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IN THIS ISSUE

Silver medalist Noelle Pikus-Pace of the United States celebrates on the podium during the medal ceremony for the Women's Skelton on day 8 of the Sochi 2014 Winter Olympics at Medals Plaza on February 15, 2014 in Sochi, Russia. (Photo by Al Bello/ Getty Images)

Message from the
Chief of Sport Performance

Alan Ashley

Welcome to the fourth and final issue of Olympic Coach for 2014! While this year is coming to a close, our winter sports season has just begun – with some great accomplishments so far this season in nearly every winter sport. A fantastic start for Team USA!

We remain grateful for the support Team USA receives. We have the best athletes, coaches, and fans in the world. We look forward to continuing to share ideas and resources through Olympic Coach and we'll look forward to several significant events coming in 2015, including the Pan American Games, Parapan American Games and the Women's Soccer World Cup!

We hope you will enjoy this last issue of 2014 that includes a number of different topics for coaches and sport educators.

We're grateful to our contributors, and thankful for all of our readers. Happy Holidays and see you in 2015!

It's Called Being Intentional Coach: Prioritizing Family and Life in Coaching

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Coaching in the 21st century has many demands in every aspect of an individual's life. These demands can range from recruiting great players, traveling frequently with little recovery time, managing parent's high expectations, monitoring student-athletes' behavior and grades, preparing for and winning games on top of trying to maintain proper eating habits, an exercise schedule, and more importantly, finding personal time.

At all levels of coaching, from the Little League to the Olympic Games, a general lack of time seems to be the common denominator. As a result, the coach loses quality time to spend with his or her family. Because of this, the family is usually the one that gets left behind in the coach's daily schedule.

I have had many conversations with coaches over the years and one topic that regularly surfaces is the coaches' lack of time for their families. Therefore, in 2009, I conducted a study interviewing three coaches on my campus about stress and burnout within coaching. Interestingly enough, one of the coaches explained that one of the major National Collegiate Athletic Association conferences had several coaches going through divorce. The coach said that the long hours, days on the road traveling, and lack of not being involved in their spouse's and children's lives were some of the primary reasons that caused the divorce among those coaches. As a single female coach, I began to ask myself questions - how would I have time to meet someone, would they truly understand my schedule or just think I am pushing them off, how will I ever be able to have children with the type of schedule I have, how many major holidays would I miss due to coaching college basketball during Thanksgiving or Christmas? The list seemed endless.

<u>It's Called Being Intentional about Prioritizing</u>

I am writing this article because I want to help as many coaches as possible, at all levels, be more intentional about their lifestyle as a coach. I have witnessed many coaches face tough decisions when it came down to choosing between their profession or their families. Once you are aware of the many challenges that can come with coaching, you can be intentional about how you prioritize other important aspects of your life. If you are not aware of the many challenges that you could potentially face, it is harder to deal with them once they arise. Trust me, challenges will arise even if you do not have any strategies in place to face the challenges associated with coaching. I honestly do not think that any coach has the desire to get out of balance with their life. Therefore, this article is intended to provide the reader with insight on the matter. However, this article is not only intended for coaches, but for their spouses, children, other extended families and athletic administrators. On the surface, it is easy to just see the coaches' job as one that gets to celebrate success or cope with failure. However, there is an immense amount of dedication and obligation that goes on behind the scenes.

Coach, you can be successful if you become more intentional about prioritizing and setting healthy boundaries. Directly handling the demands associated with the profession of coaching means that you are purposely being proactive and setting boundaries for a successful tenure in coaching. In my observation, I have noticed that the coaches who have set healthy family boundaries usually enjoy their profession more. In contrast, I have also witnessed coaches leaving their profession because they were out of balance and were not intentional about prioritizing and maintaining balance. This is sad because most people I see who are out of coaching did not want to leave the field, but they had to make a choice between either their families or coaching, their health or coaching, their personal time or coaching, or their overall livelihood or coaching. I truly believe that many of those coaches would never have left the profession if they had more information about being more intentional about how they went about their day-to-day lives in juggling family, life, and coaching. I hope this article helps you to be more intentional about your true priorities in life, like your family. You are already taking the first step because you have intentionally selected to read this article.

1. Be intentional about how you deal with stress

Coaches, unfortunately, selected a profession that can be very stressful if not properly dealt with properly. Weinberg and Gould (2011) reported that coaches felt stress due to the pressure to win, parental interferences, administrative pressures, expectations to fulfill multiple roles and travel commitments. When I was interviewing the collegiate coaches, all of them made reference that they despised the fact that their livelihood and salary depended upon young student-athletes ability. Coaching salaries depend strongly on the coaches' ability to win games. Winning no matter what has caused many coaches to choose poor ethics due to experiencing stress. Lumpkin (1990) states, "When winning becomes the primary objective, other potential outcomes are lost. Ethics is about being honest and following the laws of the land; it means being morally good. Winning within the rules is the primary objective when it comes to ethics in sports" (Beisser, 1967). When good ethics are not demonstrated, there are usually hidden motives or fears. I can relate because over the years I have had to really learn where my stress was rooted.

In almost every instance when I feel stress, the root of it is found in False Evidence Appearing Real or FEAR. Even if the worst thing happens in a situation, you can still win just by looking at it from a different perspective. I used to worry about losing my job when I only had one income. Then one day, I changed my perspective and said to myself, "If I lose my coaching job, I will just get another one." I know that sounds very simple, but there was no need for me to stress about losing a coaching job when on average the NCAA posts coaching jobs nearly every day.

Furthermore, many of you have other talents that can be used until a suitable coaching job can be found. Remember, in today's society, it is very common to change jobs and even professions. When coaches are extremely stressed, they are not able to perform at their peak and the athletes suffer from their stressful behavior. According to Price and Weiss (2000) student athletes realized that their burned out coaches provided less instruction, social support, and training for them. In addition to the athletes getting the shorter end of the stick, usually the coach's family suffers even more than the athletes. Coaches, if you find yourself not helping your family when you get home, you are probably already experiencing a lot of stress from coaching. To be honest, the real work

starts when you get home, not when you get to work. However, the difference is that a job will come and go, but a family will remain the same. Therefore, coaches should prioritize tackling stress and embracing their families.

I realize that some reading this article may not have great home situations and, as a result, may use work to escape the pressures of home life. If this is you, I highly recommend that you consult a counselor to discuss any unresolved family issues. Home should be a place of love, nurturing, care, and healthy rest for your mind, body and soul.

2. Look for a job or supervisor that will support you

Dr. John Maxwell shared in one of his leadership trainings that when most people leave their jobs, they are actually leaving because of their supervisor or boss. I remember when I was told that it was okay for me to work long, strenuous hours because I was single and did not have a family at home. This type of leadership can cause you to feel used and abused if you are not careful.

Coaches, when you are pursuing a job, make sure that your administrator or direct supervisor is in support or has an understanding of some of the challenges that come along with coaching and maintaining a family, or yourself as a single coach if you are not married. You are not asking for special treatment, however, if you are married, you will need to get home to tend to your spouse or children. You may need to go home to cook, support your child or children's extracurricular activities. Having a supportive boss can assist in maintaining balance with your family

If you are single, look for a supervisor that understands some of the challenges that comes with being single - living on one income, having to take care of your household on your own (getting groceries, paying bills, taking care of other house and life necessities). If you are single and live far from family, it can also be stressful. If this is the case, try to get your family to come visit you as much as possible. If that doesn't work, try to stay connected to friends and family via phone, emails, Facebook, Twitter. Having a sense of connection for either the single or married coach is very important. I think this is especially true for the female coach.

Women are more interactive by nature, and when we do not get that interaction, we tend to feel a sense of isolation. Female coaches, do not feel bad about how you were made. You were designed to connect and share your deepest thoughts, needs, and interests with others. Male and female coaches need at least one person in their lives to share our thoughts and emotions.

3. Set boundaries with your student-athletes

Overall, the field of coaching can involve an immense amount of nurturing. Most research reports have mentioned that women tend to be more nurturing than men. It does not mean that men are not nurturing, women just tend to be more nurturing.

For instance, Dale and Weinberg (1990) researched high school and college coaches and found that those with a more caring style of leadership had higher levels of perceived burnout than coaches who had a more autocratic style of leadership. This can be good and bad, meaning that

the coach needs to be mindful that he or she does not overextend themselves with their athletes. I can relate to this because I loved to encourage my student-athletes when I was a coach. That was the part that I enjoyed the most. As a result, a lot of my athletes told me that they pushed themselves so hard because they knew how much I cared for them. Bortoli, Robazza, and Giabardo (1995) stated, "A good coach-athlete interaction tends to enhance motivation, induce pleasant emotions, and create a satisfactory and positive climate (p. 1217)." I would get an emotional high when I would witness a student-athlete's effort change after talking with them.

Because I cared so much for them, I found myself giving too much of my time and energy. I spent a majority of my time counseling during my coaching tenure. I discovered that my student-athletes had more life challenges than I had ever imagined. I have coached young women and men with children, who came from single parent homes, were homeless at some point, or had been abused mentally, physically, and sexually. I remember days when I would break down because so many of my athletes relied on me for encouragement and support.

For some coaches this is not a problem because they do not take on that role, they just coach. I am talking to those coaches who have opened up their hearts and minds to emotionally support their athletes. You have to set boundaries to protect your own emotional health. If not, you will lose a lot of sleep and constantly find yourself in your office counseling. I had to take a step back and truly look at which athletes are listening to my advice and which ones were not. Once I realized the difference between the two, I was able to minimize my office hours. I focused on helping those who were serious about wanting to get better.

When my athletes would come to my office for advice, I would ask them, "How serious are you about getting better?" This would weed out the determined student-athletes from the ones who were just seeking attention. I was able to focus on the athletes who truly needed my time by putting this boundary in place. I had to be intentional about giving my time, heart, and energy to studnet-athletes who were determined. After I did this, I had more personal time and had more energy to give my students on the court. I know a coach who turns his cell phone off after 8p.m. in an effort to put his family first. This is a great example of being intentional about setting boundaries.

There is also a story that one of my colleagues shared with me about how his marriage was in jeopardy because of all the time he was investing in his athletes. As a result, he came home one day after practice and his wife had his bags at the door with the ultimatum of choosing her or coaching. Of course he chose his wife, which was very wise of him. He is now reaping the beautiful benefits of spending time with his wife and watching his children grow up.

Again, coaches, if you are like me, then you see your athletes as your very own children at times. With this in mind, you can tend to invest much of your time into your athletes without realizing you could be neglecting family time. There is nothing wrong with caring for your athletes - just make sure you are balancing student-athlete with family time.

4. Get a strong social support system in place

I cannot tell you how important it is to have the strong support from a network of people who will advocate for you as a coach. Over the years, I have witnessed the stress of coaching on several of my friends. At first they start off wanting support and a connection, and then they begin to fade-off when time constraints and job pressures build. As a result, some would leave their job or even leave the coaching profession. The reason social support systems are so important is due to the assistance they provide with maintaining balance and keeping healthy boundaries.

Coaches – communication is crucial for athletes. When coaches are burdened by their profession, they can find themselves isolated and hiding from issues instead of confronting them. Another idea to consider is to invite your spouse or significant other, children, and extended family to your practices or assisting athletes with things like fundraising or meal preparation. On game day, it's easy for your spouse or significant other to watch and observe you coaching, however, it's better for them to see all that goes in prior to game day.

Depending on the level of competition, travel time can be another area of concern. When I used to coach college basketball we were on the road for games a lot. We were also required to participate in the Final Four conferences and listening to coaching presentations for our professional development. Unfortunately, I would observe many coaches practicing single-minded behavior by putting themselves in compromising situations, and how people are attracted to coaches, particularly those with high profile positions.

If you are married, have an internal struggle and find yourself in compromising situations, you need to have a strong support system in place so that you can be open and honest. It is better to deal with issues beforehand rather than after actually acting. Work on being accountable through support systems. Your spouse, children, and extended family would much rather see you deal with these issues beforehand rather than after the fact.

Remember, you have to acknowledge your struggles. It's not just sexual behavior either; it could be substance abuse, control issues, or other things that interfere with your personal or professional life. Coaches usually tell everyone else how to act, but they also need to think about their own actions. It's also healthy for your athletes to see their coach practicing what they preach.

5. Give back to yourself

Coaches give and keep giving until they are so empty they do not have anything left to give. This can cause stress and lead to burnout. There are a lot of ways that coaches can give back to themselves and one of the healthiest ways is to exercise and eat well.

In 2009 when former coach of the University of Florida, Urban Meyer, resigned as head football coach. Meyer won two national championships and three Southeastern Conference titles - making him the all-time winningest coach at the University of Florida with a record of 55-10. He unfortunately had possible heart problems. The press speculated why Meyer would leave at such a successful point. Coach Meyer bluntly stated, "I have given my heart and soul to coaching college football and mentoring young men for the last 24 years, causing me to ignore my health, but recent health issues have forced me to reevaluate my priorities of faith and family." I am very proud

of Coach Meyer for taking that bold step to prioritize himself and his family.

There are many stories of great coaches leaving the profession to invest in their families and health. Iit should not take them getting sick or realizing that their families come first before they take action. With this in mind, find time to get away and exercise, even if it's just taking a daily walk. Stop making excuses for not taking better care of yourself and start investing in yourself in order to be better for others. I started this a few years back and I am now reaping some truly wonderful emotional and physical rewards.

A lot of coaches give back to themselves by over-eating, over-spending, and over-indulging in areas of their lives. At times you need to splurge and treat yourself like the wonderful coach you are - justmake sure that you are willing to live stress-free with the decision or choice you make. It is also okay to take some time away when your schedule permits or, if you are a head coach, by delegating responsibility to others. Regardless if you win or lose the game, the media, families, and administration will look toward the coach first. It is crucial for a coach to take some time for themselves and find things they can delegate so that they can learn how to grow as leaders.

Remember, one of the true signs of leadership is not doing all the work, rather putting people in a place where they can get the job done with or without you. Coaches, you owe yourselves the best "you". I am often reminded of my favorite quote by Dr. Barbara Amos that states, "Nobody can beat you at being you."

Final Thoughts

This article was designed to assist coaches in helping to keep first their number one priority - their families. Coach, you have a life beyond coaching. If you think you do not, then it's time to get one. I am sure that you enjoyed doing a lot of things before you got busy with the life of a coach. Remember, coaching jobs come and go, but your family will remain.

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Pilot Nick Cunningham, Justin Olsen, Johnny Quinn and Dallas Robinson of the United States team 2 make a run during the Men's Four Man Bobsleigh heats on Day 15 of the Sochi 2014 Winter Olympics at Sliding Center Sanki on February 22, 2014 in Sochi, Russia. (Photo by Alex Livesey/Getty Images)

Using Training Journals to Increase Motivation and Performance

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Introduction

Continual improvement in sport requires extensive time commitments that extend beyond training sessions themselves. The requirement for focus not only during training, but on maintenance of a healthy lifestyle, can demand an extreme amount of attention to detail on a daily basis. As an athlete becomes increasingly accomplished, the number of factors that are measured and which must be accounted for also increase. Training journals have long been accepted as a method to record the details and rigors of training and are thought to aid in the improvement of athletes. But how does it do this? More importantly, how can you insure that your athlete can improve from using a training journal?

This article proposes a method that coaches can use to optimize an athletic environment through use of training journals. The purpose of keeping a training journal is two-fold – increase intrinsic motivation, and enable athletes to take ownership over their training, both of which are known to increase performance in athletes (Barry J. Zimmerman & Kitsantas, 2005a, 2005b).The framework is presented using wording specific to endurance runners; however, it can be adjusted to suit athletes of different sports by changing objectives and prompting questions that are addressed later in this article.

Fostering Motivation of the Athlete

Fostering motivating environments enables athletes to take control of their development and increases engagement in their sport (Ryan & Deci, 2007; Barry J. Zimmerman & Kitsantas, 2005b). This begins with knowing what motivates your athlete and to what extent. The Behavioral Regulation in Exercise Questionnaire (BREQ-2) (Appendix A) assesses motivation by evaluating various aspects of motivation with the premise that multiple forms of motivation exist with varying levels of *autonomy* ranging from *amotivation* (absence of motivation) to intrinsic motivation (doing something out of pure enjoyment) (Markland & Tobin, 2004; Mullan, Markland, & Ingledew, 1997). Motivation that is more autonomous, or from within the athlete, is known to increase an athlete's engagement in training, which leads to increased performance (Ryan & Deci, 2007). Because of this, the coach should strive to create an athletic environment that fosters intrinsic motivation.

Appendix A shows a modified version of the BREQ-2 that uses language specific to endurance runners for the purpose of measuring motivation in endurance running athletes. Each question is representative of a different kind of motivation ranging from "dislike" (amotivation) to "enjoyment" (intrinsic motivation). Motivation types further to the right on the Motivation Assessment Scoring Sheet (Appendix A) are increasingly more autonomous. The athlete selects the number from the questionnaire

that describes how they feel about each statement ranging from *not true for me* –0, through *sometimes true for me*–2, to *very true for me* –4. Summing the values that are related to each other in each category then serves as an indicator for what motivates your athlete and to what extent. It is desirable for the highest values to be the right as that indicates high levels of autonomous motivation. While this questionnaire can be used by itself, some athletes may not feel comfortable being "tested" or may feel overwhelmed by being asked to fill out a 76 item questionnaire. The coach can implement smaller parts of the questionnaire, or even informally integrate the questions into conversations or interviews, to get an idea of their motivational state. The coach may later ask for more information as the athlete gets more comfortable discussing the questionnaire.

Knowing and monitoring the current motivational state of your athlete is useful in knowing if a current training program is meeting the needs of your athlete. But how do you create a training environment that encourages motivation? The next section takes a look at how giving ownership over training to the athlete can create an environment where the athlete is optimally motivated.

Encouraging Ownership in Training

Bringing an athlete to take ownership in his or her training is a direct result of teaching them to be *self-regulated*. Athletes who are highly self-regulated are also highly successful (Barry J. Zimmerman & Kitsantas, 2005b). In order to develop self-regulatory skills, an athlete must learn to plan their actions ahead of time (forethought), execute the plan successfully (performance), and reflect on the plan to determine if it was successful (self-reflection) (B.J. Zimmerman & Campillo, 2003). Repeated engagement in the three phases of the self-regulatory cycle increases the perceived meaningfulness of these tasks while providing a sense of purpose and to them. This fosters an environment in which intrinsic motivation can be continually developed (Bandura, 1977; Zimmerman, B. J., & Campillo, 2003).

These three self-regulatory phases are divided into processes and skills (table 1). In order to achieve each of these skills, objectives provide demonstrable tasks for the athlete to achieve. Prompting questions are listed, which guides the student-athlete towards successfully demonstrating the objectives (appendices B-D). Language of the processes, skills, objectives, and prompting questions are sport-specific with custom training journals (not shown) created to guide the self-regulatory process. Because each sport is different and may require sport-specific areas of focus, coaches should design training journals that their athletes can use to answer the questions, prompting them to monitor their own training. The following sections will outline what each phase of the self-regulatory phase aims to accomplish.

The Forethought Phase

The focus of the forethought phase is to enable the athlete to analyze the task ahead of them (Barry J. Zimmerman & Kitsantas, 2005b). This consists of task analysis and self-motivation processes. The task analysis process consists of skills involving setting goals and making plans. Specific long-term and short-term goals enable athletes to evaluate tasks successfully and help connect immediate tasks to events that are further in the future (Bandura, 1991; Locke & Latham, 1990). Workouts and competition goals may focus on either process or overall performance and should focus primarily

Table 1: Self Regulatory Phases
Adapted from Zimmerman & Campillo, 2003

Forethought Phase	
Task Analysis	Self-Motivation
Set Goals	Assess Abilities
Make Plans	Assess Expectations
	Assess Interests
	Assess Motivations
Performance Phase	
Self-Control	Self-Observation
Recall & Execute Plans	Personal Feedback
Create Mental Imagery	Self-recording
Focusing Attention	
Create Strategies	
Self-Reflection Phase	
Self-Judgment	Self-Reaction
Compare Results & Plans	Satisfaction/Disappointment
Idenitfy Result Source	Monitor Attitude

on self-improvement rather than comparison to others. Lifestyle goals focus on sleep, nutrition, time management, academics, and mental focus. Goal setting should provide goals that link short-term and long-term goals allowing them to have purpose which is critical in developing intrinsic motivation (Bandura, 1991).

Planning for workouts – both primary and ancillary – and competitions requires knowledge of what is needed for success. For the endurance runner, this may include time-splits, training partner assignments, workout or race tactics and details, and necessary equipment. Lifestyle planning should largely revolve around creating and keeping a weekly schedule – including scheduled blocks for meals, academics, and social activity. Planning is critical because it enables the athlete to engage deliberately and purposefully in his or her training over long periods of time, eventually leading to mastery (Bandura, 1991).

The *self-motivation* process consists of assessing current abilities and expectations, as well as interests and motivations. Assessing abilities revolves around the athlete's *self-efficacy*, or the belief that he or she is able to perform effectively. Developing self-efficacy is linked to an athlete's willingness to engage fully in assigned tasks which further lead towards mastery (Bandura, 1997; Pajares, 1996). Knowing your athlete's level of self-efficacy allows you to see when your athlete is feeling inadequate. It is then necessary for you to provide experiences that renew their belief that they can perform well.

Assessing expectations is similar, but refers to what the athlete believes will be the end product of his or her work (Bandura, 1997; Lens, Simmons, & Dewitte, 2002). Assessing interests helps the coach understand what the athlete wants to accomplish, whether it be competitive success through winning medals or in performance success focusing on increasing personal performance. In reality, these will both be present, but in different proportions. Finally, assessing motivation, as discussed earlier, provides the coach with an understanding of the internal value the athlete holds for the task. Simply put, this tells the coach how much their athletes like what they are doing – the more they like what they are doing, the more likely they are to be fully engaged (Deci, 1975).

The Performance Phase

The focus of the performance phase is to develop attention, volition, and action during tasks (Barry J. Zimmerman & Kitsantas, 2005b). It consists of two main processes – self-control and self-observation. *Self-control* consists of skills in recalling and executing plans, creating mental imagery, focusing attention, and creating strategies for tasks (B.J. Zimmerman & Campillo, 2003). Plan recollection and execution, for the endurance runner, may include focusing on form during ancillary workouts, remembering and aiming to complete runs in their prescribed time, implement-ing strategies appropriate for a particular competition, and adherence to weekly lifestyle goals. Mental imagery, or mental practice, involves creating or recalling vivid mental images to aid learn-ing (Pressley, 1977). This may include visualization of physical environments of competition or workout venue. Focusing attention, or situational awareness, aims to screen out distractions that prevent the athlete from sticking to the task at hand (Corno, 1993). This leads the athlete to view their environment in a real-time manner, comparing established plans with current performance or daily routines while minimizing distraction. Lastly, creating task strategies involves developing suc-cessful strategies while avoiding dwelling on past mistakes, enabling the athlete to better imple-ment the plans made during forethought (Kuhl, 1985).

Self-observation includes skills in providing personal feedback and self-recording of his or her present actions. Self-observation is a self-evaluation of current efforts, especially adherence to predetermined plans, which leads the athlete to monitor self-control. With a constant, tangible record of activities at hand, individuals are more conscious of current effort and are better able to compare that effort with previous trials. Training journal recording is a key part to enabling the athlete to self-reflect to their fullest ability. Recording information immediately after a task allows the athlete to recall strengths, weaknesses, and overall outcomes in a more objective and reliable manner. Highly self-regulated learners engage in more self-recording than poorly self-regulated learners (B. J. Zimmerman & Martinez-Pons, 1986, 1988). This greatly increases the timeliness, accuracy, value, and information of what was recorded (B. J. Zimmerman & Kitsantas, 1996).

The Self-Reflection Phase

The self-reflection phase aims to influence athletes' reactions to learning and consists of two processes – self-judgment and self-reaction (Barry J. Zimmerman & Kitsantas, 2005b). *Self-judgment*, consists of the athlete's focus to two main attributes of his or her performance. First, he or she evaluates results of an activity and compares recorded outcomes with goals that were set during forethought. This picks up where the self-recording skill left off as the runner looks over the

results of the workout, race, or week after they have been removed from it for some length of time. The athlete then looks for areas of improvement, comparing them with the plans from the forethought phase looking to identify areas for improvement. Poor self-regulators blame shortcoming on uncontrollable circumstances whereas effective self-regulators look to adapt from shortcomings (Weiner, 1979). Having the athlete identify his or her own areas for improvement allows him or her to take ownership of the improvement process, and is more likely to acknowledge that effort is a stronger indicator of ability than natural talent.

Self-reaction focuses on the athlete's emotional response to the objective results (Barry J. Zimmerman & Kitsantas, 2005b). These self-reactions provide opportunities to identify satisfaction or dissatisfaction and monitor attitude. Perceptions of satisfaction or dissatisfaction affect one's performance as athletes pursue satisfying activities and avoid dissatisfying activities (Bandura, 1991). By prompting athletes to find satisfying activities, they are then more likely to become persistent in those activities. Athletes who create goals around activities that are self-satisfying are more successful in setting realistic goals (Schunk, 1983).

Monitoring attitude prompts the athlete to examine personal feelings and compare them with attitudes that are healthy (adaptive) and those that are defense mechanisms (defensive). Highly effective athletes adapt their behaviors in response to unsatisfactory performances, whereas poor ones turn to defensive self-reactions (Butler, 1998). Defensive attitudes exist to justify failure while adaptive attitudes focus on how to improve after a failed effort –strategizing how to process towards success and bridging back into the forethought phase. Prompting athletes to identify defensive attitudes leads them to adjust their behavior rather than stewing in defensive excuses for failure.

Developing Self-Regulation of Training

Just as an athlete has strengths and weaknesses, they are also able to self-regulate differences between different aspects of her or his life. The athlete-centered training model identifies that athletes are engaged in several different domains which requires the necessity of multiple tools for self-regulation (Freeman, 2009). The provided framework in this article provides tools for self-regulating the following – primary workouts (e.g., running intervals), ancillary workouts (e.g., strength training), competitions and lifestyle. By striving for the development of self-regulatory processes in these four areas, athletes develop self-regulatory processes that directly affect their success as an athlete.

While this model helps group the processes of self-regulation into an easy to use graphical tool, implementation is more complex than handing out a training journal and encouraging athletes to fill it out. The model contains 65 objectives with 162 prompting questions grouped by the forethought, performance, and self-reflection phases (Appendices B-D). Expecting an athlete to handle all this information at once would likely result in frustration. Therefore, gradual implementation is encouraged. While the purpose of this model is to improve athletic performance, it is important to realize that utilizing self-regulation strategies is a skill in and of itself. In order to ensure that athletes find the self-regulation process enriching, the coach must develop the skill of self-regulation in the athlete.

Just as success in sport encourages further athlete involvement, leading the athlete to feel successful at self-regulatory tasks directs athletes to use these tasks more. This can be achieved by assigning the athlete manageable segments of the training journal to complete gradually over weeks, months,

or even years. Furthermore, being cognizant of lower and higher order thinking can also be important. High order thinking questions as defined as levels four-six in Bloom's Taxonomy (1984) are indicated within the objective listings. Starting with lower order thinking questions and progressing to higher order thinking will properly guide the athlete by allowing him or her to first focus on tangible concepts before turning attention to concepts that are more abstract. This would hold true for objectives that assess self-regulation across all domains, and also with prompting questions that assess motivation from the modified BREQ-2 assessment (Appendix A).

Fostering conversations in which teammates share some of their reflections, or giving recognition to them, can provide vicarious experiences to those who feel less competent in their abilities. This helps increase the athlete's sense of self-efficacy for these self-regulatory tasks (Bandura, 1977). Meeting weekly with each individual allows the coach to assess the athlete subjectively taking into consideration their state of mind. It may not be prudent to assign new objectives to an athlete that is feeling overwhelmed with any domain in their life, despite demonstrated competence in previously assigned objectives. This additionally gives the coach the opportunity to provide verbal encouragement and praise for their self-regulatory efforts, which additionally provides the athlete with a heightened sense of self-efficacy as well (Bandura, 1977).

Conclusion

By providing a specific model for athletes, a structured environment is created that allows them to purposefully attend to different domains and objectives within their sport. This model allows the athletes to be assessed objectively and subjectively, and guides athletes on an individual basis towards mastery of sport and self-regulation. Through this process, the athlete will become increasingly self-regulated and, subsequently, more successful in their abilities as an athlete, enabling them to attain their maximum potential.

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Galen Rupp of USA celebrates setting an American record of 26:44:36 after winning the 10,000m during day 1 of the IAAF Diamond League Nike Prefontaine Classic on May 30, 2014 at the Hayward Field in Eugene, Oregon. (Photo by Jonathan Ferrey/Getty Images)

Appendix A - Modified Behavioral Regulation in Exercise Questionnaire - 2 (BREQ-2)
0=Not True for Me; 2=Sometimes True for Me; 4=Very True for Me

	PRIMARY WORKOUTS					
1	I run only because my team or coach say I have to.	0	1	2	3	4
2	I feel guilty when I cut a run short or skip practice all together.	0	1	2	3	4
3	I value the benefits of our running workouts	0	1	2	3	4
4	I run because it's fun.	0	1	2	3	4
5	I don't see why I should have to do the running workouts	0	1	2	3	4
6	I run only because people close to me say I should.	0	1	2	3	4
7	I feel ashamed when I miss practice	0	1	2	3	4
8	It's important to me to be at every practice.	0	1	2	3	4
9	I can't see why I should bother running.	0	1	2	3	4
10	I enjoy the running workouts.	0	1	2	3	4
11	I do the workouts because others will be displeased with me if I don't.	0	1	2	3	4
12	I don't see the point in the running workouts.	0	1	2	3	4
13	I feel like a failure when I skip running.	0	1	2	3	4
14	I think it is important to be at practice every day.	0	1	2	3	4
15	I find running enjoyable.	0	1	2	3	4
16	I feel under pressure from my team and coach to run.	0	1	2	3	4
17	I get restless if I don't run regularly.	0	1	2	3	4
18	I get pleasure and satisfaction from running.	0	1	2	3	4
19	I think running is a waste of time.	0	1	2	3	4
	ANCILLARY WORKOUTS					
1	I do drills and weightlift because my team or coach say I have to.	0	1	2	3	4
2	I feel guilty when I cut drills or weightlifting short or skip it all together.	0	1	2	3	4
3	I value the benefits of drills and weightlifting.	0	1	2	3	4
4	I do drills and weightlift because it's fun.	0	1	2	3	4
5	I don't see why I should have to do drills and weightlifting.	0	1	2	3	4
6	I do drills and weightlift because people close to me say I should.	0	1	2	3	4
7	I feel ashamed when I miss doing drills and weightlifting.	0	1	2	3	4
8	It's important to me to do every set of drills and weightlifting.	0	1	2	3	4
9	I can't see why I should bother doing drills and weightlifting.	0	1	2	3	4
10	I enjoy drills and weightlifting.	0	1	2	3	4
11	I do drills and weightlifting because others will be displeased with me if I don't.	0	1	2	3	4
12	I don't see the point in drills and weightlifting.	0	1	2	3	4
13	I feel like a failure when I skip drills or weightlifting.	0	1	2	3	4
14	I think it is important to be at practice every day.	0	1	2	3	4
15	I find running enjoyable.	0	1	2	3	4
16	I feel under pressure from my team and coach to do drills and weightlifting.	0	1	2	3	4
17	I get restless if I don't do drills and weightlift regularly.	0	1	2	3	4
18	I get pleasure and satisfaction from drills and weightlifting.	0	1	2	3	4
19	I think drills and weightlifting is a waste of time.	0	1	2	3	4

Appendix A Continued
0=Not True for Me; 2=Sometimes True for Me; 4=Very True for Me

	RACES					
1	I compete because my team or coach say I have to.	0	1	2	3	4
2	I feel guilty when I skip a meet.	0	1	2	3	4
3	I value the benefits of competition.	0	1	2	3	4
4	I compete because it's fun.	0	1	2	3	4
5	I don't see why I should have to compete.	0	1	2	3	4
6	I compete because people close to me say I should.	0	1	2	3	4
7	I feel ashamed when I miss a meet.	0	1	2	3	4
8	It's important to me to compete in every meet.	0	1	2	3	4
9	I can't see why I should bother competing.	0	1	2	3	4
10	I enjoy competing.	0	1	2	3	4
11	I compete because others will be displeased with me if I don't.	0	1	2	3	4
12	I don't see the point in competing.	0	1	2	3	4
13	I feel like a failure when I skip a meet.	0	1	2	3	4
14	I think it is important to be at practice every day.	0	1	2	3	4
15	I find competing enjoyable.	0	1	2	3	4
16	I feel under pressure from my team and coach to compete at every meet.	0	1	2	3	4
17	I get restless if I don't compete regularly.	0	1	2	3	4
18	I get pleasure and satisfaction from competing.	0	1	2	3	4
19	I think competing is a waste of time.	0	1	2	3	4
	LIFESTYLE					
1	I plan out my week because my team or coach say I have to.	0	1	2	3	4
2	I feel guilty when I don't meet my lifestyle goals for the week.	0	1	2	3	4
3	I value the benfits of weekly planning.	0	1	2	3	4
4	I monitor my week because it's fun.	0	1	2	3	4
5	I don't see the point in monitoring my weekly lifestyle.	0	1	2	3	4
6	I try to monitor my weekly lifestyle because people close to me say I should.	0	1	2	3	4
7	I feel ashamed when I don't successfully balance my lifestyle.	0	1	2	3	4
8	It's important to me to monitor my week and meet my goals.	0	1	2	3	4
9	I can't see why I should spend energy monitoring my week.	0	1	2	3	4
10	I enjoy meeting lifestyle goals that I have set.	0	1	2	3	4
11	I monitor my week because others will be displeased with me if I don't.	0	1	2	3	4
12	I don't see the point in monitoring my lifestyle.	0	1	2	3	4
13	I feel like a failure when I don't set lifestyle goals for a week.	0	1	2	3	4
14	I think it is important to set lifestyle goals for every week.	0	1	2	3	4
15	I find setting weekly lifestyle goals to be enjoyable.	0	1	2	3	4
16	I feel under pressure from my team and coach to live a healthy lifestyle.	0	1	2	3	4
17	I get restless if I don't set weekly lifestyle goals regularly.	0	1	2	3	4
18	I get pleasure and satisfaction from meeting my lifestlye goals.	0	1	2	3	4
19	I think setting lifestyle goals is a waste of time.	0	1	2	3	4

Appendix A Continued

Motivation Assessment Scoring Sheet					
	Dislike	**Obligation**	**Value**	**Fulfillment**	**Enjoyment**
Related Questions	#5, 9, 12, 19	#1, 6, 11, 16	#2, 7, 13	#3, 8, 14, 17	#4, 10, 15, 18
Primary Workouts					
Ancillary Workouts					
Competition					
Lifestyle					
Add the values selected by the athlete from each indicated question from each domain.					

USA's bench reacts during the 2014 FIBA Women's World Championship semi-final basketball match between Australia and USA at the Fenerbahce Ulker Sports Arena in Istanbul on October 4, 2014.. (Photo by Getty Images)

Appendix B - Forethought Objectives wiht Prompting Questions

TASK ANALYSIS	
Workout Goals	
F.1.a.1	**Identify purpose of running workouts.**
	How is this workout going to make me a better competitor/athlete?
	How do I want to improve compared to the last workout of this type?
F.1.a.2	**Identify purpose of ancillary workouts.**
	How is this workout going to make me a better competitor/athlete?
	How do I want to improve compared to last workout of this type?
Race Goals	
F.1.a.3	**Identify purpose of races.**
	How fast do I want to run?
	Where to I want to place overall?
Weekly Lifestyle Goals	
F.1.a.4	**Identify strategies for a healthy balance in daily life.**
	How much sleep do I need?
	What do I need to eat?
	How much homework time do I need?
	When can I see my friends?
	When can I meditate/fulfill religious obligations?
Workout Plans	
F.1.b.1	**Recall what is necessary to complete running workouts successfully.**
	What are the required splits for this workout?
	Who should I be running with?
	What should I be wearing?
F.1.b.2	**Recall what is necessary to complete ancillary workouts successfully.**
	What is the correct form for this exercise?
	How many sets should I be doing?
	How much resistance should I be using (strength training)?
Race Plans	
F.1.b.3	**Recall race details.**
	How far is the race?
	Who will I be racing against?
	Where in the team should I be?
Weekly Routines	
F.1.b.4*	**Create weekly plans.**
	When do I need to get up?
	When do I need to go to bed?
	When am I going to eat?
	What am I going to eat for each meal?
	What are my homework times for each day this week?
	When can I see my friends on each day of this week?
	When will I get to meditate/fulfill religious obligations?

Indicates a higher order thinking objective

Appendix B Continued

SELF-MOTIVATION/BELIEFS	
Current Abilities	
F.2.a.1*	**Examine current running abilities**
	What am I capable of right now for this workout?
F.2.a.2*	**Examine current abilities in strength, flexibility, and agility.**
	What am I capable of right now for this workout?
F.2.a.3*	**Examine current performance abilities.**
	What am I capable of right now for this race?
F.2.a.4*	**Assess balance of his/her life.**
	How effective am I at managing my time?
Workout Expectations	
F.2.b.1*	**Explain expectations for running workouts.**
	What do I expect to happen in this workout?
F.2.b.2*	**Explain expectations for ancillary workouts.**
	What do I expect to happen in this workout?
Race Expectations	
F.2.b.3*	**Explain expectations for races.**
	What do I expect to happen in this race?
Lifestyle Expectations	
F.2.b.4*	**Explain how his/her week schedules will result in a successfully balanced lifestyle.**
	How successful will I be at balancing my lifestyle? Why?
Interests	
F.2.c.1*	**Evaluate self-interest in running workouts.**
	How important is this workout to me?
F.2.c.2*	**Evaluate self-interest in ancillary workouts.**
	How important is this workout to me?
F.2.c.3*	**Evaluate self-interest in races.**
	How important is this one race to me?
F.2.c.4*	**Evaluate his/her own interest in having balance.**
	How important is each of these life-style components to me?
Goal Types	
F.2.d.1	**Classify types of goals for running workouts.**
	What do I want to accomplish in this workout?
F.2.d.2	**Classify types of goals for ancillary workouts.**
	What do I want to accomplish in this workout?
F.2.d.3	**Classify types of goals for races.**
	What do I want to accomplish in this race?
F.2.d.4	**Classify types of goals for a balanced weekly schedule.**
	Why am I setting out to achieve these goals?

*Indicates a higher order thinking objective

Appendix C - Performance Phase Objectives with Prompting Questions

SELF-CONTROL	
Workout Recollection/Execution	
P.1.a.1	**Recall and apply strategies to running workouts.**
	How far am I supposed to run?
	How fast am I supposed to run?
	When and how much do I rest?
	What are the required splits for this workout?
	Who should I be running with?
	What should I be wearing?
P.1.a.2	**Recall and apply strategies to ancillary workouts.**
	What exercises am I supposed to do?
	How many sets of each exercise am I supposed to do?
	How much resistance should I be using (strength training)?
Race Plan Recollection/Execution	
P.1.a.3	**Recall and apply strategies to races.**
	Which teammates should I be near at the first mile of the race?
	What time should I have at the first mile of the race?
	What position should I be in at the first mile of the race?
Weekly Routine Recollection/Execution	
P.1.a.4	**Recall and adhere to weekly plans.**
	Am I meeting the goals for each lifestyle component?
Mental Practice	
P.1.b.1	**Visualize environments of running workouts.**
	Where are the landmarks for the splits?
	What terrain is the workout on?
P.1.b.2	**Visualize correct skills and required efforts.**
	What does correct form look like?
	What will the exercise feel like?
P.1.b.3	**Visualize environments of races.**
	Can I mentally picture the course?
	Can I mentally associate how each part of the course will feel?
	Do I know what the uniforms of target competitors look like?
P.1.b.4	**Predict possible interference to weekly plans.**
	What sacrifices do I need ot make to keep my life balanced?

Indicates a higher order thinking objective

Appendix C Continued

SELF-CONTROL (continued)	
Focusing Attention	
P.1.c.1*	**Compare workout environments with expectations.**
	What adjustments do I have to make because of changes around me?
P.1.c.2	**Identify exercises which require increased concentration.**
	Which exercises are difficult for me?
P.1.c.3*	**Compare racing environments with expectations.**
	Am I maintaining effort on climbs and descents?
P.1.c.4	**Compare racing environments with expectations.**
	How many people have I passed since the first mile?
	Where are my targeted competitors?
P.1.c.5	**Identify unexpected events that may affect weekly routines.**
	Am I being consistent with my routine?
Workout Strategies	
P.1.d.1*	**Compare running workout plans to current efforts.**
	Am I staying with my training partners?
	Am I keeping my eyes up?
	Am I lifting my knees?
P.1.d.2*	**Compare ancillary workout plans to current efforts.**
	Am I using correct form?
	Am I observing and using sub-components of each skill?
Race Strategies	
P.1.d.3*	**Compare race plans to current efforts.**
	Am I accelerating on the descents?
	Am I keeping my eyes up?
	Am I lifting my knees?
	Am I trying to run down the next person?
Weekly Routine Strategies	
P.1.d.4*	**Compare weekly plans to actual time requirements.**
	Am I sticking to my schedule?

Indicates a higher order thinking objective

Appendix C Continued

SELF-OBSERVATION	
Personal Feedback	
P.2.a.1*	**Evaluate current running efforts.**
	Am I exhibiting self-control?
	What is causing me to lose self-control?
	How can I regain/maintain self-control?
P.2.a.2*	**Evaluate current ancillary efforts.**
	Am I self-controlled?
	How can I stay self-controlled?
P.2.a.3*	**Evaluate current racing efforts.**
	Am I keeping to the race plan?
	Am I aware of what is going on around me?
	Am I using appropriate racing strategies?
P.2.a.4*	**Evaluate current weekly schedule.**
	Is my life balanced?
	What components of my routine are challenging for me?
	What components of my routine require more time?
	What components of my routine don't need as much time?
Self-Recording	
P.2.b.1	**Recall strengths and weaknesses of running workouts.**
	Did I run the required distance at the required speed?
	Were my splits consistent with my overall workout?
	Were my rests an appropriate length?
	Did my training partners stay together?
	Was my apparel appropriate?
P.2.b.2	**Recall strengths and weaknesses of ancillary workouts.**
	Did I complete all the exercises?
	Was my form consistent?
	Was my form an improvement from last time?
	Was I able to do more volume or intensity in comparision to last time (strength training)?
P.2.b.3	**Recall results of race.**
	What was my overall time?
	What was my overall place?
	What were my splits?
	How many people did I pass between the 1st mile and the finish?
P.2.b.4	**Recall strengths and weaknesses of weekly schedule.**
	What did I eat this week?
	When did I go to bed and wake up each day?
	Did I get my homework done?
	How do I feel about my friendships?
	How do I feel about my spirituality?

Indicates a higher order thinking objective

Appendix D - Self-Reflection Objectives with Prompting Questions

SELF-JUDGMENT	
Workout Results	
R.1.a.1	**Recall and record running workout details.**
	Did I run the required distance at the required speed?
	Were my splits consistent with my overall workout?
	Were my rests an appropriate length?
	Did my training partners stay together?
	Was my apparel appropriate?
R.1.a.2	**Recall and record ancillary workout details.**
	Did I complete all the exercises?
	Was my form consistent?
	Was my form an improvement from last time?
	Was I able to do more volume or intensity in comparision to last time (strength training)?
Race Results	
R.1.a.3	**Recall and record race details.**
	Where was I on the team?
	What was my time?
	What was my place?
	How many people did I pass?
	Did I get faster as the race went on?
Weekly Schedule Outcomes	
R.1.a.4	**Recall and record weekly events.**
	Did my nutrition match the demands of an athlete?
	Did my sleep habits match the demands of an athlete?
	Am I performing just as well academically as I am athletically?
	Do I and my friends feel fulfilled by our friendship?
	Am I satisfied with my spiritual life?
Workout Weak Points	
R.1.b.1*	**Infer what casued shortcomings in running workouts.**
	What was my performance limited by?
	Was my effort insufficient?
R.1.b.2*	**Infer what casued shortcomings in ancillary workouts.**
	Is my ability limited?
	Was my effort insufficient?
Racing Weak Points	
R.1.b.3*	**Infer what casued shortcomings in races.**
	Is my ability limited?
	Was my effort insufficient?
Lifestyle Imbalances	
R.1.b.4*	**Infer what caused deviations from weekly plans.**
	Am I expecting too much out of my week?
	Did I do all I could to keep the schedule I set?

Indicates a higher order thinking objective

Appendix D Continued

SELF-REACTION	
Workout Self-Satisfaction	
R.2.a.1	**Describe successful components of running workouts.**
	What am I pleased with?
	What am I disappointed with?
R.2.a.2	**Describe successful components of ancillary workouts.**
	What am I pleased with?
	What am I disappointed with?
Race Self-Satisfaction	
R.2.a.3	**Describe successful components of race workouts.**
	What am I pleased with?
	What am I disappointed with?
Lifestyle Self-Satisfaction	
R.2.a.4	**Describe successful components of weekly plans.**
	What am I pleased with?
	What am I disappointed with?
Workout Attitude	
R.2.b.1*	**Devise methods to improve running workouts.**
	How can I adapt?
	What defensive feelings am I experiencing?
	Why are my defensive feelings misguided?
R.2.b.2*	**Devise methods to improve ancillary workouts.**
	How can I adapt?
	What defensive feelings am I experiencing?
	Why are my defensive feelings misguided?
Racing Attitude	
R.2.b.3*	**Devise methods to improve races.**
	How can I adapt?
	What defensive feelings am I experiencing?
	Why are my defensive feelings misguided?
Lifestyle Attitude	
R.2.b.4*	**Devise methods to improve weekly schedule.**
	How can I adapt?
	What defensive feelings am I experiencing?
	Why are my defensive feelings misguided?

Indicates a higher order thinking objective

Nutrition and the Female Athlete

Shawn Hueglin, PhD, RD, CSSD – USOC Team Sport Dietitian

On many levels, working with female athletes to enhance performance is similar to that of working with their male counterparts. However, there are aspects of working with female athletes that are worth distinguishing by gender. Providing education and assistance with behavior change concerning the following topics may require a different approach in females: ensuring adequate total energy and nutrient intake, identifying symptoms of inadequate intake, developing awareness of nutrients female athletes may need to consume in higher amounts, and identifying the challenges female athletes face in achieving changes in their body composition.

It is critical that female athletes consume sufficient energy to refuel the energy cost of daily living, training or competition and repair and regeneration of tissue. Young female athletes also need additional energy to support growth; adult female athletes of reproductive age must cover the energy cost of reproductive functions. The challenge for many female athletes is to balance these energy costs with the frequent desire to change body composition - either losing body fat or gaining muscle mass. Female athletes often struggle to consume the additional calories required to synthesize muscle mass because they do not want to appear 'masculine' or gain body fat in addition to muscle mass. To alleviate these apprehensions and subsequent reluctance, it is important for these athletes to know their energy requirements to maintain body weight first. Gradual recommendations to increase calories, accompanied by body composition assessments to understand the type of weight gain occurring and a focus on changes in energy levels and training capacity will result in more positive outcomes. When athletes are trying to lose body fat, it is critical to first identify how the loss will influence performance. It is important to plan the timing of fat loss within a season and manage expectations regarding degree/rate of body fat change in order to optimize training capacity and avoid compromising performance. Ensuring the athlete makes nutrient dense choices to maintain satiety, obtain adequate micronutrients, to prevent deficiencies, and optimize consumption of lean protein to prevent muscle loss are all key to a successful outcome. All of these issues are particularly important in female Paralympic athletes who have smaller body sizes or muscle mass such as spinal cord injuries, spina bifida and double leg amputees as their total energy requirements can be relatively low.

Female athletes who consume too few total calories (energy) or individual nutrients can suffer a variety of consequences. If total energy intake is too low-usually defined as less than 30 kcal/kg fat free mass - it is difficult to obtain adequate levels of macro and micro nutrients including carbohydrate, essential fatty acids, protein, vitamins, and minerals required for their activity level. Some symptoms to be cognizant of are:

• Hunger, irritability, difficulty concentrating, and increased reaction time due to low carbohydrate consumption

• Inability to sustain high intensity training due to low muscle glycogen stores or low iron stores

- Inadequate tissue repair and inability to increase strength or hypertrophy due to inadequate protein or total calorie intake (in a young female athlete, growth may be compromised)

- A decrease in ability to absorb fat soluble vitamins and essential fatty acids if dietary fat intake is too low

- Rating of perceived exertion is higher than expected during moderate training sessions (may indicate low muscle glycogen stores, low iron stores, dehydration, and inadequate recovery time between training sessions)

- Amenorrhea (loss of menstrual cycle) - often a sign the body does not have enough energy to support training and reproductive function

- Unintentional or significant weight loss - can indicate there is not enough fuel for exercise and weight maintenance (often due to too low calorie consumption) (both muscle and fat can be used as a fuel source during this time). Conversely, some athletes may experience increasing difficulty losing weight or even weight gain if metabolism is falling in response to insufficient energy intake

- Higher injury rate and longer recovery time due to inadequate nutrients required for tissue repair or maintenance

Female Athlete Triad refers to the relationship between energy availability, menstrual status and bone health, which are three of the symptoms listed above. Each component spans a continuum from healthy to disease status. Female athletes may have symptoms of one or all aspects of the triad. Often, the triad manifests itself through inadequate calorie intake from an eating disorder, disordered eating, or inadvertent or deliberate inadequate calorie consumption to support training volume. The low energy availability leads to a disruption in the menstrual cycle and, ultimately, poor bone health. Sports that emphasize leanness or thin body may put young athletes at an increased risk for the female athlete triad.

Micronutrients are commonly deficient in female athletes with low energy intake and may be due to too little total energy or poor food choices. Calcium, vitamin D, iron, magnesium, zinc, and B-complex vitamins frequently come up short when analyzing food logs and 24-hour recalls of female athletes. Many of these nutrients play an important role in energy production, oxygen transport, bone health and maintenance and immune function. All of these represent critical physiological functions for the active female (see table below for functions and food sources). Exercise appears to increase needs above the Dietary Reference Intake (DRI) for several of these micronutrients including iron, vitamin D, calcium, and magnesium.

Micronutrient	Function	Rich Food Source
Calcium	Important for bone health, muscle signaling, and contraction	Dairy products, almonds, sesame seeds, fortified products such as soymilk, almond milk, juice, tofu
Vitamin D	Required for optimal intestinal absorption of calcium, muscle strength, immune function, mood state	Sunlight Fortified milk, juice, breakfast cereal/bars; eggs, fatty fish
B vitamins (folate, B6, riboflavin, B12 if vegan)	Necessary for energy production during exercise and prevention of anemia	Whole grains, beans, fortified cereals, dark leafy greens, meat poultry, fish
Zinc	Building and repairing tissue	Meat, eggs, seafood (oysters), poultry, yogurt, cashews, chickpeas
Magnesium	Important for energy production and protein synthesis	Bran cereals, brown rice, almonds, peanuts, Swiss chard, fish
Iron	Critical for hemoglobin synthesis and oxygen transport to working muscle and energy metabolism	Beef, chicken, oysters, molasses, kidney beans, lentils, tofu, cashews, dark leafy greens

Incorporate Key Performance Nutrients into Daily Training Meals and Snacks

What follows is an example of training meals and snacks for a day designed to incorporate the critical macro and micronutrients mentioned above for the female athlete. No quantities are provided because each athlete will require different amounts based on individual body composition, sport, position or specialty in sport, type of training day and season. It is also not a complete list – simply an example. When there is a fine balance of consuming adequate calories to support training but not too many to avoid unwanted weight gain, choosing nutrient dense foods becomes even more important so calories are not wasted on foods that provide little benefit to performance and recovery.

Breakfast: whole grain bread, scrambled eggs with spinach, tomatoes, and mushrooms, bowl of fruit (cantaloupe, berries)

Morning snack (drink outside if possible to obtain vitamin D from the sun): smoothie with dairy, frozen fruit, leafy greens

Lunch: tofu, long-grain brown rice, stir-fry vegetables

Afternoon snack: trail mix including cashews, almonds, walnuts, dried mango, sunflower seeds, roasted chickpeas

Dinner: grilled fish, mashed sweet potatoes, salad with Swiss chard, kale, romaine and veggies

Evening snack (if appropriate for energy intake): Greek yogurt with berries

Supporting Female Athletes

- Encourage athletes to eat a wide range of foods in order to obtain adequate macro and micro nutrients from their meals

- Educate athletes on the importance of macro and micro nutrients to performance that is specific to their sport and position or specialty

- Highlight nutrient dense foods as the best option to support training adaptations and performance especially during body composition changes

- If an athlete is trying to change body composition by decreasing body fat, assist with identifying an appropriate caloric restriction based on fat free mass and training demands and ensure the time frame is realistic

- If an athlete is trying to change body composition by increasing muscle mass, assist by adding an appropriate amount and type of nutrients to support synthesis of new tissue without adding excess calories, contributing to unwanted body fat

- Identify any symptoms an athlete may be experiencing related to poor nutrient intake

- Create an environment, whenever possible, that ensures optimal nutrients are available in dining halls, team meals, and hotels

A professional team including a sport dietitian, sport psychologist, sport medicine doctor and athletic trainer is essential to enhance education, prevention, quick treatment or management of any situation that may prevent a female athlete from training or competing. Recognizing symptoms or issues as soon as they appear and referring the athlete to the appropriate team of professionals ensures a proactive approach and the least amount of time lost from training and competition.

Helping Athletes Flourish; Strategies for Satisfying Basic Psychological Needs

Warrick Wood, Lecturer of Sport Psychology, Massey University, School of Sport and Exercise, New Zealand

Coaching elite athletes is a complex and demanding role that requires extensive planning and honest reflection to ensure that one's approach is aligned with the needs of the athletes. Athlete-centered coaching is becoming increasingly prevalent in pedagogical research, and adoption of such an approach is becoming more evident and accepted in the applied field of coaching. Adopting an athlete-centered approach can establish a relationship based on joint coach and athlete ownership of the development process. This approach is employed through various behaviors that lead to the sharing of authority and decision-making with the athletes (Kidman, Hadfield, & Chu, 2000).

Basic Psychological Needs Theory (BPNT; Deci & Ryan, 2000), is a sub-theory of the Self-Determination Theory (SDT) and posits that all individuals have innate, basic psychological needs - namely, relatedness, competence, and autonomy. The need for relatedness can be described as having the perception of a secure connection and respect of others (Adie, Duda, & Ntoumanis, 2008). Competence refers to the belief that one can be successful in a given task (Deci & Ryan, 2000). Finally, autonomy is the belief that one has adequate scope to drive one's own behavior (Ryan & Deci, 2002). Through adopting an autonomy-supportive approach that is based on athlete centered principles, this paper will examine the importance and benefits of satisfying the basic psychological needs of the athletes we work with, as well as provide potential strategies that can be used to promote basic needs satisfaction.

A myriad of studies have been conducted worldwide to investigate basic psychological needs in a number of domains including psychotherapy, leadership, education, and sport, amongst others, resulting in a general consensus that satisfaction of basic needs will lead to positive outcomes. Many of the studies underpinned by BPNT have examined the effects of coaches who employ an autonomy-supportive coaching approach. Sheldon and Watson (2011) define autonomy-supportive coaches as those who provide the highest quality and most engaging experience to their athletes. Studies have reported a positive correlation between an autonomy-supportive approach, that is known to promote basic needs satisfaction, greater self-determination (Halvari, Ulstad, BagØien, & Skjesol, 2009), enhanced athlete engagement (Hodge, Lonsdale, & Jackson, 2009), and improved individual well-being (Mageau & Vallerand, 2003; Reinboth & Duda, 2006). Such an approach will likely establish an autonomy-supportive environment as a result of leaders offering choice, providing rationale for decisions, minimizing pressure when appropriate, and acknowledging others' perspectives (Williams, Grow, Freedman, Ryan, & Deci, 1996).

The needs outlined in BPNT are regarded as universal and while there may be some individual subtle differences in the need for each, all individuals retain the desire to achieve relatedness, competence, and autonomy. An elite sporting environment is traditionally a hierarchical and fiercely competitive setting and, thereby, serves to fulfill or undermine these needs. One may argue that a more tradi-

tional coaching approach could potentially thwart the needs of athletes by removing opportunities for decision-making (autonomy), constantly and overtly highlighting comparisons between athletes and their competitors (relatedness), and overusing criticism or negative feedback as a method of teaching (competence). Such behavior, that is regularly evident in the sporting arena, could lead to a perceived suppression of all, or particular basic needs.

If athletes are able to experience the satisfaction of their basic needs as a result of the employed deliberate or unintentional coaching behaviors, as well as the perceptions one holds regarding key relationships with their coach and other athletes, then experiencing greater enjoyment and ownership over the process of development and performance becomes much more likely. Coaching athletes to take ownership and assume greater responsibility for their development - rightfully - is an issue with which many coaches grapple. However, establishing an understanding of these innate needs can help shape one's coaching behavior and, thereby, develop greater relationships as the athletes begin to experience increasing empowerment and motivation.

While basic psychological needs operate largely at the subconscious level, if not satisfied, they can push for resolution through various behaviors (e.g., withdrawal from sport, attention seeking actions). Because these needs do not operate within our immediate awareness, we are generally not aware of the fact that they are being undermined; however, we will more than likely notice the undesired symptoms of this occurring. Generally, maladaptive behavior engaged in by athletes will be a result of a perceived lack of relatedness, competence, and autonomy. For example, if an athlete does not feel an adequate measure of autonomy, this may push her to consciously or subconsciously challenge or disregard instructions (e.g., arriving late, bullying\ and hazing). Accepting that these basic human needs operate in all domains, allows a coach to formulate a plan to ensure that his or her athletes experience these needs to an adequate degree so that they can be free to fully embrace the process of training and performing unhindered by negative background matters.

The extant literature suggests that an autonomy-supportive approach can contribute positively, directly or indirectly, to all three of the basic needs outlined in BPNT (e.g., Vallerand, 1997). The remainder of this paper will consider strategies that, when engaged in successfully, can help coaches promote the satisfaction of each of the basic needs.

Relatedness

All athletes want to experience a sense of belonging and intimacy during their sporting careers. Significant relationships play an important role here, and none are more important than that of the coach in developing the culture and atmosphere within a team or a coach-athlete relationship. It is essential as a coach to show an appropriate level of care for the athletes they are working with. Athletes spend a considerable amount of time with members of their team. At an elite level, this may be more time than they spend with their families. It is, therefore, important that a degree of relatedness is experienced to ensure well-being and enjoyment is maintained. A coach can achieve this by simply showing that they care for their athletes beyond the sporting arena. Engaging in conversation about their outside life is a practical and easy way of doing this. When coaches seek information about their athletes' lives, it illustrates a level of caring that helps to establish a deeper relationship.

Promoting joint ownership can also foster relatedness. As mentioned earlier, elite sport is traditionally an autocratic, coach-centered environment that expects athletes to relinquish autonomy and strictly follow instructions. While this type of approach can work, promoting joint ownership over the process by changing our language and how we interact with our athletes can achieve positive outcomes. Using 'we' statements rather than 'you' or 'I' can foster feelings of togetherness. For example, "We need to take this approach when….", or "We need to do a better job of preparing before…" informs athletes both the coach and the athlete are working in unison.

Each of the basic needs is distinct, but they do overlap, and as a result some coaching behaviors can contribute to the satisfaction or undermining of more than one of the needs. Consequently, some of the suggested behaviors in the remaining sections will also indirectly positively influence feelings of relatedness.

Competence

Due to the highly competitive and pressurized nature of elite sport, it is difficult for an athlete to achieve success if they do not have a high level of perceived competence. Various challenges and external pressures can either motivate us to perform great feats, or severely undermine our ability to perform in 'the moment' by shifting our attention from the present task to future matters that are essentially uncontrollable. Whether we are inspired by big situations or, alternatively, underperform due to a high perceived pressure will be determined largely by how we perceive the situation and our ability to meet the demand.

An important aspect of coaching is ensuring that when athletes get to the start line, they trust in their ability to perform and be successful. Therefore, it is important that coaches assume an active and deliberate role in helping athletes establish a high level of perceived competence. While reminding athletes to 'be confident' prior to a race can be helpful, actually implementing strategies to improve perceived competence is more functional.

Setting up situations in training where athletes experience competence is critical. If athletes are not experiencing competence during training, then we cannot realistically expect them to feel confident during pressure situations in competition. Considering how we set up trainings and drills (e.g., goals, challenges, times, teams) is important in ensuring that athletes experience an appropriate level of competence so they feel confident about their abilities as competition draws closer, and inevitable nerves begin to emerge. While it is important to avoid complacency and, subsequently, there is a need to push athletes, achieving any noteworthy success relies on athletes feeling confident about their ability, particularly at the top level where external pressure can be immense. An adequate level of competence will lead to anxiety being at a manageable level (perceived as positive nerves) opposed to the type that overwhelms and undermines performance, which commonly manifests due to a lack of perceived competence. The notion of setting athletes up to achieve competence in trainings also extends to ensuring that they are aware of success. Highlighting improvements and success is important, as there are times when athletes actually overlook and are not aware of positive developments. Consequently, the nature of the feedback we provide is important.

Type of feedback is a significant factor in determining the degree of competence that athletes experience. Again, a fine balance needs to be established between positive and constructive feedback. If coaches can maintain a high level and rate of positive feedback, this can help ensure that the athletes' minds are saturated with positive thoughts that allow them to perform unrestricted by doubt. A mind that is dominated by positive thoughts produces confident feelings that will typically lead to optimal performance. This is in contrast to athletes who question themselves and experience self-doubt that triggers high levels of negative anxiety, which leads to underperforming or in extreme circumstances, choking.

Autonomy

Sport requires athletes to voluntarily waive a degree of decision-making as they enter into a team dynamic or become part of a coach-athlete relationship. The degree of autonomy experienced by athletes differs in every situation - the nature of effective group dynamics requires a subsuming of individual interests with those of the collective. Nevertheless, autonomy is still an innate psychological need and individual well-being necessitates that it is met to a personal satisfactory level. Coaches are required to navigate a fine line, unique to each athlete, between providing leadership and guidance, but also allowing sufficient opportunities for decision making and ensuring that athletes feel they have some influence over their sporting involvement.

One of the easiest ways to promote autonomy is to provide athletes with decision-making opportunities. The decisions a coach allows their athletes to make can be influenced by several factors including, experience of athletes, time with team, coaching approach, among others. It may be that one starts by allowing athletes to make small decisions (e.g., warm-up routine) and then gradually allow for greater athlete input. Further, merely consulting and considering the opinions of the athletes can effectively provide some autonomy, so long as that it is done genuinely and that the athletes feel the coach has considered their feelings. This type of approach would also likely have a positive effect on relatedness as it promotes joint ownership and feelings of togetherness.

How one defines success will play an important role in the actual success achieved, and this definition will influence perceived autonomy. Most individuals, predominantly as a result of societal influences, develop a stance that winning is the most important thing because it represents success, superiority, and joy. Alongside this belief, we also hold a parallel view that losing needs to be avoided and is indicative of failure, inferiority, and despair. While having a drive to win is normal and beneficial, being able to self-reference success is important. Sport is a zero-sum game - meaning for me to win, you have to lose, and this provides a truly fascinating environment. However, it also means that by definition, sport only allows for one winner, meaning there are going to be a number of athletes and teams who are not 'successful' by traditional measures.

Gauging success on both performance and outcome is important in maintaining a healthy view of what success is. Often we see teams that underperform but come out on top on the scoreboard – is this real success? In contrast, there are times when weaker teams play much closer to their potential than their opposition but unfortunately lose the battle – has this team failed? Referred to as one of the greatest and most successful coaches of all time, John Wooden defined success as "the

peace of mind that is the direct result of self-satisfaction in knowing you did your best to become the best that you are capable of becoming" (Wooden & Jamison, 1997, p. 170). Subscribing to such an approach allows one to have some control over success and heightens perceived autonomy. At the end of the day, while athletes with this stance will enjoy winning and be disappointed with a loss, they will ultimately define their success by controllable factors such as how they prepared, competed, and performed. While it is not the writer's intention to discredit winning in any way, particularly at the elite level where much relies on objective outcomes, the ability to self-reference success will play an important role in ensuring that a degree of success and autonomy is achieved. Such a stance will generally also lead to a mindset that is more likely to embrace challenges and perform free of negative external pressure, increasing the likelihood of achieving outcome success.

It becomes apparent when examining coaching behavior that the employed behaviors of a coach contribute to one, or multiple, of the basic psychological needs being satisfied or undermined. Success and failure have been increasingly attributed to the psychological aspects of performance and this is one of the factors leading to the growth in the field of applied sport psychology. At the top level of elite sport, we see very little physical and technical differences between athletes. Those who develop the ability to embrace challenges, control their focus and perform under pressure, are most likely to be successful. However, it is becoming equally clear, that coaches at the top level of sport have acquired a similar level of knowledge to their counterparts. How coaches engage with their athletes and contribute to their development, both physically and mentally, will be a key factor in determining the degree of success experienced. If a coach can contribute to his or her athletes experiencing an adequate level of relatedness, competence, and autonomy, then success will be much more likely as a result of heightened motivation, engagement, and well-being.

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The USA Team pose with Junior Ryder Cup Trophy during the closing ceremony of the 2014 Junior Ryder Cup after beating the European Team 16-8, at Blairgowrie Golf Club on September 23, 2014 in Perth, Scotland. (Photo by Mark Runnacles/Getty Images)

The FUN MAPS: A Youth Sport Scientific Breakthrough

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Fun. Everyone wants to have it. However, few can easily describe what "it" is. Such is no longer the case – at least for kids participating in organized athletics. The FUN MAPS are the result of new and exciting sport science research that engaged hundreds of youth sport players, parents, and coaches in the creation of innovative, three-dimensional maps that identify the *exact* determinants of what makes sports fun for kids. Like any road map or sophisticated GPS system, the FUN MAPS display the entire landscape of fun and provide navigational directions for optimizing fun based on precise metrics.

Much of the popular media buzz and excitement generated by this new research stems from the need and desire voiced by many to put the fun back into the ever increasing ultra-competitive youth sport environment. What's more, the FUN MAPS are challenging one of the most common perceptions in the youth sport arena today – that "having fun" is synonymous with "goofing off". Not so, according to the FUN MAPS.

Contrary to what many may think, fun does *not* come at the expense of individual athlete and team achievement efforts. In other words, it appears that greater athletic performance is more likely to be achieved if kids are engaged in the most fun sport experiences possible. So, exactly what *is* fun?

The Fun Topography

Fun is complex – and all of the things that make playing sports fun for kids are many. So many, in fact, most people are surprised to find out that the FUN MAPS display as many fun-determinants as they do. How many fun-determinants do *you* think there are? Take a quick guess. Think big. Think double digits big.

There are 81 fun-determinants. That means there are 81 independent things that make participating in team sports fun for kids! Fortunately, all of the 81 fun-determinants are organized into 11 larger fun factors. As you might guess, factors such as *Games* and *Team Friendships* are among the 11 fun factors, but surprising to many, so are *Learning and Improving, Practice, Trying Hard, Mental Bonuses, Being a Good Sport, Team Rituals, Swag, Game Time Support*, and *Positive Coaching*. Driven by scientific data, the position of each of the factors on the FUN MAPS facilitates understanding and navigating the inter-relatedness among all of the factors.

Navigating the FUN MAPS

Games and *Practice*, the two contexts in which youth sport is organized, are positioned centrally on the FUN MAPS and include 6 and 7 fun-determinants, respectively. Using a compass, head due north and you'll find *Team Rituals, Team Friendships*, and *Being a Good Sport*, which collectively include the 20 social fun-determinants. To the west is *Positive Coaching*, which alone boasts the greatest numbers of fun-determinants at 12; and, closely adjacent are other external factors including *Game Time Support* and *Swag*, which contain 6 and 7 fun-determinants. To the east are all of the internal things youth athletes find fun about playing sports including *Mental Bonuses, Trying Hard*, and *Learning* and *Improving*, which together include 23 fun-determinants.

When surveying the fun landscape in three-dimensional space, a fun factor's height is directly proportional to its reported importance. This makes the FUN MAPS easy to navigate and discern the factors of greatest and least importance. So, if you are interested in getting directions on how to start optimizing fun for kids amid the vast fun landscape, use the FUN MAPS to take a tour of the youth sport ethos which represents the trifecta of the most important fun factors surrounding *Practice* and *Games*. To start your tour, begin at *Being a Good Sport*. Next stop? *Trying Hard*. Final destination? *Positive Coaching*. These three fun factors are of greatest importance when it comes to making sports fun for kids and as such tower above other factors of minimal importance, such as *Team Rituals* and *Swag*.
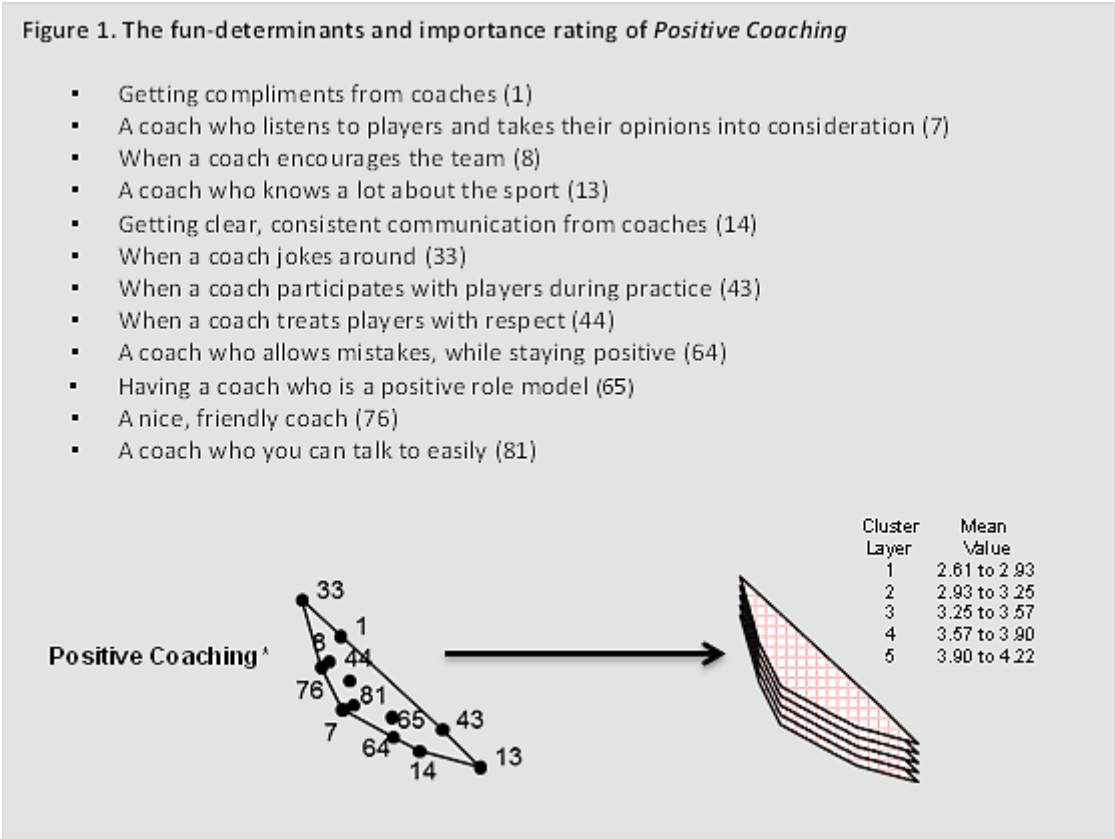
A Grassroots Approach to Mapping Fun

The FUN MAPS are the result of using a highly robust, mixed-methods scientific research design known as concept mapping, which engaged the most relevant community-based youth sport stakeholders – athletes, their parents, and coaches – as key informants in the development of concept maps which both identify and quantify fun.

First, these stakeholders brainstormed as many fun things they could think of by completing the sentence stem, "*One thing that makes playing sports fun for kids is*…." Thousands of ideas were brainstormed. These fun ideas were then analyzed and synthesized into a list of 81 fun-determinant statements that was representative of the entire saturation of ideas that had been contributed. This alone was a significant scientific advancement in sport science. For the first time *fun* had been operationally defined in its entirety by youth sport's most significant and primary stakeholders.

Next, each stakeholder conceptually organized the fun-determinants by pile sorting each of the 81 statements. Meaning, stakeholders placed fun-determinants that were similar to one another in a pile and gave each pile a name that collectively summarized the statements they grouped together. Lastly, stakeholders rated the importance of each of the 81 fun-determinants.

The FUN MAPS are the final visual result of combining the finest qualitative research methods (i.e., brainstorming) and quantitative research methods (i.e., sorting and rating) with sophisticated analytics. The placement of the 81 fun-determinants as data points on the FUN MAPS is the combined result of how the determinants were sorted by all stakeholders. That is, two data points that appear closer to one another on the FUN MAPS were sorted together more often. This means that stakehold-

ers largely conceptualized these two fun-determinants as more similar to one another than different. Points further apart from one another represent fun-determinants that were perceived to be dissimilar and thus conceptually more distinctive. Multivariate analysis connected the 81 fun-determinant points, thereby creating boundaries and partitioning the determinants into 11 distinct fun factors, illustrative of stakeholders' combined sorting data. The importance rating data was also aggregated for each fun-determinant and fun factor and displayed as three-dimensional layers on the FUN MAPS. This means that the number of layers displayed for each factor directly corresponds to how important it was rated. Therefore, factors of high importance will be displayed with a greater number of layers. See Figure 1 for an excerpt of the *Positive Coaching* fun factor from the FUN MAPS.

Figure 1. The fun-determinants and importance rating of *Positive Coaching*

- Getting compliments from coaches (1)
- A coach who listens to players and takes their opinions into consideration (7)
- When a coach encourages the team (8)
- A coach who knows a lot about the sport (13)
- Getting clear, consistent communication from coaches (14)
- When a coach jokes around (33)
- When a coach participates with players during practice (43)
- When a coach treats players with respect (44)
- A coach who allows mistakes, while staying positive (64)
- Having a coach who is a positive role model (65)
- A nice, friendly coach (76)
- A coach who you can talk to easily (81)

Cluster Layer	Mean Value
1	2.61 to 2.93
2	2.93 to 3.25
3	3.25 to 3.57
4	3.57 to 3.90
5	3.90 to 4.22

The Significance of the FUN MAPS

It is commonly known that attrition from youth sport is high – as high as 70% by the age of 13. Recent trends also indicate that more and more kids are dropping out of team sports. Both alarming and stag-gering, these statistics are largely attributable to negative sport experiences. In fact, the number one reason kids cite for dropping out of youth sport is because it is "no longer fun" and the primary reason they continue to play is because it "is fun".

The FUN MAPS are the first environmental scan of fun in youth sport today and thus may be helpful in maximizing participation retention and reducing youth sport attrition. The FUN MAPS display the entire topography of fun in easy-to-understand visual images of knowledge that provide national or-

ganizations, league administrators, coaches, parents and others with precise directions and guidance for fostering the *most* fun sport experiences for children and adolescents.

Learn More about the FUN MAPS

The FUN MAPS are the scientific blueprints for an entire theory of fun known as the fun integration theory. To learn more and to see the FUN MAPS in their entirety, you can refer to the original scientific paper, "*The fun integration theory: Towards sustaining child and adolescent sport participation*" available via:

• **Human Kinetics in the Journal of Physical Activity & Health**: http://dx.doi.org/10.1123/jpah.2013-0180

• **PubMed**: http://www.ncbi.nlm.nih.gov/pubmed/24770788

Follow-up questions and correspondence can be directed to the Principal Investigator and lead author of the paper: Dr. Amanda J. Visek at avisek@gwu.edu. You can also follow all of the fun surrounding the FUN MAPS and join the fun conversation on Twitter @ajvisek #funmaps.

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The USOC has recently published information on the American-ized version of Long Term Athlete Development (LTAD). Complimenting the great work of USA Hockey, the USOC has released information about the American Development Model (ADM) in partnership with the US National Governing Bodies. You can learn more about USOC's take on ADM,
including key principles, stages and outcomes at TeamUSA.org/About the USOC/Athlete Development/Coaching Education/American Development Model.

The Winter 2015 issue of Olympic Coach will focus specifically on ADM and athlete development.

If you are interested in submitting an article for publication in a future issue of Olympic Coach, contact Christine Bolger (Christine.Bolger@USOC.org). Article submission deadlines are:

January 31st
April 30th
July 31st
October 31st

On the cover: MILAN, ITALY - OCTOBER 12: USA players pose with gold medal after the FIVB Women's World Championship Final match between China and USA on October 12, 2014 in Milan, Italy.

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