

Mindfulness for Young Athletes
Sports Health: A Multidisciplinary Approach
OnlineFirst November 7, 2023

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Acknowledgement: The author would like to thank Michelle G. Brenner, MD, IBCLC for her editorial assistance.

Summary statement: Mindfulness is an important tool that can be utilized to help young athletes improve their overall well-being and athletic performance.

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ABSTRACT

Mindfulness has been around for centuries and a significant amount of research has been published in the past 6 years. Mindfulness has been shown to be helpful to improve overall well-being and sports performance. There has been a large increase in anxiety, depression and overall stress in the pediatric, adolescent and young adult population. This clinical commentary highlights the importance of using mindfulness as one tool to help young athletes improve their overall well-being and athletic performance. It also describes how it can be utilized in the sports medicine world along with noting a novel program at a Children's Hospital that is utilizing these tools to help young athletes.

CLINICAL SCENARIOS

A 16-year-old football player suffered an ACL tear during his junior year of high school. He had a successful surgical repair, but his rehabilitation process plateaued due to his lack of motivation and fear. Implementation of mindfulness skills such as journaling and breathwork empowered him to complete his rehabilitation and return to football. He is now a successful collegiate student-athlete.

A 17-year-old elite high school golfer developed anxiety, stress and increasingly negative thoughts. These issues were interfering with her golf game to the point that she withdrew from a tournament. Through a mindfulness program for athletes, she routinely put into practice the “three good things” exercise, breathwork, sound meditation and improved her sleep hygiene. She no longer feels compelled to play golf every day and does not feel guilty when she takes a break from her physical training schedule. She is now a successful Division 1 NCAA scholarship student-athlete.

A former major league baseball player who was a standout high school athlete has used a variety of mindfulness skills to help him through his youth sports experience followed by a highly successful professional career. He is now an advocate and mentor to current and aspiring professional athletes on the importance of the mental aspect of sports.

MENTAL HEALTH AND WELL-BEING IN ATHLETES

The mental health and wellness of young athletes are crucial to their success in sports and life but are often overlooked. Coaches, parents and peers frequently discuss how to physically train and work on the latest skill set to succeed. However, we now know the mental aspect of sport is just as important to train as the physical aspect, if not more. Success in a sport may be 20-30% physical and 70-80% mental. An athlete can have all of the physical qualities to excel at their sport, but if they are

grounded by anxiety, depression, negative thoughts, burnout or poor-quality sleep, to name a few, they will not reach their full potential.

Mental health is defined by the CDC as our “emotional, psychological, and social well-being. It affects how we think, feel, and act. It also helps determine how we handle stress, relate to others, and make healthy choices.”⁹

The Global Wellness Institute defines mental wellness as “an internal resource that helps us think, feel, connect, and function; it is an active process that helps us to build resilience, grow, and flourish.”¹⁷ Interestingly, a person can have a mental illness such as depression or anxiety, while still having good mental wellness. It is well known that sports and physical activity can play an important role in the mental health and wellness of everyone.

MINDFULNESS

Mindfulness is a mindset and skill that has been around for centuries. It was defined by Jon Kabat-Zinn as “the awareness that arises by paying attention, on purpose, in the present moment, and non-judgmentally”.¹⁴ Twenty years ago it was mainly discussed “behind closed doors”, but fortunately it is becoming more of a mainstream conversation. This explosion in the exposure of mindfulness is due in part to professional, Olympic and collegiate athletes disclosing their mental health struggles and their use of mindfulness techniques to improve their quality of life and athletic performance.⁴

One important point to highlight is that mindfulness and meditation are not synonymous. Meditation is one form of mindfulness, similar to running or tennis being forms of physical activity. Meditation is defined by the National Institute of Health as a practice that “focuses on mind and body integration and are used to calm the mind and enhance overall well-being”.²⁰ Other mindfulness skills include activities such as breathwork, positive self-talk, gratitude practice, self-compassion, journaling, guided imagery, and gentle movement (ie yoga, Tai Chi). See table 1 for an example of a Mindfulness Toolbox.

Table 1. Mindfulness Toolbox Example

Breath Focus Exercise	3 Good Things Exercise
Breath Control Exercise	Gratitude Practice
Body Scan	Awe
Sound as an Anchor	Journaling
Smiling Meditation	Guided Imagery and Visualization
Positive Self-Talk	Yoga or Tai Chi
Self-Compassion	Last Time Meditation (Stoicism)
Reverse the Negativity Bias	Living a Dream Life (Stoicism)

There has been an exponential increase in the number of apps and podcasts that focus on building mindfulness through meditation and other skills. More than 2500 meditation apps have been launched since 2015, the number of children meditating has increased by 800% in the past decade, 52 million users downloaded the top 10 meditation apps in 2019, the number of users meditating with an application has increased 3 times since 2012 and the US meditation market is valued at over \$2

billion.²³ The amount of research on mindfulness has also increased with over 16,500 publications from 1966-2021, increasing by 23.5% per year in the last decade and two-thirds of all the publications occurring in the last 5 years.⁶

Mindfulness and other forms of psychological treatment have been successfully utilized through digital health interventions with the general public for mental health problems.^{13, 15} Additional research is needed focusing on remotely delivering mindfulness content via web-based or smartphone-based tools to the athletic population.³

More research is needed focusing on young athletes, but some of the published evidence on mindfulness in sports include:

- Mindfulness added to an exercise rehabilitation program has been shown to decrease pain and functional limitations, lessen pain catastrophizing and improve coping strategies in recreational adult female runners with patellofemoral pain.⁵
- In a meta-analysis mindfulness was found to reduce negative thoughts and levels of perceived stress while improving overall well-being in high school and college athletes.²¹ It also suggested the possibility that mindfulness could reduce the risk of injury, but additional research is needed.²¹

- Mindfulness-based interventions in adolescents have also been shown to decrease anxiety, depression, and help with the prevention and treatment of disordered eating and substance use disorders while improving the quality of life in patients with chronic pain. ¹⁶ It can also help with sleep problems and stress related to sports.¹⁶
- A study of competitive cyclists showed that mindfulness can help increase flow state and decrease pessimism. ²²
- A mindfulness-based program in soccer players improved attention control and reduced sport anxiety. ¹⁹ The study also suggested that the program may reduce the number of injuries and days lost to injury. ¹⁹
- Mindfulness training was also found to increase mental toughness and emotional intelligence in amateur basketball players.¹
- Mindfulness training in amateur soccer players was found to prevent injuries and improve performance. ²⁵
- A Mindfulness–Acceptance–Commitment program in elite female adult athletes improved self-compassion and grit. ¹⁸ These improvements persisted after study completion. ¹⁸

- A meta-analysis showed that mindfulness-based interventions had large effects on inattention and other ADHD core symptoms. ²⁴

Mindfulness is yet another tool that can be utilized in a sports medicine practice to optimize athletic performance and improve overall well-being. Over the past 2 decades sports medicine providers have witnessed and treated young athletes with problems secondary to the rise in overuse, overtraining and burnout along with early sports specialization. ^{7,8,11} These problems include stress, anxiety, depression, and lack of motivation or focus. There are many other social, economic and health-related factors, in addition to sports, that may contribute to the development of these problems. The increase in these problems in the pediatric and adolescent population led to the American Academy of Pediatrics, American Academy of Child and Adolescent Psychiatry and Children's Hospital Association to declare a National State of Emergency in Children's Mental Health in 2021. ²

PRACTICAL IMPLEMENTATION

Mindfulness skills can be discussed and taught individually within clinical practice and in a team setting involving athletes and their coaches. In addition, parents and the community-at-large can be educated about the importance and benefits of mindfulness not just in sports, but also life in general. The three athlete examples cited at the beginning of the commentary show how mindfulness may be used in different scenarios. These include recovering after an injury, improving athletic

performance or facilitating one through the youth sports environment into a professional athlete.

As sports medicine providers we are all role models to our patients and their families. By educating ourselves about mindfulness and utilizing the skills personally we will be more likely to implement it into our clinical practice.¹² We integrated a Mindfulness for the Young Athlete program into our pediatric sports medicine practice 3 years ago as part of a Mind and Body Wellness Coaching program. It has impacted individuals, families and teams positively by facilitating the creation of a personalized mindfulness toolbox. We have increased the awareness of the importance of mental health in sport, rehabilitation and life and hope to continue to expand our services and serve as a model for others.¹⁰ Keep mindfulness on your radar and build your own toolbox alongside your young athletes', incorporating mindfulness into your lives. You never know, mindfulness may also improve your outlook, health and well-being and bring more joy to practice and life.

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