Behavioral Intervention for Stress Management in Sports

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This article covers stress management for athletes beginning with a brief behavioral conceptualization of athletic performance and analysis of stress. Examples of external and internal stressors are offered, as well as of stress responses from autonomic, somatic, and cognitive domains. Further discussed are specific types of stress management approaches used with athletes, and associated with external vs. internal sources of stress, and with the 3 stress response domains. Although the article focuses on the author’s own conceptualization and experiences with sport interventions, relevant research results from the current literature are cited to provide a broader context.

Keywords: athletic performance, stress, stress management

Anxiety and the anxiety disorders have occupied a central place in psychological research (Ebert, Loosen, & Nurcombe, 2000; Edelman, 1992; Hersen & Turner, 2003; Koocher, Norcross, & Hill, 2005; Tyrer, 1999), and many treatments have been proposed (Barlow, 2002; Craske, 1999; Nutt & Ballenger, 2003; Silverman & Treffers, 2001). Cognitive–behavioral interventions have had a significant impact on anxiety and phobic disorders (L. Freeman, 2004; Kazdin & Weisz, 2003; Kendall, 2000; Suinn, 1990) and have provided a valuable foundation for sport psychology theory and practice (Gill, 2000; Lavallee, Kremer, Moran, & Williams, 2004; Murphy, 1995; Orlick, 2000; Schmidt & Wrisberg, 2000; Weinberg & Gould, 1995). This article provides a brief overview of anxiety and sport performance, with a focus on my cognitive–behavioral conceptualizations. Stress and anxiety are discussed within this framework followed by some illustrations of stress management interventions relevant for sport performance. The illustrations...
are from my experience with Olympic and national team athletes. Research findings relevant to stress reduction in sport are briefly described.

ATHLETIC PERFORMANCE: A BEHAVIORAL ANALYSIS

Athletic performance is a complex set of cognitive, emotional, and motoric responses that have been shaped through learning experiences. The most important outcome is reflected in performance under competitive conditions. Performance during practice sessions, no matter how perfect, is considered to be a subgoal. Athletic performance is similar to other performing arts, including theater, dance, music, and public speaking, whereby the primary goal is to display one’s skills during the actual play, recital, concert, or public appearance, and the principles of psychomotor learning and performance are relevant to human performance in general (Domjan & Grau, 2003; Healy & Bourne, 1995; Schmidt & Wrisberg, 2000).

Components of Performance

Sport performances are influenced by several component elements: the strength of correct athletic responses, the presence of interfering incorrect responses, and the athlete’s level of transfer of responses from the practice environment to the competitive environment (Suinn, 1989). The level of potential skill and the pace of acquisition of such skill are influenced by factors such as the athlete’s genetic competencies, past exposure to sports training and performing (which teaches “learning to learn” athletic skills), the quality of coaching, training programs, nutritional planning, and so forth. For any single performance, other variables may restrict the level of actual achievement such as in the negative impact of jet lag, temporary health problems, or recent life stresses.

Of major relevance to this article are the three components of correct responses, incorrect responses, and transferability of skills. Correct athletic responses involve those that make up the primary positive aspects of the sport: the motor skill itself, preparatory-arousal responses, cognitive or cue-instructional responses, and attentional–concentration responses. Incorrect athletic responses involve interfering motor habits, inappropriate arousal or conditioned emotionality, and negative cognitions. The transferability of responses from practice settings to competitive settings is a function of the nature of the practice and its similarity to game stimulus conditions.
Correct Behavioral Responses

A high level of performance reflects a well-developed motor skill. In other words, the athlete will have learned the proper neuromuscular responses, sometimes identified as “proper technique,” such as the arm rotation that maximizes the force of a karate blow, or the quick explosive movement that initiates a rapid start, or the appropriate timing that defines the diving or gymnastic routine.

Another type of correct response involves the preparatory-arousal sequence, that is, the achievement of the athlete’s optimal level of activation (Gould, 1994; Tenenbaum, 2003). This concept involves the Yerkes–Dodson “inverted-U” law, which demonstrates an optimal level of arousal, with levels above or below being associated with poorer performance (Hanin, 2000; Yerkes & Dodson, 1908). Thelwell and Maynard (1998) and Woodman, Albinson, and Hardy (1997) each conducted studies comparing performances within versus outside ones’ optimal arousal level. They found that ratings of performances or actual game scores were both better when “in the optimal zone.”

Cue-instructional responses include such cognitive responses as game strategies or thought stimuli associated with triggering complex motor responses. In the latter case, the self-instruction of “be loose and dynamic” may precipitate simultaneously a muscular event, effort, style, and an emotional response. Finally, attentional–concentration responses are those that focus the neuromuscular and sensory–perceptual states to a narrowed set of cues and an equally narrowed set of responses related to the special demands of the competition (Moran, 1996). Kerr and Leith (1993) were successful in the use of self-talk or self-instructional procedures to improve performances as well as increase the attentional skills of competitive gymnasts.

Incorrect Behavioral Responses

Incorrect athletic responses impair the performance of correct responses. For instance, if the athlete has not extinguished a tendency to flinch, then accurate shooting will be impaired. Similarly, if the athlete’s arousal level is too low, then the motor performance may be diminished in intensity or preciseness. With inappropriately high arousal, motor coordination may be affected and concentration disrupted. In conditioned emotionality, the athlete experiences negative emotions or mood states under specific cue conditions, for example, when confronting an opponent who has always proven better or in facing the next team while mired in a losing season. Negative cognitions may also impair performance. One correlate of negative thoughts is low
self-efficacy (“I’m not good enough”). Recent data on athletics has confirmed that efficacy is indeed predictive of athletic performance. For instance, individual efficacy was predictive of performance of athletic tasks early in training, and team efficacy was associated with higher performance during actual competition (Feltz & Mugno, 1983; McAuley, 1985; Myers, Feltz, & Short, 2004).

**Transfer**

It is important that skills displayed under practice conditions generalize to competition. Transfer is enhanced to the degree that the practice conditions are similar to game conditions (Healy, Wohldmann, & Bourne, 2005; Schmidt & Wrisberg, 2000). There are a variety of ways in which practice can differ from competition: Practice “opponents” are not real opponents (but only sparring partners); environmental conditions are dissimilar (nothing can duplicate the noise level of basketball’s Paley Pavilion or football’s Texas Stadium with a hometown crowd). Research has also demonstrated that transfer is affected by training variables such as the use of immediate versus summary feedback; reliance upon grouped training versus alternating training methods; reliance on discriminative stimuli; and the role of fatigue, frustration, or overload (Alberto & Troutman, 1999; Healy et al., 2005; Schmidt & Lee, 1999; Schmidt & Young, 1987).

During practice or training, when motor skills are being acquired, stress or anxiety may interfere with the proper learning of the correct motor skills. Following acquisition and prior to performance on competition day, the presence of anxiety may be experienced as excessively high arousal (being “hyper”), or as an “out-of-body” sensation. During performance, anxiety states can lead to loss of smooth motor coordination, can disrupt concentration and attentional focus, and may precipitate negative cognitions. In addition, frequent appearance of stress responses during competition can result in anxiety becoming a conditioned emotional response to competition cues, leading to sleep disturbances, excessive precompetition worry, and impaired performance. Finally, to the degree that the competitive environment is by nature a stress-related one, stress coping skills deserve attention as a routine part of an athlete’s training.

The presence of anxiety is not necessarily predictive of impaired sport performance (Kleine, 1990; Jones & Swain, 1995). Researchers and practitioners have recognized that sometimes anxiety is facilitative rather than debilitating. This conceptualization builds partially on the Yerkes–Dodson law, interpreting anxiety as a drive state, such that an optimal level of anxiety might be facilitative and motivational. Hanin (2000) actually postulated that
an optimal level of anxiety can be measured for individual athletes, this level falling within one half of a standard deviation of the athlete’s anxiety test score. Research based on this hypothesis has produced mixed results (Halvari, 1996; Hanin, 2000; McNally, 2002; Thelwell & Maynard, 1998). Whether the presence of anxiety is viewed as facilitative or potentially debilitating also seems a matter of appraisal. For instance, elite athletes tended to interpret their anxiety symptoms as more facilitative than athletes with lower skill (Eubank & Collins, 2000; Hanton & Maynard, 2004; G. Jones, Hanton, & Swain, 1994; G. Jones & Swain, 1995; Swain & Jones, 1996).

Despite the possible facilitative contributions of anxiety, reducing anxiety’s debilitating effects is of major interest to applied sport psychologists. Anxiety reduction has been the center of attention for nearly every possible type of sport, such as field hockey, gymnastics, sport parachuting, shooting, soccer; swimming, tennis, and volleyball (Fenz, 1988; Hanton, 2001; Holt & Hogg, 2002; Jiang, Zhu, & Liu, 1999; Kolt, Hume, Smith, & Williams, 2004; Lanning & Hisanaga, 1983; Maynard & Cotton, 1993; Maynard, Smith, & Warwick-Evans, 1995; Perna, Antoni, Baum, Gordon, & Schneiderman, 2003; Terry, Coakley & Karageorghis, 1995; Ward, 1997).

STRESS AND ANXIETY: A BEHAVIORAL ANALYSIS

I have elaborated on a behavioral model of stress and anxiety elsewhere (Suinn, 1980b) and provide a brief summary here. I use the term stress as a generic term to refer to a state that is experienced as tension. The cue conditions that precipitate such stress are labeled as stressors, and anxiety or stress responses mean those characteristics that, when present, lead to the inference of stress. Stress results from the interaction between stressor variables (such as unfair judging, poor field or course conditions, being behind in game score, biased crowd participation) and person variables (such as personal sensitivities, tendency to appraise conditions as threatening, poor coping skills, perception of control, or history of success) (Lazarus, 1998; Wells, 1996).

The presence of stress can be inferred through any or all of three basic response domains: the autonomic–physiological, the somatic–behavioral, or the cognitive–affective (Deffenbacher & Suinn, 1987; Suinn & Deffenbacher, 1980). For a given athlete, stress responses may appear in different patterns, including the dominance of symptoms in one domain and not the others (Martens, Vealey, & Burton, 1990). Where the autonomic–physiological domain is involved, stress responses may include heightened autonomic arousal, distress, and psychophysiological symptoms. Where the somatic–behavioral domain is involved, symptoms can include muscular tightness and
motor coordination decrements. Where the cognitive–affective domain is involved, responses may show as negative thoughts, uncontrolled cognitions, disruptions of attention or concentration, worry, dread, or hypervigilance. Such stress reactions have direct relevance for athletic performance. In the presence of autonomic–physiological reactions, the athlete may experience hyperarousal and excessively burn off energy, may have stomach cramps or loose bowels, or may be unable to sleep or rest. Where somatic–behavioral reactions are present, the athlete may lose fluidity and flexibility, with resulting danger of injury. There may also be interferences with coordination with corresponding restrictions in accuracy and power. Where cognitive–affective reactions are present, attention may be inappropriately focused on nonessentials or the athlete may become distracted from focus on the task. Cognitions may take the form of worrisome ruminations about outcomes (“I won’t last long enough to finish the race”), personal evaluations (“I don’t feel I trained hard enough”), or apprehensive anticipations (“What if . . . I get behind early . . .”). Such cognitions can interfere with the athletic challenge at hand.

A number of sport psychologists have sought to identify sources of athletic stress. For instance, Gould, Jackson, and Finch (1993) and Scanlan, Stein, and Ravizza (1991) have surveyed national level figure skaters, and Park (2004) interviewed a Korean national team and 180 professional athletes in archery, baseball, basketball, golf, gymnastics, martial arts, shooting, skating, skiing, swimming, table tennis, track and field, volleyball, and weightlifting. Holt and Hogg (2002) studied members of a women’s national soccer team prior to the 1999 soccer World Cup finals. Finally, Anshel, Porter, and Quek (1998) conducted a study of 477 athletes in Singapore regarding sources of acute stressors. Studies such as these identify external and internal stressors. External stressors include such circumstances as the appearance of a particular opponent, unexpected weather or course or field conditions, the sight of someone else’s posted score, or simply the sight of the starting gate. Other examples of external stressors include a bad call by a referee, entrance onto the home court or home field of an opponent, negative comments from an opponent or spectators, or the presence of media. Media influence was also prominent among the external stressors listed by U.S. figure skaters in the Gould et al. (1993) study, and Scanlan et al.’s results included the general category of expectations of others. Of interest, coaches were possible stressors, at least within a study of soccer team members (Holt & Hogg, 2002). An opponent who cheats ranked high as a stressor among a sample of Singaporean female athletes, and making an error was a major stressor among the men (Anshel, Porter, & Quek, 1998).

Internal stressors include thoughts, appraisals, or perceptions. Examples of internal stressors include being aware of physiological signs of fatigue, interpreting a bodily response as fatigue and concluding that this means the
race or game or fight is lost, or even continuously wondering if fatigue will set in before the event is complete. Park (2004) identified a number of internal stressors including negative thoughts, high expectations, fear of failure, and lack of self-confidence. Gould et al.’s (1993) finding also highlighted the existence of self-doubt as a stressor, and Scanlon et al. (1991) confirmed the relevance of worries about failure as a stressor.

STRESS MANAGEMENT FOR ATHLETES

Stress Management: External Stressors

Stress management to control external stressors can take several forms: removal of the external cues, extinction of the conditioned emotional response to those cues, or conditioning new responses to such cues. Because continued attention to stress cues maintains stress, removal of such cues is necessary to reduce stress. For some athletes, seeing other competitors perform arouses tension and anxiety. Preventing such observations would therefore be one way of at least delaying the onset of anxiety. A world-class fencer would always sit with a towel over his head, to prevent himself from seeing the other competitors and to enable himself to focus instead on other matters (Suinn, 1976). Pentathlon team members bring books or read slogans on their pistol cases instead of watching the judges scoring their targets. I trained a Nordic cross-country skier to actively concentrate on nearby trees (“Look for the tree with the highest branches”). This approach at least temporarily prevented stress cues from taking hold, and reduced the tendency of stress to build up from accumulated exposure. Dugdale and Ecklund (2002) measured eye movements of participants viewing video of Australian football showing umpires, football players, and coaches. In this experiment, focusing on the umpires in the clips interfered with the desired task–behaviors. The instruction to consciously try to “not attend to the umpires” was ineffective. On the other hand, separate instruction to actively focus on the ball was the most effective strategy.

A second intervention approach involves extinction of the anxiety response–external cue relationship. Where external stressors are specifically identified as involving stable cues, a desensitization therapy may be indicated, whereby relaxation responses are used to countercondition the anxiety response (Wolpe, 1982). I have applied this approach in working with a recreational skier who suffered agony in a ski accident. Her injury was so severe that any cues associated with skiing would precipitate flashback responses and emotionality. Desensitization was successfully used to eliminate these automatic responses. Over the years, desensitization has been
explored with various athletes for reducing effects of trauma, increasing pain tolerance, or controlling anxiety (Bauman & Carr, 1998; Blacksmith, 1977; Dorsey, 1977; Etter, 1980; Heyman, 1987). Oglesby (1999) used a variant of desensitization with 48 college varsity athletes involved in field hockey, gymnastics, lacrosse, track and field, or volleyball. Although no significant changes in a paper-and-pencil state–trait anxiety measure were found, significant reductions in subjective self-ratings of anxiety associated with memories of their “worse moment in sports” were identified for the group treated for anxiety compared with the placebo group.

A third approach conditions new responses or associates a new “meaning” to the initial stressor. Prior to the 1980 Summer Olympics in Moscow, athletes and coaches were concerned about the extreme Russian nationalism and the negative feelings that could be activated by the sights and sounds of the Russian stadium. A classical conditioning program was developed, whereby the sight of red (as in the Russian flag) was paired with feelings of competency and readiness to perform at peak levels. Because these Summer Games were canceled for U.S. athletes, the training was not completed. On the other hand, a similar approach was successfully used with members of a university women’s volleyball team in preparation for a series with the UCLA basketball team. The UCLA team members were perceived to be unusually talented, strong, and tall, and to be unbeatable. Suinn (1984, 1997) used an imagery-rehearsal method, visuomotor behavior rehearsal (VMBR), to assist the women to more accurately judge the UCLA team: What do they really look like in “real life” stripped of their reputation? Self-report results suggested that the VMBR helped the athletes reduce their anxieties about facing UCLA. Imagery-rehearsal techniques have been used extensively for sport performance enhancement (for reviews, see Driskell, Copper, & Moran, 1994; Feltz & Landers, 1983; Suinn, 1997).

**Stress Management: Internal Stressors**

Internal stressors include the awareness of fatigue or errors and their consequences. The sequence for fatigue involves attending to the early signs of fatigue, which is followed by worry and tension that leads to muscle tightness and motor interference (e.g., onset of cramps). Fatigue signals act as cues for stress responses or as cues for adaptive behaviors. The sequence for errors involves the committing of a performance error, which the athlete evaluates negatively, thus precipitating inappropriate thoughts or emotions, which in turn disrupt performance.

Various attempts have been made to identify psychological factors in fatigue such as mood states (Hooper, MacKinnon, & Hanrahan, 2003: Suinn, 1997).
Lowther & Lane, 2002). Some sport psychologists have suggested that anxiety and stress can either influence fatigue directly or affect mood states, which in turn create fatigue or energy loss. Perna, Antoni, Kumer, Cruess, & Schneiderman (1998) hypothesized that stress would be associated not only with negative moods but also with loss of energy. They provided a cognitive–behavioral stress management program to rowers focused on controlling thoughts and maintaining relaxation. Their results showed a reduction in both depressed mood and fatigue and reduced salivary cortisol after the 4-week intervention.

The presence of errors or the onset of fatigue cues need not always be associated with a stress sequence. Mahoney and Avener (1977) discovered that successful Olympic gymnasts differed from less successful ones in terms of their responses following an error. The successful athletes used the error as information to plan the next sequence of moves; the unsuccessful athletes were emotionally reactive or ruminative about the error. Morgan (1984), in his studies of marathon runners, concluded that an “associational” style was preferable in effective running. In the associational style, the runner continuously monitors his or her physical state, using the bodily signals as data for making adjustments in running, to maintain a steady state. Morgan referred to this as a “pay as you go” (p. 313) method for expending energy while achieving pace. Poor runners ignore their physical signals and instead run harder earlier to achieve a fast pace, but they then wear down and eventually lack energy to complete the race; these are the “buy now, pay later” (p. 313) runners. Thus, as confirmed in both the gymnast and marathon studies, error or bodily signals can serve either as triggers for further stress or as signals for adapting one’s subsequent behavior. Suinn, Morton, and Brammell (1979) trained cross-country runners to identify early signs of fatigue, then to cue off a relaxed style of running, using a combination of relaxation training, VMBR, and thought cuing. Data on oxygen consumption during treadmill testing confirmed that athletes can alter their styles to reduce oxygen utilization, signifying greater physiological efficiency.

**Stress Management: Autonomic–Physiological Stress Responses**

An athlete’s stress response may involve autonomic–physiological arousal, whereby stressors are experienced as increased heart rate, higher respiration, and other symptoms of excessive arousal. Biofeedback training has been used as a method for directly controlling autonomic–physiological responses and as an adjunctive treatment of physical disorders such as essential hypertension and Raynaud’s syndrome by controlling blood pressure or blood flow (Carlson, 2003; A. Freeman, Pretzer, Fleming, & Simon,
In addition, biofeedback has been studied as a means for controlling anxiety disorders as well as situational stress arising from medical procedures (Chang & Hiebert, 1989; Fahrion & Norris, 1990; Ryan & Gevirtz, 2004; Schwartz & Andrasik, 2003). Some studies have examined the influence of biofeedback for various types of performance, such as public speaking, music performance, and sport performance. Hickerson (1998) reported biofeedback training increased participants’ control of physiological stress symptoms (heart rate, breathing) and improved ability to give public speeches. Niemann, Pratt, and Maughan (1993) also used biofeedback and coping training for relaxation among musicians and reported reductions in debilitating anxiety. Prapavessis, Grove, McNair, and Cable (1992) used a combination of biofeedback, thought stopping, and muscle relaxation with a rifle shooter in a single-case design. Anxiety levels, gun vibration, heart rate, and urinary catecholamines decreased, and self-confidence and performance increased over the 6-week intervention. In another study, Strack (2003) reported the biofeedback intervention baseball group achieved a 60% improvement in batting practice results compared with a 21% improvement of the control group even though there were no significant differences in anxiety.

Anxiety management training (AMT; Suinn, 1990) involves training in the direct use of relaxation under conditions of arousal, including anxiety arousal, anger arousal, or other impulse activation. During AMT, the athlete visualizes the disturbing situation, permitting the situation to precipitate the physiological arousal. Relaxation is then initiated to reduce heart rate, respiration, and other indicators of physiological arousal. AMT for multiple stressors was applied with the U.S. Modern Pentathlon Team. In the Modern Pentathlon, athletes compete in five events: shooting, running, swimming, riding, and fencing. Because each event is very different, stress management training would be extremely lengthy were such training to target each of the events separately. AMT provided a coping approach that controlled maladaptive arousal regardless of the situation prompting the arousal. AMT was used with one pentathlete who experienced stress reactions in pistol shooting, fencing, and horseback riding. Following an abbreviated training, the athlete developed sufficient AMT skills as to win against an international field, including a former bronze medalist.

### Stress Management: Somatic–Behavioral Responses

Stress responses may also include the somatic–behavioral domain and manifest as neuromuscular tightness, motor coordination dysfluencies, restless and random activity, or constricted movements. Free movements may be lost, and error patterns may be repeated. In some cases, these responses may
actually reflect excessive autonomic–physiological arousal or cognitive stressors. However, where the stress responses seem focused primarily on the somatic–behavioral domain, then certain stress management procedures are appropriate.

If the stress appears as tightness and rigidity, then simple relaxation or breathing exercises may be useful, including the Jacobsen deep muscle relaxation technique (Jacobsen, 1938; Suinn, 1980a). Maynard and Cotton (1993) compared applied relaxation with positive thought training on measures of somatic and cognitive anxiety. The relaxation intervention led to a 32.7% reduction in somatic anxiety compared with 16.7% from the cognitive treatment. The cognitive intervention resulted in a 31.9% improvement in cognitive anxiety compared with 13.9% from the applied relaxation treatment in a field setting. This study, like others described later in this article, highlights the specificity of treatment effectiveness.

Where the anxiety appears as uncoordinated, restless activity, the recommendation could be for the athlete to engage in motor behaviors opposite to these, such as more deliberate and slow-paced walking, less rapid speech, or slow-motion arm movements. Using this method, more controlled neuro-muscular feedback signals will be transmitted internally. In some cases, an athlete lacks the sensitivity to know when muscles are relaxing. In such instances, I have paired up athletes, with one person putting his or her hands on the shoulders of the other. Sensing this weight, the athlete preparing to relax can then monitor shoulder muscle relaxation by feeling the shoulders lower under the combined weight and relaxation exercise.

Occasionally the athlete’s stress response involves motor constriction and loss of free range of movements. With one wrestler, this appeared in his grabbing and holding on rather than fluidly using different throws or holds. To counter this tendency to freeze, I had him begin each match with broad, exaggerated, wide-ranging motions in order to cue freer movements.

Stress Management: Cognitive Stress Responses

Cognitive stress responses involve thoughts that either are themselves consequences of a stressor or may act as stressors to precipitate other stress responses. These thoughts may be disruptive cognitions, worrisome ruminations, poor self-efficacy statements, or helpless-oriented thoughts such as a sense of not being in control.

Among elite athletes, negative self-thoughts, self-doubting thoughts, and worrying about not doing well have been identified as common cognitive stressors (Gould, Ecklund, & Jackson, 1992; Gould et al., 1993; Park, 2004; Scanlon et al., 1991). The influence of cognitive anxiety on performance was
clearly demonstrated in a laboratory study of Williams and Elliott (1999), who measured eye scanning, fixation, and focus while karate martial artists viewed video clips of an opponent. Participants high in cognitive anxiety visually attended to less relevant, more peripheral areas of their opponent.

A variety of interventions are appropriate for the control of unhelpful thoughts (Moran, 1996). These are cognitive restructuring, positive thought control, thought isolation, and attentional refocusing. Cognitive restructuring is a common approach to thought management in clinical work and has application for anxiety control by athletes (Beck, 1985; Ellis, 1996; Holt & Hogg, 2002). This approach confronts the irrationality of the athlete’s thoughts and requires restructuring them to match reality. Haney (2004) compared a cognitive restructuring intervention with progressive muscle relaxation in women athletes. One measure provided assessment of three adaptive coping behaviors, namely, engaging in active coping actions, planning, and suppressing competing activities. The scale also identified three maladaptive behaviors, namely, denial, mental disengagement, and physical disengagement (Carver, Scheier, & Weintraub, 1989). Following a 6-week treatment, both approaches significantly reduced trait anxiety, increased coping, and increased self-efficacy. The only difference was the greater value of cognitive restructuring in reducing maladaptive coping strategies.

The following case example illustrates how cognitive restructuring or reappraisal can benefit an athlete. An Olympic fencer often hurried her warm-up time because of officials’ delaying her ability to get to the fencing strip on time. Her prior reaction was to think, “I’m holding everyone up; they’re mad at me; I shouldn’t take any more time.” Without a decent warm-up, she also would feel, “I’m not really ready to fence . . . I haven’t even warmed up, I can’t possibly perform well . . . oh, well let’s get it over with.” In working with her, I had observed her rapid ability to eliminate anxiety through new insights or through changing her perceptions. Hence, restructuring was used, whereby she was required to reevaluate the circumstances for delays, her own rights as a competitor, and the rationality of her rushing her warm-up. Her thoughts now altered to, “I have as much right to warming-up; they kept me waiting too, so now they can wait a little for me; if I’m taking up too much time, it’s the judge’s obligation to tell me and not my responsibility.” In overcoming this obstacle, she went on to a successful competitive season, qualifying to be on the U.S. Olympic Team.

For athletes struggling with being in a slump, restructuring can also prove valuable. Athletes in slumps typically randomly try out different technique changes in hopes of pulling out of the slump and soon conclude that “nothing works,” leading to giving up or becoming anxiously frantic. One approach I have relied on is to have the athlete change a single part of his or her technique, systematically testing this change several times. Even if this does not lead to performance improvement, the athlete is still encouraged
to understand that “at least you’ve made progress in ruling this area out, so you are systematically progressing toward a solution,” as opposed to feeling that nothing effective has been achieved.

Positive thought control involves the use of self-instruction to cue off adaptive behaviors and to replace interfering useless thoughts (Suinn, 1987). Negative self-talk generally involves ambiguous, urging, but directionless self-instructions such as “Pay attention and concentrate, dummy.” A self-instructional positive correction might therefore be “Here’s an approach shot, just stroke it across court.” Maynard et al. (1995) provided positive thought control training involving strengthening positive thoughts and controlling the appearance of negative thoughts. Participants were semiprofessional soccer players. Performance measures involved coaches’ ratings of physical skills, such as accuracy of passing, and ratings of decision-making skills, such as knowing when to pass. Results showed that the cognitive intervention increased both physical and decision-making performance along with reducing anxiety. Terry et al. (1995) used imagery rehearsal to train young tennis players to replace negative images with positive ones and also found reductions in anxiety.

A variation of positive thought control focuses more on isolating the negative thought rather than emphasizing positive self-instruction. Thought-stopping involves instructing the athlete to actively stop a negative thought from developing further. A simple strategy might be to picture “a large bright stop sign” to halt the thought. I have sometimes instructed an athlete to picture these thoughts as being placed in a “compartment in your mind, where you now shut the door on them until the competition is over” or to picture these thoughts as “running through your head, straight through your head, and out . . . and gone.”

In attentional refocusing, the athlete stops attending to stress stimuli (such as staring at the starting area) and instead attends to a nonstress stimulus (such as conversing with a friend). This method has applications as well to negative thoughts. One skier on the U.S. National Cross-Country Ski Team kept thinking, “I’m not smooth on hill climbing, hills are always a problem.” As a consequence, when she approached a hill she exerted extra effort, would lose her rhythm, ski poorly, and confirm her worst fears. Prior to the next race, I instructed her to instead search for the tallest tree on each hill she approached. This not only refocused her attention on new thoughts, thereby displacing the negative ones, but also raised her head higher and freed up her breathing. This performance helped her earn a third place finish, making up for an extremely poor initial run. The laboratory study by Dugdale and Ecklund (2002) previously cited used a cue word ball to refocus the participant’s attention on adaptive behaviors. Similarly, Rushall, Hall, Roux, Sasserville, and Rushall (1989) found that using cue words to key off task-relevant behaviors improved performance among skiers.
Stress management may remove obstacles to learning or performance or may enhance the subjective satisfaction of athletic activities by removing distress. In the former, stress management training is provided because the presence of stress inhibits learning or blocks optimal performance. In the latter, learning and performance may not be affected by anxiety, but the attendant stress can create discomfort, nausea, or sleep difficulties. Thus, stress management skills can help an athlete feel better with a better quality of life, even though he or she does not perform better. In some sports, stress may actually be part of the excitement and attractiveness of the sport for a competitor, such as in high-risk sports. A thorough assessment of the degree to which reported anxiety is facilitative or debilitating is needed prior to the implementation of any stress management program.

Assessment is important because the conditions that produce stress may be very specific. Further reported symptoms may be due to other causes, and these have to be considered prior to the implementation of an intervention. Specifically, intense autonomic arousal may be related to physical illness; sleep irregularities may be caused by oxygen deficit at altitude; muscular tightness may be associated with the need for orthopedic adjustments; mental slumps and depression may be caused by overtraining; poor concentration may be connected with deficits in attentional skills or even distracting symptoms from allergies. Although there may be some value to considering a general trait of anxiousness, the trend in sports anxiety assessment is to take a more sport-specific orientation (Gill, 2000; J. Jones & Hardy, 1990; Weinberg & Gould, 1995). Response to stress varies, with different athletes exhibiting stress through different domains: autonomic–physiological, somatic–behavioral, or cognitive–affective. From my experience in working with a range of athletes, I have concluded that (a) different “individual stress profiles” exist; (b) different stress sequences exist—with one athlete reacting to an external stressor first with negative thoughts, which in turn prompt autonomic and somatic symptoms, whereas another athlete may respond first with autonomic stress responses, which in turn precipitate cognitive or somatic symptoms; and (c) the most beneficial stress management techniques are those that are individually matched to individual differences and to the existing coping styles and/or skills of the athlete (Martens et al., 1990). Fortunately, cross-over effects (Burton, 1990; Davidson & Schwartz, 1976) have been documented, whereby treatment in one domain has a positive effect on another domain, although the effect is smaller than that from a direct treatment focused on that domain.

The acquisition and application of stress management techniques by an athlete should be viewed in the context of skill acquisition, akin to motor skill
acquisition and performance. Stress management skills require training and practice and repeated successful applications in the performance context. Knowledge of stress management is no guarantee of the skilled application of such activities. In addition, it is important to consider stress management as self-control training. The eventual goal is the ability of the competitor to initiate stress management through his or her own skills and to not have to rely upon the presence of the psychologist.

In sum, stress management can be an important contributor either to the performance of an athlete or to the satisfaction experienced by an athlete. Proper assessment of the individual circumstances is critical to program planning for stress. Such assessment has to encompass not only consideration of the stress characteristics of the athlete in question but also the ruling out of other nonstress factors that might contribute to the presenting difficulties. Various stress management approaches are available with varying degrees of research or case history validation. A proper match and training in such approaches can enhance athletic endeavors for athletes of all levels.

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