

Preparing Scotland's best athletes to perform on the world stage



Psychological recovery in sport

To ensure that athletes absorb and maximise the benefits from demanding training sessions and remain robust enough to cope with multiple performances at major events, it is vital that individual athletes' have the ability to recognise when and how they need to recover.

Athlete's who fail to recover efficiently can, over time, show symptoms of underperformance syndrome that may lead to burnout. Burnout is defined as a state of mental, emotional and physical exhaustion brought on by persistent devotion to a goal whose achievement is dramatically opposed to reality (Pines & Aronson, 1988).

Risks of insufficient recovery and potential burnout

Burnout afflicts overly dedicated, idealistic men and women who are motivated toward high achievement and who work in unrewarding situations, in other words "those who work too hard, too, long, too intensely and are extremely dedicated to what they are doing (Fender, 1989). Considering the type of person susceptible to burnout, it is easy to understand why many high performance athletes and coaches may be at risk. The consequences of burnout's devastating states of physical, mental and emotional exhaustion can lead to athletic personal developing negative self-concepts; negative attitudes toward work like and other people; a loss of idealism, energy and purpose (Schaufeli *et al.*, 1993).

Specific to individuals who immerse themselves in their sport, is the potential to develop a sports specific self-identity termed "athlete identity" (Brewer, Van Raalte, & Linder, 1993). Athlete identity can be defined as individuals who disproportionately invest in sports participation and maybe be described as "unidimensional" people ie: their self concept does not extend far beyond the limits of their sport (Ogilvie & Howe, 1982). Groff and Zabriskle (2006), highlight that athletes' who develop too strong an athlete identity are potentially at risk of various negative consequences. Good *et al.*, (1993) found that a strong athletic identity in individuals who have not explored various identity alternatives may result in over training or emotional vulnerability when faced with poor athletic performance or potentially career threatening injuries. Additionally, strong exclusive athletic identity has been linked to vulnerability to high levels of anxiety and depression (Brewer, 1993) less interest in academic achievement (Cornelius, 1995), and susceptibility to performance enhancing drug use (Cornelius, 1995).

According to Feigley (1984), specific personality characteristics and behavioural patterns increase an individual's susceptibility to burnout. Shank (1983) identified the following characteristics and behaviours as predisposing certain people to burnout: 1) perfectionism, 2) being other-orientated and 3) lack of assertive interpersonal skills. Perfectionists are at risk because they are overachievers who tend to set high standards for themselves and others. They also may tend to invest more time and effort on a task than necessary. Other-orientated people have a strong need to be liked and admired and are often extremely sensitive to criticism. They tend to be generous with everyone but themselves. People who lack assertive interpersonal skills find it difficult to say no to express negative feelings such as anger without feeling extremely guilty.

Feigley (1984) notes that coaches often find quiet, concerned, energetic perfectionists to be ideal athletes. Indeed, it could be argued that perfectionism is a common trait in most high performance athletes. If high performance athletes do not balance perfectionism tendencies, these individuals could be at a greater risk of overtraining syndrome and subsequent burnout. "While dedication to a sport is essential for high level success, if one's focus is too narrow, too intense, or too prolonged the likelihood of burnout increases dramatically (Feigley, 1984).

Competition and training fatigue

Calder (2003) outlines four generic types of training and competition fatigue. These are:

- 1) Metabolic fatigue
- 2) Neural fatigue
- 3) Psychological fatigue
- 4) Environmental fatigue

Monitoring variables of fatigue

Coaches

In their contact time with athletes coaches will have various observational information about indicators of poor performance adaptation and fatigue at their disposal. Assessment of the criteria below (see table 1 on next page) at every coaching session should enable coaches to identify any non-adaptive stress responses at an early stage before they become a major issue for the athlete:



Coaching Observations	Warning Signs & Symptoms of Non-Adaptive Responses
Direct Communication	Athlete discloses they have: <ul style="list-style-type: none"> - Heavy legs - Doesn't feel good - Legs are sore - Feels tired
Body Language	<ul style="list-style-type: none"> - Facial expression and colour - Slumped or withdrawn posture - Increased levels of frustration
Performance	<ul style="list-style-type: none"> - Poor skill execution - Slow acceleration off the mark - Heavy feet - Poor or slow decision making/response time - Excessive weariness that is prolonged
Psychological	<ul style="list-style-type: none"> - Emotional and mood imbalance/swings - Low motivation and apathy - Low concentration - - Aggressiveness/Hostility/Quarrelsomeness - Confusion - Increased instances of anxiety - No self-confidence
Gut feeling/ 6 th sense/ lifestyle	<ul style="list-style-type: none"> - Poor eating habits - Poor diet - Poor sleep patterns - External stress

Table 1 - A coaching checklist for monitoring athlete's adaptation to training and stress (Adapted from Calder, 1996).

Athletes

Although it is important for coaches to be aware of and monitor the above non-adaptive responses, it is also vital that athletes themselves have the ability to monitor their own emotional states. In recent years, sports psychology research has seen the rise of a concept named emotional intelligence and how can it help sports performance.

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Emotional intelligence is defined as 'the capacity to recognise and utilise emotional states to change intentions and behavior' and can be summarised as:

- The ability to recognise different emotional states;
- Assessing the effects of emotions on subsequent behaviour;
- The ability to switch into the best emotional state to manage a particular situation.

Not surprisingly, an individual athlete's self-awareness to recognise when potential dysfunctional emotional states may be affected by, or be possibly facilitating ineffective recovery behaviours/strategies, is clearly a desirable skill in the prevention of emotional exhaustion symptoms related to underperformance syndrome and potential burnout. Considering the physical and mental stressors a high performance athlete is exposed to, the ability to self-monitor emotions is a potentially priceless asset for an athlete. Below is a six-stage approach to assessing and implementing strategies that people can use to enhance their emotional intelligence

Stage 1: Developing emotional self-awareness

The capability to change emotional states and learning how to change emotions in relation to performance requires self-awareness. We need to be able to identify when our emotions are influencing our performance and how our emotions change over time. We need also to be able to assess the emotional states that other people are feeling, picking up on their body language, verbal and non-verbal gestures.

There are many possible ways in which to assess emotions, including standard psychometric tests; however, athletes often find repeated completions of standardised scales to be a tiresome task. An alternative approach is to use an open-ended diary type approach such as a video or an audio diary.

Assessment of emotions should start by asking the athlete to think carefully about a situation in which performance was very important. It helps if the athlete spends some time rehearsing this situation in their mind, and tries to remember how they felt. The athlete then writes down all of the emotions they experienced. They should also rate how they performed in the situation to allow comparisons between successful and unsuccessful performance.

Emotions such as anxiety can be positive and negative. It is the combination of emotions, and the thoughts that are linked with these combinations that determines whether these emotions are motivational or demotivational.

Key point - It is important that an athlete should assess both their own emotions and those of their team-mates (using mental imagery to help recreate the situations) and note which were associated with best performance and which with poor performance.

Stage 2: Developing self-awareness of emotional states during daily performance

Stage 2 builds upon stage 1. If stage 1 provides the extreme emotions linked with success and failure, stage 2 provides the 'running commentary' of emotions on a daily basis. Here is a small sample of the emotions experienced in a professional soccer player:

- Felt furious during the drive into training. Too many people on the road. Why do bad drivers follow me to work?
- Felt tired this morning. Struggled with training this morning. Became frustrated and felt a little angry when I made mistakes
- Felt happy with overall effort made in training
- Became irritated later in the day over trivial matters and cannot think why, but was angry nonetheless

Notice how emotions from things other than sport can influence how we interpret new situations, whether sport or otherwise.

In this example, the player was frustrated and felt angry during the drive into training, and as a consequence, became angry during training. It's likely that his poor tolerance of errors (by others and himself) was in part because of feeling angry and tired at the onset of training.

Stage 3: Identification of strategies to regulate emotion

It is important to remember that there are ways of dealing with emotions such as anger and anxiety without the need for intervention by a sport psychologist. For example, research has found that listening to music is effective at changing a range of emotions (4).

For example, a soccer player recognises that he preferred to release feelings of anger publicly with the result that everyone around him knew he was annoyed. However, while anger might have been helpful to him, it might not have been helpful to the team who might not have understood why he was angry, especially as they were not aware that he started getting angry on the drive in to training. Equally, he uses the team for emotional support and is seemingly unaware of the influence his expressions of anger alter his team-mates' emotions.

Stage 4: Set emotionally focused goals

Once an athlete becomes aware of emotions he or she has experienced, the effect these have on team-mates and, importantly, whether the emotions were helpful or unhelpful, the next step is to try to change these emotions. For example, identifying that the athlete may experience dysfunctional anger when tired can lead to effective strategies designed to control these feelings. Goal setting has been found to be an effective intervention strategy in a plethora of different skills, but the desire for change is crucial. Resistance to the notion of the adverse effects of negative emotions on others will only serve to maintain a lack of cohesion in a team setting.

Stage 5: Engage in positive self-talk

Once the individual has identified a need for change, developing an appropriate self-talk diary that can run alongside a diary used to record emotions can be helpful. We cannot change our emotions immediately, but we can change the dialogue that runs through our mind when we experience emotions

It is often difficult to engage in self-talk that is counter to the emotion being experienced. For example, depressed individuals find it difficult to engage in positive self-talk. By contrast, happy individuals find it easy to maintain positive mood. Positive self-talk statements are best conducted when the athlete is calm and when the emotion diary or performance diary is being evaluated. Asking an athlete to think of a sentence that they can say to themselves when they recognise the beginning of detrimental emotion can be a helpful way of preventing that emotion from starting. We have found that athletes quickly grow in confidence in their ability to recognise and control emotion through self-talk, and the early stages of raising emotional intelligence can be rewarding for the athlete and consultant.

Stage 6: Role-play to develop emotional control competencies

Role-play can be a very effective method of working with emotions and can also be an enjoyable activity for those taking part. Role-play works effectively when a situation described in the daily diary is re-enacted.

Sleep/rest and dreams

Calder (2003) outlines that passive rest, particularly in the form of sleep, is an area that is not fully understood by either coaches or athletes. Sleep, however, is probably the most important form of recovery an athlete can have. A good night's sleep helps athletes adjust to the physical, neurological, immunological and emotional stressors that high performance athletes experience during the day.

Griffin and Tyrell (2004) outline that recent developments in sleep studies, highlight that poor sleeping patterns and insufficient rest is often associated with patients who are suffering with high levels of anxiety and depression. As discussed above, often high performance athletes specific personality characteristics and behavioural patterns increase their susceptibility to experience their perceived environment as stressful. In an attempt to link the psychological elements of chronic anxiety and clinical depression to physical symptoms Griffin and Tyrell (2004) outline a link between excessive dreaming and depressed patients who are experiencing poor sleeping patterns (see next page)

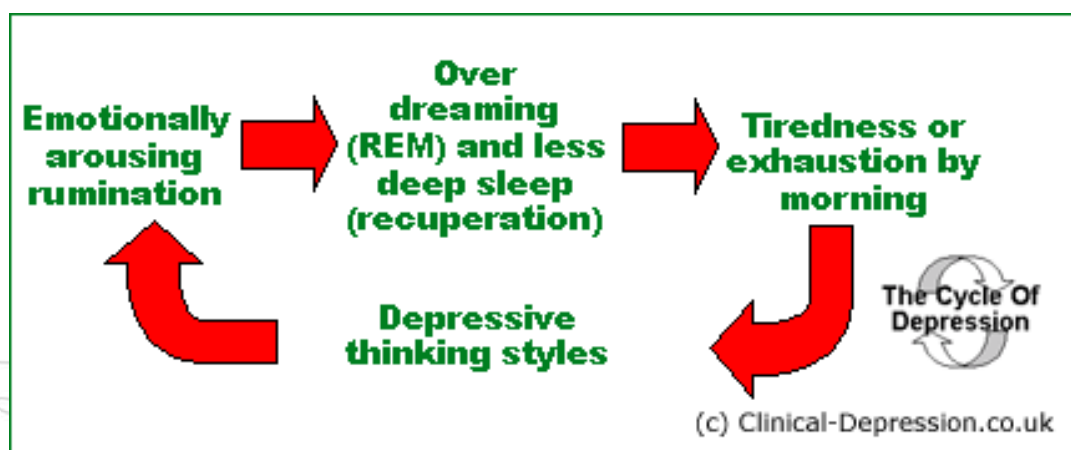
Depression, Anxiety, Dreaming and Exhaustion: The New Link

How your thoughts affect you physically

"Depressed people dream up to three times as much as non-depressed people."

This is a startling, and illuminating fact. And when combined with a recent breakthrough in **dream and depression research by Joseph Griffin** of the European Therapy Studies Institute, it gives us a clear understanding of the how depression affects us physically.

The Cycle of Depression



What dreams do

If you are, or have been depressed, you may have noticed that you ruminate, or worry a lot during those periods. Typically, these ruminations are emotionally-arousing as they are carried out using 'All or Nothing thinking' (more on this later in the section) and a negative bias. That is, you have a thought and you feel unpleasant after it - anxious, angry or helpless.

The trouble with this sort of emotional arousal is that it doesn't *do* anything. The thought creates the emotional reaction (usually anxiety or anger) and that's it.

What this does is leave an uncompleted 'loop' in the brain's limbic (emotional) system.

Normally, the emotion would be 'played through' by action being taken. For example: You think "That's a tiger in the bushes", feel anxious, and then run away. The cycle has been completed. Or, someone annoys you, you shout at them, and the cycle is completed.

(By the way, we are not advocating the 'playing out' of anger as a therapeutic technique. All that does is makes people more angry!)

But what happens when the cycle doesn't complete?

When these emotionally arousing introspections remain incomplete at the onset of sleep then the brain needs to 'do something' with the emotional 'loops' that have been started.

What it does is create scenarios that allow those loops to complete. We call them dreams. The dream acts out, in metaphor, a situation that will allow the emotional loop to be completed and therefore 'flushed' from the brain.

In other words, an imaginary experience whose pattern resembles the 'real life' one enough to create the same emotional reaction.

Normally, this does its job, and everything stays in balance.

Key Understanding - When unfulfilled emotional arousal remains in the brain's limbic system at sleep onset, the brain creates scenarios that allow those loops to complete. We call them dreams. The dream acts out, in metaphor, a situation that will allow the emotional loop to be completed and therefore 'flushed' from the brain. In other words, an imaginary experience whose pattern resembles the 'real life' one closely enough to create the same emotional reaction.

For example, during the day you worry about what someone has said to you, thinking that they were perhaps criticising or making fun of you. That night you have an anxiety dream where someone stabs at you with daggers and you try to run away. The dream allows your system to complete the loop started by the emotional arousal.

However, because you do so much more ruminating, or introspecting, when depressed, the brain has to increase the amount of dreaming you do. And before long you are:

- Spending too much time in dream sleep (Rapid Eye Movement - REM) and missing out on physically-rejuvenating Slow Wave Sleep.
- Depleting your hormonal system with extended night-time emotional arousal.
- Exhausting your 'orientation response' - a crucial brain activity that allows you to change your focus of attention and so motivate yourself. It is also a key part of concentration.

Recurring dreams

If you are continuously having the same problems or ruminating in the same way then you may experience recurring dreams (the same dream over and over). This usually continues until the situation changes or you begin to deal with it in a less negatively arousing way.

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Why are my dreams so weird?

Dreams exaggerate the feelings they represent from waking life, so even if you have just had a fleeting moment of anger at someone during the day, the dream that flushes this out may involve you becoming furious.

As an aside, dreams usually just 'borrow' imagery from your surroundings.

So, for example, images from a recent T.V program may be used by the dream when representing something from real life. So the fact that you kill your brother in a dream, for example, doesn't necessarily mean you have any problems with your brother at all!

Depressive thinking styles mean more arousal

Depressive thinking styles will tend to cause more negative emotional arousal, and therefore more dreaming. This extra dreaming is to try to 'clear the brain' for the next day, but because our negative arousals are excessive when depressed, our natural rhythms find it hard to cope with this "over-dreaming":

Why is over-dreaming bad for me?

Basically, because dreaming is hard work.

Dreaming itself is not a restful activity. Dreaming is called 'paradoxical sleep' because brain wave patterns are similar to those of the brain when completely awake.

Dreaming is a state of arousal.

As far as much of your brain is concerned, your dream is real. So adrenaline and other stress hormones in your system will be active in the body.

This is a double edged sword, because over-dreaming, as well as using up these hormones and energy, is actually making it harder for the body to make more. As you try to flush out the incomplete emotions, you spend more time in REM sleep, and therefore less time in deep sleep, when your body should be recuperating in preparation for producing these hormones for the next day.

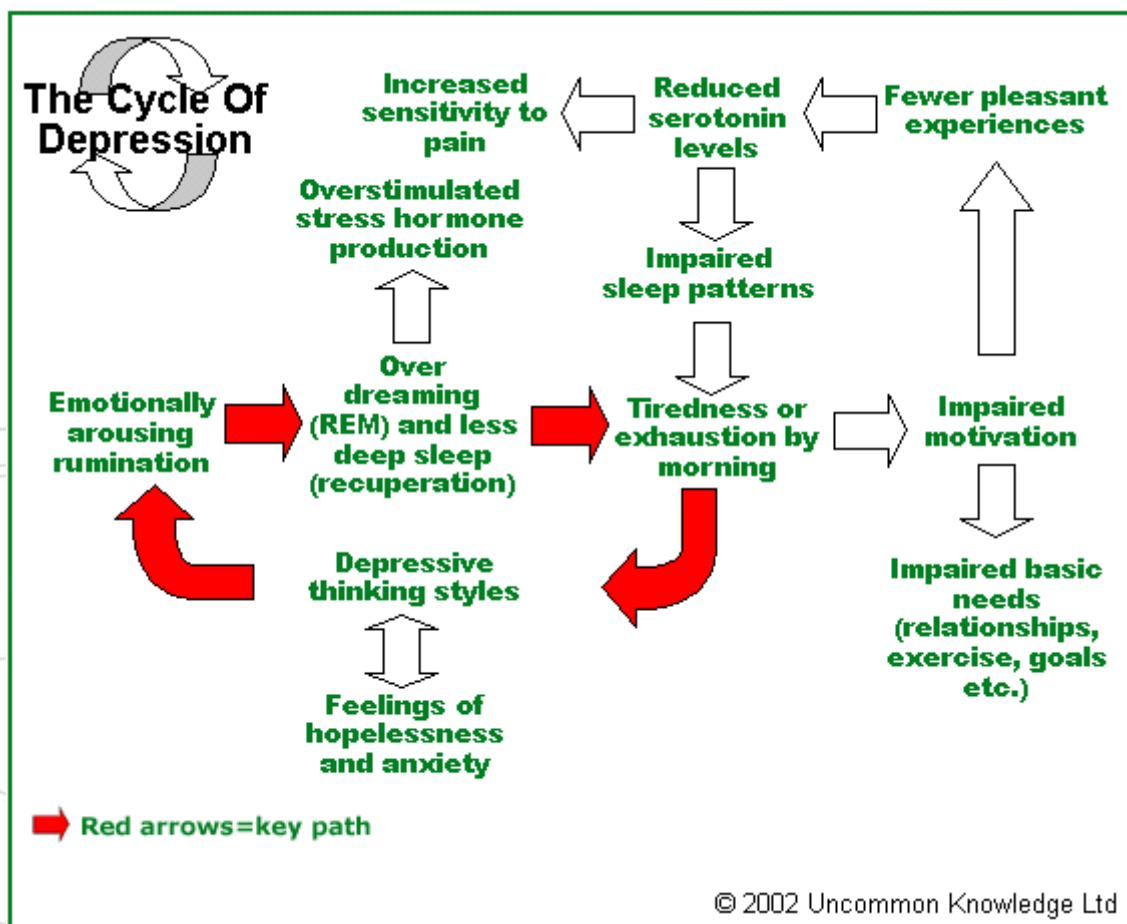
So if you are over-dreaming you're not resting but flooding your system with adrenaline and other stress hormones. If most of your sleep consists of dreams, your body and mind will begin to feel very tired during the day. Depressed people often report that the worst time of day is first thing in the morning

Sometimes a depressed person may start waking up early in the morning and not be able to get back to sleep. This may be a way of the body trying to cut down on over-dreaming in order to try and lift depression.

This depletion is also why depressed people often feel at their worst first thing in the morning.

As the day progresses, their hormones replenish themselves and their energy levels increase, and they are better able to motivate themselves.

Here's a more complete picture of how depression works:



(Note: Levels of the stress hormone cortisol are much higher in depressed people.(1)) And because we can clearly see that what maintains the clinical symptoms of depression is emotionally arousing introspection, or rumination, we know exactly how to deal with it. Cut down the amount of emotional arousal.

Psychological recovery strategies for athletes

The primary aim of any psychological recovery strategy is to ensure that an athlete mentally restores in order to assist future preparation. Calder (2003) identified various psychological strategies that can be used to enhance recovery.

1) Debriefing: Effectively evaluating performance can be a useful way to provide emotional and psychological recovery post training or post competition. A successful debriefing approach helps both the coach and the athlete to evaluate performance objectively, identify what specific changes are needed and then set realistic goals for the next performance. An effective debriefing protocol should emphasise to an athlete and focus on controllable processes rather uncontrollable outcomes of performance. Effectively debriefing performances allows the athlete to achieve "closure" with regards to a past performance.

2) Emotional Recovery/contingency planning: In the case of a major setback or traumatic situation/event additional resources may assist an athlete in "coming to terms" with such a situation. It is important that coaches and athletes have their own individual strategies established in advance in case such a situation arises. Contingency planning is an important aspect of preparation for handling emotionally traumatic events as they can be used to distract your attention away from potential sources of stress.

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

3) Access to Social Support: Boterill, (1982) Suggests that due to athletes' total psychological and social immersion in the sports world, the majority of their friends, acquaintances, and other associations are found in sport environment, and that often their social activities revolve around their athletic lives. Rosenfeld et al (1989) point out that an athletes' social support will often be derived from their athletic involvement. However, in times of emotional stress that is potentially caused by the athletic involvement, it is important that athletes can also access social support networks that are not immersed in such an environment. It is therefore essential that athletes need to build up a network of support contacts that enables them to access specific individuals who will match their emotional needs for specific emotional stressors, such a support group will include significant influences who the athlete feels they can trust for such support eg: previous coaches, siblings, parents, friends and possibly other athletes.

4) Mental Toughness skills: Recognition of the complex interaction between physical and emotional states is important for recovery training, This is evident when muscle relaxation is observed in conjunction with lowered heart rates and blood pressures and improved mood states. Skills associated with developing positive body language are some of the effective skills that have been used by elite tennis athletes (Loehr, 1992). Development of such techniques can be incorporated prior, during and post training and competitive environments.

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5) Relaxation Techniques: There are numerous relaxation techniques available to athletes that can be utilised to energise and regulate levels of anxiety and arousal. Williams & Harris (2001) suggest such strategies can be categorised as muscle to mind and mind to muscle techniques. Muscle to mind techniques typically involve breathing exercises, neuromuscular exercises or progressive muscular exercises, the aim of such techniques being to train an athlete to become sensitive to levels of tension and then control their ability to release such levels of tension. Mind to muscle techniques such as medication, autogenic training and visualisation aim to disrupt the stimulus response pattern of the nerves leading to the brain or away from the brain. Learning to reduce the sensation in either half of the circuit will interrupt the stimulation necessary to produce unwanted muscular tension. Other relaxation techniques include flotation, the athlete immersing themselves in a flotation tank and listening to music relaxing music. By practising one or a couple of such techniques on a regular basis can reduce levels of tension and thus aid recovery.

In summary, for effective recovery management athletes must understand and be aware of how they respond to stressful events. Subsequently, any self-management strategies utilised by an athlete must be individually specific and practiced in order that the athlete can train hard, reduce training injuries/illnesses and cope with the emotional demands associated with a high performance sporting environment.



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