



## Emotion Regulation and Sports Performance: A Systematic Review.

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### ABSTRACT:

Competing in sporting events, different feelings pass through an athlete's emotions and bodily system. The present article is a systematic review that seeks to identify the ongoing research done on emotion regulation in the context of sports. This systematic review aims to review the literature and extract information on how emotion regulation is essential in sports performance. The paper examines how athletes can manage emotions, such as anxiety or anger, to optimize their mental state and achieve peak performance. The review examined the theoretical perspective of emotion regulation in the sports context. Two primary approaches to ER research that have become entwined in sports contexts in this systematic review are The IZOF model and the process model of Emotion regulation. Key concepts explored in this review include the "emotional zone," where athletes experience a specific range of emotional intensity that leads to optimal performance, and the ineffectiveness of emotion suppression techniques. The review emphasizes the need for personalized emotion management strategies customized to each athlete's specific needs. By effectively managing their emotions, athletes can enhance focus, motivation, and resilience, ultimately leading to improved sports performance. This research paper will contribute to the understanding of how athletes can harness the power of their emotions to excel in sports. Athletes, coaches, sports psychologists, and researchers can gain valuable knowledge from this review to optimize their training and reach their full potential by assessing emotion regulation's impact on sports performance, categorizing strategies, assessing methodologies, exploring athlete well-being, offering recommendations, and identifying research gaps.

A rapidly growing field of study, emotion regulation looks at how people manage their own emotions, including when they feel them, what they think about them, and how they show them to the world. In recent years, there has been a growing consensus among sports psychology academics and practitioners that emotion regulation (ER) is a significant factor in the field of sports. Emotions experienced before and during sports competitions have been found to influence sports performance. Emotion regulation is the automatic or

deliberate use of strategies to initiate, maintain, modify, or display emotions (Gross & Thompson, 2007). It is proposed to occur when a discrepancy exists between current and desired emotions (Lane, A. M., Beedie, et al., 2012). Emotion regulation is crucial for athletes, as it significantly impacts performance, well-being, and game enjoyment. It improves performance under pressure, enhances well-being, and increases enjoyment. Common emotions in



sports include anxiety, anger, excitement, and disappointment.

Our emotions and feelings play a vital role in regulating our interactions in the social world. They mainly consist of psychological, emotional, cognitive, motivational, physiological, and behavioral components. All these aspects help humans adapt and enhance their performance in various fields such as interpersonal relationships, decision-making, memory, stimulus detection, etc. They also have the potential to positively impact the performance and health of human beings. Alternatively, emotions are dynamic and vary according to the content, timing, and intensity. If one wants to do great things while encountering constructive hurdles, one must learn to control one's emotions. This kind of emotional self-regulation can happen automatically or by deliberate thought. (Lane, A. M., Beedie, et al., 2012).

A key component of peak athletic performance is emotional regulation. An athlete's performance and feelings are influenced by the emotions that pass through them. The application of procedures to initiate, maintain, modify, or display emotions is referred to as emotion regulation. These techniques can be applied instinctively or consciously. Emotions felt before and during sports competitions have been shown to impact athletic performance. The most prominent emotions include anxiety, excitement, fear, happiness, disappointment, etc. Such emotions can positively or negatively affect an athlete's performance, so managing such emotions is crucial.

(Tamminen, K. A, et al., 2021). Anxiety and worry are two such emotions that surface when the athlete is in a state of helplessness or is unsure when it comes to a certain situation, and this can even result in performance anxiety affecting their upcoming performances. Fear of failure, embarrassment, or elimination from a competition is a common source of anxiety for athletes. Performance anxiety can manifest in various forms, including nervousness before competitions, upset over losses, or excitement after big wins, leading to poor performance. (Wagstaff, C. 2014). This can be balanced by introducing techniques that help control emotions and deal with stress efficiently.

Understanding how to control one's emotions effectively is a skill that is essential for any athlete. They learn to manage their stress in multiple ways, positively impacting their performance on the field. Athletes can utilize several ways to enhance emotion management, including enhancing, perfecting, and broadening their routines and psychological skills.

Emotions have a tremendous impact on athletic performance, causing athletes to feel nervous, excited, or frustrated before, during, and after a game. Uncontrolled emotions can impair performance by producing focus loss, mistakes, and anger. Emotional distractions can lead to a lack of attention to game strategy or a given task. Decreased focus and concentration may cause the athlete to fail to make quick decisions on the field. An athlete cannot mentally engage in the game or sports when irrelevant thoughts might come into their mind. Emotional instability can result in making impulsive or rushed decisions and overreacting to referees' calls or opponents' actions. Unregulated emotions increase stress levels and anxiety and hurt self-confidence and motivation among athletes. (Kopp, A., & Jekauc, D. (n.d.). More emotional stress can manifest physically as tense muscles and decreased flexibility. It can lead to fatigue and a lack of energy, thus leading to poor coordination and timing in movements, affecting performance. Unregulated emotion also leads to an impaired ability to cope with setbacks and failures. The ability to focus on what is most important in any situation while ignoring many distractions is vital for successful performance in sports.

Athletes can improve their performance by developing the ability to manage their emotions and cope with stress using strategies such as deep breathing, visualization, and positive self-talk. The dispersion of emotions within a team can also have an impact on performance. Specifying performance goals, adhering to performance routines, using trigger words as cues to concentrate and simulation training are some of the practical strategies to improve attentional skills in athletes and enhance sports performance. (Wagstaff, C. (2014).

Emotion regulation (ER) plays a crucial role in sports performance, but its impact is complex and influenced by numerous factors. Mediators include focus,



motivation, confidence, stress management, and teamwork. D. Wang, et al., 2022). Effective ER fosters mental clarity, Resilience, motivation, self-efficacy, and stress management. In contrast, moderators include sport type, personality traits, context, previous experiences, and training and support. Different sports require different emotional profiles, and athletes with positive experiences with ER may have a stronger belief in its effectiveness. Understanding these factors allows for a more nuanced approach to optimizing the ER-performance relationship, allowing athletes and coaches to tailor strategies for maximum effectiveness. (Millán-Sánchez, A et al., 2023).

For efficient emotion regulation in sports, it is essential to have a solid understanding of individual characteristics, personality features, and coping techniques. This would allow players to cultivate self-awareness and adopt adaptive strategies. The rigors of competitive sports can be overwhelming, and players frequently deal with outside pressures that have a big impact on their emotions and how they handle them. External influences such as performance expectations and audience pressure can have a big impact on athletes' ability to regulate their emotions, which can affect their mental health and either improve or impair performance. Some athletes excel under pressure, while others find it challenging. (Lane, A. M et al., (2011). For athletes to maintain mental health and achieve peak performance, they must understand the effects of these elements and create useful coping mechanisms. This review aims to explore the current state of knowledge on the relationship between emotion regulation and sports performance and identify key areas for future investigation.

## Materials and Methods

### Data Sources

Relevant studies were sought in key databases: EBSCO, Scopus, Science Direct, Google Scholar and APA PsycNet. The systematic review included articles published between March 1, 2012, and February 27, 2023.

Only articles published within the last eleven years were included to ensure the review's relevance and focus on current methodologies. Our search strategy,

enriched with pertinent keywords, aimed not only to encompass a diverse range of studies but also to minimize the potential impact of language bias.

### Inclusion and Exclusion Criteria

Both the studies' direct relevance to the research issue and the capacity to add significant insights to our systematic review were taken into consideration when selecting the studies to be included in the review. Articles were included if they investigated the relationship between emotion regulation and sports performance and or studies that explored emotion regulation strategies. Studies were included if they were published in peer-reviewed journals and included participants 18 years and above. Research that did not meet these requirements, on the other hand, was carefully disregarded and never included. We excluded studies that were published before your chosen timeframe.

### Data Extraction and Synthesis:

Two independent reviewers extracted data and evaluated bias risk. This systematic review followed SWiM standards and used a narrative synthesis approach without conducting a meta-analysis. The researchers used the Cochrane Risk of Bias (RoB-2) technique to assess methodological quality and evidence robustness.

Following this comprehensive search, an exacting screening process came into play. Titles and abstracts underwent meticulous evaluation for relevance, with studies showing promise advancing to full-text scrutiny. This screening process, vital for ensuring the highest quality of research inclusion, was independently executed by two reviewers to mitigate the risk of selection bias, with any discrepancies diligently resolved through discussion.

The subsequent steps involved in our methodology maintained a rigorous standard. Data extraction and quality assessment were executed with systematic precision. Pertinent information, including study characteristics, participant demographics, intervention specifics, and outcomes on sports performance, were meticulously extracted.



To reduce the possibility of bias and increase the reliability and reproducibility of the results, this systematic review has adhered rigidly to a clear and systematic approach in its materials and methodology. Our systematic review methodology is strengthened by a thorough search strategy, strict selection criteria, independent screening, and methodological quality assessment. These factors contribute to the thoroughness and validity of the study and the analysis that follows.

To enhance the transparency and accountability of our systematic review, we employed the PRISMA flow diagram. This visual aid described the research selection procedure in detail, including the number of records that were identified, screened, evaluated for eligibility, and included in our systematic review.

The initial search yielded 368 articles, underscoring the considerable research volume on emotion regulation and sports performance. This broad array of literature reflects the escalating interest and concern regarding the influence of emotion regulation on athletic prowess, emphasizing its potential impact on optimizing sports performance. 134 duplicates removed. Studies in languages other than English and non-peer-reviewed sources were excluded from 45.

After reviewing titles and abstracts, 125 studies were excluded due to not meeting the inclusion criteria (e.g., wrong age group, non-experimental design). The remaining 54 studies were then assessed through full-text review, with 15 ultimately excluded due to methodological limitations (e.g., small sample size.) Out of the comprehensive collection, 24 articles have been found to satisfy the rigorous inclusion criteria established for this systematic review. These studies collectively engaged a substantial cohort of athletes, encompassing diverse sports disciplines and providing a comprehensive and representative sample for assessing the efficacy of emotion regulation in enhancing sports performance. It was created following PRISMA criteria

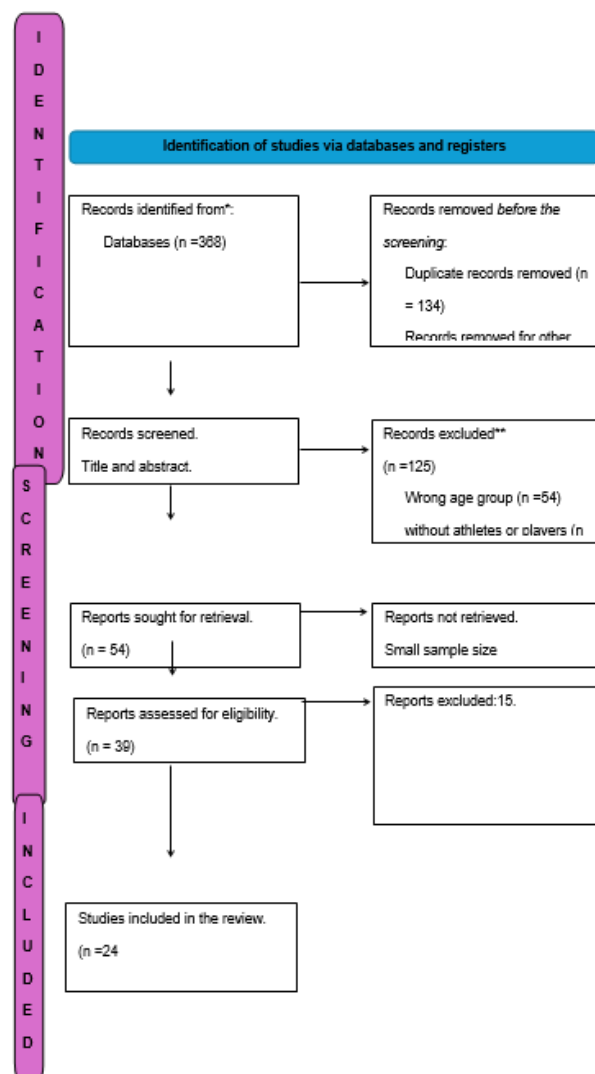


Fig. Flow diagram of trial selection, adapted from PRISMA. (PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-Analyses)

### Results:

The evaluated interventions within these studies showcased a multifaceted array, incorporating diverse approaches aimed at optimizing emotional regulation for improved sports performance. These interventions ranged from tailored psychological strategies addressing emotional factors influencing performance to training programs aligning with the specific needs and demands of athletes, aiming to foster emotional regulation conducive to peak performance.

The cumulative findings from the selected studies suggest a positive correlation between the



implementation of emotion regulation strategies and enhanced sports performance. Particularly noteworthy is the significant improvement in performance outcomes and the mitigation of factors hindering optimal athletic achievement. This observation underscores the potential effectiveness of holistic approaches addressing both psychological and physical aspects in cultivating emotional regulation and elevating sports performance.

The diverse studies of the interventions and the expansive athlete cohort involved in these studies provide invaluable insights into the potential benefits of emotion regulation strategies across various sports and disciplines. Furthermore, the observed enhancements in performance outcomes emphasize the potential of these strategies to positively influence athletic well-being, effectiveness, and overall sports performance.

Through the synthesis and analysis of these findings, this systematic review aspires to furnish a comprehensive understanding of the efficacy of emotion regulation strategies in optimizing sports performance. The insights derived aim to be valuable for athletes, coaches, and sports professionals seeking evidence-based strategies to enhance emotional regulation and elevate sports performance effectively.

The review examined the theoretical perspective of emotion regulation in the sports context. Two primary approaches to ER research that have become entwined in sports contexts in this systematic review are The IZOF model and the process model of Emotion regulation. The individual zone of optimal functioning (IZOF) idea was first presented by Hanin in the 1980s. It postulated that an athlete's precompetitive anxiety was within or close to the optimal zone, indicating a successful performance (Hanin, 2000). James Gross's process model of emotion regulation offers a step-by-step framework for understanding how we perceive and control our emotions. It describes five crucial phases at which we might step in and control our emotional reactions. (Gross 2001)

The strength model of self-control, the biopsychosocial model, the dual-process theories, and the attentional control theory are a few of the models that are also considered in this area of research.

## Discussion:

In this review, the authors conduct a comprehensive analysis of the correlation between emotions and sports performance. This research forms the basis for regulating emotions. The authors additionally investigate contemporary studies on emotion regulation and its impact on sports performance, health, and overall well-being. Additionally, this review also discusses contemporary approaches to studying emotions, which encompass innovative methods for both evoking and assessing emotional states. (Tamminen, K. A et al., 2021).

This research paper discusses the importance of emotion regulation (ER) in athletes and its impact on performance, motivation, resilience, teamwork, and improved mental well-being. The paper highlights various strategies for ER, including cognitive reappraisal, relaxation techniques, visualization, distraction techniques, and social support. It emphasizes that the ideal emotional state may vary depending on the sport and setting, with some athletes benefiting from increased arousal and others performing better when calm and focused. The paper also emphasizes the need for practice and training in ER, as well as the development of emotional intelligence and adaptability. In this review, the theoretical models of emotion regulation (ER) were discussed. This has led to the identification of two well-known ER models that are now being combined under sports conditions: Individual Zones of Optimal Functioning (IZOF) Model and The Process Model of Emotion Regulation. Overall, the paper emphasizes the importance of ER in enhancing athletic performance and overall well-being. (Moore, Z. E., & Marin, K. A. (2019).

## Theoretical framework Identified.

Effective management of emotions is a vital component in achieving optimal sports performance. The Individual Zones of Optimal Functioning (IZOF) model is a sport-specific paradigm that explains the connection between emotional experiences and personal achievement in sports tasks, focusing on individual patterns rather than collective patterns. The paradigm posits that there exist variations among individuals in their responses to anxiety. Certain individuals thrive when experiencing low levels of anxiety, while others excel when faced with high levels of anxiety. Robazza, C., et al., (2008).





Consequently, every individual possesses a unique threshold of anxiety that enables them to achieve their highest level of performance. When athletes are in their ideal performance zone, it indicates that they are experiencing their desired amount of anxiety. When an athlete suffers excessive or insufficient anxiety, it might impede performance, as the athlete is operating outside of their ideal range.

The IZOF model makes it possible to characterize a wide range of emotional states, each of which may be advantageous or detrimental depending on the surrounding circumstances.

IZOF proposes that in a sporting context, it is more advantageous to differentiate between beneficial emotions and emotions that are detrimental, or emotions that are optimal, and dysfunctional emotions. For instance, certain athletes may observe that experiencing excitement is not beneficial to achieving high performance, whereas others would argue that feeling anger assists them in attaining their peak performance condition. The Individual Zones of Optimal Functioning paradigm proposes that athletes can determine their ideal blend of beneficial emotions and acquire the skills to achieve this distinct condition before competitions. (Woodcock, C., et al., (2012). The process model of emotion regulation, which is the second prominent approach that we evaluated in this systematic review, emphasizes that individuals can exert control over their emotions at various stages such as before experiencing an emotion and after they have already initiated an emotional response (Webb, T. L et al., (2012). It is possible that the process of emotion regulation can occur at two different stages within the process of emotion generation, according to this theory. From the process model of ER (Gross, 1998, 2015), a relevant variable is the ER strategy, defined as any behavior or cognitive method that has a regulatory goal and modulates different aspects of the emotional experience (Gross, 2014; Gross & Jazaieri, 2014).

According to the process model of Emotion Regulation, such processes are categorized primarily into 5 categories based on their impact on the emotion-generating process namely:

1. Situation selection (confrontation and avoidance).

2. Situation modification (direct situation modification, support-seeking, and conflict resolution).
3. Attentional deployment (distraction, concentration, and mindfulness).
4. Cognitive change (self-efficacy appraisals, challenge/threat appraisals, positive reappraisal) (Robazza, C., et al., 2023).
5. Response modulation (suppression).

In addition to the emotional regulation process, alternative methods have been implemented to highlight the ideas of adaptation and self-regulation, resulting in improved performance are also explored in this systematic review. The paradigm as mentioned above has also incorporated elements of emotional self-regulation and an emphasis on the relationship between feelings and behavior. A framework like this aids performer in comprehending and controlling their feelings and patterns of performance. (Balk, Y. A., & Englert, C. (2020).

Jekauc et al. presented a hypothesis in a recent article published in *Frontiers in Psychology*, which focuses on the dynamic growth of emotional processes, the control of emotions, and the connection between emotions and performance in sports. The theory centres on the emergence and development of affective processes during engagement in competitive sports. According to Scherer's component process model, the authors propose six components of emotion that circularly interact with each other: (I) triggering processes, (II) physiological reactions, (III) action tendencies, (IV) expressive behaviours, (V) subjective experience, and (VI) higher cognitive processes. This concept emphasizes the dynamics of emotional processes and draws attention to the influence that these dynamics have on performance in competitive sports. According to this remark, to appreciate emotional processes, one must take into consideration the distinctive qualities that are associated with the various sports. Additionally, it offers preliminary suggestions for the implementation of methods that are effective in managing emotional states.

## Emotion Regulation Strategies in Sports

This systematic review seeks to comprehensively evaluate the existing evidence regarding the effectiveness of emotion regulation strategies to



enhance sports performance. This review explored how athletes use psychological skills (like rewinding or refocusing thoughts) to control their emotions (identifying, understanding, and managing them) and revealed how athletes might learn these skills in sports. Emotions can be functional or dysfunctional. Emotion regulation strategies are used when current emotions differ from desired ones. Emotion regulation strategies are deliberately to achieve a range of affective, cognitive, and behavioral outcomes employed by athletes. (Cece, V, et al., 2019). Emotion regulation strategies include cognitive reappraisal, relaxation techniques, visualization, self-talk, and seeking support from coaches, sports psychologists, or therapists. These strategies can either be used individually or combined to form a more holistic energizing program. They should learn a range of strategies and be able to explore which is most effective for them and their needs with the use of all new strategies or techniques, the performer needs to become proficient in the execution of these strategies before attempting to use them before or during the competitive setting.

This review also examined how athletes use different strategies to manage and understand their emotions during competition. It focused on three key skills: identifying emotions, processing, and understanding them, and regulating them effectively by analyzing how athletes use strategies like visualizing success reflecting on past experiences, and reframing negative thoughts. This review also provides valuable insights into how athletes can develop these emotional abilities to excel in sports. (Ekelund, R., et al., 2023). The evidence suggests that athletes should employ strategies that influence their evaluation of situations to create the most suitable emotional environment for competition. Emotions can be defined as physiological (e.g., increased respiration and heart rate), cognitive (e.g., changes in attention, perception, and information processing priorities), and behavioral (e.g., aggression towards an opponent or disgust at an official decision). Michel-Kröhler, A., et al., 2021). The athlete will require a high level of emotion regulation ability to assess the situation to help alter it to the most suitable environment to enhance the performance. This will differ from sport to sport and from task to task. Athletes should rehearse a scenario before it happens for real, this would help them

mentally prepare for what they are likely to experience in the actual situation. Thus, emotion regulation strategies are deliberately employed by the athletes to achieve specific cognitive or motivational goals usually associated with training and competitions.

The outcomes of this systematic review furnish compelling evidence advocating for the efficacy of emotion regulation strategies in optimizing sports performance. The diverse array of interventions, encompassing psychological techniques, training programs, and educational components, collectively emphasizes the potential of comprehensive strategies to enhance athletic performance. Tailored psychological strategies, a key component of these interventions, emerge as fundamental in preventive strategies. Aimed at refining emotional responses, these strategies address the psychological demands and potential stressors associated with sports performance. The observed effectiveness underscores the significance of targeted psychological conditioning and mental fitness regimens in fostering optimal emotional regulation and overall sports performance.

Another integral facet evaluated in this systematic review is the incorporation of training programs tailored to athletes' specific needs and demands. These programs aspire to enhance emotional resilience, focus, and adaptability, catering to the unique challenges presented in sports. The observed effectiveness of these programs highlights the importance of targeted emotional conditioning and fitness regimens in promoting emotional regulation and overall sports performance. (Josefsson, T., et al., (2019), Röthlin, P., et al., (2020).

Furthermore, the inclusion of educational components focused on proper emotion regulation techniques is noteworthy. Athletes often contend with high-pressure situations, which can impact emotional states and influence performance. The observed effectiveness of these techniques underscores the interconnectedness of psychological and emotional factors in sports performance. By addressing the psychological and emotional aspects, these interventions contribute to a holistic approach to optimizing emotional regulation in sports.

Education on proper emotion regulation techniques and their application in the sports context emerges as a fundamental aspect of the interventions assessed in this



systematic review. By equipping athletes with the knowledge and skills to regulate their emotions effectively and optimize their mental states, these educational interventions play a pivotal role in promoting long-term emotional well-being in the realm of sports. The emphasis on education underscores the importance of empowering athletes with the tools and knowledge necessary to proactively manage their emotional health and enhance their performance.

## Limitations:

**Sample Size and Composition:** The study may have a small sample size or a limited demographic representation, which could affect the generalizability of the findings to larger populations or different athlete groups.

**Self-Report Measures:** Reliance on self-report measures for assessing emotion regulation and sports performance may introduce biases such as social desirability or inaccurate recall, leading to potential measurement errors.

**Cross-Sectional Design:** If the study utilizes a cross-sectional design, it may only provide a snapshot of the relationship between emotion regulation and sports performance at a single point in time, limiting the ability to infer causality or the direction of effects.

**Control of Confounding Variables:** Controlling for all potential confounding variables, such as skill level, experience, coaching quality, or external stressors, may be challenging, potentially influencing the observed relationship between emotion regulation and sports performance.

**Generalizability to Real-World Settings:** Laboratory or controlled settings may not fully replicate the complexities of real-world sporting environments, where athletes encounter dynamic and unpredictable situations that could affect their emotion regulation strategies and performance outcomes differently.

**Measurement of Emotion Regulation:** The study may rely on a specific model or measurement tool for assessing emotion regulation, which may not capture the full range of strategies employed by athletes in regulating their emotions during sports competition.

**Longitudinal Follow-Up:** Lack of longitudinal follow-up to track changes in emotion regulation strategies and sports performance over time may limit the

understanding of how these variables interact and evolve across different stages of an athlete's career.

**Cultural and Contextual Differences:** Emotion regulation strategies and their effectiveness may vary across different cultural or contextual settings, and the study may not adequately account for these variations, affecting the applicability of the findings across diverse populations.

## Conclusion.

In conclusion, the evidence synthesized in this systematic review robustly affirms the effectiveness of emotion regulation strategies, spanning psychological techniques, training programs, and education, in optimizing sports performance. These findings carry substantial implications for shaping strategies within the realm of sports management and athlete performance enhancement.

The demonstrated effectiveness of emotion regulation strategies underscores the pivotal role of integrating comprehensive measures into sports organizations' frameworks. By incorporating targeted psychological techniques, training programs, and educational initiatives into routine sports practices, organizations can proactively address the emotional regulation and overall performance of athletes. This proactive approach not only holds the potential to enhance sports performance but also contributes to fostering a culture of well-being and excellence within the sports domain.

In conclusion, this review paper provides a solid foundation for understanding the importance of emotion regulation in sports. By incorporating discussions on motivation, individual differences, and future research directions, the review can be further strengthened and offer a more comprehensive picture of this critical aspect of athletic performance.

## Future Research.

Moreover, a call for further research to delve into the long-term effects and sustainability of these interventions is imperative. While current evidence supports the immediate effectiveness of emotion regulation strategies in optimizing sports performance, understanding their enduring impact and sustainability is vital for refining and optimizing practices within sports management. Longitudinal studies and follow-up assessments can offer insights into the lasting benefits of emotion regulation strategies, challenges in





sustaining their effects over time, and opportunities for continuous improvement.

Exploring the long-term effects of emotion regulation strategies can also illuminate their potential influence on broader outcomes, such as athletes' satisfaction, retention rates, and overall quality of athletic life. Understanding the sustained impact of these strategies on the well-being and professional longevity of athletes is integral to shaping comprehensive strategies for promoting emotional well-being and performance optimization in sports.

Additionally, further research can delve into the scalability and adaptability of emotion regulation strategies across diverse sports settings and disciplines. Investigating the feasibility and effectiveness of these strategies in various sports environments, including team sports, individual sports, competitive events, and training regimens, can provide valuable insights into their applicability across the spectrum of sports. This research can inform tailored approaches to implementing emotion regulation strategies that address the unique challenges and demands of different sports settings, maximizing their impact on optimizing sports performance.

In summary, while the current evidence robustly supports the effectiveness of emotion regulation strategies in optimizing sports performance, further research is essential to explore their long-term effects, sustainability, scalability, and adaptability. This ongoing inquiry is crucial for advancing evidence-based practices in sports management, and promoting the emotional regulation, well-being, and performance of athletes.

## References

1. Lane, A. M., Beedie, C., Jones, M. V., Uphill, M., & Devonport, T. J. (2012). The BASES Expert Statement on emotion regulation in sport. *Journal of Sports Sciences*, 30(11), 1189–1195. <https://doi.org/10.1080/02640414.2012.693621>
2. Tamminen, K. A., Kim, J., Danyluck, C., McEwen, C. E., Wagstaff, C., & Wolf, S. (2021). The effect of self- and interpersonal emotion regulation on athletes' anxiety and goal achievement in competition. *Psychology of Sport and Exercise*, 57, 102034. <https://doi.org/10.1016/j.psychsport.2021.102034>
3. Wagstaff, C. (2014). Emotion regulation and sport performance. *Journal of Sport & Exercise Psychology*, 36(4), 401–412. <https://doi.org/10.1123/jsep.2013-0257>
4. Laborde, S., Lautenbach, F., Allen, M. S., Herbert, C., & Achtzehn, S. (2014). The role of trait emotional intelligence in emotion regulation and performance under pressure. *Personality and Individual Differences*, 57, 43–47. <https://doi.org/10.1016/j.paid.2013.09.013>
5. Kopp, A., & Jekauc, D. (n.d.). The Influence of Emotional Intelligence on Performance in Competitive Sports: A Meta-Analytical Investigation. *Sports*, 6(4), 175. <https://doi.org/10.3390/sports6040175>
6. Balk, Y. A., & Englert, C. (2020). Recovery self-regulation in sport: Theory, research, and practice. *International Journal of Sports Science & Coaching*, 15(2), 273–281.
7. Cece, V., Guillet-Descas, E., Niçaise, V., Lienhart, N., & Martinet, G. (2019). Longitudinal trajectories of emotions among young athletes involving in intense training centres: Do emotional intelligence and emotional regulation matter? *Psychology of Sport and Exercise*, 43, 128–136. <https://doi.org/10.1016/j.psychsport.2019.01.011>
8. Navas-Casado, M. L., García-Sancho, E., & Salguero, J. M. (2023). Associations between maladaptive and adaptive emotion regulation strategies and aggressive behavior: A systematic review. *Aggression and violent behavior*, 101845.
9. Michel-Kröhler, A., Kaurin, A., Heil, L. F., & Berti, S. (2021). Self-Distancing as a Strategy to Regulate affect and Aggressive Behavior in Athletes: An experimental approach to explore emotion regulation in the laboratory. *Frontiers in Psychology*, 11. <https://doi.org/10.3389/fpsyg.2020.572030>
10. Webb, T. L., Miles, E., & Sheeran, P. (2012). Dealing with feeling: A meta-analysis of the effectiveness of strategies derived from the process model of emotion regulation. *Psychological Bulletin*, 138(4), 775–808. <https://doi.org/10.1037/a0027600>



11. Lane, A. M., Beedie, C., Devonport, T. J., & Stanley, D. M. (2011). Instrumental emotion regulation in sport: relationships between beliefs about emotion and emotion regulation strategies used by athletes. *Scandinavian Journal of Medicine & Science in Sports*, 21(6). <https://doi.org/10.1111/j.1600-0838.2011.01364.x>
12. Doorley, J., Kashdan, T. B., Weppner, C. H., & Glass, C. R. (2023). Corrigendum to “The effects of self-compassion on daily emotion regulation and performance rebound among college athletes: Comparisons with confidence, grit, and hope” [Psychology of Sport and Exercise 58(2022) 102081]. *Psychology of Sport and Exercise*, 64, 102333. <https://doi.org/10.1016/j.psychsport.2022.102333>
13. Robazza, C., Morano, M., Bortoli, L., & Ruiz, M. C. (2023). Athletes’ basic psychological needs and emotions: the role of cognitive reappraisal. *Frontiers in Psychology*, 14. <https://doi.org/10.3389/fpsyg.2023.1205102>
14. Wang, D., Hu, T., Luo, R., Shen, Q., Wang, Y., Li, X., ... & Yin, H. (2022). Effect of cognitive reappraisal on archery performance of Elite athletes: The Mediating Effects of Sport-Confidence and Attention. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.860817>
15. Oguntuase, S. B., & Sun, Y. (2022). Effects of mindfulness training on resilience, self-confidence, and emotion regulation of elite football players: The mediating role of locus of control. *Asian Journal of Sport and Exercise Psychology*, 2(3), 198–205. <https://doi.org/10.1016/j.ajsep.2022.08.003>
16. Kubiak, J., Rother, S., & Egloff, B. (2019). Keep your cool and win the game: Emotion regulation and performance in table tennis. *Journal of Personality*, 87(5), 996–1008. <https://doi.org/10.1111/jopy.12451>
17. Robazza, C., Pellizzari, M., & Hanin, Y. (2004). Emotion, self-regulation and athletic performance: An application of the IZOF model. *Psychology of Sport and Exercise*, 5(4), 379–404.
18. Robazza, C., Pellizzari, M., Bertollo, M., & Hanin, Y. L. (2008). Functional impact of emotions on athletic performance: Comparing the IZOF model and the directional perception approach. *Journal of Sports Sciences*, 26(10), 1033–1047. <https://doi.org/10.1080/02640410802027352>
19. Woodcock, C., Cumming, J., Duda, J. L., & Sharp, L. (2012). Working within an Individual Zone of Optimal Functioning (IZOF) framework: Consultant practice and athlete reflections on refining emotion regulation skills. *Psychology of Sport and Exercise*, 13(3), 291–302. <https://doi.org/10.1016/j.psychsport.2011.11.011>
20. Robazza, C., Bortoli, L., & Hanin, Y. L. (2006). Perceived effects of emotion intensity on athletic performance. *Research Quarterly for Exercise and Sport*, 77(3), 372–385. <https://doi.org/10.1080/02701367.2006.10599371>
21. Röthlin, P., Horvath, S., Trösch, S., Holtforth, M. G., & Birrer, D. (2020). Differential and shared effects of psychological skills training and mindfulness training on performance-relevant psychological factors in sport: a randomized controlled trial. *BMC psychology*, 8, 1–13.
22. Brown, D. J., & Fletcher, D. (2017). Effects of psychological and psychosocial interventions on sport performance: A meta-analysis. *Sports Medicine*, 47, 77–99.
23. Josefsson, T., Ivarsson, A., Gustafsson, H., Stenling, A., Lindwall, M., Tornberg, R., & Böröy, J. (2019). Effects of mindfulness-acceptance-commitment (MAC) on sport-specific dispositional mindfulness, emotion regulation, and self-rated athletic performance in a multiple-sport population: an RCT study. *Mindfulness*, 10, 1518–1529.
24. Robazza, C., & MC, R. (2018). Emotional self-regulation in sport and performance. In *Oxford research encyclopedia of psychology* (pp. 1–35). Oxford University Press
25. Ekelund, R., Holmström, S., Gustafsson, H., Ivarsson, A., Lundqvist, C., & Stenling, A. (2023). Interventions for improving mental health in athletes: a scoping review. *International Review of Sport and Exercise Psychology*, 1–36. <https://doi.org/10.1080/1750984x.2023.2258383>