

# Maximising Olympic Distance Triathlon Performance A Sports Physiologist's Perspective.

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This presentation will provide an overview of the following important physiological issues for maximising Olympic distance triathlon performance for the elite competitor:

## 1. Know the demands of the sport.

The sport has changed considerably in the past few years. Some believe that the swim leg is akin to a pool based 1500 m while others believe a successful triathlon swimmer has excellent starting speed, then a good threshold pace and strong endurance. The bike, while now a draft-legal event may still be similar to a time-trial event for some athletes, while very much a stochastic, skill based event for others. The run at the elite level is quite fast. Those athletes skilled enough to run at the fast baseline speed required to be in contention now have to be able to maintain contact during surges and also provide a fast (or sprint) finish.

## 2. Identify the physiological status of the athlete

After identifying the likely physiological demands placed on the athlete during competition, identifying the strengths/weaknesses and areas that need improvement is a key issue. Being able to identify these attributes can range from the high tech laboratory based physiological assessments such as gas analysis, blood biochemistry and the like, to field based testing of "test sets" or time-trials. Nevertheless, being able to monitor training adaptations by some reliable, and hopefully, valid

measures are an important consideration to athlete development.

## 3. Plan training and racing schedules

The value of a business or operational plan to big and small businesses has always been crucial to their success. Equally, a plan for the development of elite athletes would also appear warranted. But despite this, many elite triathletes in the past have not had a systematic training or racing plan. It is acknowledged that triathlon training, which includes a number of disciplines, can be difficult to plan for in great detail for long periods of time. However, some general plan that clearly identifies short and long term goals, strategies for improving weaknesses etc. should clearly be a helpful addition to the "business" of being an elite triathlete.

## 4. Plan the sequence of sessions within the micro and macro cycle to optimise gains

Based on the fact that adaptation is enhanced by the appropriate balance between sport-specific training load and recovery, it is crucial in triathlon to get physical training, recovery, overall workload, sports-specific skill acquisition and other aspects of life into the right blend. Programming of discrete training blocks is often not a science, but perhaps should be. Identifying the length of recovery necessary from various key sessions and working out what combinations of sessions can be tolerated can provide great gains in

triathlon performance. Increasing the intensity of some sessions can impact significantly on the training accomplished on the subsequent day, which in the overall scheme of training may not be ideal. Other sessions can be used for recovery, while still achieving an objective (e.g. skill based sessions).

## **5. Monitoring training**

When to train harder and when to take a rest is a tough question for the coach and athlete to answer objectively. Some athletes rely heavily on being “in tune with their body” while others use more objective tools such as performance in a key session or psychological rating scale. Nevertheless, having an athlete-specific warning system is a crucial aspect of training and racing. Investigating the method(s) or signal(s) that work for each athlete makes the job of a coach much easier, reducing much of the guess work, and allowing for a more structured and efficient training program.

## **6. Tapering for competition**

This is an extremely important aspect to overall elite athlete development since the race arena is the place where performance is examined, where national squads are selected and where sponsors notice athletes. However, the topic of tapering for competition is an extremely difficult concept for many coaches and athletes to get right. The balance between training volume and intensity, maintaining the “feel” for the skills of the discipline and getting your mind ready for a good performance is an individual thing, and must be practiced. The taper process can often be interrupted by travel, unfamiliar training environments and unexpected interruptions to the previous training block.

## **7. Coping with heat and cold**

Much has been written about the adaptation to heat. It is well documented that athletes from colder climates can race well in hot conditions if appropriate heat acclimation routines (and hydration practices) have been observed in the few weeks leading up to competition. Less is known about cold adaptation, but as illustrated in a number of races during recent years, it may be just as important to our athletes performance at international competitions. Cold adaptation, which includes improvements in manual dexterity, the maintenance of core body temperature and the like, is also achievable if done in a systematic way leading up to competition.

## **8. Race day strategies**

How many athletes do you know begin their swim warm-up for a race in the last 5 minutes before the start? If you asked these same athletes at what time (or distance) during a normal swim session did they start feeling good or started to get into the “groove”, I can guess the answer wouldn't be 5 minutes or less, but instead perhaps 20-30 minutes or 1-1.5 km. Since the swim start of a race is not a leisurely activity these days, and maintaining contact with the swim pack is crucial to elite racing, I would regard an optimised swim warm-up to be a necessary part of the elite triathletes' weaponry.

The start of the run leg is a flurry of activity. Athletes are generally excited about the run leg, to the extent that many appear to run out of transition with scant regard for the distance. It is well shown that running economy is depressed by between 7-10 % following a tough bike ride. Similarly, it is also demonstrated that athletes run the first kilometres of

the triathlon run at an unsustainable pace. Considerable extra energy is therefore used to run very fast with an inherently inefficient running style. Run pacing, especially in races held in warm to hot environmental conditions, is therefore an avenue that I believe many triathletes can improve on their current race performances.