TOPIC 6
Psychology and performance

OVERVIEW
6.1 Psychology and sports performance
6.2 Motivation
6.3 Anxiety and arousal
6.4 Psychological strategies to enhance motivation and manage anxiety
6.5 Topic review

OUTCOMES
In this topic students will:
• explain how a variety of training approaches and other interventions enhance performance and safety in physical activity (H8)
• design and implement training plans to improve performance (H10)
• design psychological strategies and nutritional plans in response to individual performance needs (H11)
• devise methods of gathering, interpreting and communicating information about health and physical activity concepts (H16)
• select appropriate options and formulate strategies based on a critical analysis of the factors that affect performance and safe participation. (H17)
6.1 Psychology and sports performance

The importance of psychology in sports performance has increased appreciably over the past few decades. The ability of the mind to generate thought patterns, influence emotions, stimulate or diminish arousal and create vivid images of a desired action is now better understood and has changed the way that many of us approach our sporting activities.

Research continues to suggest that there is significant potential to improve performance through mental training. Reasons why people perform differently in sporting activities relate mainly to physical factors, including genetic makeup, fitness level and skill. However, better understanding of specific psychological influences, notably motivation, interest, concentration and anxiety management is becoming increasingly important as these influences can significantly enhance or inhibit performance depending on the way they are managed.

![FIGURE 6.1](image1.png)

**FIGURE 6.1** Thinking differently can create thought patterns that ultimately improve performance.

6.2 Motivation

Motivation is an internal state that activates, directs and sustains behaviour towards achieving a particular goal. Because motivation is inherently abstract, it is difficult to define. One definition calls it a ‘desire or want that energises and directs goal oriented behaviour’. Another refers to motivation as the ‘arousal, direction and persistence of behaviour’. Most would agree that motivation is an internal state that activates, directs and sustains behaviour towards achieving a particular goal.

A high level of motivation within an individual is prized by those responsible for improving their performance. Understanding the mindset of motivation is difficult because each individual is different and may respond better to internal or external motives. What is accepted is that motivation is not a static phenomenon but rather a force that can be manipulated to help an athlete achieve their full potential. It is an energy source that has the potential to be harnessed and focused, ultimately influencing attitudes and behaviours and infusing feelings of self-belief.

Increasing the level of motivation in players may be as simple as:
- recognising individual effort
- supporting belief in one’s ability
- instilling a good work ethic
- providing positive reinforcement and encouragement.
For example, a coach who praises a player when a correct movement is performed may inspire the development of a positive mindset, leading to an increased desire in the player to achieve their performance goals. Some athletes are highly self-motivated, while others have a much more casual approach to achieving their goals. The level of motivation we are able to achieve is affected by both intrinsic and extrinsic factors, including:

- self-determination or self-drive
- expectations in terms of our personal goals
- parental pressure
- prestige
- response to the encouragement and support of others
- money
- relatedness or the desire to feel connected
- challenge.

6.2.1 Positive motivation

Positive motivation occurs when an individual’s performance is driven by previous reinforcing behaviours. Sportspeople commonly experience positive motivation, but the degree to which it is experienced varies from one individual to another. It occurs when the athlete performs because they have received rewards for similar actions in the past and they realise that continuing to perform as required results in additional rewards. To a certain extent the athlete is 'conditioned' to perform in expectation of the reward.

Positive motivation relies on continual self-reinforcement and/or reinforcement by others such as the coach, family, friends, spectators and media. If the coaching situation changes and favourable reinforcement is diminished or not forthcoming, then the athlete’s effort will be affected accordingly. To maintain high levels of positive motivation, coaches must continually strive to find unique ways of reinforcing the desired behaviour in the athlete. This may require techniques such as providing incentives, developing personal progress charts or, perhaps, looking to others for reinforcement. Positive motivation can be further enhanced by recognising achievement, handling mistakes constructively, developing respect for athletes and taking the time to listen when they speak.

Positive motivation is more effective than negative motivation. The simplest way to develop positive motivation is to establish a gradual sequence of challenges for the athlete. Challenges are positive and motivating whereas threats are negative and destructive in the long term. Threats distract the athlete from the task, because the athlete is confronted with the consequences of failing and ultimately fear of being punished. Further, positive motivation is more sustainable. Some athletes may be responsive to negative motivation on particular occasions, but positive motivation is better on an ongoing basis.
6.2.2 Negative motivation

Not all motivation is driven by previous gains from performance. In some cases, athletes may be inspired to perform more from a fear of the consequences of not performing than as a result of a motivated behaviour. This is referred to as negative motivation and is characterised by an improvement in performance out of fear of the consequences of not performing to expectations.

Inspiring an athlete to perform well because they expect to be punished if they fail may work on occasions, but has serious shortfalls. Indecision, lack of creativity, fear of risk taking and susceptibility to ‘choking’ are some performance inhibiting behaviours that might surface in high pressure situations as a result of fear of failure. Negative motivation may cause a player to always opt for the safe play in game situations and not take risks where the reward could be victory, but unfortunately is outweighed by the consequence of failure. While some players may respond to negative motivation on an irregular basis, the general long-term effect can be the destruction of confidence, initiative and belief in oneself — the reverse of what motivation is supposed to achieve.

6.2.3 Intrinsic motivation

Intrinsic motivation is motivation that comes from within the individual. It is a self-propelling force that encourages athletes to achieve because they have an interest in a task or activity and they enjoy learning and performing the movements. This type of motivation stems from doing things that are their own reward. Intrinsic motivation originates with inner feelings and may serve to drive a need to succeed, accomplish or perform at the best level. It is self-sustaining and self-reinforcing because effort and personal accomplishment becomes its own reward. Intrinsic motivation is the preferred type of motivation because personal reward and self-satisfaction are much stronger driving forces than anything bestowed or imposed from outside.

Intrinsic motivation generally has a knowledge, achievement or experience foundation. Individuals who are driven predominantly by this form of motivation display high levels of mastery or task orientation. In other words, some might be motivated to perform just to know more or to experience something different. Others might be motivated by the need to become competent at the task; for example, to be able to hit the ball further by increasing their technical proficiency. For these athletes, establishing competence is sufficiently challenging and rewarding in itself. They often choose activities that involve a contest, finding enjoyment in rising to the inherent demands of competition.
Central to intrinsic motivation is the ‘flow experience’, which represents the highest level of internal motivation. The flow experience is characterised by a very high level of concentration, to the extent that an individual is completely absorbed in the task. When in this zone, performance is maintained without conscious effort. Total attentiveness to what is being done ensures that the mind remains free of interference from other distracting thoughts.

Studies reveal that most children and adolescents participate further and are rewarded more fully as a result of internal motivation than other factors. The sport or activity provides a continuing source of enjoyment, sufficiently motivating the individual to sustain their effort and interest.

6.2.4 Extrinsic motivation

Extrinsic or external motivation is motivation that comes from sources outside a person, such as parents and coaches. It tends to have an outcome or ego orientation. While intrinsic motivation has a focus on process, such as the development of competence, extrinsic motivation focuses on the product, or what can be gained. Extrinsic motivation is seen in many forms such as praise, material rewards and financial remuneration. Effort and the desire for achievement are related to the expectation of an outside reward or fear of punishment from an outside source.

While rewards or fears may change how hard we work, they do not alter attitudes that underlie our behaviours. In children certainly, quality execution of movement skills as well as enjoyment and satisfaction need to be the focus in training and performances. Attachment to these values ensures that children continue to enjoy physical activity as they grow older. However, a focus on external rewards such as prizes and monetary incentives or a fear of retribution if one’s performance is not up to standard can turn the purpose of activity into an end rather than a means. In fact, in the case of athletes whose driving force to achieve good performance stems from intrinsic sources, the use of extrinsic rewards may only serve to decrease intrinsic motivation.

Furthermore, external motivation can be manipulated by those responsible for its making. Use of bribes and coercion to succeed may work temporarily but has little chance of being sustained. External motivation
has even less chance of being successful if it challenges the values of the individual, or if their opinion of the reward is such that it is not seen to be something that is useful or fulfilling.

While the responsibility for motivation needs to be shared between the athlete and their coaches/parents/peers, sustained motivation relies much more on internal factors than on external factors. Athletes who derive motivation from satisfaction with quality performances are likely to stay motivated for longer than those who compete in order to gain rewards from external sources. A noticeable characteristic of high achievers is that they seek to match their physical and technical skill against others of similar ability, whereas lower achievers often select competitions in which they know they will be successful.

Inquiry
Types of motivation
Form groups of three or four. Copy figure 6.7 onto a large sheet of paper. Have each student write a brief motivational statement, such as, ‘Dad said I would get $5 if I win the race today’. Cut each statement out and take turns to place each one on the types of motivation sheet according to where it best fits. Many will fit in an area in between as it could represent more than one type of motivation. Justify your card placement as you select its position.

FIGURE 6.7 Types of motivation

Inquiry
What motivated me?
Research has shown that young people highly value the intrinsic rewards gained from participating in sport. Rewards such as the learning of a new skill, or merely being involved in sport with their friends, mean more for young athletes than the extrinsic rewards of receiving trophies or prizes.’ (From ‘How to motivate young people’, Fact Sheet, Australian Sports Commission, www.ausport.gov.au)

Read the quote above, then think about your own sporting history or experiences in relation to one sport or event. Discuss how various forms of motivation have contributed either positively or negatively to your success in that sport.
Inquiry
Motivation for sports performance

1. Using a table like the one below, choose three sports that are fundamentally different in the type of motivation required to enhance performance. A suggested range of sports includes golf, surfing, boxing, rugby league, tennis and aerobics.

2. Research a range of performance scenarios that relate to your selected sports and establish the two most appropriate forms of motivation for success in this sport. (Boxing is shown as an example for sport 1 and a relevant type of motivation has been selected and justified.) Justify your choices.

<table>
<thead>
<tr>
<th>Sport 1: Boxing</th>
<th>Sport 2:</th>
<th>Sport 3:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form of motivation 1: <strong>Intrinsic motivation</strong> — important because boxing is highly competitive and demands superior fitness. The training and performance demands will not be met unless inspired by personal belief and commitment.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Form of motivation 2: <strong>Anxiety and arousal</strong></td>
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</tbody>
</table>

Anxiety is predominantly a psychological process characterised by fear or apprehension in anticipation of confronting a situation perceived to be potentially threatening. It is a complex emotion identified by various levels of agitation. It is caused by reaction to a threat or perceived threat that generates a ‘fight or flight’ response. In other words, when we experience situations where we are at risk, uncertain, threatened or attacked, we become anxious and take steps to address the concern. From here our natural instincts take over, forcing us to confront it (fight) or escape (flight). At the extreme, anxiety disrupts and unsettles behaviour by lowering the individual’s concentration and affecting their muscular control.

Sporting contests and competitions may contribute to anxiety because of the unpredictable nature of performance or the uncertainty of the outcome. Any sporting contest can give rise to anxiety when one’s perceived ability does not measure up to the demands of the task. For example, a boxer might be aware that his preparation has been insufficient, but must go an indefinite number of rounds with a clearly superior opponent. The build-up of anxiety is unavoidable as the mind tinkers with thoughts of ways forward or ways out. This pessimistic appraisal causes negative stress, which underlies most forms of anxiety.

Anxiety can also be entrenched in deep-seated expectations, especially if one feels that they cannot be fulfilled. When people realise that their actual ability and possibly their level of motivation falls short in terms of the perception of others, confidence falls and anxiety rises proportionally. It’s a fine line between being ‘psyched up’ and ‘psyched out’. The person’s state of mind depends almost entirely upon their perceptions and expectations.

6.3.1 Trait anxiety
Trait anxiety refers to a general level of stress that is characteristic of each individual. It is evident in how we respond to daily situations, of which many are new and cause concern. What may prompt anxiety in one person
may not generate any emotion in another. Trait anxiety varies according to how individuals have conditioned themselves to respond to and manage the stress. Increased levels of such anxiety can be controlled in most cases by the use of relaxation techniques such as progressive muscular relaxation.

Researchers have established that coaches and others in whom the athlete has a firm belief can significantly influence trait anxiety. Support, positive comments and encouragement positively affect a player’s level of trait anxiety more than any other influence.

6.3.2 State anxiety
State anxiety is more specific. This type of anxiety is characterised by a state of heightened emotions that develop in response to fear or danger. This arousal may be visible physiologically and exhibited in certain conditions and behaviours such as nervousness, and even shaking. A certain level of state anxiety might be considered beneficial in sports such as rugby where aggression can become a natural outlet. However, in sports or activities such as archery and pistol shooting where success often depends on controlled muscular responses, unrestrained anxiety can hinder performance.

At the extreme, state anxiety can contribute to a degree of physical and mental paralysis, preventing performance of a task that may otherwise be routine and has been repeated many times in practice situations. Examples of the presence of state anxiety include missing relatively easy shots in basketball, failed goal attempts in soccer and ‘breaking’ at the start of important swimming and track races.

Measures suggested by coaches to address state anxiety include having the athlete better understand the nature of the anxiety, confronting its causes and refusing to submit to controlling fears that may arise because of it. Relaxation, slow breathing, changing the pattern of thinking and engaging in thought distraction are commonly used anxiety techniques suggested by coaches.

6.3.3 Sources of stress
Stress is the non-specific response of the body to a demand placed on it. It is a normal part of everyday life. However, it is also very relevant to sport performance situations. It can be felt by participants in all sports, but particularly individual sports such as tennis and diving where there may be a feeling of isolation and exposure. Stress causes a unique body reaction with which we are all familiar, particularly in times of crisis. We feel stress building within us, produced by \textit{adrenaline} (a stimulant hormone), which readies the body for action. It is characterised by:

- increased blood supply to skeletal muscles
- more oxygen to the lungs
- increased glucose production to provide extra fuel
- increased sweat production to cool the body
- tightened muscles to prepare the body for action.
Stress can be real or imagined. Being chased by a dog, for example, is a real stress when it actually happens. All the body reactions outlined above will intensify. However, thinking about the same situation or sporting situations that cause concern will also cause stress. The body will react to a perceived situation as if it is real because the mind, in responding neurologically to situations, does not differentiate between the real and imagined experience.

Just thinking about something that may make us uncomfortable — such as missing a match-winning goal in a grand final, going to the dentist or travelling in planes — can bring about symptoms such as an increased heart rate and sweating.

However, stress is a personal attribute. It depends on predisposition — that is, how each person perceives the stressors as a result of their genetic makeup and learned coping mechanisms. This reflects:

- past experience
- routines
- expectations
- the amount of support
- the frequency of similar occurrences.

Factors that produce stress are called stressors. In practice and competitive sporting environments, they can develop from:

- personal pressure — individual pressure imposed by the desire to win, achieve or fulfil goals
- competition pressure — pressure exerted by opponents on the field of play
- social pressure — pressure from coaches, parents, peers and others who are held in esteem by the athlete
- physical pressure — the pressure of having to perform learned skills under the demands of competition.

It is felt by many researchers that coping effectively with stress has a lot to do with an individual’s perception. Particular traits such as positive expectations and confidence are important in containing anxiety that might otherwise develop because of the situation. This is not to say that the athlete will not experience anxiety. However, qualities such as self-assurance and self-belief help athletes interpret feelings of anxiousness as facilitative, thereby assisting rather than hindering performance. Successful athletes do not deny the existence of anxiety, commonly called ‘butterflies’, but are skilled at having the butterflies fly in formation.

Athletes, indeed anyone, can further learn to cope with stress by using strategies such as:

- practising relaxation techniques
- developing concentration skills that require focusing on the immediate task rather than on the perceived reaction to it
- developing confidence
- planning strategies to cope with the situation.

### 6.3.4 Optimum arousal

**Arousal** is a specific level of anxiety and can be experienced prior to and during a performance. It is different from anxiety. While anxiety is predominantly a psychological state, arousal is essentially a physiological process. Arousal is a necessary ingredient in sports performance, although its level can either facilitate or hinder the execution of specific skills or task components.
The individual performs a skill most successfully when the level of arousal is optimal for that particular task and that individual. A runner in a 100 metre sprint, for example, may complete a time far worse than expected. This could be partly attributable to a low level of arousal, perhaps resulting from distraction, disinterest or a depressed level of motivation. The other extreme is a state of over-arousal, whereby the athlete is unable to perform the required movements with precision because he/she is excessively tense and unable to concentrate. Levels of arousal vary considerably between individuals. Generally, athletes who have a high disposition towards anxiety require less arousal than those who have a low disposition towards anxiety.

Both over-arousal and under-arousal contribute to adverse performance. The role of the coach and athlete is to ensure the level of arousal is optimal for each performance. All athletes respond to different stimuli to raise or lower their levels of arousal. Some can achieve optimal arousal by thinking about what they need to do in the game or activity. Others may require input from a coach, parent or peers. This suggests that arousal has drive properties — that is, the manipulation of factors that affect anxiety, such as motivation, can increase or decrease arousal.

The inverted U hypothesis shown in figure 6.11 illustrates the connection between arousal and performance. It suggests there is an optimal level of arousal for any performance. If an individual’s level of arousal is at A on the curve, then they would be considered to be under-aroused for that activity. Performance may suffer from such factors as lack of motivation, disinterest, poor concentration and the inability to cope with distractions.

As an athlete’s interest heightens, they move into the arousal zone and attain an optimal level of arousal at the peak of the curve (B). This is shown by a balance between level of motivation and ability to control muscular tension, which could be increasing as a result of the desire to perform well. Levels of arousal in the C area of the curve are excessive. If an individual’s level of arousal is in this area, then their feelings would be characterised by anxiousness and apprehension, reflecting their excessive concern about the performance. This leads to increased muscular tension and possible mental confusion as the individual tries to process messages during skill execution, resulting in a poorer performance.

The optimal level of arousal varies from one skill to the next. Generally, when difficult tasks involving few muscle groups are involved — for example, archery and putting in golf — levels of arousal need not be high to be optimal. However, many other activities that may be easier to execute or that involve large body movements — for example, running and weight-lifting — require an increase in the level of arousal for performance to be optimal (see figure 6.12).

Optimal arousal levels for a given task vary between athletes, and largely depend on the individual’s personality and factors that include:

- **self-expectation**: that is, how the individual expects to perform
- **expectation by others**: that is, how a person perceives others, such as their coach or parents, expect them to perform
• *experience*, which determines how the individual handles the increased pressure at higher levels of competition
• *financial pressures*, such as whether the individual’s livelihood depends on their performance
• *the level of competition*, such as whether the individual is playing a round or a final
• *the degree of difficulty*, with higher levels of arousal generally being associated with more difficult tasks
• *skills finesse*, with fine motor skills (for example, shooting and balancing) generating higher levels of arousal than produced by gross motor skills (for example, running).

Arousal affects performance when it becomes a focus. When the individual shifts focus from thinking about feelings to concentrating on the task, anxiety is revealed for what it is — a heightened state that can be controlled and that can actually assist performance.

**Inquiry**

**Comparing performances**

1. Examine figure 6.13. Compare and contrast possible reasons for the performances of athlete A and athlete B using a Venn diagram such as the one in figure 6.14. (Use the overlapping area for similarities and the individual circles for differences.)

![Figure 6.13 Comparison of athletes' performances](image)

2. Examine figure 6.15, which shows arousal curves X, Y and Z. Using the ranking chart, rank the following activities performed during competition in terms of lowest to highest optimum arousal levels. Then establish which curve (X, Y or Z) best suits each athlete in terms of arousal. Justify your choices.
   - Rowing
   - Weight-lifting
   - Pistol shooting
   - Golf swing
   - Discus throwing
   - Tennis serve

![Figure 6.14 Venn diagram to compare performances](image)
Inquiry

Anxiety and arousal

Explain the difference between anxiety and arousal. Use sporting examples to illustrate the effect of each on performance. You can use the Anxiety weblink in your Resources tab to assist in your research.

Resources

Weblink: Anxiety

studyon

Optimum arousal

Summary screen and practice questions.
6.4 Psychological strategies to enhance motivation and manage anxiety

Uncontrolled anxiety can potentially have a negative impact on performance, but a complete lack of anxiety can undermine effort and achievement. Accomplished athletes are able to draw on strategies such as focusing skills, mental rehearsal, visualisation, relaxation and goal setting to ensure their mental and physical energy is channelled in the right direction to lead to the desired result.

6.4.1 Concentration/attention skills (focusing)

Sport psychologists generally agree that the key to success among elite sportspeople is concentration, or the ability to focus on the task at hand. To understand concentration we need to distinguish between doing and thinking about doing. When an individual thinks about doing, they often separate the task from themselves as the performer. In this situation, their feelings, sensations and personal reactions become the focus. Total focus can contribute to over-arousal. When an individual focuses on the task or activity, their thoughts relate more to execution. Effective concentration involves not focusing on one or the other, but maintaining an uninterrupted connection between the two.

Psychologists sometimes illustrate the concept by relating to Self 1 and Self 2. These are the internal voices and emotions that provide direction for behaviour. Self 1 tends to focus on instruction, listens to directions, asks questions and is aware of criticism. Self 2, on the other hand, focuses more on action, execution and task completion. Improved concentration is marked by less interference from Self 1 and more reliance on Self 2.

Concentration can be improved through training that emphasises the process rather than the outcome. When an individual focuses on the process, they give attention to technique and try to understand why, for example, the shot missed the target. Focusing on the outcome places importance on the result — the success or otherwise of the shot.

Athletes need to know what to focus on at a particular time and be able to adapt to changing situations. During one stage of a basketball game, for example, a player may need to focus on the shot and exclude all other distractions; however, at other times, they may need to be aware of their own defensive position and that of team-mates. The ability to widen and narrow attention skills can be developed through training. Some coaches require athletes to develop lists that embrace their thoughts at particular stages of the game/performance.

The type of concentration required varies from one sport to another.
- Intense concentration is required in activities such as gymnastics, diving and batting in cricket.
- Intervals of high concentration interspersed with periods of less intense concentration predominate in most team games such as touch football, netball and softball.
• At the extreme is sustained concentration as might be required in triathlons, marathon running and high-level tennis matches.

Athletes need to recognise the type of concentration required for their particular sport or activity, and develop skills that block out distractions and help maintain focus. Using well-established routines, avoiding negative thoughts and utilising self-talk to enclose one’s thoughts and focus points are techniques commonly used to boost concentration.

CASE STUDY

Four reasons why every athlete should meditate
By Dr Kristin Keim (Clinical sport/performance psychologist) for the Headspace app

‘Bike racing is always physically hard, but the mental part can be even harder.’

Just the other day an athlete posted this on social media, and they’re right. A mind that is not under control is a mind that makes mistakes — mistakes that could prevent you from winning. High levels of stress decrease your ability to maintain focus and concentration. Of course, stress can be a helpful tool when used correctly; but when it’s not, it can only impact your performance, but your life. As a clinical sport psychologist I have worked with a vast array of elite, professional and amateur athletes. Despite their differences in level and/or sport, they all face similar challenges: anxiety, depression, stress, inability to maintain focus, sleep difficulties, life balance, confidence, the list goes on. But so does the game. So when my athletes need to step up but are having trouble finding the mental wherewithal, one of the key techniques I rely on to change their thoughts and behaviours is meditation.

Why should you consider practicing meditation for athletic performance?

1. Stress reduction
Stress reduction is vital for optimal performance. Racing and competing when under stress has been proven to negatively impact athletic performance. A study published in the Journal of Health Psychology showed that the results of meditation are associated with reduced stress levels in addition to decreased levels of the stress hormone cortisol. Being relaxed and centred increases the ability to remain calm under pressure and also improves focus and concentration. By consistently practising meditation, your body will learn how to relax in stressful situations, building self-confidence and ultimately achieving a more positive mindset.

2. Improved sleep patterns and speeding recovery time
Sleep is imperative to all human beings, especially athletes. A study published in the Journal of Sleep showed that athletes who are not able to get enough sleep will experience a number of negative effects including: weight gain, mood disturbance, increased anxiety/depression, inability to maintain focus/concentration and decreased motor control. Athletes who consistently practise meditation can help their body to recover quicker from training, racing and even injury. While physical training is good, it also places high levels of stress on the body, including muscle fibre tears. Recovery time from many common sports injuries can actually be reduced. In addition, meditation boosts the immune system, preventing illness that can hinder your training and/or performance. Researchers from the University of Wisconsin School of Medicine and Health found that those who practise meditation experience fewer acute respiratory infections, as well as a shortened duration and severity of symptoms from the common cold. Therefore, meditation aids in improving the quality/length of sleep and the immune system.

3. Enhanced endurance
This might be one of the most popular reasons to include meditation into your training routine. By practising meditation that utilises visualisations, athletic endurance can be enhanced. Athletes who visualise accomplishing specific objectives/goals, combined with the regular practice of breathing exercises, can train the body to work harder and for a longer period of time in training and competition.

4. Improved sense of identity, self and the body
Meditation in sport can help athletes conquer those common ‘blind spots’ that tend to make performance challenges seem worse than they actually are. These blind spots negatively impact performance, and meditation helps you recognise your blind spots. By recognising these blind spots, you can work on improving your physical/mental training, skills and coping mechanisms. This serves to build your athletic identity and self-confidence, and improve performance. Furthermore, the meditator learns to enhance awareness of each muscle, which can help pinpoint an injury and prevent further damage. Finally, meditation in sport can greatly improve the mind-body connection, allowing you to discover your optimal zone of performance.
Meditation in sport is not only helpful for performance, but can also aid athletes who experience anxiety, depression and other mental health illnesses. The practice can help athletes through injury, as well as to overcome challenges such as the transition back into sport or out of sport (e.g. retirement).

The practice of meditation is a journey similar to that of any athletic pursuit, and it could offer that small percentage needed to make you a better athlete and a happier human being.

Source: www.headspace.com/

6.4.2 Mental rehearsal/visualisation/imagery

Mental rehearsal is the technique of picturing the performance or skill before executing it. It is sometimes called visualisation or mental imagery, has been shown to enhance not only competition performance, but also the acquisition and building of motor skills. Mental rehearsal is a commonly used technique in many forms of physical activity. Weight-lifting, gymnastics and high jump are examples of sports that frequently use it. Mental rehearsal involves the mental repetition of a movement or sequence to increase the mind’s familiarity with the desired motion. It relies on the power of imagery — that is, seeing clearly in the mind what is required of the body in the movement. It involves recalling and then reliving the execution of a skill or performance.

Mental rehearsal has a number of advantages, the most important of which is to improve concentration. If done properly, mental rehearsal also provides the athlete with additional practice and may remove the need for total reliance on physical training. It is commonly used by athletes when they are unable to train through inclement weather, illness or injury. However, mental rehearsal does have an apparent flaw in that it is difficult for the coach to control the thoughts of his/her athletes.

Some players may tend to daydream and embrace their performance images in an unproductive manner, while others lack the drive to back up mental rehearsal with devoted physical practice. Nevertheless, mental rehearsal is a chance for ‘perfect practice’, although the extent to which ‘perfect practice makes perfect’ is debatable.

The importance of mental rehearsal to improving performance is that it:

• elevates the body to the desired level of arousal
• provides a clear idea of what has to be done
• heightens concentration
• narrows thoughts to the task.

However, to be totally effective, mental rehearsal requires:

• vivid, realistic pictures at performance speed in the mind
• at least one and possibly more rehearsals
• a narrowing of thoughts to exclude distractions
• a sense of ‘experiencing’ — seeing colours, hearing sounds, feeling the movement and noticing the crowd
• seeing a successful performance — to visualise failure is to experience failure
• practice, so the process can be ‘turned on’ when required.
Application
Experiencing mental rehearsal
Choose a skill such as a long jump, discus throw or soccer kick for goal. Take five minutes to apply the principles of mental rehearsal to performing the skill. Execute the skill as closely as possible to the way in which it was imagined.

Inquiry
Evaluating mental rehearsal
Comment on the ease or difficulty of sustained concentration on a specific performance in the above application. How could your technique be improved? How could it be applied to non-sporting tasks?

6.4.3 Relaxation techniques
While optimal arousal is desirable for good performance, over-arousal will tarnish even the best efforts. Relaxation techniques may assist the athlete in control of arousal.

Without the use of relaxation techniques when necessary, an athlete may be unable to reproduce in competition what has been learned in training because other factors interfere with their concentration.

Techniques commonly used by athletes include:
- **progressive muscular relaxation**, which involves relaxing muscle groups using special exercises (a good technique if arousal is excessive)
- **mental relaxation**, which involves relaxing the body through controlled breathing, relaxing the mind and gaining a ‘floating’ feeling
- **self-hypnosis**, which involves using the power of suggestion to have the mind accept a particular level of anxiety in a specific situation
- **mental rehearsal**, which involves concentrating on rehearsing the performance of the task rather than on how you feel about it
- **meditation**, which involves narrowing one’s thoughts using simple repetitive images and sounds
- **centred breathing**, which involves controlling breathing to release tension before a performance.

It is important that each athlete finds the relaxation technique that suits them personally. Some may respond best to physical techniques such as progressive muscular relaxation, while others will benefit from a technique with a mental focus, such as yoga.

Application
Experiencing relaxation
In a small group, investigate one of the relaxation techniques discussed here. Teach your group’s technique to the class in a brief practice session.
Inquiry
Applying relaxation techniques
Do you feel that any of the relaxation techniques discussed here could be applied to improve your sporting
endeavours? If so, which technique(s)? How and when would you use it/them?

Inquiry
Rio 2016: Adapted breathing technique helps athletes improve their performance
1. Read the snapshot ‘Rio 2016: Adapted breathing technique helps athletes improve their performance’. How
can making it harder to breathe actually improve breathing?
2. How might controlling breathing assist in managing anxiety?

SNAPSHOT
Rio 2016: Adapted breathing technique helps athletes improve their performance
A new breathing technique designed to treat lung disease has been adapted to help Australian athletes heading
to the Olympics and Paralympics strengthen their muscles.
Gold Coast exercise physiologist James Fletcher has pioneered a program to strengthen the breathing
muscles of star athletes heading to Rio.
The training involves software that makes it harder for an athlete to breathe, in turn strengthening their muscles.
Mr Fletcher has based the program on techniques used for medical patients with lung disorders, including his
mother who suffers from a degenerative lung disease.
‘In a nutshell we’re taking the breathing muscles to the gym,’ Mr Fletcher said.
‘All we’re doing for these guys is reducing their shortness of breath and improving their exercise capacity,
effectively the same as we would for a person with diseased lungs.’
Swimmer Thomas Fraser-Holmes has been attending the specialised training for six months.
‘What I’ve noticed, probably the biggest thing in my swimming, is being able to get that oxygen in a lot quicker
and a lot easier,’ he said.
‘When I breathe I look at the bottom of the pool and exhale all my air and then when I go to breathe it’s more of
a sharper intake of the air so I can effectively, not get more air in but get it quicker and more efficiently.’

Helping athletes deal with anxiety
The training aims to simulate an athlete’s rhythm of breathing from a race.
It also focuses on dealing with anxiety before competing with a special program which mimics the effort to control
breathing when an athlete is feeling anxious.
‘If they can get control of their breathing then it hopefully translates to getting control of that anxiety some athletes
get when they walk on to pool deck or the start line,’ Mr Fletcher said.
Paracanoeist Curtis McGrath said the program was already
having an impact after just a couple of sessions.
‘I think anxiety plays a big role in sport,’ he said.
‘Having a different thing to focus on … and things that you can control … I think that’s really great to be able to
focus on the breathing side of things.’

study on
Core 2  Question 2  Topic 2  Concept 6
Relaxation techniques and goal setting  Summary screen and practice questions
6.4.4 Goal setting

Goals are targets that we direct our efforts towards. They can relate to either performance or behaviour. The establishment of goals is important to improve both individual and team preparation. By empowering athletes with the responsibility to set their own goals, they are more likely to seriously attempt to fulfil them. Goals provide athletes with a reason to persevere with training over extended periods. They provide focus, give direction, and help people to realise their aspirations. Not only can goals redirect an athlete who is unable to see the end result of training, but they can also provide the essential formula for success. Providing a goal–training relationship exists (that is, the intensity and aims of training relate to specific performance aspirations), then today’s goals will become tomorrow’s realities.

Goals may be short or long term, and behaviour or performance oriented. Short-term goals are the most important because they serve as checkmarks by which other goals can be measured. The approach to achieving short-term goals should not be inflexible and it shouldn’t be of concern if one or a number of goals are not achieved. Situations arising from personal circumstances and possibly injury may interfere with the timeframe over which achievement of a goal or goals is sought. In this case, discussion and renegotiation is a preferable solution rather than reinforcing feelings of failure and disappointment.

The types of goal that are important to athletes are:

- **Short-term goals.** These are goals that can be achieved in a limited period of time; for example, ‘I will complete at least three endurance training sessions this week’. They are stepping stones to achieving long-term goals.
- **Long-term goals.** These goals can be achieved only over a long period of time; for example, to complete the City to Surf fun-run.
- **Behavioural goals.** These goals are arrived at by players and relate to improved behavioural expectations in training, competition or both. They are observable, measurable behaviours rather than aspirations. An athlete may aim, for example, to be more punctual at training, to control their temper on the field, or to refrain from criticising other athletes. Some coaches use behavioural goal agreements to monitor desired improvements in player behaviour and to highlight the importance of developing a workable relationship in this area. Figure 6.19 is an example of a behavioural goals agreement.
- **Performance goals.** These goals relate to an athlete’s desired level of success; for example, a state, national or even Olympic medal. Ideally, the athlete should write down these goals and put them on a noticeboard so they remain a focus.

![Figure 6.19 Example of a behavioural goals agreement](image_url)

<table>
<thead>
<tr>
<th>Behaviour</th>
<th>Goals</th>
<th>Poor</th>
<th>Adequate</th>
<th>Very good</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Punctuality</td>
<td>Arrives 15 minutes early</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
</tr>
<tr>
<td></td>
<td>Warm up</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Signs on</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Self-discipline</td>
<td>Listens to instructions</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
</tr>
<tr>
<td></td>
<td>Trains at home</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Makes eye contact</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Doesn’t talk during instruction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Leadership</td>
<td>Helps others with their skills development</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
FIGURE 6.20
Goals provide direction and act as benchmarks of achievement.

Inquiry

Wimbledon: Bernard Tomic should give it away if he’s bored, says Laurie Lawrence

Read the following snapshot, ‘Wimbledon: Bernard Tomic should give it away if he’s bored, says Laurie Lawrence’, then answer the following questions.
1. How do top athletes who are financially secure maintain motivation?
2. How does an elite athlete set goals that are realistic in terms of their ability and motivation?
3. What advice would you give Bernard Tomic if he was trying to balance his talent with his aspirations?

SNAPSHOT

Wimbledon: Bernard Tomic should give it away if he’s bored, says Laurie Lawrence

Former Olympic swimming coach Laurie Lawrence has slammed Australian tennis player Bernard Tomic for announcing he was ‘bored’ during his first-round Wimbledon loss on Wednesday.

The 24-year-old said he ‘wasn’t mentally and physically there’ during his clash with German 27th seed Mischa Zverev, adding that during the match he was also felt ‘a little bored’.

The comments have infuriated many in professional sport, including Lawrence who believes a lot of young people in these semi-professional or professional sports ‘get given too much too early’.

‘I think half the time a lot of these people are not paying the price, they’re getting paid big money to come 146th in the world … give me a break,’ he said.

‘They get everyone bowing down to them, ‘oh you’re great, you can do this, you can do that’.

‘If you’re bored with the sport, don’t take money from it, give it away. If you don’t want to be a winner, give it away.’

Lawrence questioned the work ethic of the world number 59, and said the best athletes set goals and work hard.

‘Real success in life comes to those people who get their head down, their backside up, and they don’t miss training sessions,’ he said.

‘What makes a great athlete is pure, total focus on the job at hand and work towards it.’
Stress, lack of goal setting: Sports psychologist
Sports psychologists believe there are number of reasons that might cause an athlete to announce they are bored with their chosen sport.

Sports psychologist from University of the Sunshine Coast, Dr Lisa Martin said stress could be a contributing factor.

‘That can range anywhere from the amount of stress that’s going on in their life, whether it be in relation to their sport or their personal life,’ Dr Martin said.

‘Other areas in relation to feeling bored might be, does the athlete have goals that they’ve reset since their last competition or their last pinnacle event?’

‘I think goal setting can have a lot to do with it, and keeping them fresh and re-evaluated on a regular basis,’ she said.

Dr Martin said everyone reacts to loss differently, and athletes are no exception.

‘When some people come up short, and they perhaps expected themselves to do a little bit better, they can take that ‘I don’t care’ kind of attitude,’ she said.

‘Sometimes it can go the other way, where they don’t achieve their goal and it can cause them to fall into that severe disappointment and lack of motivation.’

She said support networks can act as a buffer.

‘Having a strong social or support network in relation to their team, or friends, or family members, these can have a really significant impact on someone’s ability to deal with that stress,’ she said.

6.5 Topic review
6.5.1 Summary
• Motivation is an internal state that activates, directs and sustains behaviour towards achieving a particular goal. It is important to remember that motivation is not a static phenomenon, but a force that can be manipulated to help an athlete achieve their full potential.
• Motivation can be positive or negative. Positive motivation is good because it reinforces actions and behaviours that are correct or that the player will benefit from if repeated. In contrast, negative motivation inspires the athlete out of fear of the consequences of not performing, and subsequently is not sustainable.
• Motivation comes from inside (intrinsic), and is also influenced by outside (external or extrinsic) sources. Both forms are valuable, but intrinsic motivation is more sustainable.
• One important difference between intrinsic and extrinsic motivation is that while intrinsic motivation has a focus on process such as the development of competence, extrinsic motivation focuses on the product, or what can be gained.
• Anxiety refers to the development of physical and mental tension when the individual perceives a situation as potentially threatening. Different people experience trait and state anxiety at different levels.
• Stress is the non-specific response of the body to a demand placed on it. It can be real or imagined, but becomes a problem when it is the athlete’s focus. Athletes can use relaxation techniques to control stress.
• Arousal refers to the level of anxiety before and during a performance. The performance will be best when the level of arousal is optimal. The inverted U hypothesis illustrates the relationship between arousal and performance.
• Athletes can use a number of techniques to enhance motivation and manage anxiety, including concentration/attention skills, mental rehearsal, visualisation, relaxation and goal setting.
• Concentration is more about doing than thinking about what is to be done. Concentration skills need to be learned. Once learned, they can positively contribute to a desirable level of arousal.
• Mental rehearsal is the technique of picturing the performance or skill before performing it. It relies on the power of imagery, but requires practice and development for positive results.
• Anxiety and arousal can be controlled and channelled into performance improvement. A number of techniques are available, so the athlete must experiment and work out which methods make optimal arousal attainable for specific performances.
• Goals are targets that the individual aspires to achieve. They can be short or long term, and behaviour or performance oriented. They have many features, but most importantly they must be attainable. If an individual cannot achieve their goals, they will lose interest and direction.

6.5.2 Questions

Revision
1. Define motivation. Outline factors that affect our level of motivation. (H11) (3 marks)
2. Explain the difference between positive and negative motivation. (H11) (2 marks)
3. Choose a sport or activity in which you regularly participate. Explain the motivational forces that have driven you when you have played your best. (H8) (4 marks)
4. Motivation can be positive or negative, and intrinsic or extrinsic. Discuss the advantages of positive, intrinsic motivation in the competition preparation of an athlete over six months. (H8) (5 marks)
5. Discuss the types of motivation a player could experience in a netball team, both in the time immediately before the game and during the game. (H11) (4 marks)
6. Choose three psychological strategies used by top athletes to improve performance. Explain each strategy and suggest why it improves performance. (H11) (6 marks)
7. Explain the difference between trait and state anxiety. (H8) (2 marks)
8. What is stress? Identify strategies that can be used by athletes to better cope with stress. (H16) (3 marks)
9. Explain the difference between stress and arousal. (H8) (2 marks)
10. What is the inverted U hypothesis? How can it explain failure to achieve a best performance in (a) a team sport (b) an individual sport such as archery? (H17) (4 marks)
11. Discuss the factors that could contribute to differing levels of arousal in individuals. (H8) (4 marks)
12. Explain how and why an individual may need to control arousal while performing a fine motor skill such as pistol shooting. (H8) (2 marks)
13. Discuss the strategies required to improve the concentration skills of a high jumper. (H11) (4 marks)
14. What is mental rehearsal? Explain how the technique can be used to improve skill performance. (H11) (3 marks)
15. What is goal setting? Suggest how it can be used to motivate and orientate players. (H11) (3 marks)
16. Discuss the relationship between arousal and performance. (H11) (6 marks)
17. How do arousal and anxiety differ in their effect on sports performance? (H11, H17) (6 marks)

Extension
Choose an athlete in any sport or activity. Investigate their life history and itemise the psychological factors that have contributed to their success. Discuss how a range of these factors apply to your own sports history. (H16, H17) (8 marks)

Resources

- Interactivity: Revision quiz: auto-marked version (int-7193)
- Interactivity: Missing word interactive quiz (int-7194)
- Digital doc: Revision quiz: Word version (doc-24825)
6.5.3 Key terms

anxiety is predominantly a psychological process characterised by fear or apprehension in anticipation of confronting a situation perceived to be potentially threatening. p. 201

arousal is a specific level of anxiety and can be experienced prior to and during a performance. p. 203

concentration is the ability to link movement and awareness to the extent that the individual can focus on doing, rather than on thinking about doing. p. 207

extrinsic or external motivation occurs when the individual’s internal state is modified by sources originating from outside the person. p. 199

goals are targets that we direct our efforts towards. They can relate to either performance or behaviour. p. 212

intrinsic motivation is motivation that comes from within the individual. p. 198

inverted U hypothesis This suggests that performance improves with increasing arousal to a point beyond which performance will deteriorate. p. 198

mental rehearsal is the technique of picturing the performance or skill before executing it. p. 209

motivation is an internal state that activates, directs and sustains behaviour towards achieving a particular goal.

negative motivation is characterised by an improvement in performance out of fear of the consequences of not performing to expectations. p. 198

positive motivation occurs when an individual’s performance is driven by previous reinforcing behaviours. p. 197

relaxation techniques are a series of techniques that seek to control the body’s response to stress. p. 210

stress is the non-specific response of the body to a demand placed on it. p. 202