

STROKEARCS

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SOUTH AFRICA

RECOVERY

RECOVERY STRATEGIES FOR SPORTS PERFORMANCE

"If there was one single factor that helped this team to perform to the level they did at Atlanta, it was the recovery program that was put in place ... and monitored throughout our 1996 program."

Barry Barnes Head Coach, Australian Men's Basketball, 1996 Atlanta Olympic Report.

Athletes work hard to prepare and perform successfully throughout a competitive season or for major events. Unfortunately, many ignore or forget the performance benefits gained through including recovery strategies within their daily training programs. Indeed there is a tendency for many athletes to limit the use of recovery techniques to times when they are ill or injured. Yet recovery strategies have far more benefits for athletes than merely as tools to assist with rehabilitation or recuperation.

Recovery is one of the basic principles of training methodology (Rushall & Pyke, 1990) and it has two primary roles: The first concerns monitoring the athlete's adaptation to training and stress so that appropriate recovery strategies can be determined. The second relates to the selection of specific recovery techniques and strategies to minimize any residual fatigue from training and competing (Figure1).

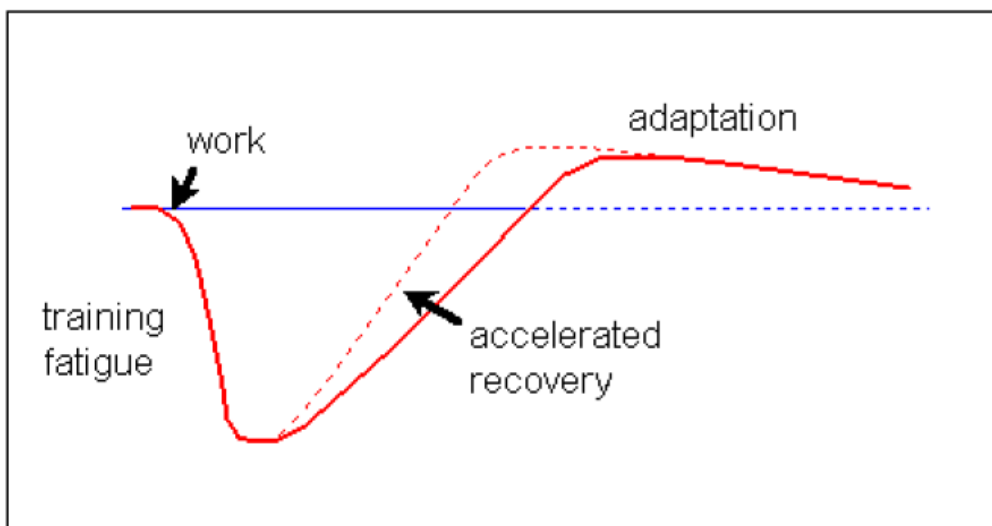


Figure 1: The principle of recovery

RECOVERY STRATEGIES: MONITORING ADAPTIVE RESPONSES

What are the variables coaches should monitor?

Each coach has a wealth of observational information about the indicators of poor adaptation and excessive fatigue. Often these are observations recorded subconsciously rather than formalized documented notes. It is important for each coach to identify what it is that they observe that is indicative of excessive stress and fatigue. A quick assessment of these criteria at every coaching session will enable the coach to identify any non-adaptive stress responses at an early stage and then address them before they become a major issue for an athlete (Table 1).

Coaching Observations	Signs & Symptoms of Non-adaptive Responses
Direct Communication	Athletes tells me he has: Heavy legs Doesn't feel good Legs are sore Feels tired
Body Language	Facial expression and color Posture Signs of frustration, etc.
Performance	Poor skill execution Slow acceleration off the mark Heavy feet Poor or slow decision making / response time
Psychological	Low motivation Low concentration Aggressiveness No self-confidence
Gut feeling / 6th sense / Other things	Poor eating habits Poor diet Poor sleep patterns External stresses

Table 1: Example coaching checklist for monitoring an athlete 's adaptation to training and stress.

What are the variables an athlete should monitor?

The responsible athlete will also monitor training adaptations through regular recordings in a training diary or log book. Maintaining a daily record is an essential training tool for all athletes as it enables them to learn how to *evaluate* their stress levels and their adaptive responses. Learning to recognize "*how they feel*" is one of the most important skills any athlete can acquire. Recordings of the quality of sleep, morning resting heart rate and morning body weight, and a daily rating of fatigue levels are four critical markers that should be recorded regularly by athletes.

These four variables take two minutes to record and may be the first warning to an athlete that he or she is not adapting well to training and other stresses. Kellmann (2002) has designed a questionnaire, REST-Q that identifies excessive fatigue and under-recovery in athletes.

Realistically, most athletes are likely to be inconsistent with recording morning resting heart rates. Research has indicated that a more comprehensive set of variables should be monitored (Mackinnon & Hooper, 1994; Hooper et al., 1995). Some examples of monitoring sheets that include many of these variables can be found in Calder (1996) or accessed on www.ask.net.au

RECOVERY STRATEGIES: MANAGEMENT

There are four generic types of training and competition fatigue (Calder, 2003). These are **metabolic fatigue** (energy stores); **neural fatigue** of either or both the peripheral nervous system (localized force production) and central nervous system (drive / motivation); **psychological fatigue** (emotional and social stress factors); and **environmental fatigue** (climate and travel).

A good coach understands not only what is being stimulated through prescribed training sessions, but also what is being fatigued. The challenge is to recognize the type of fatigue and then select specific strategies to reduce and minimize this fatigue as soon as possible after the training or performance situation. There are three major specialty areas to include when designing appropriate recovery strategies for an athlete 's training program.

NUTRITION: FLUID AND FUEL FOR RECOVERY

The most important nutritional considerations for recovery relate to fluid and fuel replacement strategies (Burke, 2000). Monitoring fluid loss so that it is kept to a minimum is essential. A bodyweight loss of two percent or more during exercise will result in a reduction in aerobic output. If an athlete becomes excessively dehydrated, not only can this be dangerous and lead to overheating, their aerobic capacity can be reduced by up to six -percent.

Adequate supplies of glycogen in the muscle and in the liver are needed to support the energy demands and promote recovery for the next training session. Athletes can minimize the effects of metabolic fatigue by starting each session with their *fuel tanks* full. They can top-up during the event with sports drinks and take other carbohydrate and protein foods. Small amounts of protein taken with carbohydrates before, during and after hard training, are also recommended to help minimize muscle protein breakdown as a result of heavy workloads (Tarnopolsky, 2000).

Nutritional supplements should be used with caution and sound scientific advice. Many coaches and athletes are pressured to use supplements and new products and it is often difficult to source reliable evidence-based information about what is appropriate and safe to use. A useful impartial website for advice on this area is www.ais.org.au/nutrition

PHYSICAL THERAPIES

A wide variety of activities and therapies are used to assist with recovery from training fatigue. Unfortunately, many recovery techniques popular with athletes and coaches have not been extensively investigated by scientists so coaches and athletes often rely on anecdotal information about what is best to use. The following list is an indication of some of the most commonly used recovery techniques.

Rest: Passive Rest

Passive rest, particularly in the form of sleep, is an area that is not well understood by either coaches or athletes. Sleep is probably **the** most important form of recovery an athlete can have. A good night's sleep of seven to nine hours provides invaluable adaptation time for adult individuals to adjust to the physical, neurological, immunological and emotional stressors that they experience during the day. An adolescent experiencing heavy training and a growth spurt may need up to ten hours a night and athletes who are sick often need more sleep as a part of their recuperation. However, too much sleep can be detrimental to performance as it can slow down the central nervous system and lead to increased levels of melatonin that can leave the athlete feeling slow and lethargic.

Rest: Active Rest

Active rest is much undervalued by athletes. The end of the loading component of the training session is an ideal time to introduce active recovery activities, although active rest strategies can also be interspersed easily throughout the session. (i.e., sets and reps). Activities can be selected to fulfil several tasks. They can either help recover the physiological state of the athlete (light jog, walk, swim or cycle to recover the lactate system), recover neural fatigue (light jostling/shaking of muscle groups), or used as a means of psychological and emotional restoration (light but different activities).

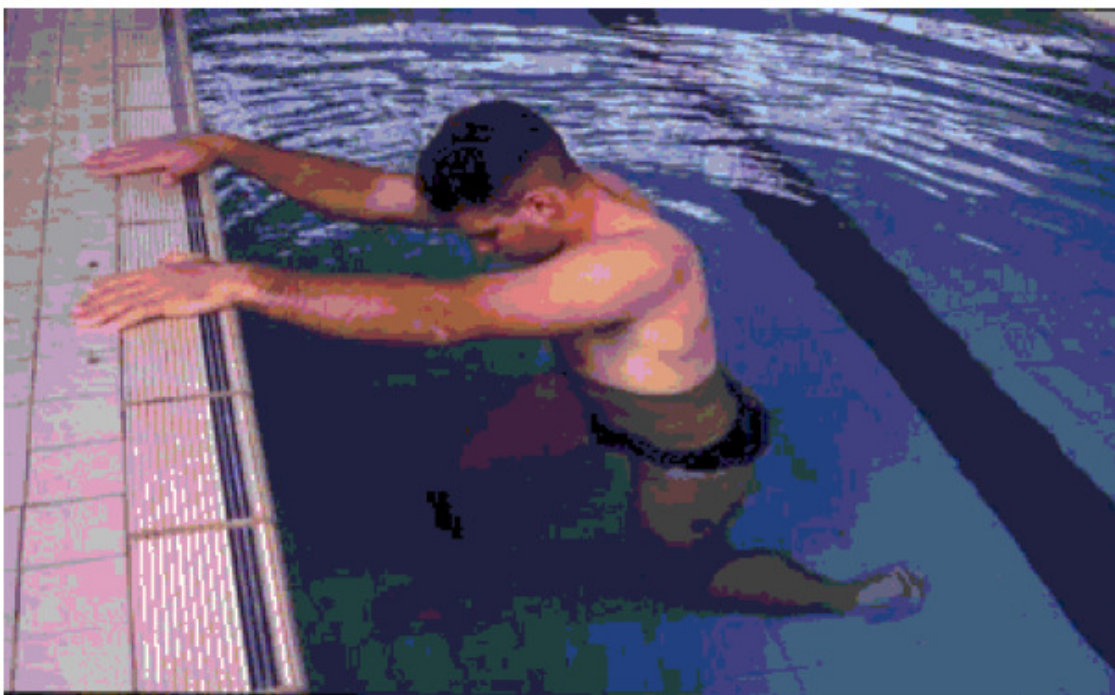


Photo 1: Static stretching in a pool after a game.

Cross-training can also be used as a form of active rest provided the work intensities are modest (light aerobic) and the exercises undertaken are different to those normally performed in training, e.g., pool work after a game (Photo 1).

Rest days are essential. Ideally at least one day per week should be a non-training day. This allows time for physical and psychological recovery as well as time for other interests and personal and family relationships.

Hydrotherapies

A wide range of hydrotherapies have been in use restoratively for several thousand years. Spas, pools, steam rooms, cold pools, and contrast temperature protocols were used by the ancient Greeks and Romans. One of the few published articles on the effectiveness of hydrotherapies comes from research with nationally ranked Finnish track and field athletes (Viitasalo et al., 1995). Researchers demonstrated that underwater massaging (using the jets in a spa) following plyometrics training helped athletes to maintain leg-explosiveness on the following day. In contrast, passive rest after such training resulted in a significant reduction in leg power.

The protocols used by the Finnish researchers were very similar to those used by the ancient Romans. Essentially, this routine involves first having a shower, followed by a spa (39 to 40°C) for three minutes and then a cold shower or a plunge into a cold pool (10 to 15°C) for 30 to 60 seconds. Warm immersion produces vasodilation of the peripheral circulation and the cold immersion encourages vasoconstriction. Three to five sets of this protocol producing rapid vasodilation and vasoconstriction will accelerate blood flow.

A contrast temperature following the same protocol as outlined above, was used by researchers from the University of Canberra in 1996 to measure lactate recovery in high-performance hockey players after a series of Wingate tests (Sanders, 1996). Results indicated that lactate levels were recovered equally fast by using either the contrast water immersion protocol or the active recovery protocol. Lactate recovery following passive rest was significantly slower.

Showering within five to ten minutes at the end of a training session is a good way to accelerate recovery of both lactates and peripheral neural fatigue. Contrasting temperatures can be achieved with a shower and bath at home or the use of a small paddling pool or tub for cold immersion.

Sports Massage

Many claims are made about the benefits of sports massage (photo 2) and numerous research studies examining these claims have been undertaken over the last 15-20 years. Despite this there is not much evidence-based science to substantiate many claims that are made about the benefits of massage (Calder, 1990). What little information that does exist provides evidence for increased muscle and skin temperatures, leads to a relaxation response as demonstrated by a reduction in resting heart rates, blood pressure and a decrease in excitability of the motorneuron pool. Improved mood states and feelings of well-being have been recorded in several studies and many athletes will use massage as both a means of relaxing physically and psychologically.

SOUTH AFRICA



Photo 2: Sports massage

Acupressure and Acupuncture

Acupressure is often performed as an adjunct to sports massage but acupuncture requires more extensive qualifications and is less accessible and more expensive than massage. Both acupressure and acupuncture focus on applying pressure or stimulus to specific points located on 14 meridians (line patterns) on the body

PSYCHOLOGICAL SKILLS

There are four main psychological strategies that are used to enhance recovery: debriefing, emotional recovery, mental toughness skills and relaxation techniques.

Debriefing

Debriefing is one of the most useful ways to evaluate performance and provide emotional and psychological recovery post training or post match. A successful debriefing approach helps both the coach and athlete to evaluate performances objectively, identify what specific changes are needed and then set realistic goals for the next training session or match. An excellent debriefing model that focuses on process rather than outcomes is outlined by Hogg (2002).

Emotional recovery / Contingency planning

In the case of a major setback or traumatic situation or event, additional resources and strategies may assist the athlete to manage this process and help them to take the first steps in "coming to terms" with the situation. It is important for coaches to identify in advance the strategy or strategies that they will use if such situations arise. Contingency planning is an important aspect of preparation for handling emotionally traumatic events.

Some of the simplest distracters to use during a tournament or competition are mood-lifting activities. These can include watching an amusing video or comedy show on television, reading an escapist or adventure novel, or going to a fun park, zoo or light entertainment center. A sense of humor and a feeling of comradie, or team support, are invaluable in times of emotional stress. For athletes in extended competitions away from home, and especially overseas, planning such activities as part of the tour is essential.

Mental toughness skills

Recognition of the complex interaction and strong relationship between physical and emotional states is important for recovery training. This is evident when muscle relaxation is observed in conjunction with lowered heart rates and blood pressures and improved mood states. Skills associated with developing mental toughness or emotional control and relaxation strategies, are important strategies for athletes to use. Positive self-talk and developing positive body language are some of the effective skills that have been used by elite tennis athletes (Loehr, 1992). These techniques can be used within training and match situations as well as afterwards and coupled with biofeedback techniques for greater effect.

Relaxation techniques

Many relaxation techniques are available. An athlete needs to practice only one or two techniques on a regular basis for these to become effective tools to use to aid recovery. Some of the more common relaxation techniques include: meditation, progressive muscle relaxation, visualization, breathing exercises, music, and flotation.

CONCLUSION

Every training session is important, as it is an opportunity to become an even better performer. Athletes should aim to start each training session or game in as fresh a state as possible so that they can maximize the training benefits and experiences of the session or event. Recovery strategies are aimed at helping athletes to do this by focusing on reducing residual training fatigue and stress.

Coaches can help educate athletes to understand, plan and use recovery strategies with a view to athletes learning to manage this for themselves. Effective monitoring and recovery management will enable both the coach and athlete to train hard, perform better and more consistently, to reduce training injuries and illnesses, and to develop sound self-management strategies.

The winning formula is:

Work Hard + Recovery Well = Best Performance

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ASSOCIATION OF ROWING COACHES, SOUTH AFRICA

CREATING TRAINING PROGRAMS

SPRACKLEN'S NOTES – PART 3

ROWING TECHNIQUE

STING AND FLOAT

Good rowing technique is a combination of POWER (muscular coordination) and BLADE control. A boat will only travel as fast as the blades drive it!

In a 2000 meter race an Oarsperson rows between 200 and 250 strokes in his bid for a medal. This is a small number compared with the many thousands rowed in a training period. Concentration of effort per stroke is obvious and it is one of the hardest things to achieve in the sport.

A stroke can be divided into two phases:

1. The Power phase.
2. The Recovery phase.

This System sets out to train rowers to apply full power to each stroke and to take a good rest between strokes, which will enable them to apply a high load for a long time.

The phrase 'Sting and Float' identifies the Power as the 'sting' and the recovery as the 'float'. Good technique is based on the coordinated strength of the oarsperson, which provides the power, and control of the blade to transmit that power into efficient propulsion of the boat.

The correct path for a blade, the sequence of movements, which coordinate muscular strength into power and the recovery phase, which helps the body to maintain full power for 200 strokes, is illustrated on the following pages.

BLADEWORK

The most efficient path for the blade is described as follows:

The blade should:

- Enter the water quickly in the most acute angle to achieve full use of the reach forward.
- Move quickly into the horizontal plane once it is covered.
- Accelerate from entry, through the middle of the stroke to the finish where it reaches maximum thrust
- Remain at the same even depth throughout the stroke, well covered but with the shaft clear of the water
- Leave the water quickly and cleanly at the end of the stroke and turn onto the feather only when it is clear of the surface.
- Travel forwards well clear of the water after extraction, at an even height until it comes down to the surface squared and ready for the next stroke.

It is important to avoid the following common **TECHNICAL ERRORS** for the reasons given:

1. BLADE MISSING THE FIRST PART OF THE STROKE.

The angle and speed of entry is critical. Length of stroke is lost and valuable leg drive is used inefficiently until the blade is covered.

2. BLADE TRAVELS TOO DEEP IN THE MIDDLE OF THE STROKE.

The direction in which the blade travels through the stroke is important. It must relate to the direction of the boat. A blade moving in an angle, which takes it deep into the water at the midway point, is inefficient: the blade achieves less grip, some of the propulsive force is misdirected, and resistance to the oarsperson is caused by the shaft breaking through the water. These are the main areas of inefficiency, but other problems created by a deep blade are height of draw, balance, rhythm and inconsistency.

3. RAGGED EXTRACTION

The blade must be extracted cleanly at the finish of the stroke at the moment full power is released. A blade that drags out of the water impedes the smooth flow of a fast moving boat.

4. BLADES NOT CLEARING THE SURFACE DURING THE RECOVERY.

The blade must be carried forward well clear of the water to avoid contact with the surface, a wave or another puddle. If the blade is carried too close it is necessary to lift the blade higher when it is to be squared for the next stroke. This movement just before blade entry inhibits the preparation for a good catch. It also leads to the blade missing the first part of the stroke as described before. A blade carried too close to the water restricts the free flow of the boat and the crew finds difficulty in keeping the boat on a level keel.

Correction of these errors is part of learning good technique. Understand what good bladework is, make sure the rowers are quite relaxed, and encourage them to look at their own bladework during technical sessions and inform them that practice makes perfect and mileage makes champions.

POWER

In the same way that oarsmen must apply their power together, the oarsmen must work their muscles in support of each other. The correct movements of the body to achieve this coordination of strength are described as follows:

1. The hands guide the blade into the water.
2. The legs provide the speed which gives the blade early grip on the water.
3. The muscles of the back, shoulders and arms hold firm and provide strong connection between legs and blade.
4. The legs provide the main source of the power and maintain firm pressure throughout the stroke. Soon after blade entry, the trunk begins to swing back and the shoulders send the seat forward, drawing the oar so that through the middle of the stroke all muscle groups are working together.
5. The trunk continues to swing back till the time the arms are pulling so that pressure is maintained on the blade whilst the boat is increasing its speed.
6. The oarsperson sits tall as his/her hands draw high into his/her chest at about the height of his second rib.
 1. He/she makes sure that his/her hands do not hit his/her body at the finish of the stroke.
 2. His/her hands move quickly and smoothly down and away from his/her body following the line of his thighs.
7. The inside hand turns the blade onto the feather immediately after it is clear of the water.
8. When the arms are relaxed and straight and hands clear the knees the trunk swings forward before the slide leaves backstops. The body angle is held all the way forward to the front stops in readiness for the next stroke.
9. The seat leaves backstops slowly and unhurriedly, but without wasting any time. The sliding forwards is in sympathy with the motion of the boat and it is during this phase that the rower rests and prepares himself/herself for the next stroke.
10. His/her legs begin to rise as the seat approaches front stops. He/she remains sitting tall in the boat and floats up over his/her knees ready for a long reach forward. He/she is quite relaxed, letting the speed of the boat running beneath him/her draw his/her seat forward to front stops.

The style is based on a powerful drive from the legs with other muscle groups working in support. Every available muscle is used to drive the blade. Immediately the blade is released from the water the rower relaxes. This allows his/her body to achieve some recovery. It is this recovery which enables the rower to apply full power to 250 strokes or the number of strokes it takes to row 2000 meters.

It is important that the following common **POWER ERRORS** are avoided for the reasons given:

1. SITTING TOO LONG AT BACK STOPS POSITION.

The sooner the sliding seat leaves backstops the slower it needs to travel. At the rate of thirty, the time available for sliding forward with a good rhythm would be under 1+ seconds. Clearly, time spent sitting too long at backstops has to be made up to avoid the rate dropping, and the rower ends up sliding faster forward.

The momentum generated from the power of the stroke should be channeled into a smooth and lively recovery of the hands leading the body forward and the seat from back stops without wasting time.

2. SLIDING TOO FAST FORWARD

The speed of the sliding forward should not exceed the speed during the stroke. Sliding too fast forward does not allow the rower to rest fully. There are other disadvantages in that it does not permit smooth running of the boat, the rower loses feel for the boat and he/she is hurried into the forward position from which he/she is unable to time his/her next stroke. Falling or pitching over the knees at front stops stems from sliding too fast forward.

3. STRETCHING FOR MORE LENGTH FROM FRONT STOPS POSITION.

The length of stroke, determined by the angle of the body in the forward position, originates from the swing forward of the trunk from backstops. Attempting to reach for more length once the slide has left backstops often has the opposite affect. Diving forward for more length can cause the body to fall onto the thighs and actually prevent good length forward.

Stretching for more length, putting strain on the arms and back, at a time when the body should be set ready to spring onto the stroke, not only prevents a good beginning but it puts strain on the back which sometimes cannot hold firm. This leads to slide shooting which is a common fault!

Another common fault, which is linked to stretching for length, is the hands dropping which lifts the blade too high off the water. This inevitably means that the first part of the stroke is missed.

4. SHOOTING THE SLIDE.

When the legs drive at a faster pace than the hands move, it is evident that the back muscles have not held firm and some of the leg power is wasted. There is also the risk of injury to the back muscles. Stretching for more length forward is a common cause of slide shooting. It is important that the trunk holds firm as the legs drive the blade into the water.

5. OPENING THE TRUNK AT THE BEGINNING OF THE STROKE.

Young people and sometimes newcomers to the sport are often weak in the lower back and have difficulty in holding the trunk firm against the power of their legs. In these circumstances it is advisable to teach the technique of opening the body before driving the legs. This places the back in a stronger position and more able to hold firm. As development of the back muscles takes effect, gradual change in the technique should be introduced. It is very difficult to achieve a good catch in a fast moving boat without full use of the legs.

6. BODY CURLING FORWARDS AT THE FINISH OF THE STROKE.

This fault occurs when pressure is reduced on the blade during the last part of the stroke. With no support, the body curls forwards. This reduced blade pressure is caused by either of the following faults:

- I. Using the arms at the beginning leaves the rower less arm strength with which to draw the finish. This also eliminates the powerful latissimus dorsi and reduces the effect of the deltoids (shoulders), gluteals and erector spinae muscles.
- II. When the back does not hold firm against the leg drive, the legs reach backstops ahead of the stroke in the water. The arms are unable to cope with this amount of work left to do and pressure on the blade is reduced.
- III. Opening the body at the beginning of the stroke which delays the leg drive and reduces the effect of the legs so that co-ordination of the muscle groups is less efficient. The weakness shows at the most vulnerable part of the stroke, i.e. the finish.

The oarsperson sits tall in the boat as he/she swings back at the finish, applying full body weight to the blade. This swing back supports the draw with the arms, and pressure is maintained on the blade of an accelerating boat. It is with this pressure that the body recovers itself for the next stroke.

7. UNCONTROLLED SLIDE FORWARD AND POOR PREPARATION OF THE BODY.

The hands extract the blade from the water in the lively flowing movement leading the body into an inclined forward position and the seat into motion, sliding to front stops. The rower relaxes during this recovery phase to help the body achieve some rest and to prepare for the next stroke.

It is a common fault to move the seat off backstops with the arms still bent and the body not fully inclined forward. The effect of this is:

- I. The hands are carried too high so that they can clear the knees as they rise. The blade is carried too close to the water, which also impedes the balance of the boat.
- II. The body swinging forwards as the slide approaches front stops will fall onto the thighs and prevent a good forward reach.
- III. The last minute reach forward prevents the rower from preparing well for the next stroke.
- IV. The oarsperson is less able to relax and have sufficient rest. Tension will be likely in his hands and shoulders.
- V. The stern of the boat will drop rapidly just before the catch as the oarsperson pitches forward from front stops.
- VI. The body will be in a weaker position for the next stroke.

CORRECTION OF FAULTS

Understand what a fault is and accept that it exists.

Identify the cause of the fault.

Understand what good technique is and practice it.

Practice makes perfect.

SCULLING TECHNIQUE

Three factors determine the speed of the boat. They are:

1. Power - how fast the boat travels each stroke.
2. Length - how far the boat travels each stroke
3. Rate - how many strokes are rowed.

If a crew rowed at maximum capacity in all three of these components at the same time, it is doubtful that crew could row 10 strokes before technique withered and boat speed faded. The number of strokes required to complete 2000 meters is about 250 and clearly, an equilibrium of power, length and rate must be achieved. Rowing is basically a power endurance sport, but it requires a high level of skill. Choosing the "*right*" technique and then teaching it is a coaching skill and there are many differing opinions about which method is the best.

Whatever the method, power, length and rate are the basic ingredients.

RATE

Rate is the easiest to achieve. Keeping it at its optimum in a race is not the main problem. Length and power are the first to deteriorate when the pressure of the race reaches its peak.

LENGTH

The most efficient part of the stroke is when the blade is passing at 90 degrees to the boat. Only when it is at this angle is its force propelling the boat wholly in the correct direction. In theory, an efficient length of stroke is from 45 degrees at the catch to 135 degrees at the finish. In practice, the body prevents the arms from reaching more than 125 degrees. To achieve 45 degrees at the catch, the reach must extend beyond this angle. A longer finish can be drawn in a sculling boat but it is inefficient to draw more than 130 degrees.

POWER

Maximal power is achieved by appropriate sequencing of the contributing muscles from strongest to weakest.

- Legs first. The quadriceps and gluteals
- Then the Back. The lower back.
- Then the Shoulders and Arms. The latissimus dorsi, trapezius, rhomboids and biceps.

THE STROKE

The boat goes only as fast as the blades drive it. The power transferred through the blade to the boat is only as much as the legs supply. A good technique is based on the work of the legs to create most of the total power.

THE CATCH

The faster the blade enters the water the more positive will be the grip, the longer will be the stroke and the faster the boat will travel. The important points are:

1. Hands guide the blade into the water.
2. Legs apply the power
3. Trunk and arms link legs to blade

MIDDLE OF THE STROKE

All the muscles are working through their middle range and the blade is at its most efficient point in the stroke. Make full use of this advantage by beginning the draw with the arms before midway. The arms must start to draw well before the legs reach the backstops.

THE FINISH

Retain pressure on the blade through to the finish by pressing toes on the footboard, by using the leverage of the trunk, and by keeping the arms working with the body. Although legs reach backstops before the arms and trunk have finished working, the toes should continue pressing hard to give support with the back until the blade is extracted. The trunk should be moving towards the bow until the moment before the hands reach the body (if the arm draw starts too late, this timing will be delayed).

RHYTHM

The rowing stroke comprises fast movements and slow movements. The essence of good rhythm in the boat is the contrast between them. Done well, a good motion looks smooth, continuous, and unhurried but it can be difficult to see that contrast. The *fast* movements begin with the entry of the blade and continue through the stroke and the movement of the hands away from the body after blade extraction (the finish). The slower movements begin when the hands pass over the knees and continue until the next stroke. The inertia created by the power of the stroke carries the hands down and away from the body when the seat is at the backstops. The body relaxes immediately as the blade leaves the water so there is no interference with this natural free-flowing movement. The seat moves *slowly* forward in contrast to its speed during the stroke. The rower prepares by gathering, ready to spring from the stretcher onto the next stroke. The movement of the seat must be faster during the stroke than it is during the recovery. The sooner it leaves the

backstops after the finish, the more time it has to reach the front stops and the slower it can travel. The hands and then the body move lively away from the finish to allow the seat to start on its way forward.

THE RECOVERY

Hands, Body, Slide...

1. Move the hands down and away over the knees
2. Pivot the body forward onto the feet
3. Move the seat away from the backstops.
4. Move forward, rest the body and let the boat run underneath you.

PREPARE FOR THE STROKE

To achieve optimum position for the application of power and good forward length - note the following points of posture:

1. Head high encourages good posture for body and spine
2. Chest against thighs. Rotation should be centered around the hip joint, not the upper or lower back
3. Shins vertical - strong position for the quadriceps
4. Relaxed but alert - poised like a cat ready to spring

SCULLING

The oar handles should be held in the fingers, not the palms. The hands should generally be at the tips of the oars to maximize inboard leverage, with the thumbs pressed against the handle nub to generate sufficient outward pressure against the oarlock. As someone said, "The handles should be grasped like one is holding a small bird: firmly enough to hold on, but not so hard as to kill it." The grip of the fingers around the oar will automatically increase sufficiently when contact with the water is made. The arms and hands should extend along a horizontal plane out well over the gunwales as the blade angle is increased in preparation for grasping the water. The entry of the blade into the water will be accomplished with a relaxation or slightly positive "flick" of the hands and arms while maintaining the blade angle (not opening the back) to achieve the catch.

RELAXATION

Contract only those muscles needed to perform a specific function. This is achieved by relaxation of the hands, arms and shoulders, the areas where tension will be most prevalent. The muscles of the upper body will be more effective if they begin the catch in a relaxed condition. Muscles will contract instantly when a load is forced upon them.

BLADEWORK

The importance of bladework must be appreciated. Only the blades move the boat, therefore an important part of the technique is the skill with which the blades are controlled.

Good blades have these characteristics:

1. A long stroke in the water | Minimum loss of reach forward/Quickly grip the water | Covered throughout the stroke.
2. Utilize power/Grip the water with minimum loss of leg drive/Work in a horizontal plane/Covered throughout the stroke.
3. Do not interfere with the run of the boat/Clean extraction/Carried forward clear of the water/Balance the boat.

RHYTHM - WHERE TO POISE

It is always necessary to compose before any dynamic action (e.g. Lifting a weight, striking a note, hitting a ball, or rowing a stroke). The question is "where is the best place to "poise" prior to the action? There are different ideas in rowing on where the poise should be.

The current method is to poise during the last part of the movement towards the front stops. The inertia created by the draw at the finish is used to carry the hands away from the body, the trunk into the catch angle and the seat from backstops. The rower has time to relax, let the boat run under the seat, and to prepare for the next stroke. The poise just before blade entry is sufficient to achieve a very fast catch.

SCULLING STYLE

Sculling styles differ in where emphasis is placed. Body positions and movements will be influenced by this emphasis. The method should be based on rhythm. The stroke is divided into two phases:

1. The Stroke or power phase, and
2. The Recovery or resting phase.

Scullers are trained to apply full power to each stroke and to rest during recovery, which will help them apply power to 250 strokes or the number required to complete the race.

The ability to apply power is an essential physical requirement. Physical capacity is acquired by training but the coordination of muscular contraction in the rowing stroke is the essence of good technique.



PARENTS

A GAME PLAN FOR MOM AND DAD

“Guidelines, do's and don'ts for parents who want to effectively assume their role in helping their child to have the best athletic experience he or she can possibly have.”

At Champions Academy we are on a constant quest to help prepare our basketball players for the challenges that they will face in their coming games. However, it is not just the players who need to be prepared; parents of athletes in all sports need to strive to do their best throughout the seasons of their child's career. The parents that we work with normally have a passion to help their son or daughter perform at the highest level on and off the court. It is my desire, by way of this article, to “coach” you the parent, to maximize your impact, influence and enjoyment during the season. These years have the potential to be the best years ever, if you can better understand what goes on in the heart and mind of your child's coach, know how to effectively communicate with your athlete, as well as realize the fact that you are a public figure and that this is a potentially glorious time of building a richer lifelong relationship with your son or daughter.

What coaches would like parents to know and understand.

Having coached at the high school, college and professional levels of basketball during a 17 year coaching career and also being the son of a coach, I have spent my entire life around coaches. It is my belief that coaches would like parents to know a few things about them and the jobs they do. To begin with, coaches make their decisions based on winning, first and foremost—not on whom they like or dislike. No coach wants to lose! In fact, their job depends on winning. Several times in my career I started and played players with whom I had virtually nothing in common, and, honestly, I didn't appreciate their lifestyles and apparent priorities. None-the-less, they were among the best on my team and consequently played absolutely as much as their performance earned. Apart from discipline and violation of team rules and things of this nature, no coach that I have met kept a player on the bench because he didn't like him, if that player could help him win. Please, understand that coaches don't get into the profession to cheat your son or daughter. Most of the time, coaches decide to get into coaching in an attempt to positively impact lives, not to hurt or destroy them.

The next thing I believe coaches would want you to understand is that playing time and style of play are determined after careful evaluation of numerous practices and countless hours of watching film and contemplation. Parents and fans do not see the total picture. For example, the last two minutes of a lopsided game when a player comes off the bench and hits back to back three-pointers is not normally a true indicator of the player's skill—he probably has proven his lack of skill throughout many shooting drills and scrimmages, hence the sparse playing time.

Also, sometimes the best team in basketball is not the five most talented players. Team chemistry, role playing, specific match-ups and game plans often determines the five players who are on the court. We need only to look at the past Olympic and World Championship basketball competitions to prove that the five most talented players do not always make the best “team”. Just because your son or daughter can beat one of the starters one-on-one doesn't mean he or she should be starting. A coach considers many things relative to who gets on the court. The legendary, Hall of Fame coach, John Wooden played the players who he thought “worked best within HIS idea of the team concept”. Obviously, coaches use both tangible and intangible criteria to determine playing time. Intangible criteria would include things like coachability, hustle, attitude, punctuality, work ethic, commitment and attention to detail. These intangibles are certainly factors in coaching decisions.

It is vital to understand that parents like it or not, cannot be truly objective in evaluation of their son or daughter's ability and performance. Even my dad, a former college head coach, couldn't accurately see my weaknesses; neither can I see clearly my children's flaws. Parents love their children and look through the lens of what is best for the son or daughter vs. the coaches' lens which sees the players as for what is best for the team. Wooden frequently assured the players and parents of those he recruited that “he ALWAYS acted in the best interest of the team.”

Effective and healthy parent-child communication

The second concept that I believe impacts the athletic experience is the parent's ability to effectively communicate with their child. The most important thing you need to communicate to your child, especially right after a game, is unconditional love. There are plenty of critics out there. In fact, immediately after the game the coach critiques the team and some individual players in the locker room. The fans give constant feedback on your son or daughter's play by way of applause, boos, or perhaps non-verbal expression. The media will also grant unsolicited critiques of your child for thousands of others to hear or read. Your child needs to know that you love him or her regardless of the performance. This unconditional love will positively impact your child more than any clever, insightful critique you might convey.

As a parent, however, you do have an important evaluative critique to lend to your child. This critique is in the area of his or her behavior and attitude during the game. Many times a coaching staff will be so into the game that they will not see your child's attitude when he or she was taken out of the game, or a trash talking burst away from the live play or a disrespectful response to an official. You have a role and a responsibility to help your child be respectful and sportsmanlike in his or her actions and behavior. If your child doesn't pay attention during time-outs or plays around on the bench, you most certainly need to make this correction!

While you have a job to do regarding your son or daughter's attitude and behavior, you need to understand that you truly have great potential to destroy a team's morale by your words to your child away from the gym. Any words spoken negatively about the coach will most certainly impact your son or daughter. Whether you realize it or not, you have a position of great influence on your child. If you say the coach is "no good" or that he made an awful decision or that he is cheating your child, etc., that will stick with your son or daughter and will instill disrespect and hinder your son or daughter's coachability and enthusiasm. Have you ever walked into a room where someone was talking behind your back? You may not have heard a single word spoken, but deep down you knew that they were talking about you. When you speak negatively about the coach a negative climate or spirit is similarly created. The coach may not know exactly what is going on, but he'll feel something isn't right and in the end your child will suffer. If you care about your child, you must NOT speak negatively about the coach, especially to your child. A player being able to **trust** the coach and the coach being able to **trust** the player is an overlooked, yet significant factor in a successful season—negative words destroy the element of player-coach trust.

This concept applies to your words about the other players on the team. If you are derogatory about another player on your child's team, you can bet that your son or daughter will speak of that player in the same manner. It is one thing to say that so and so didn't shoot well or that he didn't play as well as normal, it is another to say that he is awful and shouldn't be playing.

Every season provides many "teachable moments" for parents.

It is true that a parent needs to strongly support the decisions of the coach and **not** lend "coaching" from the stands, but there is an area that a parent needs to "coach" and that is in the area of teaching life skills. Regardless if the events in the season are good or bad, can be excellent "teachable moments" for a parent that is looking at the big picture. If your child is on the bench and is only playing a few minutes, you need to teach him the concept of finding a way to contribute to the team by working hard in practice, cheering on the team during games, staying focused during the game so as to be prepared if and when his chance comes. Everything that happens during a season can help prepare your child for potential situations in the game of life. For example, if the coach happens to be a "yeller", well, your child may have a boss that communicates in the same way, and you can prepare him/her to listen to **what** is said not **how** it is said. Or, if the team is losing and your child feels like giving up, you can teach him or her that they may be in a marriage someday that is not going well, but if they will keep trying and working, things can turn around. You as a parent hold an important job in helping your child grow and mature and the season can give you tremendous, practical, teaching tools-- **if** you will constantly be aware of the bigger picture. Remember, this quote from my Hall of Fame football coach (and father-in-law), Dick Dullaghan, "It is not what you get for playing, but what you become because you played that is most important."

The parents of an athlete are really public figures

The third major concept for you to keep in mind as a parent of an athlete is that you are a public figure. In my years as a college basketball recruiter, I would often go into high school gyms, invariably, someone would ask me who I was there to recruit. After I would tell them, they would almost always point out to me who and where the parents of the person I was recruiting were sitting. The majority, if not everybody, knows who the parents of the players are. With this in mind, you will not only be known by the general public, but you will also be perceived as an expert on the issues surrounding the team. Anything that you say in the stands or around town will be taken as the truth and will be repeated with your name attached for credibility. If you bash the coach or even quietly agree with someone criticizing the coach, you can be pretty confident that it will make its way back to the coach. Further, your non-verbal expressions in the stands will be observed by those who are around you. If you throw up your hands when another player misses a

jump shot or turns the ball over, know that that person's parents and friends will see it. Self-control is a big challenge for you during games to be sure.

Also, you need to resist the temptation to respond to the negative comments made in the stands. Often the mean and nasty comments are spoken out of jealousy or ignorance. If you respond, you risk causing a scene. Having coached in the NBA, at the high major D1 level and also at the high school level, I know that anything involving family members before or during a game will negatively impact the player. I strongly suggest that you act like you didn't hear the negative comments or get up and move seats, but don't let your son or daughter catch you in an argument.

As I mentioned, I have been in countless gyms as a neutral observer and have seen some ridiculous actions performed by normally sane parents. If you could see how foolish you look screaming at the officials for a call (that many times really wasn't that bad), you wouldn't do it. Yelling at the refs honestly doesn't help your cause and some times actually hurts your child and the team. At times, I would watch a parent of a kid I was recruiting make a fool of him or herself and wonder if I really wanted to deal with that parent for four years. Additionally, by yelling at the refs you give your son or daughter an excuse for not playing his or her best.

On the positive side, as a parent you have an opportunity to support the other players and to be a witness of unselfishness and sincere care for the team. When a parent supported the team regardless of how much his/her child played or how well the team was playing, it made a tremendous statement to the coaching staff and other parents. I have seen it the other way. For example, a parent travels to every game and is very enthusiastic, etc., but as soon their son or daughter's minutes get cut or he/she gets injured and can't play, the parent is nowhere to be seen. This sends a message to the other parents and the players that it was all about their kid, not the team. If you want to contribute to the program, then it has to be about the team, not just about you and your son or daughter. By the way, the spouse of the coach does not need to be the object of your dirty looks nor should she (he) be rudely ignored. The spouse does not control your son or daughter's playing time nor does she (he) coach your son. Being mean to her (or him) is not only ridiculous but also shows a total lack of class. It is easy to lose your mind when it comes to your child and go after people who really have no intent to harm your child.

A tremendous time to enrich the parent-child relationship

The final point which I want to make is for you to enjoy this "season of life" with your child. Try to make this time special, for it ends so quickly. Every step up the ladder—from elementary to jr. high/middle school to high school to college to professional eliminates thousands and thousands of players would like to be on the team, but get cut. Be grateful that your son or daughter has a spot on the team, regardless of how good he or she might be. It is so important to the athlete that you are at his/her games—far more important than he or she might let on. You should see how the players fight for and make sure their parents have tickets for the games at the college level. Personally I know how good it felt to have my mom and/or dad at the games. If we lost or I played poorly, it was so comforting to see a caring face. The old saying applies—"family multiplies the joys and divides the sorrows". Take every opportunity to help multiply the joy of the athletic experience and divide your child's sorrows through it.

Finally, don't let playing time, losses, or difficult moments steal the joy of being actively involved in supporting your son or daughter. When I played basketball at Miami University, one of my teammate's dads exemplified this concept of enjoying the experience and it not only blessed his son but all of us on the team. My teammate, Jeff Fuerst, sometimes started and sometimes didn't even get in the game during our freshman year. For some parents this would have caused them to be angry with the coach ("How could my son play so well last game and not even play this game?!), not Jeff's dad—he was upbeat, supportive and positive to Jeff, the coaches and the rest of the guys on the team regardless of how or if Jeff played. I honestly looked forward to seeing Mr. Fuerst at the games that he could attend. Jeff's dad lived in Chicago which was quite a drive to Oxford, Ohio, but when he couldn't make the weekday games, he would drive around Chicago until he could get to a place that the game tuned in on his car radio through the static. Let me tell you, Mr. Fuerst made the most of the experience and consequently helped his son maximize the joy of being part of a basketball team.

My hope and prayer for you and your son or daughter is that you will cherish the opportunity to experience this season of life together. This season won't last long, so make it the best it can possibly be.



STRENGTH TRAINING

GREAT LIFTS

HOW WE TRAIN:

At the USOC, we center our training programs on closed-kinetic chain, multi-joint free-weight exercises. Chiefly among these are the lifts associated with the sport of Weightlifting, the clean, snatch and their respective derivations. This article will discuss only the weights portion of our program.

BENEFITS OF FREE-WEIGHT EXERCISES:

Ground-based, free-weight exercises, such as the Weightlifting lifts (i.e. cleans, snatches, & pulls), squats, presses and their derivations, are multi-joint activities executed while standing that stress the vital action/reaction principles so important in sports (1). Free-weight exercises can offer higher metabolic demands, and greater stabilization, coordination and balance when compared to machines (2,3,4). Machines tend to eliminate the need for stabilization, coordination and balance since they are usually designed to train muscles rather than movements thus reducing the metabolic demand. Machines operate in fixed movement patterns that don't conform to the athlete's individual range of motion, but rather, conforms the athlete to the machine's range of motion (3,5). Training in a fixed axis with partial movements eliminates total body involvement and drastically reduces synergistic development.

It can take a great amount of practice to become proficient with free-weight exercises such as power cleans, squats, and presses. Although machines can and do play an important auxiliary role, anybody can walk off the street and perform a leg curl. This is where the strength and conditioning professional steps in. If you are to adequately develop as an athlete you must train as you're going to compete.

Training as we compete is the key. Most sports require the athlete to perform explosively. Rapid displays of speed, quickness, agility, power and strength is necessary for sporting success (6, 13). These displays are executed in coordinated, full-body actions. One must condition the body to meet such demands. Free-weights allow the athlete train in such a manner. Further information regarding explosive training can be found at coachesinfo.com.

Some coaches cite safety as a concern in choosing machines over free weights. The goal should be to prepare the athlete so that they are less susceptible to injury in the competitive arena not the weight room. How will the athlete be better prepared to meet the demands of the game if conditioning is not similar? The answer is they won't be. Safety is definitely a concern though. Proper care must be taken when selecting equipment, facility layout, staffing, and exercise instruction.

THE LIFTS:

We feel the following five exercises, and their various derivations, are important in the development of our athletes. This list is by no means exhaustive; there are many other exercises that we will include in our training routines throughout the year as well.

THE WEIGHTLIFTING LIFTS:

The weightlifting movements (clean, snatch and their derivatives) are ground-based exercises that require total body involvement from a standing position. They stress the ground-based action/reaction principles of most sports. The lifts utilize triple extension (hips, legs, and ankles) very similar to sprinting, jumping, and other athletic movements.

As a strength coach, exercises should be selected based upon athletic movement patterns, not just muscle groups (7). The power production potential these lifts offer are unequalled by most other forms of strength training (8, 13). They also require high levels of timing, coordination, flexibility and balance with each repetition. In other words, they require a fair amount of athleticism to be performed correctly. These lifts (along with squats) are the core of our programs. The athlete must act explosively in order to be successful at them. The athlete will become accustomed to not only imparting force but receiving it as well. The derivatives of the clean and snatch include cleans, power cleans, clean pulls, snatches, power snatches and snatch pulls from various starting positions. Emphasis must be placed on the importance of technique in the execution of these lifts. It is imperative for attaining the benefits and for safety that instruction is sought from qualified individuals.



The Clean



The Snatch

SQUATS:

The squat is considered by many coaches to be essential for the overall physical and athletic development of both male and female athletes (7,9,10,11). The benefits derived from squatting include increased ligament and tendon strength and bone density (3,10,12); increased development, strength, speed and power of the lower back, hip and knee musculature (3, 10); as well as an improved neuromuscular efficiency (3,10). Variations of the squat include the back squat, front squat, overhead squat and 1-leg squat.

Again, technique is paramount.



Back Squat

THE ROMANIAN OR STIFF-LEG DEADLIFT:

The Romanian or stiff-leg deadlift is another ground-based exercise that is an integral part of our program. It is effective in developing the posterior chain muscles. The most involved of these are the spinal erectors and hamstrings. It is our observation that a majority of hamstring injuries occur near the upper portion or origin of the hamstrings. This also appears to be the area where most of the stress is focused during the execution of the Romanian or stiff-leg deadlift. It can help reduce the chance of injury by strengthening the hamstring in a stretched position which appears to be the position in which most injuries occur.

This lift also plays an assistive role for the weightlifting movements by strengthening the pull. It can be executed with clean or snatch grips and on one leg.



The Romanian or stiff-leg deadlift.

THE MILITARY OR SHOULDER PRESS:

The military or shoulder press is an excellent upper body developer. This development includes the entire shoulder girdle, arms and upper back. This exercise is best while standing for entire body involvement. Other variations include push press, jerks, and dumbbell work.



The military or shoulder press

THE PULL-UP

The pull-up is another effective upper body exercise. The pull-up tends to be a challenging exercise for many athletes, which is another reason for its inclusion. We often have our athletes execute this exercise with additional weight in the form of a weighted vest or weight connected to a belt as well as a variety of different grips. The pull-up is also an effective developer of grip strength.



The pull-up

For further information on strength & conditioning, weightlifting, and explosive exercise visit www.coachesinfo.com.

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