

MARK KLEANTHOS

THE COMPLETE BOOK OF TRIATHLON



MEYER
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SPORT

MARK KLEANTHOS



While his first competitive experience was finishing last in a school cross-country race, over the past 30 years Mark has crossed the finish line in over 1,070 races worldwide. Although he once came second in a marathon, his strength has always been in multi-sport events, where his wins have been numerous. He has completed a massive total of 470 triathlons, including 38 Ironman® distance events. He once won one triathlon in the morning and then came second in another in the afternoon.

Mark has won many national triathlon medals and has represented his country as an elite triathlete and now as an age-group competitor. He started coaching in 1998 and has helped triathletes at every level – from first-timers to age-group competitors to elite athletes. He is qualified to British triathlon coaching levels one and two.

Mark Kleanthos is a full-time qualified triathlon coach. He can prepare your training plans for triathlon, swim, bike, or run and also provide you with nutrition advice, One2One coaching, swimming, cycling, running, and also open-water swim coaching in a private lake. For more information get in touch with Mark: mark@ironmate.co.uk

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The Complete Book of Triathlon

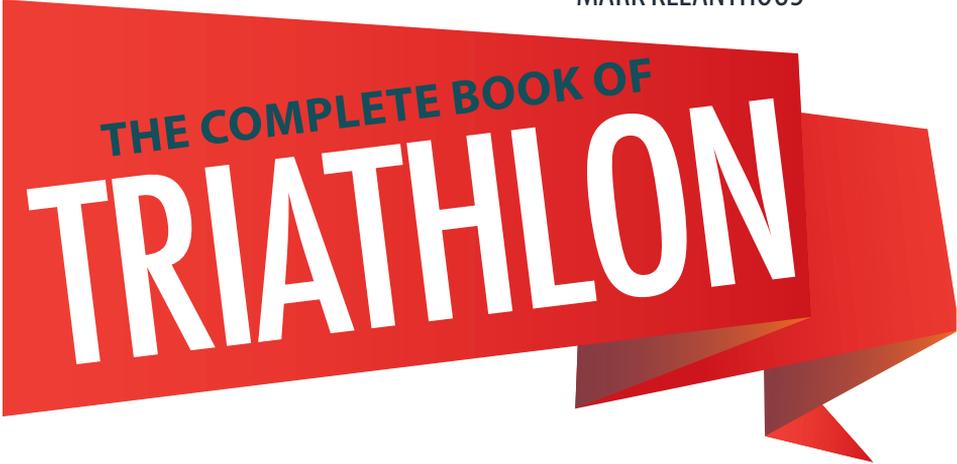
Dedications

This book is dedicated to my wife, Clare. Thank you for being so supportive. I would also like to thank John Quick for his editorial input.

This book has been very carefully prepared, but no responsibility is taken for the correctness of the information it contains. Neither the author nor the publisher can assume liability for any damages or injuries resulting from information contained in this book.

MARK KLEANTHOS

THE COMPLETE BOOK OF
TRIATHLON



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An abstract graphic at the top of the page consists of several overlapping, angular shapes in various shades of red and white, creating a dynamic, layered effect.

FOREWORD

From swimming 100m to completing triple-Ironman® triathlon races, Mark (pictured right) has done it all with pride, passion and perseverance. His knowledge and experience of the wonderful sport of triathlon is best described as encyclopaedic. From the latest training advances to the best way to prevent chafing, Mark is the person to ask. Over the past 33 consecutive triathlon seasons, he has amassed a wealth of information that will help any triathlete, regardless of whether you are a first-time novice or a top professional. Indeed, I frequently receive good-luck messages from Mark that always contain useful pre-race information and advice. Mark has his finger well and truly on the pulse of triathlon; moreover, he is passionate about sharing that information to help all triathletes achieve their personal goals in the sport.

Catriona Morrison

- Fastest debut Ironman® athlete ever.
- Current holder of the seventh-fastest female Ironman® athlete finishing time in the world – 8 h 48 min 11 sec.
- Ironman® Lanzarote champion. Even though she lost 35 min due to a broken chain, out of 1,284 finishers, she still came 58th overall and won the women's race.



SECTION 1:

THE FIRST STEPS INTO THE SPORT

So you've been watching triathlon on the television and maybe even seen an event live. It looks fun, but it also looks difficult: a multi-event marathon that will test you to the limit. Nevertheless, despite its tough reputation, anyone can do it so long as they know how. You'd like to try triathlon at least once, just to see what it's like, and possibly even take it up more seriously later, but it seems complicated, with so many things to consider. The question is – where do you start?

The first section of this book will tell you exactly where to start. It will lead you through the fundamental processes necessary to get you into the sport and will explain how to prepare yourself for your very first competition. If you follow this section to the end, you will then be able to decide whether or not you want to continue in triathlon.

Triathlon races can be of varying length, but the main international distances are the Sprint (400m or 750m swim, 20km cycle, 5km run), the International Standard distance (1.5km swim, 40km cycle, 10km run), the Half Triathlon Distance (1.9km swim, 90.1km cycle, 21.1km run), and the Full Triathlon Distance (3.8km swim, 180.2km cycle, 42.2km run). There are also Ultra Distance races that are the double and triple distance of the Full Triathlon Distance. The International Standard-distance event is covered in Sections 2 and 3, and the Full Triathlon Distance competitions are covered in Section 4.



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CHAPTER 1

GETTING STARTED

Having made the decision to train for triathlon, your first requirement will be to obtain the necessary equipment.

EQUIPMENT

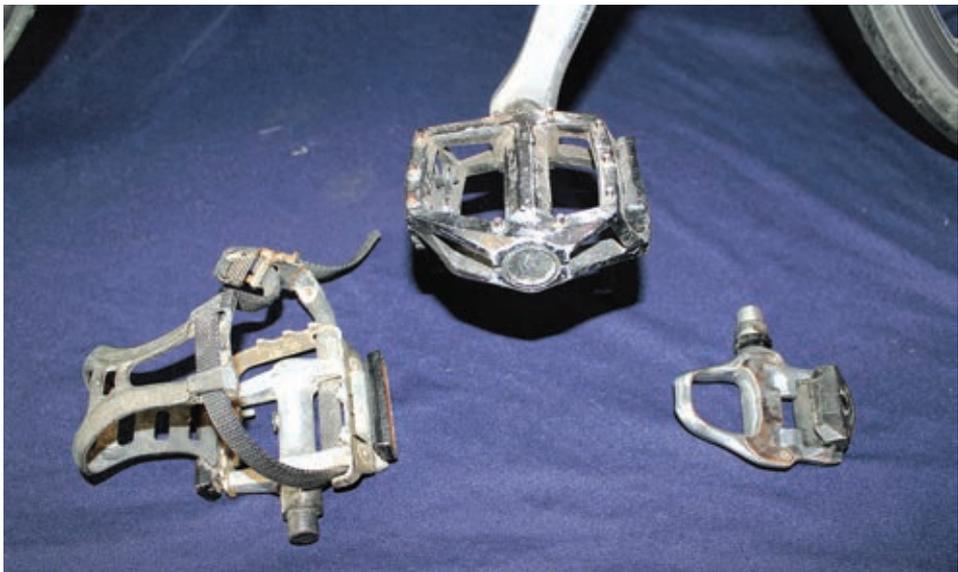
Although you probably feel confident at this point, you do not yet know whether or not you are suited to the sport or, in fact, whether or not the sport suits you; and you will not know until you have competed in your first race. Consequently, it might not be wise to spend a great deal of money on triathlon equipment at this stage, only to find that it may later become redundant.

The first piece of equipment you will need to consider buying is a bicycle, as you cannot compete in triathlon without one; but this will present you with your first dilemma. Do you spend a great deal of money on the best bicycle possible, money that might then be wasted if you decide not to continue with the sport, or do you buy a mid-priced bicycle that might have to be replaced anyway if you become competitive? Only you can make that decision, but it will probably depend upon your aspirations and the sort of success that you have been used to in other sports.

The ideal situation would be to have a racing bicycle as well as a training bicycle, but if you do this, then purchase the cheaper bicycle first (at least until you have competed in your first triathlon). If you then decide not to continue with the sport, you won't have wasted your money on a racing bicycle. If two bicycles are too much for you, then consider purchasing a racing frame first but with cheaper components and general-entry wheels for training. You can then buy the more-expensive equipment later if you decide to continue in the sport.

It is also worth noting that there are three pedal-and-shoe arrangements that you can adopt in triathlon, and this might also affect your choice of bike. See the equipment section at the end of Chapter 4 for more information on this.

The following is a list of the minimum equipment you will need to complete your training programme. If you wish to buy more than this, or if you wish to spend more on it than is necessary, then that is up to you, but the following should get you to the point where you can make an informed decision as to whether or not you are going to continue in the sport.



© Mark Kleanthous

The three types of cycling pedal (from left to right): pedal and toe strap, platform and clip-less.

- swimming costume or trunks
- swimming goggles
- bicycle
- bicycle repair kit and air pump
- bicycle safety helmet
- running shoes that can also be used on the bike
- jersey, vest or singlet, plus shorts and socks, both for cycling and for running
- sunglasses
- either one 750ml water bottle or two 500ml bottles

The main point to note here is that, as your first competition will be a Sprint triathlon in which the swim segment is always held in a pool, you will not yet need to do any open-water swimming. Consequently, you will not require a wetsuit at this stage.

Also, most triathletes now wear one-piece tri suits instead of vest and shorts. They are quick drying, can be worn under a wetsuit if you decide to progress to open-water-swim triathlon, and are specifically designed for both cycling and running. However, they are much more expensive than conventional clothing.

You will need to select your running shoes with care, as you will require a pair that supports your running gait, whether that be neutral, underpronation or overpronation (see A-Z Section).

There are other relatively inexpensive items that would be useful if you have some spare cash:

- latex cap for pool and open-water swimming;
- cycling gloves for cold days;
- running hat for sunny days;
- food-and-water belt for long cycling and running sessions; and
- spare inner tubes, plus bike tools, such as Allen keys.

WHAT TYPE OF ATHLETE ARE YOU?

If you are to construct a meaningful training programme for yourself, you will need to decide what type of an athlete you are. There is no point in setting training goals that your body is simply unable to achieve at present, but if you set yourself a training programme that is too easy, you will not progress. So, into which of the following categories do you fit?

1 The first-timer

You're making your first attempt at sport, so you should hold back because your mind will want to go faster than your body will allow. Initially, you should concentrate on developing your technique, an area where you can probably make large advances. Attention to fitness should come second, and when that happens, your fitness will increase rapidly. However, you will also experience sore muscles and lots of fatigue from a lack of endurance, and as a result, you will take longer to recover from exercise.

If accumulation fatigue occurs during a workout, you should finish the session immediately, recover, and then make changes to your diet so that your energy levels increase. Your training should begin with simple power walking or gentle running, but you should learn to enjoy it. You should also train alone so that you are not tempted to push yourself too soon, and you should take 2-3 complete rest days a week. Your effort level should be no more than seven at any time during training (see page 51 for rating of perceived exertion [RPE] table).

2 The armchair athlete

You have a good understanding of sport and are 100% committed, but you have never really had an interest in exercise until now. As with the first-timer, your mind will want to go faster than your body will allow, so you should first concentrate on developing your technique and be wary of injury.

As you have probably only trained sporadically before, you should constantly vary your training between easy, medium and hard. The hard training will make the easy training feel very comfortable, while the easy workouts will allow the body to recover before you up the pace again. If you start to feel the first signs of fatigue, stop the training session.

3 The general fitness fanatic

You have been exercising all your life, but with no real purpose. You now need to follow a progressive routine, watch for the signs of fatigue and monitor your fitness.

You will have at least some of the necessary skills, such as a good swimming technique, good coordination and/or good general endurance, and you will have an established training routine, but with only a general sporting history, you will probably need to hold back a little as you might not be as fit as you think you are.

4 The once-successful athlete

You were fit once but have not participated in an exercise regimen for a long time. Skills can soon be re-learned, but it will take time to regain fitness. You might still have the enthusiasm of your youth, but your body is not the same, so don't force it.

After having had such a long break from exercise, you will need to take at least one or two days a week to rest. Our minds don't forget what training is like but our muscles do, so build up your fitness and endurance steadily, and don't forget that a session that was once easy might now be difficult.

5 The all-or-nothing athlete

You have a work-hard, play-hard ethic, and your performances in training are usually good, but you are often injured as you do not know how to go easy or take a day off. You are also unable to hold a reasonable pace for long periods of time, as your tendency is to go too hard initially and then be forced to slow down.

You need to learn to build up fitness gradually, otherwise you will peak too soon and then, by race day, you will have tailed off. Avoid going hard in every workout because this will lead to a plateau in performance midway through your training programme, which could be difficult to break out of.

6 The brief enthusiast

You do short bursts of daily training, usually because of a New Year's resolution, in preparation for a holiday or for a certain sporting event, but then you do nothing for ages. You never really give fitness a chance because you give up before it becomes enjoyable.

You should train slightly less than you feel you ought to because by holding back you will avoid the mental problems you experience with burnout. However, 15min before the end of a workout, you should pick up the pace or do short bursts of increased intensity so that you feel you have achieved something from the session. You should refrain from going hard in every session, otherwise you will get tired and become dispirited.

7 The gym fanatic

You have a strong build, you look fit, and you like the thrill of going hard and pushing against resistance. However, while you can swim a few lengths, are good in short, fast bursts, are comfortable with indoor bike spinning and can run fast over 5km, you lack endurance and are poor at runs of 10km or more. You will need to work on your swim-bike-run pace judgement and improve flexibility, as fitness, not strength, is the key to triathlon. When cycling, you will need to learn to use the handlebars as levers. It is always easy to spot people who train mostly on a gym spin bike because they ride with stiff, straight arms.

While you will have good strength, a good understanding of how your body reacts to resistance training, and a good knowledge of sport, you will need to completely break your training habits. It is a common mistake to simply tag on three other sports to your usual gym training and expect to improve in all three by race day.

Initially you should work on your weakness, which is probably endurance. Once you have

reached a certain fitness level you will easily be able to maintain it while focusing your energy on the new sports. Don't forget that you will improve rapidly, as your body will already be accustomed to repairing itself after muscle breakdown. If you already have a swimming or running background, all you need to do is fine tune this with relatively few workouts per week.

8 The life-long fitness enthusiast

You have either concentrated on a single sport or done a number of sports for many years, and have a good understanding of how your body responds to hard training. You might already have experience in swimming and cycling, say, but be unable to swim long distances.

Your training programme needs to be adjusted so that you simply maintain your ability in the sports in which you are already experienced, while concentrating on technique in the new disciplines.

If you are a specialist runner with a history of injury, you will benefit from cross-training because you will have to decrease your running time in training but hopefully will not pick up too many injuries in cycling and swimming. For you, triathlon training will help you gain strength and improve your cardiovascular fitness. Most runners like to run every day and hate having a day off, but this isn't necessarily a good thing. During triathlon training, it is inevitable that you will not be able to run every day because you will also be swimming or cycling.

However, while the specialist swimmer will have very good cardiovascular fitness and be used to long and hard training, he might experience initial injuries when running and cycling because he will have high fitness levels but will not have built up the relevant muscles sufficiently to be able to cope with his attempted speed.

FITTING A TRAINING SCHEDULE INTO A BUSY WEEK

Anyone with a family and a full-time job will inevitably have difficulty fitting a training routine into their busy lives, especially if you bear in mind that all training will have to be followed by rest and recovery time.

There are 168 hours in a week. If about 40 hours are spent working (more if you commute) and 56 hours sleeping (eight hours per night), then that leaves 72 hours at most for training and all other personal commitments, including family. Because of the nature of training, at least some of it will need to be undertaken during the week, but for the busy triathlete, it is obvious that weekends are very important, both for performing significant training and for making sure that the family does not feel ignored.

It is also important to calculate your recovery time accurately in order to get the full benefit from the training. Steady endurance work will require an equal amount of rest and recovery time, but demanding training will require three times the amount of rest and recovery. Therefore, in order to use your time efficiently, the schedule needs to be arranged so that this rest and recovery time is spent on other commitments, such as family or, if you're single, completing all the necessary chores that keep your life functioning.

The most important thing to remember is that training is not linear; it should run in cycles, rather like the seasons. In addition, training should not be over-ambitious. You simply cannot increase from 10 to 11 to 12 to 13 to 14 miles each week without considering the rest of your life plus the accumulated training fatigue. Therefore, you should progress gradually and not underestimate the small improvements you make.

The most difficult part of regular, daily training sessions is your commitment to them. If you are hurting then you are training too hard. Triathlon is an endurance event, and your workouts need to be progressive.

WHAT IS FITNESS?

It goes without saying that, in order to compete successfully in the triathlon, you have to be as fit as possible. But what is fitness and how can it be measured?

An athlete might have great speed but if he lacks race-pace training and endurance then his competitiveness in a triathlon will be limited. Athletes who have developed a high level of fitness in other sports might not be as fast in a triathlon as athletes with higher endurance, because the latter will have a greater ability to convert oxygen into energy. However, once an athlete has become adept at triathlon, he will automatically become a specialist in each of the three sports. A fit athlete will also have a high ability to recover from exercise.

A successful training programme will work the sport-specific muscles, but you will also need to train at race-pace intensity often enough to improve without overtraining. In order to achieve optimum fitness, it is also necessary to train at different intensity levels. If you never run slowly, apart from when warming up, then the very nature of going slowly and using muscles you do not normally use immediately before a competition is likely to reduce your chances of success.

However, if you are to get the most out of your training, it is necessary to understand exactly what happens to the body when you exercise.

When you do any form of exercise, whether it be cardiovascular work or the lifting of weights, your muscles improve and you become stronger, faster, etc. You will then be able to lift heavier weights, or you will be able to run faster, or a certain distance run will become easier. This increase in fitness is called "progression."

However, if you continue to run the same distance at the same regular interval, you might find that your performance slowly begins to deteriorate, and however hard you try, you cannot achieve the performance of a few weeks earlier. You might then start training even harder, but your performances only get worse. At this point you begin to become despondent and might even consider giving up.

The truth is that your fitness levels have not been decreasing and you have probably even been progressing, but what you have not understood is the effect of “accumulative fatigue.”

Fatigue usually occurs during a long-distance event when the body simply runs out of glycogen, which it then converts to glucose, which is then burnt at the muscles to form energy. The problem can be resolved quickly by taking a high-energy drink.

However, during a training programme, the body’s glycogen stores can become depleted very gradually, so that the athlete might not be aware of it. For instance, a man has a car with a 48-litre fuel tank and puts ten litres of petrol into the tank every week, but what he does not know is that he consumes 12 litres of petrol every week. The performance of his car is fine for 24 weeks until he suddenly starts running out of petrol, and this is effectively what has happened to the above runner. Accumulative fatigue can strike at any time, but it often happens to triathletes about 20-28 weeks into a training programme.

If this happens to you, the problem is solved by having more recovery and changing your dietary requirements so that your energy intake is greater than your energy expenditure – that is, until your glycogen levels have been built up again. Naturally, this process is assisted by rest.

Also, when you exercise, the muscles that have been used are actually broken down by the body and then rebuilt stronger, which is why we become stronger and faster. However, if we continue to exercise during this time, we can damage our body and even become more susceptible to illness due to a reduction in the effectiveness of the immune system. Consequently, a period of rest needs to be built into any training regimen, and this period is called “recovery.”

Many athletes encounter problems because they simply make too much effort for too long. For instance, if you cycled uphill a number of times at maximum effort, your fitness level would increase rapidly but you would also become more susceptible to illness and injury. Therefore, it might be more productive to cycle up the same hill at a steadier, more controlled pace. The reason for this is because the physiological effects on the body are

different for the two types of exercise. In order to excel at triathlon, you need to do both types of exercise, but in a controlled way. Sometimes in this sport, slower is better.

So, fitness for triathlon is achieved by finding the correct balance of exercise, nutrition, rest and recovery, and this balance is different for everyone. This is what this book is all about.

OVERCOMING INITIAL PROBLEMS

Because all good triathletes are able to produce relatively even performances across the three elements of the triathlon, those who are new to the sport should first concentrate on improving their weaker elements before considering serious training for competition. This section highlights the common problems faced in each element and describes the simple steps that can be taken to dramatically improve performance. If you currently have a full-time job, the amount of time you will be able to spend on training will be limited, so any changes to technique that produce a leap in performance will be invaluable to you.

In addition, triathlon is not just a question of swimming, cycling and running, as the three elements have to be knitted together into a coordinated race. Your swimming technique could affect your cycling, and the way in which you ride a bike could affect your running.

Many triathletes new to the sport are often already accomplished at one of the three segments, in which case they will need to concentrate solely on the other two segments. However, prowess in one of the three disciplines can sometimes cause problems in the others. Athletes who have been running for years will often have tight ankles that could cause a problem in the swim. On the other hand, swimmers usually have flexible ankles, and these can cause difficulties when running. These problems need to be addressed early.

Therefore, your initial goal when training for triathlon should be to achieve each segment separately: swim non-stop for 750m, cycle non-stop for 20km and run non-stop for 5km. At the end of each separate segment, you should feel comfortable. Then all you need to do is to combine the three sports together.

In addition, you should also learn how to eat and drink without losing too much time when cycling and running.

SWIMMING

At this stage, all of your swimming training should be performed in a swimming pool. Open water swimming comes later, after you have competed in a novice triathlon.

Triathletes with either very dense leg muscles or long legs often find that their legs sink during swimming, and individuals with both of these traits will have even more difficulty. Body pressing, which entails deliberately pressing the head and upper body into the water, will help lift the legs and reduce resistance.

A triathlete with a fast stroke and an energetic kick will also create extra drag and therefore waste valuable energy. Consequently, economy of movement is important in order to reduce turbulence in the water. Improved streamlining will make you go faster.

In order to achieve this, the body position is a vital consideration. Try and achieve a high elbow position when lifting the arms out of the water plus a relaxed kick action driven from the hips. When training, it is important to measure the stroke count as well as the time for a certain distance in order to determine your efficiency in the water.

You should also be fully conversant with all the phases of the swim stroke in order to achieve the correct technique: hand entry, catch, press, pull, push, glide and recovery. Your swimming stroke can be improved by performing drills – training sessions that concentrate on a specific part of the swimming action. In addition, learn how to breathe without compromising your stroke technique. By turning your head too much, you will throw your body out of balance and create a scissor kick. Therefore, learn to breathe out when your head is under water, so that you only turn your head out of the water to breathe in, thus reducing the amount of time that the head is in the twisted position. Do not vertically lift the head out of the water to breathe.

It is also important to swim in a straight line. This might seem like an obvious consideration, but swimmers who train in a pool will automatically follow the line painted on the bottom.

However, in open water, straight-line swimming can be difficult for some individuals. Ask someone to watch you swim across open water to find out whether or not you have a natural drift to the left or right, and then try to address this.

In addition, try to establish how often you need to raise your head above the water in order to swim in a straight line (every 4, 6 or 8 strokes, etc). When you do this, try to line up the next buoy with a large tree or building in the distance, and then use this as a more-easily-visible reference point. It should then be possible to check your swimming line with quick glances before checking for the buoy as your next target.

It is also important to be able to assess how far you have swum. The placing of marker buoys in the water at regular intervals is obviously the best solution, as this will simulate race conditions, but most individuals will find this solution impractical. As an alternative, try counting your strokes over a set distance. This will help with interval training in open water.

Do not stand up to exit the water until you can easily touch the bottom. If the water is above your knees it is quicker and easier to swim than to run through it.

CYCLING

New triathletes can rapidly improve their performance in this segment by paying attention to their bike-handling skills. It would therefore be beneficial to train as part of a group once a week, but don't do this every session. You will also benefit by learning to change gears smoothly in order to avoid losing your rhythm while keeping your cadence at 90 revs per minute or more.

By cycling in a group you obviously keep yourself shielded from the wind and therefore save energy (drafting), but this also increases the possibility of a crash that could put you out of a race for which you could have been preparing for months. Therefore, always keep an eye on the road surface ahead for such dangers as potholes and watch for other cyclists making sudden movements or weaving across the road, or for items such as drink bottles falling from another bike.

Drafting is fine during training, but remember that it is not allowed in age-group triathlons. It is only permitted in professional triathlon races.

RUNNING

When you come to the run segment of a triathlon, you will already be fatigued, dehydrated and mentally worn out. It is therefore useful to train in this state in order to learn how to cope with these feelings. It is also important to know when and how much to eat and drink during the run, with the usual rule being little and often.

As a triathlete can dehydrate at the rate of more than two litres an hour in extreme conditions, the consumption of an electrolytic or carbohydrate drink, or plain water with a gel or food, is an absolute necessity.

