STROKEARCS

The Newsletter of the Association of Rowing Coaches, South Africa

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TESTING

HOW, WHY, WHO, WHAT & WHEN

A renowned swimming coach was walking up and down the side of the pool working with a world record holder. A younger, relatively inexperienced coach, eager to learn asked, "How do you know how your swimmer is going?" How do you know when she is ready to do her best?" The senior coach replied, **"I just know".**

Testing does not replace the skilled eye or instinctual feel of an experienced and talented coach. It aims to provide measurement and objectivity to some of the elements of performance that coaches "see" and "feel" and "know". This article discusses some of the current issues in the testing of high performance athletes and looks at the crucial aspects of the measurement and evaluation of elite sports performance.

THE TESTING PROCESS: NOT A ONE OFF EVENT!

Testing is not a one off event-it is a process that begins and ends with a test. The testing process sequence includes:

- Coach determines the need for testing and discusses the test protocols with a sports science/sports medicine professional.
- Testing is scheduled and logistics, equipment, personnel etc. are organized.
- Pre-test athlete education session organized (if appropriate).
- Testing is conducted.
- Results and data collected, collated and managed.
- Results and data evaluated.
- Results and data discussed with coach and athlete.
- Coach considers results and data and makes training program decisions based on the information.
- The next test date is scheduled.
- Athlete is retested to determine progress.
- Process repeats!

Testing is a useful coaching tool, but it is one part of the overall process of athlete preparation and development.

COMPETITION BASED TESTING

Of course, the best form of testing for high performance athletes in elite sporting programs is... competition.

Competition provides the unique combination of factors that are only found on the pitch, on the track, on the court, in the pool or on the water during actual games and events.

However, it is often difficult for the coach to be effective in competition based testing as he/she is focused on observing the athlete in competition conditions and perhaps even making strategic/tactical decisions based on those observations.

Therefore, it is essential that the elite coach identifies a reliable, experienced support team of professionals who can manage the details of competition based testing leaving the coach free to coach.

After the competition or perhaps even during rest periods, the support team can provide the coach and athlete with detailed analysis of the performance and together work towards a strategy to improve competition results.

HOW TO TEST

The perfect test is one where the athlete is accurately evaluated in the precise conditions likely to be experienced in competition and the results of the test directly relate to competition performances. This is invariably difficult to achieve as there are various factors experienced in competition which are near to impossible to replicate in a training or testing environment. For example: How do you measure a striker's ability to score a goal under game pressure when the only time they face game pressure is during a game?
How can you test a swimmer's ability to break the world record when they will only be swimming at world record speed over race distance during the world record swim?
Typically, testing protocols and methods are single discipline perspectives of one element of performance, e.g. tests based on physiology, biomechanics, psychology, nutrition or medical. The challenge for the coach is to effectively manage this narrow perspective to gain an overall understanding of the athlete's abilities and capacities at the time of testing.

WHY TO TEST?

Generally, there are many reasons why a coach would want to test an athlete. Once training and competition goals have been clearly established, a coach would test athlete:
To provide information and feedback on the progress of the training/preparation of the athlete— Are we on track to achieve our goals?
To provide information on specific elements of the athlete's capacities and abilities — Is the athlete developing and improving?
To determine areas of weakness or limitation — Are there problem areas or issues that need to be overcome?

WHO TO TEST?
Practically any athlete can be tested. Even young athletes can be tested for skill development and technical progress. Young athletes can also be educated on how to develop the skills necessary to perform the testing protocols they are likely to experience as senior athletes. For example, many tests require the ability to accurately maintain a precise speed, power output, pace or time. These skills can be taught to relatively young athletes as part of their development process and to prepare them to complete senior testing protocols as they mature.

WHERE TO TEST?
Field or laboratory-the toughest question in the testing puzzle. Both have advantages and disadvantages. Field testing can be simple, easy, inexpensive and meaningful to the coach and athlete but can be difficult to control, owing to environmental factors and a wide range of other complicating variables experienced in the training and competition setting. Laboratory testing is often expensive, requires complex equipment and trained personnel to operate it and in many cases, has the considerable challenge of making the test results meaningful and specific to the actual sports environment.

Tests for oxygen exchange dynamics (e.g.VO2 max) have generally been performed in laboratories as the availability of precision equipment allows for more accurate testing. However, the limitation in laboratory testing is in the capacity to reproduce actual sports specific training and competition conditions. For example, the measurement of VO2 max on a cycle ergometer or rowing machine in the lab is based on well established testing protocols. However, the lab cannot exactly reproduce the external environmental factors (bike or road conditions, weather, hills, wind resistance: rowing-the water conditions, current, weather, wind, boat friction/water resistance) that athletes experience in training and racing. In the end, a combination of regular field based testing (because of the practical, easy and immediate nature of the testing) together with occasional laboratory testing (because of accuracy, reliability and quality) is a good option.

WHAT TO TEST?
Selecting what to test for is a complex issue for every coach. Universities and other professional organizations can provide the coach with a wide variety of tests and toys all with the promise of quick easy solutions to performance challenges. One of the biggest problems for coaches is that many do not clearly identify what it is they want to test. As a result, when a sports science professional suggests what is possible, the coaches respond like the kid in a "toy shop" wanting a little of everything. Deciding what to test starts with a simple philosophical question for every coach:

"WHAT DO I BELIEVE ARE THE KEY DETERMINANTS OF SUCCESSFUL PERFORMANCE IN MY SPORT"
For example, as a coach of marathon runners you decide that the key determinants for success in your sport are oxygen exchange dynamics and biomechanical efficiency at 80-90% of maximum speed. Once you have made this philosophical decision, finding the right tests to evaluate the athletes is relatively easy. As a coach of a soccer team, your philosophy is that the best players are skillful at high speed. Again, the choice of tests is a simple matter once you have decided what you want to look for. Another advantage of establishing your own testing philosophy is that "unless you stand for something, you will fall for anything". Sometimes coaches fall for promises of magic pills and quick fixes from sports science professionals looking for subjects for a study or research project.

WHEN TO TEST?
Effective testing can be done at any time during the training or competition program depending on what you are looking for. Tests of maximum capacity or peak abilities are generally best performed when the athlete is rested and unfatigued. Traditionally this has meant testing during or at the end of a rest or recovery microcycle. However, if you as a coach have determined that you would like to assess the impact of physiological fatigue on skill and speed, then testing tired athletes is consistent with your overall program philosophy.

SUMMARY — THE 10 GOLDEN RULES OF TESTING

1. Test for things that make sense. Testing VO2 max in lawn bowlers is not logical
2. Test because you believe it will make a difference. Just testing for testing sake or because the equipment is available is not the most effective use of training time.
3. Test with a performance focused goal**.** Test elements of performance that you believe will make a direct impact on performance. Try not to get trapped in testing just to try and get a progressively better test result unless it is directly related to actual competition performance of the development of more effective training protocols.
4. Don't ask for a single test-ask for a series. If you make the commitment to be involved in a testing program, ask for more than one test. One off tests rarely tell the whole story.
5. If you are working with sports science/sports medicine professionals, demand that any test results are provided within 24 hours and that the professional allocates time to explain the results and their relevance to your program. This applies particularly if you have agreed to allow your athletes to be involved in a research project.
6. Think multi-disciplinary. If the athletes are being tested through lactate analysis, also measure and observe technical changes to assess the impact of fatigue on technique and skills. If they are being evaluated using heart rate; note speed, technique and if possible assess psychological skills at the same time.
7. Be visionary. If you as the coach see the need for a test to evaluate an element of performance which you believe is crucial to the success of the athlete, develop your own test! Ask a sport science/sports medicine professional to help you with the measurement side of things, but many great coaches use simple field tests that are meaningful to them but which may lack absolute scientific validity. Many scientific tests were originally ideas inspired by visionary coaches.
8. Keep records. Try to record all test results. Have assistant coaches, parents of athletes, injured players, reserve team players-anyone-trained to record (accurately) test results.
9. Measure what is measurable-Control what is controllable- What can be measured and controlled is likely to be meaningful. (Bill Sweetenham)
10. Take time to educate athletes about testing. In time, senior athletes can learn to do some or most testing protocols themselves. Athletes can learn to monitor their own heart rates, take their own times, count their strides, record their feelings... and the better educated your athletes are to self manage/self monitor their own testing, the more meaningful the results are to them. Also, having educated athletes who can self monitor means the coach has the freedom to coach, observe and learn during the testing process. As it is with your overall program, testing is Athlete Focused and Coach Driven- manage the testing process so that you can provide your athletes with the best possible opportunity to achieve their performance goals.

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ASSOCIATION OF ROWING COACHES, SOUTH AFRICA

TESTING

SUBMAXIMAL TEST TO EVALUATE VO2 MAX

The Oxygen Carrying Capacity of Blood Hemoglobin
In men there is approximately 15-16g of hemoglobin in each 100ml of blood. The value is about 5- 10% less for women and averages about 14g per 100ml of blood. The reason for the difference may be the stimulating effect on red blood cell production of the 'male' hormone testosterone. Each gram of hemoglobin can combine loosely with 1.34ml of oxygen. Thus if the hemoglobin content of the blood is known, its oxygen carrying capacity can easily be calculated as follows:

Blood O_2 capacity = Hemoglobin x O_2 capacity of hemoglobin
(ml per 100ml blood) (g per 100ml blood) x (1.34ml per gram)

On average, approximately 20ml of oxygen would be carried with the hemoglobin in each 100ml of whole blood when its hemoglobin is fully saturated with oxygen.

12g x 1.34ml = 16.08 ml of O2/100ml blood
13g x 1.34ml = 17.42 ml of O2/100ml blood
14g x 1.34ml = 18.76 ml of O2/100ml blood
15g x 1.34ml = 20.10 ml of O2/100ml blood
16g x 1.34ml = 21.44 ml of O2/100ml blood
17g x 1.34ml = 22.78 ml of O2/100ml blood

Sub Maximal Test to Estimate Stroke Volume and VO2 Max

Equipment:
Concept II Model C/D Rowing Ergometer
Heart rate Monitor Polar S210/S610/S810 or other HRM that records HR

Protocol:
Warm up: 5min - Max Heart rate 135.
Rest after warm up: 3min – No activity
Test Time: 5min at prescribed load. Must maintain accurate watts. No large changes

Recommended Load on Concept II:

Women -160 Watts
Junior Men/Lightweight Men -210 Watts
Senior Men -260 Watts

Data Collected:
Average heart rate for **last 90 seconds** of 5 minute test. Collect heart rate data every 10s for last 90s then average this data

The following table shows the oxygen consumption required to maintain work at the different loads. The corresponding cardiac output is based on an expected haemoglobin content of 15gr./ml blood.

Work Load	*VO_2 l/min*	*Cardiac Output l/min*	*Card Output ml/min*
110	2.25	16.25	16250
160	2.75	18.75	18750
210	3.45	23.25	23250
260	4.15	25.75	25750
310	5.05	30.25	30250

The calculation used to estimate stroke volume
Cardiac output (ml) / Heart rate = Estimated Stroke Volume
(From Table) (last 90s) (ESV)

Use of stroke volume to estimate Max VO_2:
Max heart rate x Estimated stroke volume =Blood transport l/min.
(Max HR) (ESV)

It is expected that 15gr. Haemoglobin per ml of blood gives 200ml O_2 per litre of blood.
Blood transport l/min x 200ml = Oxygen transport in L/min

This is then multiplied by an utilisation factor:
Junior – 80%,
Senior B International (U23) – 85%,
Senior A International – 90%.

E.g.
200 Max HR x 150 ESV = 30 l/min blood transport
30 l x 0.2 = 6 l/min max O_2 transport
Utilisation: Senior A International – 90%
Estimated VO_2 Max = 6.00 x 0.90
= 5.4l/min

ASSOCIATION OF ROWING COACHES, SOUTH AFRICA

COACHING

BECOMING THE COACH YOU WANT TO BE

There are no rules or clear pathways to become a great coach. There are no laws that say you should do this or you should do that. There is no set or established plan that you must follow to become a good coach or a great coach. John Wooden did it his way, Bill Walsh did it his way, and Pat Summit does it her way. So how do you figure out how to become a good coach, a better coach, or a great coach? How do you become the coach you want to be? Is there a special course to take, or a special book to read? We often read biographies about the great "guru" coaches of some sports and they all seem to be different. Some have tried to learn everything they can about their sport, or are great "historians " of their sport, some have studied great leaders in business and military history and employ those same tactics in their career and sport. Some are not the greatest tacticians, but are great people managers. Some might have even just been in the right place at the right time— but if they became great coaches they were more than just lucky.

From my experience working with and observing some leading coaches there are certain predictable abilities and characteristics that the great coaches have in common. They can be summarized into several different categories, including (but not limited to) knowledge and education, attitude, planning and character. We all know some coaches who know a lot about the game but have questionable character and integrity. We all know some coaches who have planned and managed their career to perfection, but are not the leaders in knowledge (beyond x's and o's) of their sport. Some are great recruiters or talent scouts— but lousy teachers.There are no "rules." Nothing is mandatory in this business, but if you want to be the best you can be, here are some guidelines.

KNOWLEDGE AND EDUCATION
You don't have to have a "PhD" in your sport; but if you want to be the best, you should seek to know as much about the sport as you can. Respect the sport and the fact that there is a body of knowledge to understand about any sport. If you treat your sport and coaching as inconsequential, then you won't be taken seriously. Take as many formal courses as you can. If your sport offers coach education course seek them out and take them. If your sport doesn't have formal courses, explore the International Federation for your sport — sometimes they offer coach education courses. If you can't find courses in your own sport, look for coach education

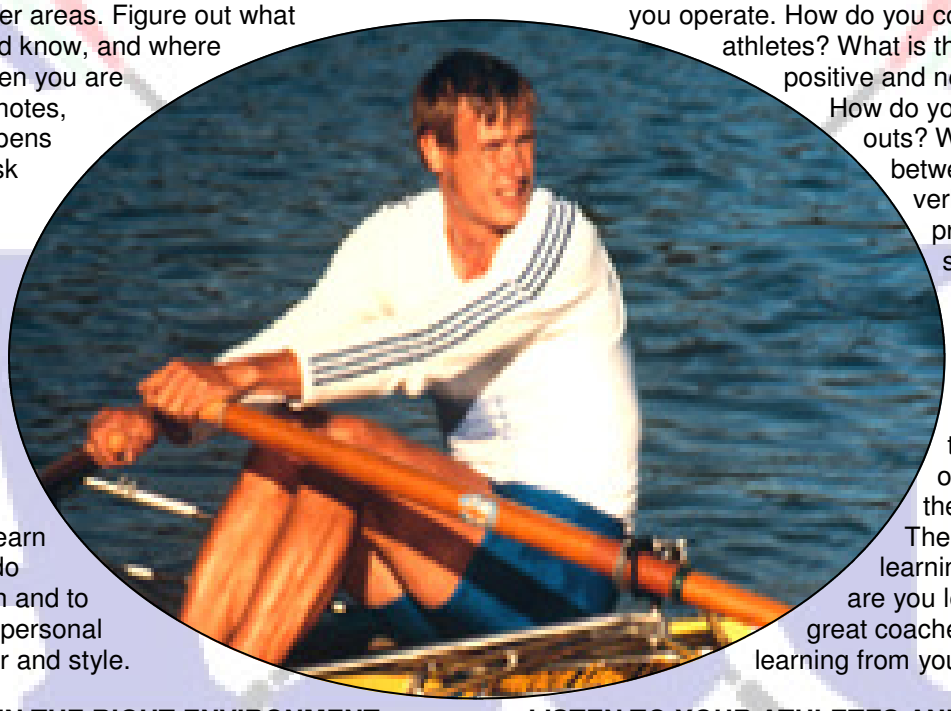
courses in other sports. In fact, once you have taken all the coach education courses in your sport it is a great learning experience to take coach education courses in other sports. Cross fertilization works wonders for innovation and creativity and setting yourself apart from your peers. Look everywhere for coach education material — books, DVDs, videos and so on.The more you know the better you will be. And think beyond your sport. Look for courses on leadership, communication, time management in other areas beyond coaching; skills in other industries transfer well into coaching and vice versa.

EXPERIENCE
Nothing beats "having been there done that", but you can't always start out with the head job and get all the experience you need at once. Volunteer as much as you can for as many different situations as you can. Find the coaches you want to be around or the situations where

you need more experience and volunteer. Take stats, shoot video, put up the nets and shag balls. Do whatever it takes to get some experience. Any time you can be around top coaches (and athletes) is time well spent—as long as you have a plan and make good use of the time.

PLAN IT AND MAKE IT WORTHWHILE

Volunteering is good in itself, but plan it and make it worthwhile. Don't just volunteer to "spend time. "Volunteer to learn —it's an investment in your career if you plan it and work it. Make a list of the strengths you want to cultivate, or the weaknesses you want to strengthen. Volunteer in situations that will help you get better in that area. This might include things like: improving time out communication strategies, managing star athletes, understanding the application of medicine and science better, dealing with volunteers/parents or any number of other areas. Figure out what you need to do and know, and where you can get it. When you are volunteering take notes, observe what happens around you and ask questions. But remember, the objective (or at least the learning objective) when you are volunteering is not to change the coach you are working with or take over the program—it is to learn what to do or not do when it is your turn and to develop your own personal coaching character and style.



PUT YOURSELF IN THE RIGHT ENVIRONMENT

Volunteering is one way to put yourself in the right environment, however, not everyone can always find the time to do that. If you can't find a way to volunteer, find a way to be around the best people. Who is the best coach in your league, your city, or your State? Make plans to be around these people, whether it is in the same competitions, or whether you just go to their competitions and observe how they operate. Invite them to come and talk to your team or school or club. Don't just limit yourself to the best coaches. Find a way to be around good people and experts in other fields. Observe how they operate. How they deal with people? How they meet challenges and handle setbacks?

Establish a personal pattern of learning and improving
Most of the things I mentioned above revolve around establishing a pattern of learning. You should take every opportunity to observe and learn from the best (and the worst) coaches. As a coach you will be at literally hundreds of competitions over time. Focus on your game and your own teams while you are in competition; but after that is over, spend some time observing other coaches at work. You can even get a lot out of watching college and professional coaches on television. Observe how they react to success and failure, how they react to adversity (bad calls by officials, bad decisions by athletes etc) on the field, how
they interact with officials. Reflect on their behavior and reactions and visualize what you would do and how you would react if (when) you were in that situation. As well as observing other coaches, how about observing your self?

I have said in previous articles in the Olympic Coach magazine that coaches are spending more and more time filming and analyzing their athletes (and their competition). This is great; but how about turning the camera on yourself for a while. Ask a friend or another coach film you at work —either in a practice or competition situation (preferable both) and observe how you operate. How do you communicate with athletes? What is the balance between positive and negative feedback? How do you function in time outs? What is the ratio between activity and verbal instruction in your practices? How do you spread your interaction between all the athletes on the team in competition and training? There are a thousand things to observe and that is not the focus of this article. The point is, how are you learning? How and what are you learning from the great coaches and what are you learning from yourself?

LISTEN TO YOUR ATHLETES AND PARENTS.

Don't be afraid to seek input and feedback from athletes and parents—.at the right time. Don't ask them how you rate as a coach 10 minutes after you have lost the league championship—structure it. At the beginning of the season, when you lay out the season plan, your philosophy and expectations for the athletes, team and parents, explain that one of your goals is to improve your own skills as a coach. Let everyone know what you hope to achieve as a coach and let everyone know that at certain times in the season you will be seeking their honest feedback about how you are doing and what areas you need to improve...just like you would do with your athletes

Some coaches will argue against this strategy because they think that athletes and/or parents will give negative reviews because you have lost games, didn't get enough playing time, or because they have hidden agendas. This might be the case sometimes; but ask yourself how could you possibly evaluate yourself and improve your skills if you avoid honest feedback from two of the most critical stakeholders in your profession. If you structure feedback sessions or "report cards" so that they seek honest

feedback with examples of strengths and weaknesses you will filter out the “disgruntled” athlete or parent and get to your true evaluation.

WHAT DOES YOUR NETWORK LOOK LIKE?
Not many coaches make it “to the top” by themselves. Most of the best ones have at least one mentor. Most of them spent a lot of time around coaches when they were growing up as either a child of a coach or as a young athlete. Most of them have a strong support team behind them. Make sure you identify people whom you admire and can learn from and seek them out as mentors. Most good/great coaches, who are leaders, value what they do and are proud of their profession and love their sport. They often love the chance to mentor others who have the same love of coaching and commitment to learning as they do. Take advantage of it. If you ask someone to be a mentor and they say no—don’t give up, keep looking until you find someone who will help you. It works both ways, don’t be afraid to be a mentor to someone else. Being objective and reflecting on someone else’s performance can sometimes open your eyes to yourself. And don’t forget that your mentor(s) can come from outside sport and coaching.

THE BOTTOM LINE....
The bottom line is that most great coaches don’t go from novice volunteer coach to a “great” coach instantaneously. They work hard, they sacrifice and sometimes they take chances. In all cases, they love the game and they respect the sport and the profession. They make a commitment to learning and excellence. Every opportunity is a learning opportunity. They have standards and a coaching philosophy and they don’t compromise. Being a great coach doesn’t mean winning the World Series or the Super Bowl—you can all be great coaches at your respective level....but you have to plan it and work it. It won’t happen by itself. It starts right now...at your next practice, your next competition, the next book you read, the next video you watch. What are you waiting for?

ASSOCIATION OF ROWING COACHES, SOUTH AFRICA

ATHLETES

THE SCIENCE AND ART OF SCHOOL ROWING

Recent achievements of the Shore School 1st 8+
National Schoolboy VIII title 2002, 2003, 2004
Head of the River winner 2003, 2004
NSW Schoolboy VIII title 2003, 2004
Unbeaten in any schoolboy race 2003-2004
New Zealand National U19 and U21 VIII titles 2004
Riverview Gold Cup winner 2004

We inherit in the GPS part of the shed boys with certain attributes:
Confidence/self-belief
Tenacity
Discipline
Focus

This can be attributed to the excellent junior program, characterised by:
Organisation
Cooperation
Consistency
Prioritising the interests of the group rather than the individual
Setting of high standards
Competitive training

The application of technology:
Video Analysis Software: *Siliconcoach*
Excellent resolution
Can play at normal or slow speed, or frame by frame, forward or backward
Can have up to four athletes on the screen at any one time or overlay athletes for comparison purposes
Can overdub commentary
Can draw lines, arrows, grids on the screen to provide a frame of reference or highlight features
Can measure angles, time, distance, speed, acceleration and display results in table or graph form
Can package presentations with playing software, then burn onto a CD for the athletes to take away with them

Shaping the right mindset:
The positive mindset we inherit from the junior ranks needs then to be refined for the challenges of rowing at the top schoolboy level

The 1st VIII, for the past three years, has applied a simple yet highly effective philosophy, developed by one of the parents – Dr Jacques van Schalkwyk. Once a week, Jacques has spent thirty minutes with the boys, working progressively through the *Eight Ways of Awesome Athletes.* He works very closely with the coach to ensure that his approach is customised to the sport of rowing and of course the boys themselves

The 8 ways of awesome athletes – moving from good to great to awesome:
Begin with passion

Believe you can
Focus your action
Do it as one
Fuel your energy
Bite the bullet
Break the barrier
Act with character

Begin with passion:
Assisting the athletes to formulate a vision that inspires passionate commitment
Breaking the vision down into clear goals that guide their actions and can be used to measure their success
In 2003 the crew's goal was to become an Awesome VIII. When asked what that meant, they said that meant remaining undefeated in every race they entered, including heats. They in fact chose to never use the term "heat" as this may have caused some in the boat to row simply to qualify. This goal to become awesome was broken down further into goals for each training session and of course goals for each phase of the race.

Focus your action:
Teaching the athletes to focus on the task at hand, one step at a time
Encouraging them to do it with *ice in their veins*

Do it as one:
Aligning the minds in the crew by:
Creating a sense of belonging
Reminding them of their shared vision
Ensuring each individual fully understands how they can contribute to achieving this vision
Building on their inner desire to be the best they can be

Fuel your energy:
Becoming awesome is a journey, not an event
The athletes will be energised by the *push* effect as they *begin with passion* and the *pull* effect as they *near their destination*
In-between these two phases, they need to be *energised* to sustain their momentum by:
Redefining the *doldrums* as *opportunities*
Reinvigorating their dreams and reminding them of the importance of their actions
Variety and surprise
Leading with optimism

Bite the bullet:
Helping the athletes to:
Persist through adversity
Remain calm under stress
Developing the *will* to succeed - not just the *want.* The coach needs to nurture those athletes who will *walk over hot coals* to succeed and use *them* to inspire the others

On the day of the State Championships, in searing heat, the bow man collapsed with a severe migraine headache in the last 200m of the final of the Men's U21 VIII race. The crew scraped across the line in third place after having won its heat in the quickest time. One hour later it won the Champion Schoolboy VIII race with a rower from the 2nd VIII in the bow seat rowing his fourth 2000m race for the day. Four weeks before the Head of the River, the crew lost its four man to malaria (caught in Bali in the holidays). He was the top sculler in the crew and considered by all to be a key player. Bringing up the seven man from the 2nd VIII caused a major reshuffle and some concerns about the crew's ability to sustain its winning form. The crew bounced back immediately, winning the Men's Open VIII at the Sydney Rowing Club Regatta that same week and the Australian Schoolboy title one week later.

Break the barrier:
Encouraging the athletes to do what the competition is not prepared to do in order to break through the performance barriers
The first barrier was considered to be that point in the 3rd 500m when so many rowers "hit the wall". The crew was encouraged to make that point their biggest opportunity – they could stay in their comfort zone or make the barrier their friend and push through it. They were given confidence to do so by practicing it in selected lead-up regattas.
The second barrier, which many saw as beyond the finish line was pulled forward to the beginning of the last 30 strokes and a similar attitude to it was adopted.

Act with character:
Develop and encourage in the athletes a sense of:
Grace
Humility
Integrity
Trust
In the absence of these, they will neither earn nor deserve the respect of others
The boys were taught that in winning the Head of the River they may be considered successful, but unless they acted with humility and integrity, they would not be

respected and thus not could not be considered awesome.
They were also encouraged to trust in each other's commitment to the crew – that they were all in this together. This gave each boy confidence to break through the two barriers because he knew he would not be doing it alone.

ASSOCIATION OF ROWING COACHES, SOUTH AFRICA

NUTRITION

NUTRITION FOR TRAVELING ATHLETES

Travelling away from home for training and competition is standard practice for most elite and recreational athletes. Unfortunately, the disruptions and distractions of a new environment, changes in schedule and exposure to different foods can significantly affect usual eating habits. Major nutritional challenges faced by athletes while travelling include:

- achieving carbohydrate and protein requirements
- meeting daily vitamin and mineral requirements
- balancing energy intake
- maintaining adequate hydration
- food safety

It is essential that strategies are put in place to minimise the impact of travel on an athlete's food intake. Whether an athlete is travelling overseas or on a long local bus trip, the key to successful eating while on the move is planning and preparation.

Plan Ahead
A general plan consisting of where, when and what the athlete is planning to eat on each day should be constructed around the anticipated daily schedule. It is important to keep foods and meal times as similar as possible to the usual daily routine at home.

Research the Destination
Food patterns at the destination should be investigated as thoroughly as possible before leaving home:

- Are all important foods available?
- Is the accommodation self-catering or will it be necessary to rely on restaurants or takeaways?

What are the hygiene and food safety risks?

The internet, travel agencies, embassies, competition organisers or other athletes who have travelled to the destination before can be used to gain information.

Choose Your Catering Style
Self Catering
Cooking skills, budget and access to shops will determine the meals that can be served. The availability of food at local shops, the cooking and storage facilities and available utensils need to be investigated before leaving home. Ideally, the menu should be planned in advance. Cookbooks such as the AIS *Survival for the Fittest* and *Survival from the Fittest* can be used as a guide. These books contain special menus for 1-7 days and the corresponding required ingredients. Useful items to pack when self catering include a can opener, chopping knife, extra utensils and storage containers for leftovers. For some locations, power cord adaptors, an in-cup heater and an electric kettle may also be useful.

Restaurant Eating
Athletes often stay in hotels where all meals are provided in the hotel restaurant. On other occasions, athletes or teams may choose to cater for their own breakfasts and lunch and use a restaurant for the evening meal. Where possible, restaurants should be investigated before leaving home. The meal options, cooking styles, opening hours and hygiene of the establishment should be considered. It is useful to book restaurants ahead of time as many businesses are unable to cater for specific requests or large groups at short notice. Discussing the proposed menu with restaurant staff in advance will minimise problems at mealtime. This is particularly important when athletes have special dietary needs (e.g. vegetarian, food intolerances).

Meals that focus on carbohydrate choices such as rice, noodles and pasta are a good place to start. Add lean sources of protein such as lean meat, fish, chicken, beans or tofu and include plenty of vegetables. Avoid dishes that are deep fried or battered. Buffet style eating can be a good option as it allows athletes a range of choices. It is quicker than waiting for individual meals to arrive and is cost effective. One of the pitfalls of buffet eating is that it is easy to over indulge. This can be avoided by planning meals in advance and leaving the buffet when full. If using the same restaurant for more than a few days, vary the menu from day to day rather than within a meal to avoid boredom. If possible, avoid being solely reliant on restaurant/fast food options. They can be time consuming, expensive and a nutritional challenge.

Snacks
Snacks are an important component of eating and recovery nutrition plans for most athletes, however access to quality snacks can be difficult when travelling. It pays to take a supply of portable, non-perishable snack foods that are unlikely to be available at the destination. It may be useful to send a package of supplies ahead to decrease baggage. Remember to check with customs/quarantine regarding foods that are restricted from crossing certain borders.

Useful Food Items To Take

- cereal bars
- breakfast cereal
- canned snack pack fruits
- dried fruit
- instant noodles
- jam, honey, peanut butter, Vegemite
- powdered sports drink
- powdered liquid meal supplements
- powdered milk
- concentrated fruit juice
- baked beans and spaghetti

Hotels usually only cater for 3 meals/day. Arrange for snacks such as yoghurt, fruit and cereal bars to be placed out at meals so that athletes can take them for snacks later in the day. Alternatively, arrange for a communal area to be stocked with snacks (i.e. the manager's room).

Travelling by Air
Meals and Snacks
Athletes are not used to forced inactivity therefore hours spent on a plane may lead to boredom. It is important that athletes avoid over eating to relieve boredom. Taking other activities on board, drinking water regularly and chewing sugar-free gum can decrease the temptation to snack excessively on long flights. Alternatively, athletes with high-energy needs may struggle to meet their needs if they rely solely on in-flight catering. This may cause the athlete to arrive at the competition destination with reduced fuel stores. Several strategies can be taken to minimise these risks to performance:
Find out if special meals (e.g. sports, low-fat, vegetarian) are available on the flight.

Enquire about the in-flight menu and timing of the meal service in advance.
On long flights, try to adopt a similar meal and sleep pattern to that anticipated at your destination. This may help to reduce the effects of jet lag.
Athletes with reduced energy needs should pay particular attention to meals and snacks provided during the flight.
It is not necessary to eat everything offered.
It may be better to take your own snacks rather than be tempted by all the extra tid bits offered in flight.
It is advisable to pack extra snacks in carry-on luggage.
Food available for sale at airports tends to be expensive and it can be difficult to find nutritious options. It is always useful to have some supplies in case of unexpected delays.

In-Flight Fluid
The risk of becoming dehydrated on long flights is high as the pressurised cabins cause increased fluid losses from the skin and lungs. Symptoms of dehydration may include headaches or slight constipation. It is inadequate to rely on cabin service for fluid as the serve sizes of drinks is very small. Athletes should take their own supply of bottled water onto the flight to supplement the water, juice and soft drink provided in the air.

Sports drinks are also a useful choice as they provide a small amount of sodium that helps promote thirst (therefore encourages a greater fluid intake), and decreases urine losses. Aim to drink approximately 1 cup per hour during the flight. Caffeine-containing fluids such as tea, coffee and cola drinks may cause increased urine production, but
can still contribute to a positive fluid balance in athletes (especially in those who regularly drink caffeinated drinks). Alcohol should be avoided on flights.

Food Safety at the Destination
Gastrointestinal problems are common when travelling to foreign destinations. These can occur in both developing countries and 'safe' destinations. Adopting good personal hygiene and food safety practices will help to decrease the risk of infection and illness.

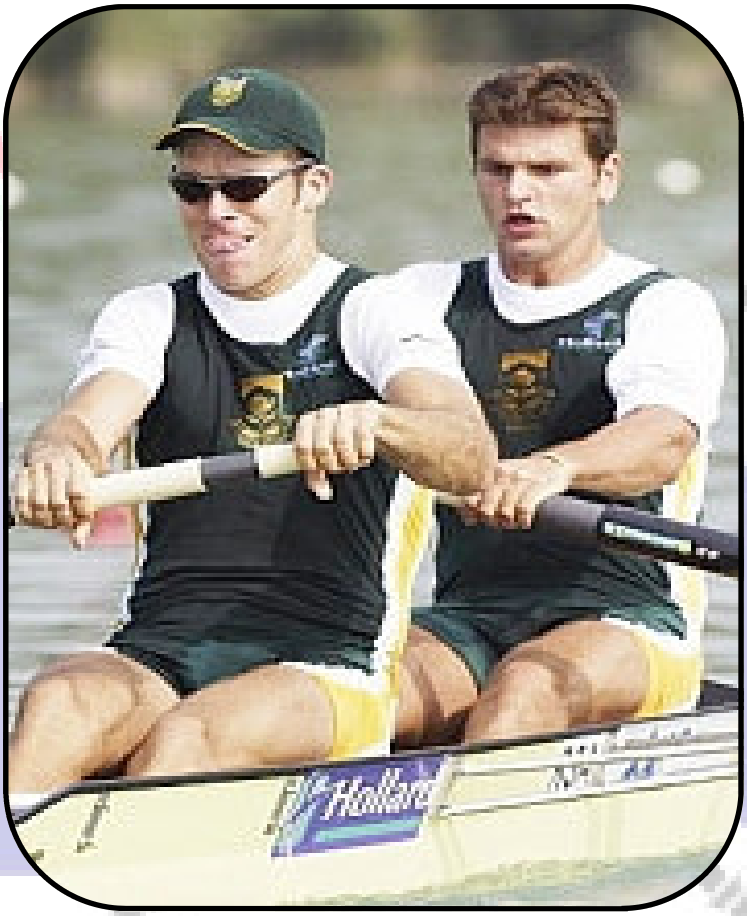
If the local water is unsafe to drink:
Drink only bottled water or drinks from sealed containers.
Avoid ice in drinks.
Clean teeth with bottled water.
Avoid salad vegetables unless washed in bottled or boiled water.
Only eat fruit if it can be peeled.
In 'high risk' areas:
Eat only from reputable hotels or well known franchises.
Avoid street stalls and markets.
Be wary of fish and shellfish.
Only consume food that is steaming hot or has been refrigerated.
At all destinations:
Avoid sharing cups, bottles or utensils as infections and illness can be transmitted this way.

If vomiting or diarrhoea does occur, it is important to

replace lost fluids and electrolytes. Oral rehydration solutions and a safe water supply should be used. A bland diet consisting of dry toast, crackers, biscuits and rice may help. Avoid alcohol, fatty foods and dairy foods until the diarrhoea has ceased.

Food at the Competition Venue

Unfortunately, most sporting venues provide food choices such as deep fried snack foods, crisps and chocolate. Nutritious options are often hard to find. Athletes should carry pre and post exercise snacks and drinks to the venue to ensure that appropriate choices are readily available. Sandwiches, cereal bars, fruit, juice, liquid meal supplements and bottled or powdered sports drinks are ideal. Check that the venue has accessible water outlets and that the water is safe to drink. Carry your own bottled water if the water supply is in doubt.



Case Study

The following case study outlines the strategy an AIS sports dietitian used to assist a volleyball team survive an international trip. The team travelled to India for 3 weeks. It was the first overseas trip for many of the athletes.

Strategy 1: Assess Travel Itinerary and Competition Schedule

The team schedule, accommodation, dining options and goals were discussed with coaching staff.
Players were to train or compete daily.
3 meals per day were to be provided by hotel restaurants.
Coaching staff and senior players who had competed in India previously were consulted regarding anticipated food availability, quality, safety and potential problems.

Strategy 2: Identify Potential Nutrition Issues

Possible avoidance of local food due to unfamiliarity and dislike of spicy food.

Dehydration (high temperatures and humidity).
Limited recovery time between sessions.
Availability of recovery foods and fluids.
Side effects of plane travel (first training session scheduled for the day of arrival).
High risk of gastrointestinal disturbances.

Strategy 3: Education Prior to Travel

Activities were planned prior to travel to help avoid potential problems and to ensure appropriate nutritional strategies were followed.

An Indian cooking night was organised for team members to increase awareness of Indian foods.
The team was educated on hydration strategies and hygiene issues. Bottled water was known to be readily available in India.
The team was educated on issues regarding plane travel.
Each athlete was provided with a small pack containing snacks, water and sports drink for use on the flight.
The team was supplied with a range of portable foods to supplement the player's eating plans and cater for recovery needs. Useful utensils were also provided. Team provisions included:

cereal bars
cereal
powdered milk
instant noodles
small tins of baked beans and spaghetti
powdered liquid meal supplement
powdered sports drink
powdered oral rehydration solution
electric kettle
power adaptor plug
can opener

Outcome

Players and coaches commented that the preparation and education prior to traveling was of great benefit. This was the first trip to India where no one became sick. This was attributed to the education players received prior to departure and the provision of safe snack choices. The athletes had confidence that they could adhere to good nutritional strategies while in a foreign environment. This helped the team perform to their full potential.

ASSOCIATION OF ROWING COACHES, SOUTH AFRICA

TECHNIQUE

GOOD BLADE DEPTH AT YOUR FINGERTIPS

Blade depth is one of the aspects of technique that needs careful attention. Rowing too deep causes a myriad of problems such as getting caught at the release or

increasing the amount of vertical motion in the stroke. I recently did a group lesson with some intermediate scullers and here is how we worked on blade depth to help move the boat better.

First, to get a sense of where the blade will sit naturally, I had the scullers sit at the release and hold the scull only using their thumb on the end of the handle. By keeping pressure against the oarlock, they had control of the handle but also allowed the blade to sit at its natural depth in the water. They then lightly placed their fingers on the blade without disturbing the height in the water.

Next, we did a drill where we rowed in circles. With one blade feathered flat on the water and the boat balanced, I had them row with one oar. The boat moved in a circle, but the advantage of this drill was they were able to watch what the blade was doing during the stroke. I explained that by accomplishing the right action in the water your inboard handle levels would also be at the right heights. I asked the scullers to keep the top edge of the blade level with the surface of the water; this way had a concrete reference point for where the blade level should be while in the water.

Allowing the blade to sit in the water requires light hands while making sure you don't overpower the stroke and lift with the upper body during the drive. I like to use two finger rowing as a way to demonstrate how little effort is required to control the oar. I instructed the group to use regular hand placements while on the recovery; place the blades at the catch and once their in the water lift the middle, ring and small fingers off the handle so they are drawing the handles with the thumb and index fingers only. In this drill you can't actually pull hard so you automatically can feel where the blade wants to sit. Another variation we did with this was to row with only the middle fingers, where after the entry, they used only the middle fingers to draw the handles through the stroke.

The final drill we did during the session was half blade rowing. The goal of this drill was to feel how to control the blade keeping only the lower half of the blade in the water. This requires focusing on the point of contact between the lower edge of the blade and the waters surface. Learning when this happens helps you to understand the sense of the blades size and action. It will also help you learn an important frame of reference for developing good catch timing and for improving your racing starts this season.

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. 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.