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# TRAINING ADVICE

## Overtraining and Under Recovery

*"I can't take time off! Every minute I'm not working out is a minute my competition has to get ahead of me."  
"I get my confidence from knowing that I work harder than everyone else out there."  
"No pain, no gain."*

Statements like these are all too common in the world of sport, particularly at the elite level, where success versus failure is often measured in the smallest of increments. Yet coaches and athletes today are walking an increasing fine line between maximizing performance and going over the edge into overtraining. Training loads are increasing, by some estimates, at a rate of ten to twenty percent every five years. Mark Spitz, for example, won his seven gold medals in the 1972 Olympics by swimming 9000 meters per day. Within twenty years, however, the average college swimmers were surpassing this mark, and by 1995, Olympic swimmers were putting in over 35,000 meters per day (Raglin and Wilson, 2000).

These training increases have come with a price tag. Overtraining, defined by the USOC in 1998 as "the syndrome that results when an excessive, usually physical, overload on an athlete occurs without adequate rest, resulting in decreased performance and the inability to train," is on the rise. Differences in how overtraining is defined has made a true estimation difficult, but researchers suggest that on average, ten percent of athletes are overtrained at any given time. Endurance sport athletes are usually more hard hit—sixty percent of competitive runners are or have been overtrained, by some estimates (Morgan et al., 1988). Overtraining has permeated the highest levels of sport, with twenty-eight percent of 1996 summer Olympians and ten percent of 1998 winter Olympians reported overtraining as a significant reason for their competitive difficulties (Gould et al., 2001). More disturbing, however, is the increasing prevalence of overtraining at sports' developmental levels.

The price athlete's pay for overtraining can be a high one. While most athletes who become stale or overtrained miss only a few days of training, for others, the symptoms can last much longer. This outcome is particularly true for the athlete who continues to try to train through his or her early symptoms, ignoring the warning signs. Given the increasing likelihood that your



athletes are going to experience overtraining during the course of their careers, what can you do as coach to mitigate or even prevent this from happening?

### Step 1: Know the Symptoms of Overtraining

While the sport scientists are still working to determine the exact mechanisms of overtraining, research and anecdotal reporting have combined to produce a list of overtraining symptoms to watch out for in your athletes:

- apathy
- lethargy
- depression
- decreased self-esteem
- emotional instability
- impaired performance
- restlessness
- irritability
- disturbed sleep
- weight loss
- loss of appetite
- increased resting heart rate
- increased vulnerability to injuries
- muscle pain/soreness

Clearly, coaches who know their athletes better are at an advantage in early detection, since many of these symptoms could be signs of other problems entirely, or even "business as usual" for some athletes. One of the detection issues with overtraining is that different athletes respond qualitatively differently to the same training stresses. What is most important, therefore, is

not the presence or absence of a particular symptom of overtraining, but a pattern of differences in symptoms for a particular athlete over time.

### Step 2: Increase Athletes' Self-Awareness

*"When you don't feel right, back off. [In marathon training] it is all too easy to fall victim to the idea that you must run a certain number of 20-milers. When you're tired, it's better to*

*run less."*

--Joan Benoit Samuelson, USA, 1984 Olympic Marathon Champion (Samuelson and Averbuch, pp. 106 – 107).

Easy for Joan to say, hard for most athletes to do. How can you as coach help your athletes increase their self-awareness, to differentiate between pushing through a needed hard workout, and knowing when enough is really enough and more recovery is really the answer?

I Make it a habit to ask your athletes how they are feeling and listen to their answers. Simple as this may sound, many athletes simply have not given much thought to how they feel until the feeling cannot be ignored. Helping your athletes to focus more regularly on their physical and emotional symptoms will hone

their self-awareness and their ability to detect symptoms more quickly.

I Encourage your athletes to keep a regular training log. Elite athletes across sports agree, regular use of logbooks can greatly increase self-awareness and smarter training. Dietary intake, sleep quality, resting heart rate, physical and emotional well-being, as well as workout quality can all be useful information when assessing for the possibility of overtraining. For more information on putting together logbooks, refer to the USOC Sport Psychology's Mental Training Manual. I Systematically evaluate athlete performances. For many athletes, their competitive performance analysis consists of the knowledge of whether they won or lost. Helping them to understand the process that went into the outcome, including fatigue, emotions, execution of strategy can be helpful in its own right to give athletes an increased sense of control over their performances, as well as connect training quality with performance. It can also help them answer the important question of whether they were adequately recovered, or optimally trained for the competition in question.

### Step 3: Model and Teach the Value of Recovery

A key for coaches and athletes in the battle against overtraining starts simply with how we define the issue of overtraining. As the comments at the beginning of this article reflect, it is incredibly difficult from a psychological standpoint for a high-achieving athlete to willingly do less of something in order to get better. But if we turn the problem on its head, going from OVERtraining to UNDERrecovery, we can help athletes understand that their job doesn't have to be all about backing off from training, but training smarter and doing more recovery activities.

How do you, coach, approach the concept of recovery with your athletes? Are recovery periods built into your training cycles? Do you refer to them in the same tone of voice and with the same sense of reverence you reserve for your athletes' most difficult workouts? Do you yourself model good recovery strategies in the context of your own lifestyle?

In addition to being a good role model, coaches must be good teachers of the concept of recovery to their athletes. An active rest day at the swimming pool shouldn't, for example, turn into a water polo game if rest was really the goal. Particularly at the elite level of sport, athletes need to learn that recovery is as much a part of their job as is the rest of their training regimen, their diets, or their sleep.

### Step 4: Keep Training Fun and Sport in Perspective

One of the main correlates of overtraining has proven to be the levels of stress the athlete associates with his or her sport. Gould and Dieffenbach (2001) suggest that coaches should work to dispel the myth that intense

training cannot also be fun, and to incorporate innovations to training programs to reduce stress and make sport more enjoyable for their athletes. Athletes should also be encouraged to maintain balance in their own lives and develop their identities in other realms of interest, be it family, school, non-sport careers, or outside interests.

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## PHYSIOLOGY

### Running on Empty

**Your lungs are bursting and your muscles are screaming at you to stop. Can it really be possible that fatigue is all in the mind? Rick Lovett reports**

TIMOTHY NOAKES will never forget the day he encountered the hill from hell. It was 1976 and he was running the gruelling Comrades Marathon, an annual 90-kilometre road race between Durban and Pietermaritzburg in South Africa. About 20 kilometres from home he rounded a bend and saw a steep incline he hadn't known was there. Even before he started climbing, he suddenly began to feel overwhelmingly tired.



At the time it was just a case of gritting his teeth. But Noakes, a professor of exercise physiology at the University of Cape Town, South Africa, soon came to see that hill as an intellectual mountain, too. Why had the very thought of it made him feel so tired?

Conventional wisdom on muscle fatigue can't explain what happened that day. For the better part of a century, scientists and athletes have presumed, not unreasonably, that fatigue originates in the muscles themselves. Precise explanations have varied, but all have been based on the "limitations theory". In other

words, muscles tire because they hit a physical limit: they either run out of fuel or oxygen or they drown in toxic by-products.

In the past few years, however, Noakes and his colleague Alan St Clair Gibson have taken a hard look at the standard theory. The deeper they dig, the more convinced they have become that physical fatigue simply isn't the same as a car running out of petrol. Fatigue, they argue, is caused not by distress signals springing from overtaxed muscles, but is an emotional response which begins in the brain.

The essence of their new theory is that the brain, using a mix of physiological, subconscious and conscious cues, paces the muscles to keep them well back from the brink of exhaustion. When the brain decides it's time to quit, it creates the distressing sensations we interpret as unbearable muscle fatigue. This "central governor" theory remains controversial, but it does explain many puzzling aspects of athletic performance, as well as suggesting some revolutionary approaches to training and offering tantalising hints as to the cause and maybe even the cure of chronic fatigue syndrome.

The hill from hell might have set Noakes thinking about fatigue, but it was a more recent discovery that made him start researching it in earnest. He calls this the "lactic acid paradox". Lactic acid is a by-product of exercise, and its build-up is often cited as a cause of fatigue. But when research subjects exercise in a decompression chamber designed to simulate high altitude, they become fatigued even though lactic acid levels remain low. Nor has the oxygen content of their blood fallen too low for them to keep going. Obviously, Noakes deduced, something else was making them tire well before they hit either physiological limit.

Noakes and St Clair Gibson decided to probe further. For their first study, published in 2001 (*American Journal of Physiology - Regulatory Integrative and Comparative Physiology*, vol 281, p R187), they recruited seven experienced cyclists and asked them to pedal 100-kilometre time trials on stationary exercise bikes. On several occasions during the time trial, they asked the cyclists to sprint for 1000 or 4000 metres. Throughout the experiment, the cyclists wore electrical sensors taped to their legs to measure the nerve impulses travelling to their muscles.

It has long been known that during exercise, the body never uses 100 per cent of the available muscle fibres in a single contraction. The amount used varies with the length of the endeavour, but in endurance tasks such as the cycling test the body calls on about 30 per cent, spreading the load by rotating in fresh ones as needed.

And because separate nerve filaments send signals to each fibre, sports scientists can determine what fraction of the muscle is being used by measuring the electrical impulse travelling to it.

Noakes reasoned that if the limitations theory was correct and fatigue was due to muscle fibres hitting some limit, the number of fibres used for each pedal stroke should increase as the fibres tired and the cyclist's body attempted to compensate by recruiting an ever-larger fraction of the total. But his team found exactly the opposite. As fatigue set in, the electrical activity in the cyclists' legs declined - even during the sprints, when they were striving to cycle as fast as they could.

### Plenty in the tank

To Noakes, this was strong evidence that the old theory was wrong. The cyclists may have felt completely done in, he says, but their bodies actually had considerable reserves that they could theoretically tap by using a greater fraction of the resting fibres. This, he believes, is proof that the brain is regulating the pace of the workout to hold the cyclists well back from the point of catastrophic exhaustion.

More evidence comes from the fact that fatigued muscles don't actually run out of anything critical. Muscle biopsies have shown that levels of glycogen, which is the muscles' primary fuel, and ATP, the chemical they use for temporary energy storage, decline with exercise but never bottom out. Even at the end of a marathon, ATP levels are 80 to 90 per cent of the resting norm. And while glycogen levels approach zero, they never get there. Post-marathon muscles also still have substantial reserves of other fuels, notably fat.

Still more evidence in favour of the central regulator comes from observations of the closing stages of distance races. Top athletes almost always manage to go their fastest during the last kilometre of a race, even though, theoretically, that's when their muscles should be closest to exhaustion. In particular, Noakes says, the end spurt makes no sense if fatigue is caused by muscles poisoning themselves with lactic acid. If lactic acid build-up is the limiting factor, racers would progressively slow down and would find it impossible to sprint for the finish line.

But with the central governor theory, the explanation is obvious. Knowing the end is near, the brain slightly relaxes its vigil and allows the athlete to tap a bit of the body's carefully hoarded reserves.



But the central governor theory does not mean that what's happening in the muscles is irrelevant. The governor constantly monitors physiological signals from the muscles, along with other information, to set the level of fatigue. A large number of signals are probably involved, but the ones Noakes is most sure about include the body's remaining stores of carbohydrates, the levels of glucose and oxygen in the blood, the rates of heat generation and heat loss, and the rate at which muscles are working. Where the central governor theory differs from the limitations theory is that these physiological factors are not the direct determinants of fatigue - they are just information to take into account.

Conscious factors can also intervene. Noakes believes that the central regulator evaluates the planned workout, and sets a pacing strategy accordingly. Experienced runners know, for example, that if they set out on a 10-kilometre training run, the first kilometre feels mysteriously easier than the first kilometre of a 5-kilometre run, even though there should be no difference. That, Noakes says, is because the central governor knows you have farther to go in the longer run and has programmed itself to dole out fatigue symptoms accordingly.

This can be verified by putting people on treadmills and telling them they're going to run one distance when in fact you have another planned. When the subjects are given the real story midway through the test, their reported levels of fatigue suddenly adjust to account for the new information.

It also explains Noakes's experience on the hill from hell. "The central governor had been pacing me for another 20 kilometres," he says, "but it had presumed it was going to be flat. Now, it suddenly had to take the hill into account, and it forced me to slow down."

St Clair Gibson believes there is a good reason why our bodies are designed to keep something back. That way, there's always something left in the tank for an emergency. In ancient times, an emergency might take the form of a lion or pack of wolves at the end of a long, gruelling hunt. Today, the "wolf" might be a mugger hiding in an alley, or a lightning storm near the end of a long hike. But the same concept applies: life would be too dangerous if our bodies allowed us to become so tired that we couldn't move quickly when faced with an unexpected need.



## Drugs and hypnosis

The team also believes the central governor theory helps to explain why hypnosis helps block sensations of fatigue, allowing athletes to work harder. If fatigue were merely the result of hitting the muscles' physiological limits, this shouldn't be possible. But it is. Amphetamines have a similar effect, and again it could be down to the central governor. Blocking the sensation of fatigue with drugs, however, makes it much easier to work yourself to death. Normally, fatigue will force even the most iron-willed competitor to quit before they succumb to heatstroke, but this didn't happen for the British cyclist Tom Simpson, who died after taking amphetamine during the Tour de France in 1967, the year before drug tests started. Ecstasy, Noakes adds, is an amphetamine-like substance that could have the same effect on clubbers.

The theory could also help to unravel the mystery of chronic fatigue syndrome. Perhaps something has interfered with the brain's regulation of fatigue so that you always feel exhausted even though you are not.

Successfully puzzling out the workings of the central governor might open the door to a long-awaited cure, Noakes suggests.

St Clair Gibson and Noakes are presently trying to find where the central governor is located in the brain by studying the electroencephalograms (EEGs) of tiring cyclists. "We're finding that a lot of areas of the brain are involved," St Clair Gibson says, "but we haven't yet found the stop switch." However, the mix of such areas is interesting, and includes the frontal lobe (which is involved in decision making), the parietal lobe (which is involved in sensation), and, for some reason, the visual and speech centres.

The central governor theory has found favour with other exercise physiologists. George Brooks at the University of California, Berkeley, for example, recently amended his textbook to include it. But for some it remains controversial.

One critic is Jere Mitchell, a cardiologist at the University of Texas Southwestern Medical

Center, Dallas. He points to treadmill tests in which people run up ever-steeper slopes while having their oxygen consumption measured. Shortly before the subjects collapse in exhaustion, their oxygen consumption reaches a plateau beyond which it won't increase, no matter how hard they try to work.

This maximum rate of oxygen consumption, called VO<sub>2</sub> max, can be boosted by increasing the number of red blood cells in circulation - for example, by re-injecting blood that was taken several weeks earlier. This proves that fatigue has nothing to do with any central governor, Mitchell argues. Instead, it kicks in at the point at which the body has bumped into a very real physiological limit - the amount of oxygen the blood can transport.

Peter Wagner of the University of California, San Diego, concurs. He has conducted treadmill tests in which athletes are tested under two different conditions: on normal air, and on pure oxygen. That is enough to produce an 8 to 10 per cent increase in the amount of oxygen going to the muscles, he says, producing a measurable increase the VO<sub>2</sub> max in well-trained athletes.

Noakes and St Clair Gibson, however, argue that the central governor theory can explain both studies. The brain, they say, senses the elevated amount of oxygen in the blood and then "resets" the pace to allow the athlete to work harder, while still maintaining a reserve. "So there is a ceiling of oxygen use," says St Clair Gibson, "but at a level decided by the brain, with a wide margin of reserve for error."

If the central governor theory does prove to be correct, can coaches use it to improve athletes' performance? Noakes's experience on the Comrades Marathon underscores the importance of knowing the course beforehand - particularly its later stages. Top athletes and coaches figured that one out many years ago. In fact, says Brooks, trainers are often ahead of the science. "Coaches, by experience, have discovered things which scientists take longer to understand," he says. But Noakes argues that the central governor theory helps make sense of interval training, a "sharpening" technique in which athletes do repetitive bouts of high-intensity exercise interspersed with recovery breaks

In a recent experiment, Noakes took a group of cyclists who had never done intervals before and asked them to add them to their normal training, once or twice a week for six weeks. At the end of this programme the cyclists, who were fast recreational riders but not professional racers, had shaved a startling 15 minutes, or approximately 10 per cent, off their previous times on a 100-kilometre time trial.

Similarly dramatic improvements are often observed when runners are introduced to interval training. Traditional theory says that the improvement is due to physiological changes in the muscle cells that make them better able to use oxygen or tolerate the build-up of metabolic waste products. But Noakes doesn't see how major physiological improvements can occur so quickly. And in any case, he says, interval training seems to induce very little, if any, biochemical change in the muscle. He believes that interval training works largely by teaching the central governor that going faster won't do you any harm.

Perhaps, then, the central governor idea can be used to give athletes an important mental edge. Simply telling them that even when they are feeling completely exhausted their bodies actually have a lot in reserve should provide an incredible psychological boost, says St Clair Gibson. "When athletes know that," he says, "it's going to be exciting."

## TECHNIQUE

### Soft Hands

Last weekend, while waiting for my heat of the 1650-yard Free (equivalent of 1500 meters) at a Masters meet, I overheard a coach reviewing with a swimmer who had just completed his heat in the same race. One comment was that the swimmer had kept his fingers spread while stroking and this would compromise his grip on the water. This piqued my interest, because I was specifically planning to concentrate on "relaxed hands" - i.e. allowing my fingers to spread - as one of my two primary focal points for the first 500 yards.

I've seen accomplished swimmers use many hand configurations, from an unbroken pinkie-to-thumb surface to irregular spacing. Recently (after 40 some years of swimming without giving it much thought) I'd decided to explore the significance of the fact that the fingers on my right hand remain closed as I stroke, while my left hand is spread. I could feel no difference in "grip" between the two. And when I experimented with closing the fingers on my left hand, the only result was that my left forearm throbbed with fatigue within a few laps. So much for that experiment. Thus, I've instead experimented with the opposite - softening my formerly-rigid right hand. When I do so I feel just as much control of the water, but it also promotes a general sense of relaxation in my right arm. So I'm going to continue with this focus. Right now I can swim with soft hands at low speeds, but when my effort approaches the "red line" I can feel my right hand reflexively tense up. Last night at Masters, I did manage to complete a set of 20 x 25-yard repeats at fairly high speed (16 seconds) but with a low stroke count (13SPL). During this set my primary focus was on keeping my right hand relaxed and open. The most challenging thing was to relax my hand on the first stroke. When I did I was able to keep it relaxed the entire way. I was encouraged that the spread fingers also helped me feel as if my hand was a "bigger paddle."

There may be honest differences of opinion about whether one's fingers should be open or spread, but here are some other aspects of how you use your hands that will make a difference in your swimming and that you'll find worth thinking about:

1. **Knifelike entry.** When watching swimmers underwater, the arms of some are surrounded by bubbles as they stroke. **Those who pull "quiet" water have a more propulsive stroke. The secret to "quiet" water is a "quiet" entry. If**

you smack the water loudly with your hand on entry, you'll feel as if you're pulling 7-Up, when you want to feel as if you're holding molasses. Just listen to your entry; anything that makes it quieter is more effective. One way to make your entry cleaner on freestyle is to visualize sliding your hand and forearm through a mail slot as they enter the water.

2. **Patience before pulling.** In every stroke, I've noticed that the best swimmers are the least hurried when making their "catch" -- even at high speed. I.E. Fast Catch equals Slow Swim. Slow Catch equals Fast Swim. After your mail-slot entry, take the time to extend the hand fully (giving your arm more time to shed the bubbles it might have brought underwater) and whatever time it takes to feel the water return a bit of pressure to your relaxed hand and forearm before you stroke.
3. **Fingers down on freestyle.** After your silent entry, you should also focus on pointing your fingertips toward the bottom so your hand is below your elbow as you extend. This helps your balance and helps provide a better surface area for holding water. If you can establish this position before you begin stroking back, you shouldn't have to think much about your hands again, until you make a quiet entry on the next stroke.

- knowing how to communicate effectively with your athletes
- understanding the learning process and training principles
- understanding and implement appropriate teaching methods
- understanding the various coaching styles
- understanding the capabilities of growing children
- advising athletes on track safety
- understanding the causes and recognise the symptoms of over-training
- understanding how to reduce the risk of injury to your athletes
- preparing training programmes to meet the needs of each athlete
- assisting athletes to develop new skills
- using evaluation tests to monitor training progress and predicting performance
- advising athletes on their nutritional needs
- understanding and knowing how to develop the athlete's energy systems
- advise athletes on relaxation and mental imagery skills
- advise athletes on the use of legal supplements
- evaluate the athlete's competition performance
- evaluate athlete/training and athlete/coach performance

## COACHING

### MOTIVATING AND DEVELOPING ATHLETES

The United Kingdom Coaching Strategy describes the role of the coach as one which "enables the athlete to achieve levels of performance to a degree that may not have been possible if left to his/her own endeavors". At the 19th session of the International Olympic Academy, Greece 1979, Dyson widened the horizon to "the wise coach develops not only the fullest physical potential in his charges, but also those capacities and habits of mind and body which will enrich and ennoble their later years".

The role of the coach could be quite daunting since the above implies what could be construed as quite awesome responsibility, especially for the part-time non-professional. I believe the role of the coach is to create the right conditions for learning to happen and to find ways of motivating the athletes. Most athletes are highly motivated and therefore the task is to maintain that motivation and to generate excitement and enthusiasm.

#### Coaching Skills

To be successful as a coach you will need to develop many personal and interpersonal skills. These include:

I will not go into any depth here on these above skills as these will topics will be addressed in future Successful Coaching Newsletters.

#### Coaching Roles

Many people will consider the role of a coach to be one of teaching the athlete the appropriate skills to succeed in their chosen sport or event. The roles that you will find you undertake as a coach will be many and varied and you may find at some stage in your coaching career that you will be: instructor, assessor, friend, mentor, facilitator, researcher and many more.

In my many years as a coach I have found myself undertaking many roles under the coaches mantle. These include:

|            |  |
|------------|--|
| Advisor    | Advising athletes on the training to be conducted and suitable kit and equipment to purchase |
| Assessor   | Assessing athletes performance in training and in competition                                |
| Ambassador | Visiting schools, colleges and universities promoting the sport and club                     |
| Chauffeur  | Transporting athletes to sporting events if parents or family are unavailable to take them   |

|                           |  |
|---------------------------|--|
| Counsellor                | Resolving emotional problems on the basis that sharing anxieties can be both relieving and reassuring  |
| Demonstrator              | Demonstrate to the athletes the skill you require them to perform. To achieve this it is important that you also keep fit, if you can find the time between your full time job, coaching and family life   |
| Friend                    | Over the years of working with an athlete a personal relationship is built up where as well as providing coaching advice you also become someone, a friend, who they can discuss their problems or share their success with. It is important to keep personal information confidential because if you do not then all respect the athlete had for you as a friend and coach will be lost |
| Facilitator               | Identify suitable competitions for them to compete in to help them achieve their overall objectives for the year   |
| Fact finder               | Gathering data of national and international results   |
| First Aider               | There will be times when injury occurs and you have to manage the initial first aid before appropriate medical advice can be sought  |
| Fountain of all knowledge | This may be part of the advisor role in that you will often be asked questions on any sporting event, events that were on the television, diet, sports injuries and topics unrelated to their sport  |
| Instructor                | Instructing athletes in the skills of their sport  |
| Mentor                    | When athletes attend training sessions you are responsible, to their parents and family, for ensuring that they are safe and secure. You have to monitor their health and safety whilst training and support them should they have any problems or sustain any injuries. At some stage in your coaching career you find yourself taking on the role as a mentor to a new coach           |
| Motivator                 | Maintain the motivation of all the athletes the whole year round   |
| Organiser and planner     | Preparation of training plans for each athlete and organise attendance at meetings and coaching clinics  |
| Researcher                | Keeping abreast of current training techniques and how to give your athletes that extra edge over their rivals   |

|                          |   |
|--------------------------|---|
| Supporter                | Competition can be a very nerve racking experience for some athletes and often they like you to be around to help support them through the pressures. Role of a 'Friend' and perhaps 'Counsellor' come in here to |
| Sports Massage Therapist | Providing pre and post competition massage to help give your athletes that extra edge   |

### Trust and Respect

Each athlete's training requirements are unique and so a one to one relationship develops between the coach and athlete. As a coach I believe there are two things that you need to develop in your athletes in order to have a good working relationship/partnership which will enable your athletes to develop to their full potential and they are: Trust and Respect.

In working with an athlete you are a team and you should consider the athlete's partner, or parents in the case of young athletes, as being part of that team. They can provide valuable support to your athlete, which in turn can be very beneficial to you in your coaching role. Remember you also need to trust and respect the athlete as well as the partner/parents. The roles of the coach and athlete in determining training requirements will change over the time an athlete is with a coach.

- When an athlete first starts in a sport/event the coach's role is to direct the athlete in all aspects of training (autocratic coaching role)
- As the athlete develops and demonstrates a sound technical understanding of the sport/event then gradually the coach's role changes to one where the coach and athlete discuss and agree appropriate training requirements (democratic coaching role)
- As the athlete matures and demonstrates a sound understanding of training principals then the athlete will determine the training requirements. The coach's role becomes one of a mentor providing advice and support as and when required.

### Styles of Coaching

There are perhaps two coaching styles - autocratic (do as I say) and democratic (involve the athletes in decision making). The autocratic style could be broken into two types - telling and selling and the democratic style into sharing and allowing. Coaches will use a variety of styles/types depending on the coaching situation.

#### Autocratic Style - Telling

- The coach decides on what is to be done

- The athletes are not involved in the decision making
- The coach defines what to do and how to do it

e.g. in a circuit training session the athletes are told the exercises to be completed

### Autocratic Style - Selling

- The coach decides on what is to be done
- The coach explains what is required and the objectives
- The athletes are encouraged to ask questions to confirm understanding
- The coach defines what to do and how to do it

e.g. in a circuit training session the athletes are informed of the exercises in the circuit. The coach explains the object of circuit training and the purpose of each exercise. Athletes can ask questions to clarify any points.

### Democratic Style - Sharing

- The coach outlines the training requirements to the athletes
- The coach invites ideas/suggestions from the athletes
- The coach makes the decision based on the athletes' suggestions
- The coach defines what to do and how to do it

e.g. the coach identifies a circuit training session. Athletes identify possible exercises for the circuit. The coach selects from the suggestions a set of exercises.

### Democratic Style - Allowing

- The coach outlines the training requirements to the athletes
- The coach defines the training conditions
- The athletes brainstorm to explore possible solutions
- The athletes make the decision
- The athletes define what to do and how to do it

e.g. the coach identifies a circuit training session. The coach defines the conditions of the circuit to ensure it is safe and meets the overall objectives of the session. Athletes identify possible exercises for the circuit and then select a set of exercises that meet the coach's conditions.

### Alternative styles

B. Woods (Applying psychology to Sport, Hodder & Stoughton, 1998) identified 4 styles of coaching:

- Command style - direct instruction, coach dictates

- Reciprocal style - athlete takes some responsibility for their own development, monitored by the coach
- Problem solving style - athlete solves problems set by the coach
- Guided discovery - athlete has freedom to explore various options

### Is Coaching an Art or a Science?

To support the coach there is a wealth of scientific information based on research conducted with athletes. Information is available to support the coach and athlete in all areas of training and development including nutrition, biomechanics, psychology, physiology & medicine. There are a number of scientific methods to measure and analyse the athlete's performance e.g. computer aided analysis of VO2 max, lactate levels, running technique etc.

The art of coaching comes when the coach has to analyse the scientific data and convert it into coaching and training programmes to help develop the athlete. This analysis process relies heavily on the coach's experience and knowledge of the event/sport and the athlete concerned. By understanding the science, which is the foundation of training, a well-designed training program can be developed that will help an athlete reach their full potential. The art is understanding the science and then applying it.

### Successful Athletes

As coaches we would all like to develop the next Olympic champion so how do we initially identify a potential successful athlete. Thomas Tutko and Bruce Ogilvie believe that the following characteristics form part of a successful athlete: Aggression, Coachability, Conscientiousness, Determination, Drive, Emotional Control, Guilt Proneness, Leadership, Mental Toughness, Self Confidence and Trust. Personally I look for four characteristics: Concentration, Confidence, Control (emotional) and Commitment. Of these four C's the primary one I focus on to develop in any athlete is Confidence. If an athlete has high level of self-confidence then the commitment, control and concentration will also be high and likewise a low level of confidence will negatively impact the other three C's.

### Legal Responsibilities

Coaches need to be aware of their legal responsibilities, especially with respect to the advice they give their athletes and the way they manage and supervise them. Coaches have a legal responsibility to their athletes and should:

- give appropriate advice and guidance
- not offer advice beyond their level of qualification

## Health and Safety

Coaches are responsible for the health and safety of the athletes in their charge. Coaches should have access to first aid facilities and have the means by which to contact emergency services.

## Protection from Abuse

Coaches also have a responsibility to protect children from all forms of abuse. There are four main kinds of abuse:

- Neglect (providing inadequate food)
- Emotional abuse (being threatened or taunted)
- Sexual abuse
- Physical abuse (hitting)

Coaches should be able to recognise indicators, which may signify abuse and take appropriate action if concerned. All organisations (e.g. sports governing bodies, local authorities, clubs) should have a policy statement and guidelines regarding child abuse.

## Insurance

Coaches should have appropriate insurance, which covers both public liability and personal accidents. Many governing bodies include insurance as part of their affiliation fee.

## Transportation

It is recommended that coaches do not use their personal vehicles for transporting athletes to venues. If coaches do use their own vehicles then they should ensure they are properly licensed and insured. With young athletes coaches should seek the assistance of the parents/guardians.

## Supplements

Coaches have an ethical and legal responsibility to:

- educate their athletes about drug (supplement) use and abuse
- provide general and appropriate nutritional advice

## Ethical Responsibilities

A coach is required to comply with their National Governing Body's code of ethics and conduct. The following is a summary of the code of ethics for coaches as supplied by the National Governing Body for Athletics in the UK to its registered coaches. The coach's primary role is to facilitate the process of individual development through achievement of athletic potential. This role accepts the athletes' long-term interests as of greater importance than short-term athletic considerations. To fulfil this role the coach must

behave in an ethical manner respecting the following points:

- Coaches must respect basic human rights. Coaches should operate without discrimination on the grounds of gender, race, colour, language, religion, political or other opinion, national or social origin, association with a national minority, birth or other status
- Coaches must respect the dignity and recognise the contribution of each individual. This includes respecting the right for freedom from physical or sexual harassment and advances
- Coaches must ensure that the practical environment is safe and appropriate. This must take into consideration the age, maturity and skill level of the athlete. This is particularly important in the case of younger or less developed athletes
- Coaches must acknowledge and respect the Rules of Competition. This respect should extend to the spirit as well as to the letter of the rules, in both training and competition, to ensure fairness of competitive opportunity between all athletes
- Coaches must exhibit an active respect for officials, by accepting the ability of the officials to ensure that competitions are conducted fairly and according to the established rules
- Coaches have a responsibility to influence the performance and conduct of the athletes they coach, while encouraging the independence and self determination of each athlete by their acceptance of responsibility for their own decisions, conduct and performance
- Coaches must assert a positive and active leadership role to prevent any use of prohibited drugs or other disallowed performance enhancing substances or practices. This leadership by coaches includes education of the athletes on the harmful effects of prohibited substances and practices
- The coach must acknowledge that all coaches have an equal right to desire the success of the athletes they coach - competing within the rules. Observation, recommendations and criticism of coaching practice should be directed to the appropriate person outside the view or hearing of the public
- Coaches should never solicit, either overtly or covertly, athletes who are already receiving coaching to join their squad
- Coaches should hold recognised coaching qualifications. Coaches should respect that the gaining of coaching qualifications is an ongoing commitment achieved through the upgrading of their knowledge by attendance at accredited courses and through practical coaching experience. Coaches also have a responsibility to share the knowledge and practical experience they gain

- Coaches must respect the image of the coach and continuously maintain the highest standard of personal conduct, reflected in both the manner of appearance and behaviour

Coaches should seek out and fully co-operate with all individuals and agencies that could play a role in the development of the athletes they coach. This includes working openly with other coaches, using the expertise of sports scientists and sports physicians, and displaying an active support of their National Governing Body.

### Article Reference

This article, written by Brian Mackenzie, appeared in Issue 1 of the Successful Coaching Newsletter.

### About the Author

Brian Mackenzie is a UK Athletics level 4 performance coach and a coach tutor/assessor. He has been coaching sprint, middle distance and combined event athletes for the past 20+ years and has 35+ years experience as an endurance athlete. Brian is the editor of the "Successful Coaching" and "[Your Personal Trainer](#)" newsletters and can be contacted through his website at [www.athleticscoach.co.uk](http://www.athleticscoach.co.uk)

# COACHING PERSONALITIES

## HARRY PARKER

Much has been said and written about Men's Heavyweight Crew Coach Harry Parker over the course of the near half-century he has been involved in crew. He is one of a select few living legends here at Harvard who can still be seen day in and day out just doing his job. Arguably the best-known name in the sport of rowing, and indisputably one of the most successful college coaches of all time, Parker is also the subject of a soon-to-be-released documentary by Michael Masland ('95) of the Harvard Film Study Center.

The coach is a strikingly fit and youthful sexagenarian, charismatic in a quiet way, who might have had a career as a film actor (he bears a slight resemblance to Robert Duvall) if he'd had the time. As it turned out, his life has been virtually devoted to the sport of rowing, and more importantly to the hundreds, perhaps thousands, of young oarsmen who have passed in and out of his life during a 38-year tenure as head coach.

Parker started rowing relatively late – as an undergraduate at the University of Pennsylvania (class of '57), where he studied philosophy. He got good fast. He was the U.S. single scull champion in 1959 and 1960, the Pan Am Games champion in 1959, and

placed fifth in that event in the 1960 Olympic Games in Rome.

Though he contemplated a career in academia, Parker decided to stay involved with rowing. After the Olympics he came to Harvard to coach and in no time transformed Harvard Crew into a virtually unbeatable powerhouse. Among his triumphs are six national titles, 15 undefeated seasons, 17 Eastern Sprints Championships, and a 31 — 6 record against Yale. This in addition to the 55 or so Olympic athletes he's coached both at Harvard and as a member of the Olympic coaching staff.

"I believe in everything that he's done," says Senior Captain Neil Holzapfel. "He's the best – a real man of integrity. I have no doubts about his proficiency as a coach. He's so well respected, has been so successful for so long, and has completely revolutionized the sport.... His role is absolutely essential to Harvard's success."

Recreational boating instructor Dan Boyne is author of *The Red Rose Crew: a True Story of Women, Winning and the Water* (due out in September), which chronicles the 1975 U.S. women's rowing National Eight team. Boyne attributes much of Parker's success to his innovative style: "Up until the late 50s, Germany and other Eastern Bloc countries were dominant in rowing. Parker looked at East German physiology texts and integrated some of their ideas into his coaching." He placed more of an emphasis on cross-training, new rigging equipment, and new elements in rowing technique – all of which had an immediate and positive affect on the athletes' performance. "He is definitely a pioneer in the sport," says Boyne.

Holzapfel attributes the team's strength to the "gritty, gutty perseverance and determination" that Parker, by example and encouragement, instills in the oarsmen. They are trained in the delicate art of "controlled aggression" – a tactic that requires as much mental as physical exertion, and which may be a key factor in Harvard's legendary mastery over the close finish.

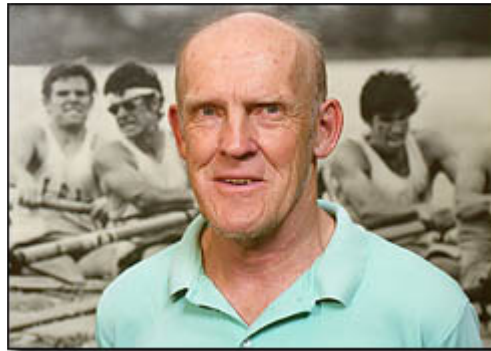
Though Parker flatly denies it, there is an impenetrable mystique, an air of intrigue about him. A reticent man with a nonetheless assured demeanor and commanding voice, he is somewhat of an enigma to those around him. "I like him, but I don't know him that well," says Holzapfel. "We joke that he was immaculately conceived, that he's been around forever."

These jokes may reflect the fact that Parker doesn't seem to age. At sixty-four he is still as robust, if not more so, than many of his athletes. Every year he competes with the team in a triathlon that consists of 7,500 meters on the erg (a stationary rowing machine), a 4.7-mile run, and a dash up and down all 37 sections of the Harvard Stadium. He may not win, but he's usually far from the back of the pack.

Perhaps Parker's mystique is simply a reflection of his no-nonsense disposition. "I just do what I do," he says in reference to the larger-than-life attributes ascribed to him. "It has to start with just really liking and being deeply involved in the sport. If that's true, everything falls into place," he says, intimating that he doesn't understand what all the fuss is about. The way he says it makes you think that it might just be that simple. The oft-touted Nike maxim "Just Do It" would actually mean something coming from him.

The biggest mystery, however, is how he manages to instill such determination and confidence in his athletes. Masland, who filmed Parker in the launch for an entire season, states "The real key to his coaching is that they're doing the work for themselves. He's able to get people to do that, to convince people that it's worthwhile to make the effort."

"If he says something, I believe it," says Holzapfel. He goes on to explain that though Parker's approval is valuable to him, he has learned to believe in himself, in his training, in his teammates, and in winning. "You just know that every year Harvard will be successful."



Men's varsity crew coach Harry Parker, in his 40th year at Harvard, poses in Newell Boathouse beneath a photo of the 1974 heavyweight crew that went undefeated in dual regattas for three consecutive years, and sent five members on to row at the Olympics. Parker transformed Harvard Crew into a virtually unbeatable powerhouse. Among his triumphs are six national titles, 15 undefeated seasons, 17 Eastern Sprints Championships, and a 31-6 record against Yale.

"I don't think too much about what I want to instill in them," says Parker with characteristic understatement. "They should enjoy rowing. It should be satisfying. My job is to establish the basic framework, but we rely on the individual's own motivation."

In the end, the boathouse is a stage for learning about life – about determination, focus, perseverance, and good sportsmanship. "It's still fun. I don't know if there's ever been a day when I didn't look forward to going to the Boathouse," says Parker. After thirty-eight years, he still looks forward to going to work. Isn't that what life's all about?

SOUTH AFRICA



# Association of Rowing Coaches

## Membership Application Form

**First Name:** \_\_\_\_\_

**Surname:** \_\_\_\_\_

**Gender:** \_\_\_\_\_

**Nationality:** \_\_\_\_\_

**ID Number (RSA):** \_\_\_\_\_

**DoB:** \_\_\_\_\_

**Postal Address:** \_\_\_\_\_

**Cell Phone:** \_\_\_\_\_

**Email:** \_\_\_\_\_

**Club/Institution:** \_\_\_\_\_

**Volunteer/Half paid/Full Paid:** \_\_\_\_\_

**Coaching Qualification Level:** \_\_\_\_\_

**Representation: International/National/Provincial:** \_\_\_\_\_

This form must be completed and returned by fax to Jamie Croly (National Secretary) at 011 781 2987 or by Email at [jcroly@stithian.com](mailto:jcroly@stithian.com). You will be notified by email of the receipt and acceptance of the membership application.

Membership fee of R100.00 per year will be invoiced after membership has been accepted and processed.