tradition: Long sessions (continuous or long intervals, for example 4x5km).

Mistakes in threshold training

- Too little volume.
- Too slow pace.
- Not enough recovery.
- Neglect of other qualities (for example speed, VO2 max).

Intervalls or continuous training?

- Intervalls allow for higher intensity and pace control.
- Continuous training has advantages, at least for marathon runners.

How control pace/intensity

- **Intensity** (Base training for 1500-10000m runners)
 - Feeling
 - Heart rate
 - Lactate

- **Pace** (For marathon specific training)
 - Bicycle
 - GPS (Not accurate enough?)

Progression in threshold training

- For track runners:
 - Increase of pace (as threshold improves)
 - Larger total volume
- For marathon runners also:
 - Larger volume in single session or single day (up to 30km)
 - Reduction or elimination of rest between intervalls.
 - 2002: 4x5km
 - 2007: 30km 1h30min

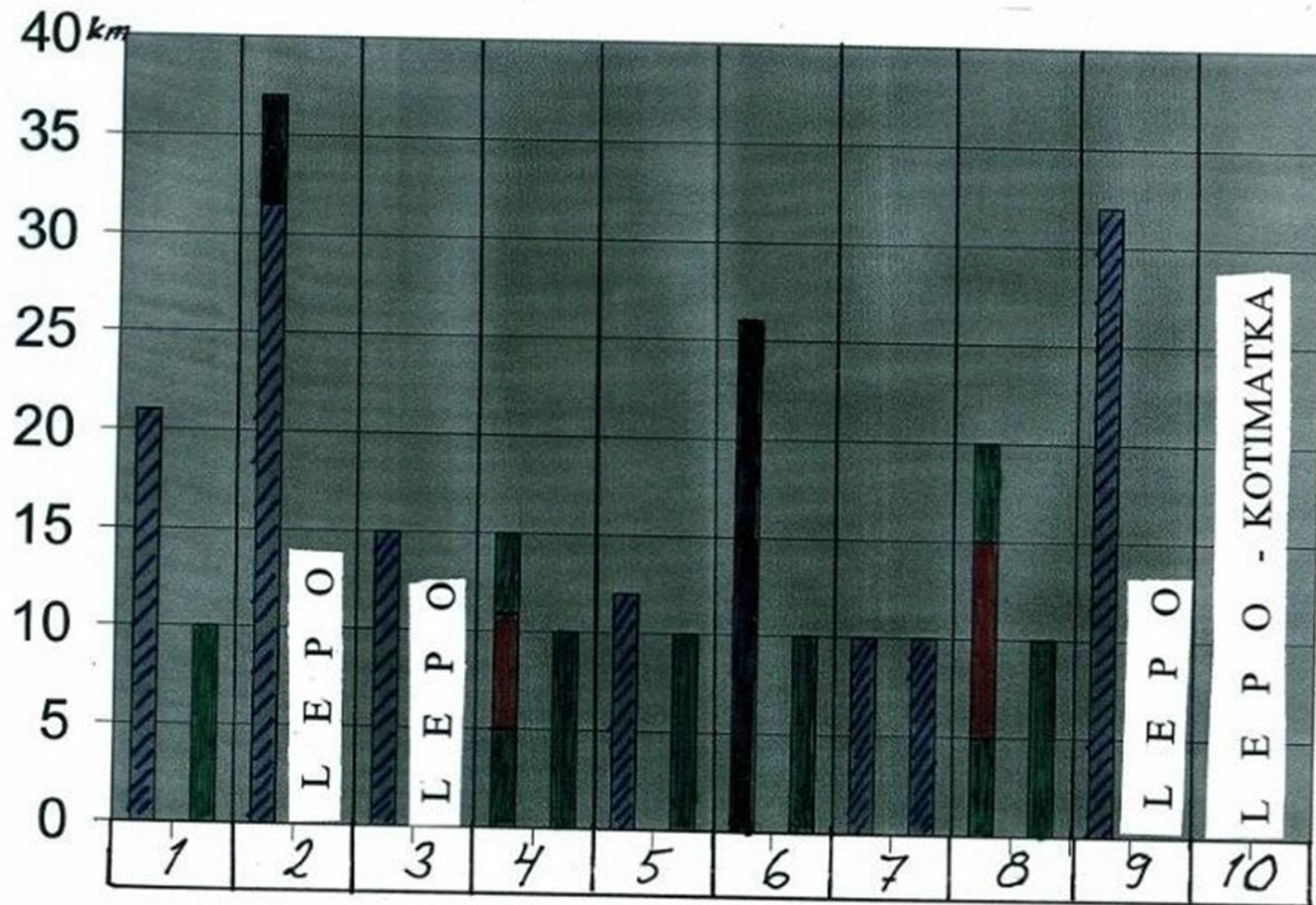
Difference between long threshold and long run for advanced marathoners:

- Length: Threshold max 30km, long run 35 or more
- Pace: Threshold with even pace between marathon and half marathon pace, long run slower, at least in beginning.
- Preparation: Rested before threshold run, but sometimes quality session day before longrun.
- Specificity: Race shoes and surface for threshold training, softer shoes and surface for longrun.
- Conditions: long threshold on day with good weather, maybe help from bike

Where to do threshold training?

- Flat terrain.
- 1500-10000m: soft but firm surface to avoid injuries.
- Marathon: road (race specific). Save your legs on other sessions.
- For hilly marathons some race pace training on hilly roads is necessary. (Preferably at sea level).

FONT ROMEU 20 -29/ 7 2002 (1850 m ö h)



How fit threshold training into weekly schedule?

- Shorter distance: split into many sessions
- Marathon specific: collected in one session.

- Double sessions make it possible to combine high volume with enough recovery days.

Threshold training in the seasonal schedule

- Do threshold training during all periods of the season.
- For 1500-10000m: most during base training, less during race season.
- For marathon: Most in the last months of buildup before race.

(This means other qualities have to be trained during other periods of the year).

- 1500-10000:
- Threshold period->Mixed period->Race season

- Marathon:
- Mixed period->Marathon specific period->Race

How I used threshold training

- 1995: Second half of 10km session hard (17 min) once a week.
- 1996-1999: 10-16km, two times per week (Lydiard type)
- 1999-2001: Included more African type training, fast pace towards end of distance runs.
- 2001-2003: Marathon specific training up to 20km, continuous or 4x5km
- 2004: More hills (Because of Athens Olympics)
- 2005-2008: Increased length of marathon specific training, up to 30km. Sometimes double threshold.

Tandvärk/Hammassärky/Tootache

- Run for example 10km, first 5km threshold, last 5km variations in pace, 50-80m acceleration, 50-80m relax.
- Speed is higher than threshold pace, but still no huge accumulation of lactate because of short time.
- Paula Radcliffe did similar sessions 200-200 on track.

Double threshold

- For example, from 2005:

Two threshold sessions:

- Session 1: 4x5km, 15.28-15.11
- Session 2: 10km , 29.23. (Probably faster than threshold towards the end of session)
- Two sessions of different type:
 - 1: Threshold session
 - 2: 12x1000 2.51 (10000m pace)

Marathon paced training towards end of long runs

- Run with marathon pace or faster after 30km on long runs as preparation for marathon race.
- Makes the body prepared to run with race pace in fatigued, dehydrated and glycogen depleted state.
- Water or sports drink? Both.

Should you never run faster than threshold pace at "threshold sessions"?

- Depends on the context of the rest of your training and racing schedule.
- 1500-10000m runner with competitions and track sessions at faster paces might not need to (threshold only to build base).
- Marathon runner who competes seldom might need specific training sessions that are as hard as races.

Havamal (Norway, ca 900 CE?):

Translation William Taylor, 1828.

XXXIX.

If you 've a friend, take care to keep him,
And often to his threshold pace;
Bushes and grass soon choke the path
On which a man neglects to walk.



Questions?