

This fitness program has been developed for a 20 year old male athlete (full-time professional). The athlete already holds a high level of fitness acquired throughout their career as a junior. The athlete has just been selected into a senior high performance squad. The program is designed to prepare an elite athlete for the competition phase of the squash season. The aim of the training program is to increase the athlete's strength and power, develop their energy systems, increase their level of skill and develop them psychologically.

Predominantly, squash uses the lactic acid system; an anaerobic energy pathway. This is due to rallies lasting for a short amount of time (7 seconds on average) but requiring a high level of intensity. The lactic acid system provides a maximum level of energy output that can be sustained for around three minutes, depending on the athlete's ability to tolerate and remove lactic acid and the blood glucose level. This energy system's fuel source is glucose, which is stored in the blood. After the event, the athlete requires around 90 minutes to recover, in this time the body is removing lactic acid from its system, restoring glycogen to the muscles and increasing the athlete's blood sugar level. Lactic acid builds up through anaerobic glycolysis; the process that converts glycogen and glucose to adenosine triphosphate in the absence of oxygen to supply energy. The ATP-PC system provides a maximum amount of energy for around 15 seconds. This system provides energy through ATP splitting, where the ATP molecule loses a phosphate ion to release mechanical energy. As there is only about 90 grams of ATP in the muscles, the system can only sustain this process for two to three seconds. This process requires no oxygen and produces no toxic by products. The splitting of creatine phosphate provides energy to resynthesise the ATP molecule, this process can last up to 10 seconds. The ATP-PC system provides little input in supplying the athlete with energy as it cannot be sustained for a prolonged period of time. The anaerobic systems are used for explosive movements and accelerating. Squash is a sport that requires short, explosive movements in all directions. The aerobic system becomes the dominant energy system when the heart rate drops below around 70% of the maximum heart rate. The oxygen system is used in periods of recovery and when the intensity of the activity is low. For example; during breaks between games, in between rallies and towards the end of the match when fatigued. This program is designed to increase the athlete's VO_2 max, therefore increasing their aerobic capacity. Activities that do this are continuous training, circuit training and fartlek training. The athlete's program incorporates sessions of cycling, circuits, speed play and hill runs. These activities follow the F.I.T.T. principle; outlined further on. Adding short sprints into the activities help to increase lactic acid tolerance and develop the anaerobic systems. Increasing the athlete's aerobic capacity allows them to recover quicker and lowers their risk of soft tissue injury.

To improve performance, all training programs require activities that increase aerobic capacity, increase flexibility and develop strength. For a fitness program to be effective, these three aspects must be balanced, in order for the athlete to improve.

Specificity is the training principle that applies the theory; 'you get what you train for'. In other words, the success of the program is closely related to how close the activities are to the actual performance. Squash requires a high level of anaerobic fitness as well as a high aerobic capacity. The athlete also needs; muscular strength to move around the court, muscle power for explosive movements and muscular endurance to perform for an entire match. Squash also requires specific skills related to court movement and efficiency and technique when striking the ball. Activities such as cycling, fartlek training and circuits are designed to increase the aerobic capacity and raise the anaerobic threshold of the athlete. These two goals are achieved by maintaining a heart rate within the training zone (70-80% of the maximum heart rate) for a minimum of thirty minutes and working for a short time with the heart rate above the anaerobic threshold (greater than 80%). Squash also requires a high amount of leg power and strength. These aspects of fitness are developed through resistance training activities that focus on the muscles used. For example; the gluteus maximus, hamstrings, quadriceps, gastrocnemius, deltoids, trapezius, biceps, triceps and pectorals. Resistance sessions that use a high load with a low amount of reps and a low number of sets are used to develop strength. Plyometrics are combined with these sessions to increase the power that the athlete is capable of. Plyometrics work on increasing the strength and the length of the eccentric contraction. As a result; the concentric contraction is stronger, resulting in more power produced, propelling the athlete forward with a higher velocity. Flexibility is an important part of squash as it reduces the risk of injury and leads to greater power. The key areas that require flexibility are the legs, torso and the shoulders. This allows the athlete to manipulate their body in order to retrieve the ball and play a good shot. Yoga is used to increase the flexibility of the key areas. Stretching sessions that incorporate static, ballistic and PNF stretches are also used to provide the athlete's joints with a greater range of movement. Functional training sessions are used to develop core strength and posture. The body generates most of its strength and power from the core of the body, or the abdominal and lower back regions. To ensure that maximum power can be generated and peak performance can be maintained for an entire match, functional training is used to increase the athlete's strength and able them to maintain equilibrium. The theory that if the body is balanced, posture is correct and the two halves are inline, then the shot produced will be perfect is tested by the athlete's core strength and endurance as it affects their ability to repeat and hold the correct position many times. The most important sessions of this program are the on court sessions. They provide the athlete with invaluable skills that are directly applied in a match situation. Muscle memory movements are an essential part of the program. They isolate the player's ability to move efficiently and quickly around the court and apply themselves in the correct position to produce an effective shot. They also simulate the fitness requirements demanded by a match, allowing the athlete's body to adapt to the conditions. Developing muscle memory is also important as it teaches the muscles to move to the ball subconsciously, leaving the player to anticipate their opponent and create their own shots. Activities using the ball allow the athlete to experiment with their shot placement and timing and practice specific routines that can be put into practice in a match situation. Fitness testing applying the principle of

specificity is an essential part of a fitness program. It allows the athlete's adaptation to be measured quantitatively when skills specific to squash are tested. From the results, the coach or athlete can then revise the areas that require more focus and the areas that do not need as much attention.

For an athlete's performance to improve, the load must be greater than normal. This forces the athlete's system to adapt to the higher load, becoming stronger. Progressive overload is applied to this program so that the athlete gradually adapts to greater loads, leading to an increase in performance. Load refers to the intensity, time, frequency, resistance and distance of an activity. To increase the strength of the athlete, the resistance is gradually increased and the number of sets and repetitions is increased or decreased. Resistance is decreased every second week to allow the athlete to adapt to the higher load, the load can then be increased to a greater amount the following week. For an increase in aerobic capacity to be achieved; the distance, time and intensity of activities are increased gradually overtime to force the body to adapt to a higher demand. These activities also increase the athlete's aerobic capacity and raise their anaerobic threshold, allowing the athlete to work at a higher intensity before producing lactate. The increase in load gradually becomes less as the athlete becomes closer to their peak performance.

By raising the training thresholds, the athlete can work at a higher intensity for longer before experiencing fatigue. The athlete's aerobic capacity is increased by working the athlete at an intensity that raises their heart rate above the aerobic threshold and within the training zone. To develop the athlete's aerobic capacity, they must sustain a heart rate within 70-80% of their maximum heart rate (the aerobic training zone). For the athlete to increase their anaerobic capacity, they must perform an activity that raises their heart rate above the anaerobic training threshold (greater than 80%). In this state, the athlete will begin to produce lactate, which inhibits performance. The aim of this type of training is to increase the intensity they are able to work at while using oxygen, which enables them to work at a higher intensity before producing lactic acid. The fitness program incorporates activities that increase the athlete's aerobic capacity. These include; fartlek training, circuits and continuous training. Sprints are added into these activities to increase the athlete's anaerobic capacity. Hill runs increase the athlete's anaerobic threshold, allowing them to work at a higher intensity while using oxygen.

If the training program is interrupted due to injury or another factor, the detraining effect may arise. This is where the athlete begins to lose the fitness they have gained. The faster an attribute is increased, the faster the athlete will lose it, so it is important to gradually develop increases in fitness. If the program must be interrupted because of an injury it is important to maintain total body fitness. This reduces the chance of experiencing a second injury on return to play. It also lessens the effects of reversibility. For example, if an ankle injury is incurred, upper body work can still be performed and activities such as swimming can be used to maintain aerobic capacity.

It is important to vary the program to avoid boredom and to keep the athlete motivated. Rotating activities such as cycling, fartlek training, circuits and hill runs assist in keeping the athlete motivated. The addition of modified games also introduces fun to the athlete's schedule while developing their skills at the same time. It is also important to vary the structure of an athlete's schedule to reduce the predictability as it will increase the monotony of full time training.

A thorough warm-up is essential. It prepares the athlete physically and psychologically for high intensity performance. The aim of a warm-up is to increase the temperature, flexibility, oxygen intake and blood flow of the athlete. This leads to a higher performance and reduces the risk of an injury occurring. Warming-up also causes the athlete to be less fatigued at the end of the session and aids them in a quicker recovery. The mind is also stimulated and prepared for competition by warming-up. An important rule to follow when warming-up is 'sweat before you stretch'; this reduces the risk of muscle damage when stretching. Gross motor movements should be performed to increase temperature and blood flow. This should be followed by a stretching session, callisthenics and skill rehearsal to complete the mental and physical preparation. Some athletes may also have psychological techniques to reduce stress and raise or lower arousal levels. Cooling down after a session helps to remove any lactate build-up which leads to stiff muscles and a decrease in performance. It also assists in restoring muscle length and blood flow to normal. A cooling down session should aim to lower the body temperature through low intensity, gross motor movements, followed by light stretching. Intense stretching should be avoided if high performance is required on the following days as it can tear muscle fibres. There are also a number of techniques such as ice baths, contrast baths, electro stimulation and vibration that are believed to assist in cooling down. Warming up and cooling down should be specific to the requirements of the session. This ensures that the athlete is prepared to perform at an optimal level without the risk of injury.

Strength is the ability to exert a force against a resistance. The strength aspects of this program are aiming to increase the athlete's absolute strength; their maximum force generated, and their power; ability to apply force at a fast rate. Strength is gained by using a load that is greater than the normal load placed on a muscle. This is done by applying a resistance generated by weights. The main focus of the program is the lower body, due to the high amount of strength required when moving around the court. Progressive overload is applied to strength training by gradually increasing the amount of resistance. Isometric weight training is the main type of training used. This is due to its effectiveness in developing strength, its availability and its low cost effectiveness. Isokinetic training is the preferred form of strength training as it places equal resistance on all muscles, but because of its high cost and low availability, its use is not viable. Strength is important in squash as it allows the player to move quickly to the ball and pull the racket head through the air to produce a shot. Having adequate strength also reduces muscle fatigue and lowers the chance of developing stress injuries. The main focus of the program is the lower body, due to the high amount of strength required when moving around the court. The upper body is also targeted so the athlete is

able to pull their racket through the air at high speed to produce a shot. Muscle bulk is avoided as it slows the athlete down and requires more oxygen.

Aerobic training is vital to increasing the performance of an athlete. This program uses a combination of continuous, circuit, interval and fartlek training to increase the athlete's aerobic capacity. They are rotated on a weekly basis to add variation to the athlete's routine. This keeps their motivation levels high and avoids boredom. When designing an aerobic program, the F.I.T.T. principle should be followed. The frequency of the activity should be around three to five times per week. The intensity should be within the aerobic training zone (70-80% of maximum heart rate). The activity should be performed for no less than thirty minutes and should be aerobic; using oxygen. Aerobic training increases the muscle's ability to metabolise oxygen while working at a raised heart rate. It also allows the athlete to recover quicker and reduces their risk of soft tissue injuries. The addition of high intensity periods into the aerobic session develops the anaerobic systems and simulates a squash match. Anyone commencing an aerobic training program should be assessed by a physician to ensure their cardiovascular system is able to cope.

Flexibility is an important part of any sport. It allows the athlete to move freely and perform the required skills, assists in the prevention of injury and develops muscle coordination. As young males suffer from flexibility issues, this type of training is vital to their performance. Squash requires a high level of flexibility due to the amount of lunging and the large range of movement required by the shoulders and hips. The athlete's flexibility is increased through activities such as yoga and stretching sessions that focus on lengthening the muscles of the upper legs, shoulders and core. A combination of static and PNF stretches are used to gain an increase. Ballistics stretching is also used as the subject is highly trained and they are performed in a controlled environment.

Psychology plays a large role in the performance of an athlete. If they become unmotivated or have no reinforcements they will find it difficult to reach their optimum performance. It is also important to set goals and assess progress towards them to keep the athlete motivated and on track. There are several types of motivation and several sources. Positive motivation is derived from influences that have a positive effect on the athlete's performance. Negative reinforcement is formed through a fear of performing below an acceptable level or consequences resulting from a poor performance. An athlete may be motivated from an external source (extrinsic) or an internal source (intrinsic). Extrinsic motivation comes from people in the surrounding environment. For example; peers, coaches, fans and family. Intrinsic motivation comes from within the athlete. Reinforcements are also an important part of the performance of an athlete; they lead to the motivation of the athlete. Reinforcements are provided to ensure the athlete will maintain peak performance and remain motivated to train at an intense level. They can be provided socially; through friends, peers and coaches. Material reinforcements are also used, for example money and trophies.

Reinforcement can also be created from within the athlete, through meeting goals or a performance that they are pleased with. The athlete is surrounded by a supportive environment of peers, coaches and fans. They also receive material reinforcements in the form of sponsorships, a salary and winnings. The player may also be motivated to train to remain competitive with fellow players. These factors help to keep the athlete focussed on training and meeting their goals. The athlete's program involves sessions designed to increase their motivation and assist them in being able to create intrinsic motivation and internal reinforcements. The sessions include a talk from a professional athlete on finding influences from their environment and a psychology session on motivation.

It is common for most athletes to experience some form of anxiety. Talented athletes are able to control this anxiety through relaxation methods and by creating positive intrinsic reinforcements. Every individual experiences some trait anxiety, although some may be more sensitive to their environment than others. In addition, some athletes may experience anxiety from the pressure of competing and the variables they cannot control, such as the environmental conditions and their opponent. Anxiety causes the athlete to stress, which can have a positive or negative effect on the athlete's performance. The reactions to stress are similar to those experienced when an athlete is preparing to perform. Their muscles gain an increased blood flow, the lungs absorb more oxygen, increased glucose is produced, the body sweats to counteract a change in temperature and the muscles tighten in anticipation to heightened intensity. The extents to which these reactions occur and the effect they have on the athlete vary, depending on the techniques used to manage them. Stress is created when pressure to perform is placed on the athlete externally and internally.

The level of arousal an athlete is experiencing has a dramatic affect on their performance. If arousal is too low, they may lack performance. For peak performance to be experienced, the athlete must be at their optimal arousal. This is the point where the two factors are in balance and not affecting each other negatively. The 'inverted U curve' is used to describe this. If the level of arousal is too low or high, then performance will be negatively affected.

To manage anxiety and arousal levels, athletes can use a number of techniques to mentally prepare themselves for competition. Concentration and attention skills can be refined to allow the player to focus on the performance for a longer period of time. These techniques include mental rehearsal and visualisation. Mental rehearsal involves focussing on the positive aspects of a performance and preparing the mind to play at peak performance. They heighten arousal and provide a vivid picture of what is to be done. It allows the athlete to focus on their performance and go over planned techniques and tactics. A session on teaching mental rehearsal to the athlete has been included in the session to teach the athlete the fundamental skills. Several other sessions focussing on mental rehearsal are also included to increase the athlete's ability to experience their performance in their mind. Visualisation

involves the athlete imagining a perfect performance and replaying the images repeatedly in their mind, while experiencing all the features of the imaginary environment. It focuses on reinforcing a positive performance. The aim of visualisation is to make an imprint in the player's mind of how they should perform. Visualisation sessions have been placed in the program to enable the athlete to perform this method of increasing motivation. Mental rehearsal and visualisation raise arousal levels. Relaxation is important in bringing arousal levels down. If the athlete is too aroused, they may perform at a level that is well below their peak. Relaxation techniques are used just prior to a match to release tension in the athlete and reduce their arousal level. These techniques are also used to reduce anxiety within the athlete and to reduce the physiological responses to stress. Athletes set goals in order to have something to strive towards. They encourage the athlete and push them forwards, providing material and internal reinforcement and positive and negative motivation. Goal setting and assessment sessions have been included in the athlete's program to provide them with a motivation to train. All of these techniques and practices help the athlete to centre their thoughts and focus on achieving their optimum performance. They are designed to assist the athlete in blocking external influences that may have a negative effect on their performance. Although they have no major contribution to the athlete's performance levels, they are vital in keeping them on track and playing at their peak level.

Nutrition is an important aspect of an athlete's training program. Due to their intense training schedule, it is important to replace lost nutrients. If the athlete fails to eat a balanced diet and replace lost energy, their performance will be inhibited and they will be at a higher risk of injury and illness. An athlete's diet should consist of approximately 70% carbohydrates, 15% fats and 15% protein. This balance in macronutrients allows their body to supply a large amount of energy, repair and grow new tissue. As the average squash match lasts no longer than an hour and a half, the body can supply sufficient energy from glucose and glycogen. For this reason, large fat stores are not required as a source of energy for the athlete and would only inhibit their performance. Carrying extra tissue as fat requires the body to supply more oxygen and requires the muscles to carry more weight. Complex carbohydrates are the preferred form of carbohydrates. They break down slower than simple carbohydrates, providing a less erratic supply of energy. 70% of the total carbohydrate intake should be complex. Complex carbohydrates can be found in cereals, pasta, rice, bread, fruits and vegetables. These foods often appear less processed and less 'sugary'. Simple carbohydrates include; sugar, cakes, lollies and ice cream and should be no more than 30% of the total daily carbohydrate intake. These foods often have a processed and sweet appearance. If the athlete experiences tiredness during training, they should increase their intake of complex carbohydrates. Fats are required to transport fat soluble vitamins and provide insulation for the body. Although they provide the most energy per volume, they are a less efficient source of energy than carbohydrates due to the amount of oxygen required to release the energy and the increased body temperature that results. Unsaturated fats are the preferred type as they are not sticky like saturated fats and do not stick to artery walls. Proteins are required by the body for growth and repair of tissue.

A plentiful supply of protein is essential for the athlete as they are undertaking resistance training. Protein allows their muscle tissues to repair any damage encountered whilst training. It is important to monitor the athlete's intake of protein as any that is not used is converted to adipose tissue. Protein intake for an athlete should be around 2g per kilogram of body weight. Only a small amount is required as it is not used as an energy source unless in extreme conditions. Vitamins and minerals are micronutrients; they are required in minute amounts. They assist in energy release and maintain metabolic and nervous pathways. These assist the athlete and help to maintain their health. As the athlete is training for up to four hours per day, it is important that they replenish any fluids lost. Drinking water throughout the day is the most effective way to do this. Electrolyte drinks should also be used in small amounts to replace salts lost through sweating. Drinks that contain simple carbohydrates may also be consumed during activities (in small amounts) to keep up energy levels. To ensure that the athlete maintains an adequate level of hydration, they should be weighed at the beginning and end of each day. They should then consume one litre of water for every kilogram of weight they have lost. Eating the right types of food after training sessions is important and has an affect on the rate of recovery and the athlete's ability to perform. Immediately after training, the athlete should consume a small amount of simple carbohydrates to restore their blood glucose level. One hour after that, they should eat a wholesome meal consisting mainly of complex carbohydrates (1g per kilogram of body weight). Protein intake should be limited during the day, with the main supply being consumed after the final training session. Small amounts of food should be continually eaten throughout the day to avoid large volumes of food sitting in the stomach, as this may restrict performance. During exercise, gastric emptying rates are reduced by half because blood is being diverted away from the stomach, to the working muscles. Supplementation is a controversial issue in the professional sporting scene. It is widely believed that dietary supplements are not required if the athlete eats a balanced diet. As the athlete is a young male, he is at risk of suffering from sports induced anaemia. If this occurs, iron supplements should be taken and monitored by a physician. Calcium supplementation may also be required as squash is a high impact sport and puts a large amount of strain on knees, ankles, hips and legs. To ensure the athlete maintains a healthy diet, they are assessed regularly by a nutritionist. They are also provided with education on nutrition and encouraged to follow the diets outlined for them by health professionals. The athlete's health is taken into consideration by training indoors during the midday session, preventing excessive fluid loss.

The human body has numerous responses to activity that may occur immediately or over an extended period of time. An increase in the athlete's working heart rate is an immediate physiological response to aerobic activity. In order to meet the raised oxygen demand of the working muscles, the heart must beat faster to pump blood around the body faster. This leads to an increased stroke volume; the amount of blood pumped out of the left ventricle every beat. Cardiac output also increases as an immediate response to activity due to its relationship with heart rate and stroke volume ($H.R. \times S.V. = C.O.$). The athlete's ventilation rate increases as the result of an increase in

oxygen demand. Due to a higher amount of oxygen required by working muscles, the athlete breathes faster to take in more oxygen. More carbon dioxide; a product of aerobic glycolysis, can also be removed faster. Lactate levels are raised slightly through aerobic activity. This is because, although the aerobic system is the dominant system providing energy, all three energy systems interact to provide energy. Increased lactate levels affect the muscle's ability to contract, leading to a decrease in the athlete's performance. A thorough warm up and cool down assist in the removal of lactate accumulation. This allows the athlete to perform in the days following a training session or performance. The athlete's oxygen uptake increases during activity. This is caused by an increase in ventilation rate and an increase in the oxygen demand. An increase in oxygen uptake leads to a greater supply of oxygen available for use by working muscles. As the blood in the arteries is being pumped with greater force, the athlete's blood pressure is raised. The athlete's lung capacity is not affected by activity, they just breathe faster and deeper to supply more oxygen. The amount of oxygen used by working muscles increases during activity, in order to release more energy through aerobic respiration.

Throughout the athlete's 10 week program their body will adapt to increases in load, intensity and frequency. This enables their body to complete the same activity with less effort. The athlete's resting heart rate will drop. This is due to the heart becoming stronger and more efficient, therefore less beats are required to perform an equal amount of work. As a direct result, the athlete's stroke volume will increase significantly. This is because the left ventricle is able to hold more blood and pump more out every beat. Resting cardiac output remains relatively unchanged because as the heart rate drops, stroke volume increases. The athlete's working cardiac output will increase as their heart is capable of pumping out more blood every minute. Aerobic training increases the athlete's lactic threshold. This allows the athlete to work at a higher intensity before beginning to accumulate lactate. The athlete also develops a tolerance to lactic acid, allowing the muscles to continue to contract. Ventilation rate experiences no significant changes throughout the program although the athlete will be required to breathe a lesser number of times for an equal amount of work. This is caused by an increase in the efficiency of the cardiovascular and respiratory system and increase muscle ability to use oxygen. Aerobic training increases the athlete's VO_2 max, the maximum amount of oxygen their muscles can use. This is caused by a combination of factors. Their body is able to deliver more oxygen to the muscles which develop to be able to use larger amounts of oxygen. Lung capacity is an inherited characteristic which remains unaffected through training. The lungs are able to use more oxygen due to increased efficiency, but their volume remains the same. Oxygen molecules attach onto haemoglobin molecules to be transported around the body. To cope with increased oxygen demand, the body produces more red blood cells to enable the oxygen demand to be met. This delivers more oxygen to working muscles. Aerobic training causes hypertrophy; an increase in the size of the slow twitch fibres. This allows for a more efficient use of oxygen and a greater amount of energy being released. If the athlete stops training, they may begin to lose these attributes. It is important to reduce the intensity of the program when

they re-enter the program to allow their body to re-adapt to training. These attributes should also be tested during the testing phases of the program to assess improvements or determine which areas require more attention.

For a professional athlete to be successful, they must have many characteristics that favour their performance. Heredity is a factor that has a significant effect on the athlete's performance. It is important that they have the right balance of fast and slow twitch muscles, their somatotype must suit the physical requirements of the sport and their height also has a consequence on the successfulness of their career. Most professional squash players fit into the ectomorph somatotype, with a small amount of mesomorphic qualities. They should have a balance in fast and slow twitch muscle fibres and having some height is an advantage. Conceptual ability provides the player with a natural advantage and allows them to process information and perform skills with greater ease. This presents them with a head start over many other athletes. These features will act in a way that naturally selects the athletes that are best suited to the sport. Athletes that do not hold the right characteristics are forced to work harder to achieve or they will fail.

Athletes also require an attitude that helps them to maintain focussed on their goals and allows them to become more skilled, not inhibit their progress. Being able to interact with peers and coaches allows the athlete to learn from their environment, accelerating their potential. For an athlete to remain focussed on achieving their goals they must have enthusiasm, determination and a will to learn. As the athlete is professional and has a considerable amount of experience, their self confidence will be at a high level. It is important that they are monitored by sports psychologists to ensure that they remain mentally fit. Prior experience in other sports will also add to the athlete's ability and raise their confidence levels. They may also be better adapted to working with other members of a team. The athlete will have a high ability level as they have been playing for many years and have acquired countless hours of training and playing experience. This will allow them to perform the skills required with considerable ease and precision. All of these factors affect the athlete's overall performance. If they develop an attitude that works against them or they are unable to work with the people around them, their performance will lack and their confidence levels will drop dramatically.

The environment an athlete trains and competes in has an affect on their performance. The condition of the court and their equipment may have an affect on their performance. Climate may also have an affect on their ability to play as well. For example, the squash ball has less bounce during the cold seasons, forcing the athlete to modify their style of play. They may also be forced to travel to other areas of the world to find competition due to lack of support in their own country. This has an affect on them mentally as they may be removed from family or forced to give up a part of their life. These factors influence an athlete's performance. If they have a negative affect, they need to be identified and changed to allow the athlete to reach their optimum performance.

Learning to perform a skill at a high level is a cyclic process. The athlete constantly perceives the way they perform. This involves the athlete watching the skill being demonstrated and using their senses to interpret or perceive how it is being performed. Their brain then remembers the movement after viewing it several times. The athlete then processes the new information and has to decide when and how to use the skill most effectively. The next stage of the learning process is acting out the skill. This uses the sensory and effector mechanisms to carry-out the skill. The athlete then receives feedback from their performance. This may come from an external source, such as a peer, coaches or an audience or internally, for example; themselves. The process then starts again and repeats in an infinite loop, even when the athlete has mastered the skill. The program incorporates drills and routines that allow the coach and athlete to identify errors in technique. They are then able to fix the problem, perform it again and detect any other possible errors. The use of video sessions allows the athlete to analyse their own performance and correct any technical errors. Video sessions also allow the athlete to analyse the techniques of their opponents to recognise strengths and weaknesses.

When carrying out a fitness program with an athlete, it is important to be flexible. The circumstances of the athlete should be taken into account, along with their health and welfare. If the athlete does not feel up to training or suspects an injury, the training session should be cancelled or modified. It is also important to recognise that every athlete is different and what may work for one athlete may not work for another. It is for this reason that fitness programs must be created specifically to take all of the athlete's characteristics into consideration.