

Finish strong!

By Rob Lockey, CSCS

The summer event season is well underway. Whether it's one bike tour, multiple running races or a triathlon series, it may be time to dial in training. To attain goals set for these events, coaching and physiology testing can help guide competitors and everyday athletes. The process of training from data retrieved from a test like lactate threshold begins early in the winter. So, by this time in the summer, that data may not be as accurate for training because of the adaptations brought about from the training. A midsummer slump can be due to using older data and this can result in unreached goals for the end of summer. To reverse this trend and get a much deserved personal record for that last event of the season, a retest is in order.

A midsummer test of lactate threshold can help identify heart rate and power zones for current physical condition. This has several benefits which will help optimize a training schedule for the last push to the end. Retesting provides a better idea of the ability to recover which helps for those active recovery days after a high intensity workout. It also helps focus high intensity workouts by allowing you to sustain the proper zones to gain the adaptations desired. Most of all a test will show the current threshold, and if the training has been going well, this should have increased. This increase refers to improved efficiency, and a lower heart rate for a given workload which equals being faster.

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⁺ (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⁺ 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. 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.

Lactate threshold testing and training utilizes the individual markers of each competitor and allows for improvements based on real data not just general guidelines. Timing a Lactate threshold test mid season is best done around 4-6 weeks before the main event or 'A' race, so that training can be adjusted to optimize those weeks towards attaining the goals set by the athlete. It is not uncommon to see significant improvements when a training plan is structured around this test, due to the ability to make each workout specific and focused, thus removing any of the 'junk miles'. There is still time this summer to focus heart rate and power training and anyone can see improvements.

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