

Mind Rep

Annotated Research Bibliography

A note on research honesty: Where studies include important caveats — such as calling for more robust trials, noting unstable effect sizes, or being based on small samples — those caveats are included in the summaries below. This reflects the actual state of the science, which is strong in direction but still developing in rigor.

MENTAL SKILLS TRAINING: BROAD EFFICACY

- 1. Reinebo, G., Alfonsson, S., Jansson-Fröjmark, M., Rozental, A., & Lundgren, T. (2024).** Effects of psychological interventions to enhance athletic performance: A systematic review and meta-analysis. *Sports Medicine*, *54*(2), 347–373. <https://doi.org/10.1007/s40279-023-01931-z>
This Karolinska Institutet meta-analysis found moderate positive effects ($d = 0.51$) of psychological skills training — including visualization, self-talk, goal setting, and relaxation — on objective performance outcomes across a wide range of sports. The authors note these moderate effects are not fully stable and call for more robust randomized controlled trials. This is strong directional evidence, not settled science.
- 2. Lange-Smith, S., Cabot, J., Coffee, P., Gunnell, K., & Tod, D. (2023).** The efficacy of psychological skills training for enhancing performance in sport: A review of reviews. *International Journal of Sport and Exercise Psychology*. <https://doi.org/10.1080/1612197X.2023.2168725>
This "review of reviews" analyzed 30 systematic and meta-analytic reviews and found 90% concluded PST can enhance athletic performance. Important caveat: 97% of those reviews were rated critically low in methodological quality — the direction of evidence is clear, but specific effect sizes should be treated with appropriate caution.
- 3. Lochbaum, M., Stoner, E., Hefner, T., Cooper, S., Lane, A.M., & Terry, P.C. (2022).** Sport psychology and performance meta-analyses: A systematic review of the literature. *PLoS ONE*, *17*(2), e0263408. <https://doi.org/10.1371/journal.pone.0263408>
A broad review of performance-focused meta-analyses found that self-talk, imagery, and combined mental skills training produced moderate positive effects on athletic performance ($d = 0.51$). Results are real and meaningful, but should not be overstated as large.
- 4. Bordo, S., Costanzo, G., & Villani, D. (2025).** Enhancing psychological skills and well-being in sport through an app-based blended intervention: A randomized controlled pilot study. *BMC Psychology*, *13*, 537. <https://doi.org/10.1186/s40359-025-02824-8>
This randomized controlled pilot study with 41 professional tennis players tested an 8-week smartphone app-based intervention combining breathing techniques, mindfulness, relaxation, and CBT-based skills. Results showed significant improvements in self-confidence, arousal control, anxiety reduction, awareness, and refocusing — the most directly relevant study to app-based mental performance training.

VISUALIZATION & IMAGERY

- 5. Driskell, J.E., Copper, C., & Moran, A. (1994).** Does mental practice enhance performance? *Journal of Applied Psychology*, *79*(4), 481–492. <https://doi.org/10.1037/0021-9010.79.4.481>
This landmark meta-analysis confirmed that internal visualization of performing a skill reliably improves motor performance. One of the most cited foundational studies in sport psychology, replicated across hundreds of subsequent studies.
- 6. Liu, Y., Zhao, S., Zhang, X., Zhang, X., Liang, T., & Ning, Z. (2025).** The effects of imagery practice on athletes' performance: A multilevel meta-analysis with systematic review. *Behavioral Sciences*, *15*(5), 685. <https://doi.org/10.3390/bs15050685>
This 2025 meta-analysis of 86 studies and 3,593 athletes found imagery practice significantly enhances athletic performance across agility, motor skills, tennis, soccer, basketball, and gymnastics. Combining imagery with self-talk or other psychological training produced superior outcomes.
- 7. Hatzigeorgiadis, A., Zourbanos, N., Galanis, E., & Theodorakis, Y. (2011).** Self-talk and athletic performance: A meta-analysis. *Perspectives on Psychological Science*, *6*(4), 348–356. <https://doi.org/10.1177/1745691611413136>

A meta-analysis of 32 studies found self-talk interventions significantly improve sport performance. Instructional self-talk was particularly effective for precision and fine motor tasks; motivational self-talk helped most with endurance and effort.

CBT & COGNITIVE REFRAMING

- 8. Tóth, R., Turner, M.J., Mannion, J., & Tóth, L. (2023).** The effectiveness of rational emotive behavior therapy (REBT) and mindfulness-based intervention (MBI) on psychological, physiological and executive functions as a proxy for sports performance. *BMC Psychology*, *11*(1), 442. <https://doi.org/10.1186/s12888-023-05443-6>

This randomized controlled trial found that REBT — structured cognitive-behavioral reframing of irrational beliefs — significantly improved athletes' emotional handling, attention control, and recovery from mistakes. Both REBT and mindfulness produced meaningful gains in performance-relevant psychological factors.

- 9. Wilczyńska, D., Qi, W., Jaenes, J.C., Alarcón, D., Arenilla, M.J., & Lipowski, M. (2022).** Burnout and mental interventions among youth athletes: A systematic review and meta-analysis. *International Journal of Environmental Research and Public Health*, *19*(17), 10662. <https://doi.org/10.3390/ijerph191710662>

Based on five studies, this meta-analysis found CBT- and mindfulness-based interventions effectively reduced most (not all) dimensions of burnout in young athletes. Online delivery was particularly effective. Authors call for more high-quality research; evidence base is small but directionally consistent.

ATTENTION CONTROL & FOCUS TRAINING

- 10. Si, X.W., Yang, Z.K., & Feng, X. (2024).** A meta-analysis of the intervention effect of mindfulness training on athletes' performance. *Frontiers in Psychology*, *15*, 1375608. <https://doi.org/10.3389/fpsyg.2024.1375608>

This meta-analysis confirmed mindfulness training — fundamentally a practice of directing and sustaining attention — significantly enhances athletic performance, particularly for skills requiring concentration under pressure. Supports attention training as both a performance and mental health tool.

BREATH REGULATION & AROUSAL CONTROL

- 11. Buchanan, T.L., & Janelle, C.M. (2022).** Emotions and ensuing motor performance are altered by regulating breathing frequency: Implications for emotion regulation and sport performance. *Frontiers in Psychology*, *13*, 963711. <https://doi.org/10.3389/fpsyg.2022.963711>

Breathing rate directly influences emotion regulation and motor performance. Slow breathing reduced error and improved precision under emotionally charged conditions, supporting breath regulation as a concrete, teachable skill with measurable effects on sport performance.

- 12. VanHaitsma, T.A., Muoio, D.M., & Hackney, A.C. (2023).** Mental training influences endurance performance outcomes after 3 weeks. *European Journal of Applied Physiology*. <https://doi.org/10.1007/s00421-023-05196-0>

Just 3 weeks of daily mental training — including breath regulation and focus techniques — produced measurable improvements in endurance performance. Primary source supporting the claim that positive changes can emerge in as few as 4 weeks of consistent practice.

PRE-PERFORMANCE ACTIVATION ROUTINES

- 13. Rupperecht, A.G.O., Tran, U.S., & Gröpel, P. (2024).** The effectiveness of pre-performance routines in sports: A meta-analysis. *International Review of Sport and Exercise Psychology*, *17*(1), 39–64. <https://doi.org/10.1080/1750984X.2021.1944271>

This meta-analysis of 112 effect sizes found significant effects of pre-performance routines on sport performance, with moderate-to-large effects under both low-pressure ($g = 0.64$) and pressurised conditions ($g = 0.70$). Multi-element routines were most effective; benefits held for both novices and elite athletes.

- 14. Orbach, I., & Blumenstein, B. (2022).** Preparatory routines for emotional regulation in performance enhancement. *Frontiers in Psychology*, *13*, 948512. <https://doi.org/10.3389/fpsyg.2022.948512>

Examines how pre-performance routines function as emotional regulation tools — helping athletes manage arousal, reduce anxiety, and establish optimal psychological state before competition. Explains the mechanism behind why activation routines work.

EMOTIONAL REGULATION IN SPORT

- 15. Myall, K., Montero-Marin, J., Gorczyński, P., Kajej, N., Sheriff, R.S., et al. (2022).** Effect of mindfulness-based programmes on elite athlete mental health: A systematic review and meta-analysis. *British Journal of Sports Medicine*. <https://doi.org/10.1136/bjsports-2021-104364>
A systematic review and meta-analysis found mindfulness programs produced significant reductions in anxiety and stress among elite athletes, with meaningful improvements in emotional regulation and mental well-being. Focused specifically on elite competitive contexts.

SELF-CONFIDENCE IN SPORT

- 16. Lochbaum, M., Harriott, T., Sief, G., & Gübü, Ü. (2022).** Revisiting the self-confidence and sport performance relationship: A systematic review with meta-analysis. *International Journal of Environmental Research and Public Health*, *19*(11), 6381. <https://doi.org/10.3390/ijerph19116381>
This meta-analysis of 41 studies and 3,711 athletes found a small but consistent, publication-bias-free relationship between self-confidence and sport performance ($r = 0.25$), stronger in individual sports ($r = 0.29$) than team sports ($r = 0.14$). Confidence matters, its effect is real but modest, and it is trainable.

RESILIENCE IN SPORT

- 17. Fletcher, D., & Sarkar, M. (2012).** A grounded theory of psychological resilience in Olympic champions. *Psychology of Sport and Exercise*, *13*, 669–678. <https://doi.org/10.1016/j.psychsport.2012.04.007>
Qualitative interviews with Olympic champions found psychological resilience was built through intentional mental training — positive focus, motivation regulation, emotional control — not simply an innate personality trait. Champions framed resilience as a learnable, trainable skill.
- 18. Glandorf, H.L., Madigan, D.J., Kavanagh, O., & Mallinson-Howard, S.H. (2023).** Mental and physical health outcomes of burnout in athletes: A systematic review and meta-analysis. *International Review of Sport and Exercise Psychology*. <https://doi.org/10.1080/1750984X.2023.2225187>
Athlete burnout is associated with significant increases in depression, anxiety, addictive behavior, insomnia, and psychological distress, as well as physical health declines. Makes a strong case for preventive mental training — building coping skills before burnout occurs.

GROWTH MINDSET

- 19. Dweck, C.S. (2006).** *Mindset: The New Psychology of Success*. Random House.
The foundational text establishing growth mindset: the belief that abilities can be developed through effort and learning. Dweck's research consistently shows athletes with growth mindsets respond more productively to failure, sustain higher motivation, and develop more fully over time.
- 20. McNeill, D.G., Phillips, W.J., & Scoggin, S.A. (2023).** Examining the importance of athletic mindset profiles for level of sport performance and coping. *International Journal of Sport and Exercise Psychology*. <https://doi.org/10.1080/1612197X.2023.2180073>
Identified four athletic mindset profiles and found high-growth/low-fixed athletes reported higher sport performance levels and superior coping skills. Growth mindset was a meaningful predictor of both athletic success and psychological resilience.
- 21. Deng, J., Wang, Z., Chen, H., & Song, B. (2025).** Relationship between growth mindset and competitive motivation: A moderated parallel mediation model and feature importance analysis. *Frontiers in Psychology*. <https://doi.org/10.3389/fpsyg.2025.1576649>
Growth mindset significantly predicts competitive motivation in university athletes, mediated by psychological need satisfaction and stress response. Growth mindset interventions may be particularly valuable for developing athletes facing performance pressures.

REFLECTIVE JOURNALING

- 22. Sohal, M., Singh, P., Dhillon, B.S., & Gill, H.S. (2022).** Efficacy of journaling in the management of mental illness: A systematic review and meta-analysis. *Family Medicine and Community Health*, *10*(1), e001154. <https://doi.org/10.1136/fmch-2021-001154>

Journaling is effective for reducing depression, anxiety, and stress, with strongest evidence for anxiety and PTSD. While not sport-specific, findings are directly relevant to athletes managing competitive stress and performance anxiety.

- 23. Heekerens, J.B., & Eid, M. (2022).** Writing yourself well: Dispositional self-reflection moderates the effect of a smartphone app-based journaling intervention on psychological wellbeing. *Behaviour Change*, 40(1). <https://doi.org/10.1017/beh.2022.22>

App-delivered journaling improved psychological wellbeing over time, particularly for individuals with average or higher self-reflection capacity. Supports structured, prompt-based journaling within app-based mental training as a wellbeing tool.

LEADERSHIP & COMMUNICATION IN SPORT

- 24. Cotterill, S.T., & Fransen, K. (2016).** Athlete leadership in sport teams: Current understanding and future directions. *International Review of Sport and Exercise Psychology*, 9(1), 116–133. <https://doi.org/10.1080/1750984X.2015.1124443>

Examines athlete leadership — the capacity of individual athletes to positively influence teammates' thinking, feeling, and behavior. Communication, accountability, and trust are identified as core leadership behaviors that can be trained, not just personality traits.

PRESSURE & PERFORMANCE

- 25. Rupperecht, A.G.O., Tran, U.S., & Gröpel, P. (2024).** The effectiveness of pre-performance routines in sports: A meta-analysis. *International Review of Sport and Exercise Psychology*, 17(1), 39–64. <https://doi.org/10.1080/1750984X.2021.1944271>

Pre-performance routines showed their strongest effects under pressurised conditions ($g = 0.70$), meaning structured mental preparation works best in the exact high-stakes moments that matter most.

- 26. Reinebo, G., et al. (2024).** Effects of psychological interventions to enhance athletic performance: A systematic review and meta-analysis. *Sports Medicine*, 54(2), 347–373. <https://doi.org/10.1007/s40279-023-01931-z>

Performance under pressure is the primary outcome variable across the studies in this meta-analysis, providing the broadest evidence base for the claim that mental skills training helps athletes execute under high-stakes conditions.

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