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The Effect of Stress Coping Techniques in Sports

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The Effect of Stress Coping Techniques in Sports

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Abstract

The first part of this literature review goes over the biological and psychological aspects of stress. The cause of stress can be linked back to a primitive instinct known as “fight or flight.” The “fight or flight” instinct is triggered by several chemical reactions in the body starting from a signal from the amygdala to the sympathetic nervous system. Stress can also be categorized into internal and external stress. Further research links stress to sports. Many studies show that stress coping techniques such as meditation, self-talk, rituals, etc. are beneficial to athletes during competition. Suggested avenues of further research are to develop a standardized way to incorporate practicing stress coping techniques into a younger athlete’s routine, discover whether the same stress coping techniques can be used throughout all sports, and whether certain stress coping techniques will benefit people of different personality types equally.

Keywords: Stress, Coping, Sports, Psychology, Athlete

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Introduction

Overview of Stress

Stress can be conceptualized as a response to a challenge or threat. The purpose of stress dates back to one of the most basic animal responses: fight or flight. Stress is essentially a response that alerts and prepares your body in the event of potential psychological or physical danger. In the most primitive form, stress is used as a catalyst for protection. While stress generally has a negative connotation, it is essential for survival as well as growth. The flight or fight response is linked to the sympathetic nervous system. When faced with a stressful situation, a part of the brain called the amygdala will activate, sending a signal to the hypothalamus, which is composed of two parts: the sympathetic and parasympathetic nervous system. As stated by Harvard Health Publications (2011), the parasympathetic nervous system triggers increased production of the chemicals called, epinephrine (more commonly known as adrenaline), cortisol, and norepinephrine. The most widely known of these chemicals, adrenaline, “triggers the release of blood sugar and fat from temporary storage sites in the body (Harvard Health Publications 2011). Drawing on these nutrients gives the body a surge of energy. Initially, this was the function of stress. However, over a prolonged period of time, stress can be very detrimental to the body’s health. Stress can act negatively by suppressing the immune system, increase the likelihood of muscle cramps, headaches, heart problems, and sleeping difficulties (Medical News Today 2015). Psychologically,

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stress can cause many shifts in people's thoughts and feelings such as anxiety, insecurity, irritability, restlessness, anger, and fatigue (Medical News Today 2015). People also undergo negative behavioral changes as well.

In the highest level of any sport, where competitors have all put countless hours into perfecting technique and strategy, anything can tip the scales. The world of competitive sports is often conducive to a stressful atmosphere. Athletes must handle both the short term stress during competition and the long term stress of results and expectations. It is especially important when high level athletes must control their bodies with the highest precision. Just like everyday life, stress can induce a fight or flight response during competition. In sports, the "flight" can refer to nervousness or fear. Oftentimes, fear is recognized when an athlete starts to make "comfortable" or "safe" plays instead of sticking to a game plan. It can be seen in basketball, when a player opts to pass instead of taking the open shot, in tennis, when a player backs off from the net after being in an advantageous position, or in volleyball, when the wing spiker hesitates to call for a shot. Every sport has moments where a certain amount of risk is required in order to win. Athletes must confront the natural "flight" instinct in order to make the right decision. The phrase "play to win, don't play not to lose", is not only a grammatical mess, but a phrase that many coaches will use to encourage their players. As a contrast to "flight", the "fight" function in sports is the instinct to embrace a challenge. The "fight" instinct in sports is not as similar to the primal "fight" instinct, (I think "flight" is more similar to its original meaning). The fight instinct is activated when

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the prospect of a challenge really excites the athlete. There are times when an athlete just craves competition. When all of the negative stressors become fuel for the “fight” instinct, athletes generally perform better. Uncertainty of the outcome can turn into a thrill. Taking risks become easier. It is in that instant that pressure is a privilege. Even though winning a competition doesn’t seem nearly as weighty as trying to survive, the biological response is the same. In both instances, a lot of effort must be used to fight for something of importance.

Assuming that athletes are at a similar level, the ones that are able to deal with at critical moments are most likely to succeed. That’s why many sports refer to certain moments in a game as “pressure” moments. Pressure is often the greatest source of stress in sports. Athletes also use terms such as “choking” or getting “tight”. Biologically, stress is known to tighten the muscles and increase the heart rate. All of the terms mentioned above are used when athletes know that they have failed to cope with stress of the moment. Dealing with stress for an athlete means handling all of the baggage that comes with being stressed out: the emotional ups and downs, the changes in behavior, the inability to control the body correctly, and many more. While it is okay in everyday life to blow off some steam or take a breather, athletes are constantly in situations where there is no room for error. Dealing with stress means that the athlete has to instantly deal with hormonal or chemical changes in their bodies that they have no control over (Harvard Health Publication 2011). While stress causes the emotions of anger and frustration, the most successful athletes appear calm and collected. The concept is very simple; the one who wins is the one who gets the job done despite the

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circumstances. It is often the case that two athletes are very similar in talent and skill level in practice, but there is a huge gap in their level during competition. One prime example is tennis. Many of the top professional players hire hitting partners to do drills with them. Of course, these hitting partners have to have a certain level of competency. To people on the sidelines, it may look as if both players are about equal on the practice court. However, the difference can be as great as being ranked number one versus being ranked two hundred.

In some instances, stress can be a motivator as well as a tool to help get things done. On the other hand, the wrong kind of stress can make an athlete lose focus, feel discouraged, and feel overwhelmed. Stress can also be divided into two categories: internal and external. Internal stress is generated by the athlete. Expectations for one's self are an example of internal stress. Examples of external stressors would be expectations from others, monetary issues, or other athletes. There are many different factors that can bring stress into an athletic career. First there is the idea of self-worth. This is an internal factor that can cause a substantial amount of stress when an athlete feels the pressure to meet his or her own expectations. Because the training is so intensive, it is normal for athletes to invest almost everything into their craft. The result is that many athletes will tend to judge their self-worth through the results of their matches. Taking this kind of all-or-nothing approach can create an overwhelming amount of stress during competition. Athletes who can separate their results from their self-worth are more likely to be able to bounce back from a bad loss. Linking very closely

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to self-worth, another type of stress is purely results based. Fear of losing/failure is very simple but a very deadly stressor (Cohn 2015). Skills and practice time can help athletes gain confidence, which minimizes this kind of stress. However, when athletes are too results oriented, it takes away from the way that they should perform (Cohn 2015). Because results are the only things that are set in stone, many athletes perceive their performance based on wins or losses. Being really focused on the present is good but only if it does not take away potential to improve in the future. External stressors can vary greatly depending on the situation. Growing up, one of the biggest external stressors I experienced while playing tennis is my parents. While my parents were nurturing, they also put immense pressure on me to perform at my best every tournament. In the case of a lot of maturing athletes, their parents are the sole investors in their sports careers. Along with all of the time, money, and effort, athletes have to shoulder the parent's expectations as well. In a study done by Scanlan and Lewthwaite, coaches and parents were found to be very influential on their child's enjoyment of competition (Scanlan, T. Lewthwaite, R 1986) In turn, this enjoyment contributes to confidence and better performance (Scanlan, T. Lewthwaite, R 1986) Famous athletes have the added stress of being under a microscope. The press, fans, team organization, and coaches can put players in stressful situations both on and off the playing field. Interviews and fan speculation is a prime cause of rumors surrounding famous athlete ,the reason being that the body will release chemicals that alter the body indiscriminately during stress (Harvard Health Publication 2011). Stress does not just disappear once an athlete enters competition mode. Even supportive fans can cause

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a lot of stress to an athlete. It was found in a study done by Baumeister and Steinhilber (1984) that the presence of supportive audiences might be detrimental to performance in some circumstances. It was found that “specifically, the imminent opportunity to claim a desired identity in front of a supportive audience might engender a state of self-attention that could interfere with the execution of skillful responses,” (Baumeister, R. Steinhilber, A 1984). An example is when archival data from championship series for baseball and basketball. It was found that in both series, the home team would win early games but lose decisive games ,” (Baumeister, R. Steinhilber, A 1984). All of these are stressors that can deter an athlete from focusing on what needs to be done.

Despite the negative connotation of stress, the top athletes use it as fuel to get closer to their goals. As noted in the earlier, stress is a catalyst for preparing the body for oncoming challenges. Athletes who feel the stress of other athletes catching up in skill level can be motivated to work even harder. An optimal amount of stress and pressure can let muscles perform at the highest level. While no athlete can perform at one hundred percent while completely relaxed, being too tight is detrimental as well. How an athlete copes with negative stress and feeds on positive stress can define his or her career. Just like in a survival setting, athletes need stress to be cognizant of what is negatively affecting their career.

Once an athlete steps onto his or her competitive stage, all of the stress in their lives does not just disappear. Whether the stress is related to competition or not, every kind of stress will somehow affect the performance of the athlete. It is a misconception that the greatest athletes in the world are unaffected by stress. The athletes that

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produce the best results are simply the best at suppressing the negative effects. During the course of competition, there is even the added stress of unexpected events. Bad judgment from the referee or foul play from the other players can add to the mountain of stress that is already built up. The most difficult part is that in the midst of competition, all of the senses and emotions are enhanced so that even a nagging annoyance can be blown out of proportions. The most important thing to realize is that stress is a natural survival instinct. Since it is originally designed to increase survival rate, it is better to formulate a way to put stressors into perspective rather than trying to avoid them.

Stress Coping Techniques

Preparation. Being well prepared can give an athlete peace of mind. Not only can being prepared give an athlete confidence, but it can also leave the athlete more accepting of the result. When an athlete feels unprepared, his or her performance can be affected if the athlete feels hesitant in performing a skill that wasn't practiced adequately. Nutrition, mental state, quantity of sleep, and physical care are also part of the preparation process. Even though it is impossible to mitigate all of the stress, many of the unnecessary stressors such as regret can be avoided. Aside from the physical aspects of preparation, there are many psychological pre-match coping strategies that athletes can use to lessen the effects of some negative stressors.

Confidence. "I learned to believe," is what Djokovic said when he was asked about his success at a 2011 news conference. 2011 is the year the current number one

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tennis player began his domination. The competitive sports world is laden with stress factors. One way to counteract the stress of competition is to have enough confidence to tackle the situation. Confidence, in psychological terms, is closely interchangeable with self-efficacy. Self-efficacy is a term coined by Albert Bandura to describe “people's internal beliefs about their ability to have an impact on events that affect their lives” (Dombeck, Mills, Reiss, 2008). Research has demonstrated that the amount of self-efficacy a person has can have a significant impact on how that person is affected by negative stress. The book *Self-Efficacy: Thought Control of Action* by Ralf Schwarzer (1992), states that “high self-efficacy buffers the experience of stress, whereas low self-efficacy puts individuals at risk for a dramatic increase in threat and loss appraisals.” The article by Dombeck, Mills, and Reiss also stated that “possessing high levels of self-efficacy acts to decrease people's potential for experiencing negative stress feelings by increasing their sense of being in control of the situations they encounter,” (Dombeck, Mills, Reiss, 2008). There are several ways people can perceive an upcoming challenge. Some of the different perspectives are: an opportunity to prove themselves, a task where there is a chance to fail, a neutral task that just needs to get done, a task that is beyond their abilities, or a task that is too easy. Of these options, the most positive one is for the athlete to see a challenge as an opportunity to prove him or herself. Because these opportunities usually present themselves at a time of importance, where the spotlight might be on the athlete, there will almost always be a significant amount of uncertainty. However, according to the literature above, a more confident athlete will have a higher likelihood perceiving a challenge as an opportunity instead of thinking

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about what there is to lose. Regardless of the actual difficulty of the challenge, confidence can create a placebo effect that increases the level of performance by negating some stress factors. A study done by Pollo et al. (2008) showed that there was an increase in muscle work and a decrease in muscle fatigue when participants were administered a placebo. If the same theory is applied, it would be extremely beneficial for an athlete to somehow train or get used to being confident. This may result in the athlete focusing on more positive outcomes rather than worrying about negative stressors. The pinnacle of an athlete's performance is when they are in what is called "the zone". Psychologist Mihaly Csikszentmihalyi calls being in the zone "flow". In his book, *Flow, the Psychology of the Optimal Experience*, Csikszentmihalyi describes the flow as being "completely absorbed in an activity, especially an activity which involves their creative abilities. During this 'optimal experience' they feel "strong, alert, in effortless control, unselfconscious, and at the peak of their abilities." He goes on to explain that some characteristics of flow are losing track of time and external concerns or stimuli, feeling connected to something greater than oneself, and feeling challenged but not overwhelmed in terms of the ability and attention needed to complete a task. Although getting into the "flow" isn't as easy as it sounds, confidence is still a crucial component. As pointed out earlier in Ralf Schwarzer's (1992) book, confidence helps buffer negative stressors. Since part of being in the "flow" is losing track of external concerns (concerns largely being stressors), the right amount of confidence should produce more consistently high levels of performance.

Confidence Building. Confidence building is a crucial part of being prepared. The most effective way to build confidence is to win. However, it is impossible for anyone to never experience loss. Since confidence is crucial in order to perform well, it is important for athletes to mentally prepare themselves to have a confident mindset. Building confidence is very important. An article by Costas Karageorghis (2010) categorizes the sources of confidence into six groups. The groups are: performance accomplishments, being involved with the success of others, verbal persuasion, imagery experiences, physiological states, and emotional states. “

1. **Performance Accomplishments-** As an athlete become increasingly successful at a task or skill, his or her confidence level in that skill should increase. The scale doesn't really matter. Any accomplishment, whether it be learning a new skill or winning a national title, will lead to positive emotions. (Karageorghis, C. 2010)
2. **Being Involved with the Success of Others-** Being involved with the success of others helps one reinforce that what he or she is doing is correct. People receive positive feedback if others are successful using a method that they taught them. It also confirms that the method is more likely to be correct. (Karageorghis, C. 2010)
3. **Verbal Persuasion-** Words have more power than one expects. It is easy to say “I am terrible” without fully meaning it after making a mistake. However, these seemingly harmless words can be destructive. All of the words a person says to him or herself will continuously shape the overall mindset. One technique that a

lot of athletes use is *self-talk* which will be explained later. (Karageorghis, C. 2010)

4. **Imagery Experiences-** If an athlete is able to visualize winning, stress level goes down and confidence goes up. Many athletes undergo *visualization* training; a technique in which the athlete visualizes the successful completion of an action. Visualization will also be explained more later on. (Karageorghis, C. 2010)
5. **Physiological States-** Being in shape not only improves physical performance, but also instills confidence. Athletes are all highly cognizant of the physiological state that they are in. Being injured or unfit can alter the way the athlete performs. Going into a competition physiologically hampered can negatively impact confidence. It is also common that the athlete can be overwhelmed by a situation. Physiological states that can negatively impact confidence are tight muscles, “butterflies” in the stomach, and increased rate of breathing. (Karageorghis, C. 2010)
6. **Emotional States-** Emotional states are regarded as emotions that are induced by competition. Nervousness, anxiety, excitement, etc are all examples of emotional states. These emotions can both be positive or negative. Positive emotions can include motivation, determination, and enjoyment. A critical part of an athlete’s success is their ability to control these emotions. (Karageorghis, C. 2010)

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Confidence building should start before competition. Athletes should be confident right when they step out onto the playing field. The start of a competition can set the mood for the rest of the match. Even if an athlete starts out performing badly, projecting confidence is important as a message to oneself as well as to the opponent.

Self-Talk and Body Language. As stated above, the many comments that athletes mutter to themselves can have a big impact on their performance. And whether athletes realize it or not, they are adding a large amount of stress by using negative self-talk during practice and during competition. Constantly saying positive things about an athlete's ability will reaffirm that they are able to perform. There are four different kinds of self-talk: positive, negative, instructional, and neutral. A study done by Antonis Hatzigeorgiadis, Nikos Zourbanos, Evangelos Galanis, and Yiannis Theodorakis (2011) concludes that "self-talk strategies can make a valuable contribution to skill acquisition, learning, and task performance enhancement in sport. Furthermore, examination of potential moderators revealed that the effectiveness of self-talk strategies may vary depending on the appropriate matching of task and type of self-talk, on task novelty, and on the implementation of training in self-talk interventions." So according to the results of this meta-analysis, positive self-talk is helpful in many aspects of sports performance. Another study done by Hatzigeorgiadis, Zourbanos, and Theodorakis tested motivational and instructional self-talk on water polo players. The study included a group of water polo players who were recruited for two tasks. The first task was to hit a target. The second task was to throw for distance. The study concluded

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that instructional self-talk increased performance in the accuracy task (first task) and motivational self-talk increased performance in the power task (second task). In another study by Landin and Herbert (1999), college level female tennis players were taught self-talk strategies as they tried to complete a volley task. The study showed that using self-talk to bring about cues for what the player needed to do (instructional self-talk) increased the level of volley performance. In this experiment, self-talk is being used as a learning tool in order to get the body to do what the mind wants (Landin, D. Herbert, E. 1999). Being able to generate positive self-talk is not as simple as it may seem. The majority of athletes actually employ negative self-talk; even if they know it is detrimental to them. Reasons for negative self-talk may be: having unrealistic expectations, having low self-confidence, or from frustration at careless mistakes. It is actually pretty easy to fall into the spiral of negativity. So practicing positive self-talk is a must. Learning positive self-talk starts on the practice court. Players need to establish ways to internalize a bad outcome, and vocalize it as an opportunity to improve. An example would be if a tennis player missed an easy shot and said "Only I could miss that shot," when instead, the player should say a positive thing like, "I will focus more and make it next time. Another alternative can be giving oneself an instruction self-talk. An example using the previous situation would be for the tennis player to tell oneself, "move your feet with more intensity and you will make it next time." Thought Stopping is a good technique that is used to replace negative with positive self-talk. Thought Stopping starts by identifying instances where negative self-talk is most likely to occur. Once those instances are recognized, the next step is to come up with a positive

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rephrasing of the self-talk. Finally, when the athlete catches him or herself about to say a negative phrase, the athlete will stop that negative thought process and say the positive one. Learning to constantly bring positivity into the competitive atmosphere will greatly help any athlete.

Meditation. World number one tennis player Novak Djokovic is known for his attention to detail during his preparations. Among his strict diet and hours spent stretching, he puts a big emphasis on meditation. So what does meditation do for athletes? At the most basic level, meditation is a technique that is used to train the mind. During meditation, an individual will try to reach a state of consciousness in order to focus on what is needed. Djokovic himself says that the way he uses meditation is not to escape from everyday stressors. He says that “One of the ways is to kind of meditate, but not meditate with the intention of going away from those problems, but *visualize*.” It can be discerned from this quote that Djokovic uses meditation in order to reflect clearly on how to solve problems. He goes on to say that “Visualization is a big part of everybody’s life, not just athletes’, but everybody. I strongly believe in visualization. I believe that there is a law of attraction: You get the things that you produce in your thoughts. Life just works that way.” Djokovic’s experience and theory with meditation is backed by previous research that suggests that negative thoughts can hamper an athlete’s performance. Meditation can help clear the mind of negative thoughts so the athlete can focus on the goal. An article by the Mind & Sport Institute talks about the benefits of meditation; claiming that athletes who meditate experience [“focus &

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concentration. confidence & optimism. optimal body mind integration, coordination and mastery. Increased ability to enter peak awareness & slowing of time.

Heightened intuition resulting in greater team cohesion & anticipation. Untapped

Energy & vitality. Deepened relaxation & lasting wellbeing,"] (Sports Mind Institute

2015). Mind body integration refers to when a person's mind and body are in the same

state. Peak awareness is when the athlete is able to pick up many details and process

them without thinking. Heightening intuition results in greater team cohesion because

the chemistry of the team will be better. This results in the team moving as one

instinctive unit. Since meditation seem yields many positive results, how does one go

about meditation? First, it is important to understand what mindfulness means.

Mindfulness is (paying precise, nonjudgmental attention to the details of our experience

as it arises and subsides, doesn't reject anything. Instead of struggling to get away from

experiences we find difficult, we practice being able to be with them." (Wegela 2010)

One basic meditation method is to sit comfortably with the legs crossed. A person's

posture should be upright but not too stiff during meditation. An article by Wegela

explains that the three main components of basic meditation are: body, breath, and

thoughts. Therefore, it is very important to maintain an upright, yet natural posture.

Breathing should be natural as possible. It is very common for someone to worry about

whether their breathing is natural or not. Just let it be. Practicing mindfulness includes

accepting whatever thoughts come into the mind. Mindfulness is not an escape from

reality. Observe the thoughts from a non-subjective standpoint. By simply thinking and

observing thoughts instead of judging them, it becomes possible to be mindful of the

situation in its entirety. While basic mindfulness meditation can be helpful in sports as well, there are also specific meditation techniques that can be used for more sports specific benefits. Dr. Kristen Race, founder of Mindful Life, and expert on brain-based mindfulness solutions suggests meditation based techniques to employ the morning before a competition.

1. **Mindful Breathing-** The main focus of mindful breathing is to regulate breathing so the body can enter a more relaxed state. This type of meditation is not used to think about problems. However, mindful breathing enables the mind to think clearly once it is used successfully. It is done in a comfortable sitting position. The person will then close his or her eyes followed by inhaling and exhaling fully. It is important to focus on your breath entering and leaving your body. Start with five minute increments. (Yu 2014)
2. **Body Scan-** Body Scan is primarily used to bring awareness to the body in a systematic way. The process also helps quiet the mind and release tension. The person will lie on his or her back with the palms facing up. The totally relaxed position will make it easier to isolate each limb during the scan. With eyes closed, the person will then focus on each individual parts of the body. Starting from the toes, focus all attention on the sensations that the body part is feeling. For example, notice if the toe is feeling tight or if it is hot or cold. Take time on each body part while breathing to try to release any stress on that body part. (Yu 2014)

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The study by John, Verma, and Khanna (2011), tested the effects of meditation on the Salivary Cortisol (a physiological response in reducing pre-competition stress). Ninety-Six elite shooters were taught meditation techniques. The result was that levels of Salivary Cortisol had decreased which resulted in less pre-competition stress. This resulted in the shooters performing better (John, S. Verma, K, Khanna, L. 2011). Meditation is not the one defining factor that could propel an athlete to guaranteed success. However, there are many benefits that athletes are able to glean from meditation. Stress coping is one of them.

Rituals. Some elite athletes are known to have quirky rituals that they must perform before competition. Rituals can range from modest, such as listening to the same song before every competition, to borderline bizarre; Michael Jordan wearing his college basketball shorts under his NBA uniform for every game. One extreme example is tennis player Rafael Nadal, who gives a whole new meaning to the word ritual. A Men's Fitness article points out that "Nadal takes a cold shower 45 minutes before every match, he towels down after every point (even for aces and double faults), he points the labels of his drinking bottles toward the end of the court he's about to play from and he never stands up from his chair before his opponent. If you're not this neurotic, that's why you've never made it to the Wimbledon Final". So there might be a method to this ritualistic madness. The last sentence of the quote about being neurotic directed its attention to a tennis specific goal, but it may be applicable to all forms of competition. Rituals do not have to be flashy or weird. Habits are a form of rituals as

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well. By repeatedly enacting pre-match rituals and in-game rituals, athletes not only promote meticulousness, but also consistency. While there are many rituals whose functions are clearly beneficial to athletes (such as taking deep breaths to relieve stress), there are rituals that, at first glance, seem purely superstitious. So why do so many elite athletes bother with them? An article written by Nick Nauert (2011). states that a recent study done by David Eilam, which was published in the journal of *Neuroscience and Biobehavioral Reviews* talks about how “ritualistic behavior in both humans and animals evolved as a method to induce calm and relieve stress.” Dr. Eilam goes on to describe free throw shooting in basketball. He explains it as “The routine they perform in the moments before shooting the ball is a method to focus their full concentration and control their actions,” and continues by saying “It’s also an essential part of sports psychology. If players feel that completing their repetitive actions will enhance their performance, they tend to be more successful, whether it is locker room antics or LeBron James’ pre-game chalk toss.”(Nauert. 2011) Regardless if the ritual directly affects the outcome of the next action, if the athlete is able to believe that the ritual will attribute to his or her success, there might be a placebo effect in boosting performance. By having a routine, people bring in an aspect of the situation which they are able to control. A ritual brings familiarity into an uncertain situation. Performing a familiar action can act as a stimulus to help remind the body that it has executed the following action countless times before. Because of the familiarity of a ritual, it can lower stress levels as well. Meticulously performing a ritual shows the athlete’s will to succeed. It shows that they care. Rituals are tailored to each individual. There are no set guidelines

in what a ritual should entail. Even though rituals are in the preparation section, rituals are versatile enough that they can be used in any situation the athlete has time.

Goal Setting. The type of goals set forth by an athlete are actually very important to an athlete's development. Setting the wrong type of goals can also cause undue stress to an athlete. Athletes must also be careful to set goals that are independent of other people's expectations. If they aren't your expectations, they are adding extra pressure to you. In his book *Fundamentals of Sports and Exercise Psychology*, Alan Kornspan defines different types of goals.

1. **Subjective Goals** are not based on any measurable performances. A subjective goal might be for an athlete to try his or her best. Another example is for an athlete to never give up (Kornspan. 2009).
2. **Objective Goals** are based on performance results. "For example, an objective goal of decreasing time by 2 seconds in the 50-meter freestyle event is focused on what needs to be done in order to become more successful at a specific sport. This specific objective goal would then help the athlete be more focused on the task at hand in order to improve technical and tactical skills," (Kornspan. 2009).
3. **Outcome Goals** are based on the results of the competition. Usually, the goal is to win a certain amount during competition. It is good for the athlete to know how much he or she is expected to win, however, outcome goals can potentially deter the player from performing his or her best. If a player is looking at a goal

that is too far away, he or she will not be able to focus on the moment (Kornspan. 2009).

4. **Performance Goals** are goals that focus on a certain aspect of the sport but will also aide in the overall outcome. Examples are: raising the first serve percentage in tennis from thirty to forty percent, shooting a higher percentage of open shots from beyond the arc in basketball, or completing a higher percentage long passes in football (Kornspan. 2009).
5. **Process Goals** are related to performance goals in the sense that both are more focused on one aspect of the game. The example that Kornspan gives is “in addition to setting a performance goal of increasing the number of greens hit in regulation by 10 percent, a golfer may also set a goal to go through the same routine before every shot,” (Kornspan. 2009).

Goal setting is not as simple as picking an activity and deciding that you want to be good at it. For competitive athletes, there specific approaches to goal setting that can maximize an athlete’s potential. The consensus among experts is that it is better to set process and performance goals rather than outcome goals. While it is okay for an athlete to know where they want to end up, outcome goals do not gauge performance. Only having an outcome goal such as winning a national title does not guarantee achieving it. There is also no way to tell if the athlete is on the way to fulfilling a long term outcome goal. It is also possible that the outcome is an inaccurate placeholder of skill. Performance and process goals are more accurate in determining if an athlete has

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improved in skill level. Because performance and process goals are more specific than outcome goals, it is within the athlete's ability to control it. The athlete can then see visible improvement step by step. For example, if a basketball team's goal is to work on their passing, setting the process goal of passing three times per possession will help them work on it and improve as a team. If the outcome goal was just to win, there are many factors that could skew the outcome. First, the team could have had a good passing day, but the other team played better defense and the team loses the game. In another scenario, the team could have passed horribly, but their opponent was much weaker so they won anyway. In the first scenario the team accomplishes the passing goal, but it will have a negative effect if they were too concentrated on winning. The only take away the team might have from the game is that they lost; instead of realizing that they can build off of the good passing. In the second scenario, the team is rewarded with a win even though they played poorly. The loss in the first scenario punishes good behavior while the win in the second scenario enforces bad ones. Focusing too much on outcome goals also puts the athlete at risk to not make use of their full potential. In tennis, many parents and children emphasize winning at too young an age. The result is that kids (ages 8-14) are very successful early on, but the game that they developed to beat younger kids no longer work once everyone gets bigger and stronger. Process goals develop skills that will be useful once the athlete has matured. One of the most important roles of process and performance goal setting is that it relieves pressure from the athlete. Winning is dependent on many uncertain factors. Athletes are able to perform much better if they focus on the things they can do to improve their chances of

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winning instead of the end result. The athlete will see his or her goals as something within control. The result is lessened anxiety about the uncertainty of winning. Focusing on the process will also help an athlete block out external stressors not related to the competition.

Further Research

Standardization of mental toughness in young athletes

In almost every sport, there are guidelines on how to develop technique and strength. Interestingly enough, even though there is the cliché that sports are ninety percent mental at a competitive level, people do not spend nearly as much time training their mental toughness as they do their technique.

"Mental will is a muscle that needs exercise, just like muscles of the body."-Lynn

Jennings

So if an athlete needs intensive training in all of the sport's facets from a young age, why isn't mental training as big of a deal as it should be? When a child has aspirations to become a good athlete, the parents will usually spend massive amounts of time and money searching for coaches to teach their child all of the techniques of the game. However, it isn't until the child becomes a lot older (usually past their teens) that mental strength training is implemented. Children have a window of time when they are especially receptive to learning new things. In elementary school, teachers stress the importance of teaching children morals and good habits because the earlier the

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behavior is learned, the greater the likelihood that the children will be receptive.

Teaching mental toughness should be the same. If an athlete that is looking to specialize in a sport is taught mental toughness techniques or better ways to approach stressful situations within competition, it might become part of his or her personality to deal with stress in a positive way. Just as techniques learned at a young age become second nature, it should be possible to incorporate mental training. The issue is that children's brains are a lot different from that of a young adult. It is often hard to keep a young child interested in a stress coping technique such as meditation. Depending on the child, concentrating on mental training techniques can be frustrating because of the cognitive willpower it requires. Some children will be unable to accept certain practices simply because their brains have not developed a sufficient degree of control. In other cases, children are often not skilled enough to recognize the benefits of mental strengthening. This is why the importance of mental toughness training is not stressed until later in the athlete's career. Based on the studies that were cited in the stress coping section, a lot of athletes can benefit from learning stress coping techniques. Therefore, it should be even more beneficial for athletes to have incorporated mental toughness training early in their careers in order to perform at a consistently higher level down the road. Although it might help slightly, the idea is not for mental training to have an immediate effect on the child. Learning mental toughness is a process that will pay dividends at a competitive level. So training it into an athlete until it becomes second nature can be one of the best ways to deal with the stressful atmosphere of competition. As the field of sports psychology grows, an area of research could be how to incorporate mental

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toughness conditioning into a younger athlete's daily routine. Sports psychologists need to figure out how to tailor mental toughness training for younger, less mature minds. Creating subtle but appealing exercises that younger athletes can manage to do consistently will be a challenge. The first step is to be able to create a quantifiable system in which coaches are able to evaluate a young athlete's mental toughness. In order to do that, behaviors that happen during the course of competition need to be charted and converted into some form of quantifiable data. This way, rather than just dividing mental toughness into broad categories such as "good" and "bad", mental toughness can be divided into stages of proficiency that athletes should strive to meet. After that quantifiable system is created, a development plan should be created. The development plan should include where an athlete's level of mental toughness should be at each level in his or her sport.

Do different sports have stress coping techniques?

In every single sport, it is important to be mentally tough. The response to this has been many techniques researched by sports psychologists in order to deal with the stress that happens during competition. However, it still isn't set in stone that every sport should be approached from the same mental standpoint. In a study cited earlier by Hatzigeorgiadis, Zourbanos, and Theodorakis (2004). The effects of positive self-talk were tested on water polo players. It was found that different types of self-talk yielded different effects depending on the type of task. The water polo players who were trying to throw for distance were more positively affected by motivational self-talk than

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instructional self-talk. The group that was trying to throw for accuracy were more positively affected by instructional self-talk. In this example, there were two kinds of actions: power and precision. There are also other factors in other sports such as reaction time or stamina. Some skills require a mixture of factors. (example: Serving in tennis requires both accuracy AND power) Just going by this study, there is a very high chance that different methods of stress coping suit different sports. There are many variables that can go into deciding which stress coping technique works best. One example can be preparing for a sprint. Is using a ritual like listening to pump up music any different than meditating to loosen up the muscles? While both might relieve some stress, it seems unproductive to use meditation when a sprinter wants his or her body to be on edge. Incorporating these future topics of research will be really important to preventing athletes from falling into habits that might potentially hurt their performance. All of the stress coping techniques are helpful but only if applied correctly.

Do different personality types benefit from different coping techniques?

Every athlete has a set of skills that uniquely defines his or her “playing style” It is important to master the fundamentals, but at the same time, many top athletes approach the sport with distinctive winning strategies. There are playing styles that are more suited for some people, it could be possible that people with different personality types benefit more by different stress coping techniques. Different personality types respond to stress differently in daily social life. It is not only important to research which instances in competition are best to use certain stress coping techniques, but which

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personality types they benefit. This research could lead to more athletes being able to integrate stress coping techniques into their games because they could be matched with the stress coping techniques that are more natural for them. In matching stress coping techniques to an athletes personality type, there is the potential for new stress coping techniques to be found as sports psychologists explore different ways to accommodate the different personalities.

Conclusion

Sports psychology is becoming an increasingly acknowledged field for boosting the capabilities of athletic performance through training the mind. Stress, which is a critical component in competition can either push athletes to grow or cause them to perform below their capabilities. Through studies and the researching of the most elite athletes, learning stress coping techniques whether they are pre-match, during a match, or post-match is critical. What matters is not the athletes overall performance, but the level of the athlete during the most crucial points in competition. Through methods such as adequate preparation, meditation, rituals, positive self-talk, confidence building, goal setting, and more techniques that might not have been discovered yet, athletes are able to increase the likelihood of performing well. Because of the positive results of stress coping techniques, further research should be done so that in the future; there will be a systematic training system that incorporates mental toughness training for young athletes. Studies should also be done to determine whether stress coping techniques can be used for all sports in the same manner. Different coping techniques might work

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better for different sports. Determining if different coping techniques will be better suited to different personalities is important as well. Just because all of the techniques are proven to relieve stress, it doesn't mean that the process of using these techniques will not affect each athlete differently. Allowing young athletes to incorporate these techniques more seamlessly into their sports routines will produce a generation of athletes that have the ability to remain calm in critical situations because of the stress coping techniques that were practiced since a young age.

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