



Challenging the concept of “Mental Toughness”

A coach’s guide to developing athletes’ resilience and ability to navigate adversity

This document provides information aimed at:

- 1) challenging the concept of “mental toughness”,
- 2) debunking/unraveling myths related to the use of controlling and violent behaviours to develop mental toughness in athletes, and,
- 3) providing effective and safe alternatives to help coaches develop athletes’ resilience and ability to navigate adversity.

October 2024



SPORT + SOCIÉTÉ
ENGAGÉE



UNIVERSITÉ DE
SHERBROOKE

Chaire de recherche Sécurité
et intégrité en milieu sportif



UNIVERSITÉ
LAVAL

AUTHORS:

Deziray De Sousa, Bsc., B.A., Ph.D (c) ¹
Sylvie Parent, Ph.D. ¹
Emilie Belley-Ranger, Ph.D. ¹
Allyson Gillard, B.A., Ph.D (c) ¹
Emilie Lemelin Ph.D. ¹
Véronique Boudreault, Ph.D. ^{1, 2}

1. Chaire de recherche Sécurité et intégrité en milieu sportif (SIMS), Université Laval
2. Faculté des sciences de l'activité physique, Université de Sherbrooke

TO CITE THIS DOCUMENT:

De Sousa, D., Parent, S., Belley-Ranger, E., Gillard, A., Lemelin, E., & Boudreault, V. (2024). Challenging the concept of “Mental Toughness”: A coach’s guide to developing athletes’ resilience and ability to navigate adversity. Chaire de recherche Sécurité et intégrité en milieu sportif, Université Laval et Université de Sherbrooke.

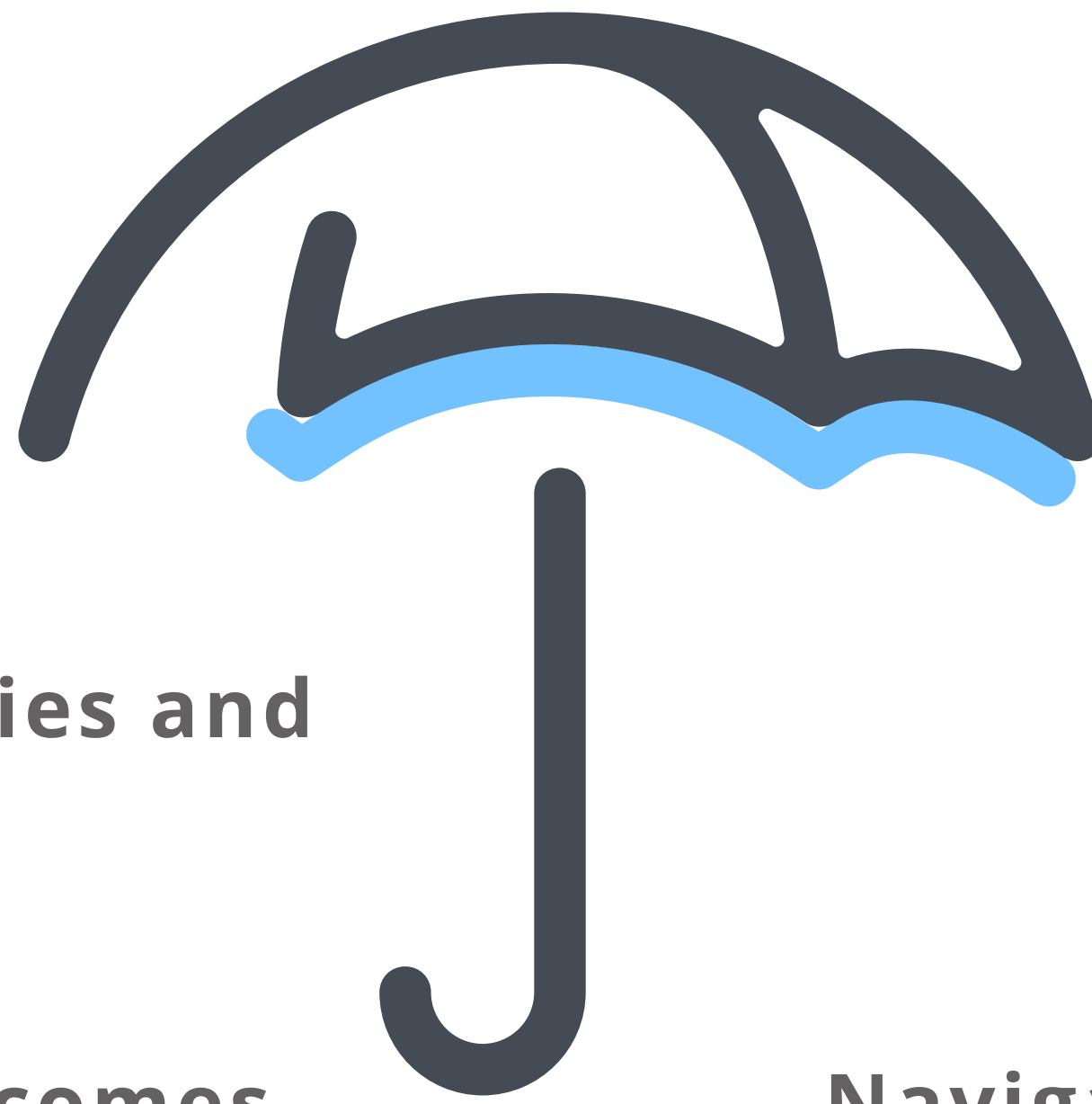
TABLE OF CONTENTS



What is mental toughness?	4
<i>Definition of mental toughness</i>	4
<i>Challenging this concept for a more effective field implementation</i>	4
Common negative practices	5
<i>What are controlling and violent coaching strategies?</i>	5
<i>Examples of controlling and violent behaviours</i>	5
Debunking common myths	6
<i>Identifying common beliefs</i>	6
<i>Negative impact of using controlling and violent behaviours on athletes to build mental toughness</i>	6
Alternatives to the term mental toughness	7
How can coaches better promote athletes' resilience and help them navigate adversity?	7
<i>Teaching athletes' tools to foster self-regulation</i>	8
<i>Strategies to implement during training sessions</i>	10
Putting it into practice	11
Training journal	12
Feedback sandwich	14
References	15

What is mental toughness?

An umbrella term that refers to a **psychological edge** that enables athletes to **cope with the demands** of competition and training, **consistently perform despite adversity**, while remaining **determined** and **focused** under pressure.



Self-confidence

Unwavering belief in abilities and outcomes

Sustained focus

Sense of control over outcomes

Drive & determination

Relentless pursuit of goals

Stress management

Navigating adversity without quitting



Certain aspects associated with mental toughness, such as resilience, stress management, and mindfulness, can **benefit athletes' mental health and their ability to handle adversity**. However, various myths associated with the concept of mental toughness may lead coaches to **use harmful strategies** (e.g., violence) which, remains a **significant issue** in sports.

Challenging this concept for a more effective field implementation

Some sports cultures can place significant **pressure** on athletes to **appear tough, avoid admitting vulnerability, and refuse help** when needed. This stigma around mental health in sports can **silence athletes** who fear being punished or being perceived as weak.

The term "toughness" often embodies aspects of sports culture that draw criticism, such as promoting a strong, masculine, dominant environment that can be harmful. Athletes can **suppress their physical and emotional pain** which, can lead to long-term physical and mental health issues.

Concepts like "never giving up" or "refusing to quit" can harm athletes' performance and well-being, as they **may ignore injuries or overexert** themselves.

Athletes inevitably encounter adverse events both within and outside of their sport. While these experiences can lead to learning and personal growth, **building mental toughness and improving performance does not require enduring adverse events**.

Despite strides forward, some coaches still maintain the belief that it is necessary to toughen athletes up and **break them down to build mental toughness**. This culture often conceals or even justifies coaches using their authority to employ **controlling and violent strategies towards athletes**.

Common negative practices used to build mental toughness

WHAT ARE CONTROLLING AND VIOLENT STRATEGIES?

The use of **coercive, threatening, and authoritarian** methods to impose ideas on athletes, while ignoring or dismissing the athletes' perspectives and emotions.

Examples of controlling behaviours

Placing an emphasis on winning at all costs instead of on athletes' progress and effort

"I don't care if we did better than last year in the championship, we did not win and that's all that matters."

Undermining athletes competencies

"You're never going to be good enough to play at this level. You're too weak and crack under pressure. Maybe you should consider a different sport."

Excessive personal control

*Firm and commanding presence
Lack of flexibility "may way or the highway"
Lack of choice (e.g., training methods, skill execution, position the athletes play)*

Valuing athletic ability over the individual (e.g., comparing athletes, favoritism, making athletes earn attention)

"If you want more training time with me, you have to show your athletic ability and that you're worth the extra effort."

"Unlike you, Liam never gives up. Even when it's tough, he pushes harder."

Examples of violent behaviours

Psychological violence

(e.g., yelling, humiliating or overly criticizing an athlete)

Negligence

(e.g., voluntary excluding or ignoring an athlete)

Physical violence

(e.g., pushing, biting, shoving, choking, hitting or punching an athlete)

Instrumental violence

(e.g., forcing an athlete to use performance-enhancing supplements, do additional training or train despite injury)



Debunking common myths

What are some common beliefs?

Mental toughness is as a **predetermined personality trait** that athletes either have or not.

Being exposed to controlling and violent coaching behaviours during training is **necessary to build athletes' mental toughness** and ensure they perform at their best during high-pressure competition.



These beliefs and practices **do more harm than good!** The concept of needing to "toughen up athletes" is harmful for **their well-being and performance.**

Negative impact of using controlling and violent behaviours on athletes to build mental toughness

Diminished motivation

Feeling external (e.g., coaches, parents) or internal (e.g., shame, guilt) **pressure to continue** to train and compete in sports.

"I don't play the sport because I love it anymore; I play because I have to."

Negative self-related beliefs

Internalizing negative feedback from coaches.

"I'll never be good enough, no matter how hard I try."

Excessive fear of failure

Feeling **negative emotions** when faced with achievement-oriented activities due to belief they will not meet their goals.

"The fear of making a mistake is paralyzing; it's like every move I make is a potential disaster waiting to happen."

Diminished mental health and well-being

Certain performance-driven cultures that value "unshakeable mental toughness" can **deter athletes from seeking mental health support** due to fear of being seen as weak. This pressure may also lead to the **use of performance-enhancing drugs** and increase risks of **depression, anxiety, body image issues, low self-esteem, disordered eating, and burnout.**

Negative physical impact

The performance-driven culture often praises athletes for toughness and managing pain. To maintain this image, athletes may **take risks, downplay pain, skip injury rehabilitation, and self-sacrifice**, which can **lead to further injury and harm their well-being**.

"I didn't want to seem weak, so I just keep playing even if I was in pain. I was scared that if I missed a practice or game that I would lose my spot in the lineup."

Social isolation and identity dilemma

Elite athletes can develop a **singular identity** where sport is their life. Extensive commitment to a sport can lead to **less time invested in relationships and other activities**. This can lead to **social isolation** as well as **threats to their identity** when they retire from the sport.

"I don't know who I am without my sport."

Alternatives to the term mental toughness

Instead of using the term mental toughness, coaches' should focus on **developing athletes' resilience and ability to navigate adversity**.



Resilience is the capacity to **grow and learn** from stressful experiences, gaining **new skills and self-awareness** that better equip individuals to **navigate future adversity**.

How can coaches better promote athletes' resilience and the capacity to navigate adversity?

Rather than resorting to controlling and violent behaviours that hinder athletes' performance and well-being, coaches should **focus on** teaching them **self-regulation tools** that they can apply in various situations.

Why is it more beneficial to foster self-regulation instead of self-control?

Self-control aims to **STOP athletes from expressing their impulses and emotions**. Instead, self-regulation aims to equip athletes with skills that can help to **better UNDERSTAND and MANAGE their emotions in the future**.

Teaching athletes' tools to foster self-regulation

Encourage constructive self-talk

- Use **encouraging and supportive language** in your interactions with athletes as this can become their **internal dialogue**.
- Teach athletes to **recognize negative or harmful thoughts** that can hinder their ability to function and **reframe them** into constructive statements.

"I notice that you tend to be hard on yourself. Could you phrase that in a more objective way? Try to speak to yourself like you would speak to a friend."

- Help athletes create a list of **helpful and realistic affirmations** they can repeat to themselves, such as **"I am strong"** or **"I can handle this."**



To be useful the athlete must **believe in the affirmation**.
Allow the athlete to **formulate** these short phrases themselves.

Develop Imagery skills

- Encourage athletes to **mentally rehearse** their routines or game scenarios to **build confidence and familiarity**.
- Lead **guided imagery sessions** where athletes can practice visualizing success and overcoming challenges. Want to learn more about imagery? [Click here](#)
- Instruct athletes to **incorporate all of their senses in their visualizations**, making the imagery as vivid and realistic as possible.

Visualize hearing the crowd, feeling their body move, smelling the competition environment.

Promote mindfulness

- Athletes' ability to be **fully present and aware** of the current moment, **without judgment**.
- Incorporate simple **mindfulness exercises** into practice, such as **deep breathing, body scans, or mindful stretching**.

[Guided meditations and breathing exercises \(e.g., headspace, calm, YouTube\)](#)

[Heart rate variability training \(apps include HRV4Training, Elite HRV\)](#)

Cultivate self-awareness

- Athletes' **capacity to look inward and reflect** to understand their internal states.
- Foster athletes' **development of self-awareness** using mindfulness.

Training journals to reflect on their experiences (refer to the end of this guide)

Encourage athletes to debrief with others (e.g., teammates, coaches)

Self-compassion

- Athletes' ability to be **kind to themselves**, see their experiences as part of the **larger human experience** and have a **balanced awareness** of their experience. This leads to a greater ability to **accept negative emotions** when faced with undesirable outcomes.
- Practice being compassionate **towards your athletes and yourself** by showing acceptance of performance regardless of the outcome. It is important to **model self-compassion** in the presence of athletes to show them mistakes and difficulties are normal.
- Show compassion **towards athletes with injuries** by respecting the time needed to recover, reducing training intensity or duration, as well as making sure they still feel a part of the team.

Examples of self-compassion exercises to introduce to athletes

How would you treat a friend?

Imagine **treating yourself the way you treat a close friend when you're going through a difficult situation.**

How might this change things? Why not try treating yourself like a good friend?

Want more information on this exercise?
[Click here](#)

Self-compassion break

Think about a stressful situation in your life. **Feel the emotional distress in your body.** What do you observe?

Say to yourself: "This is hard", "Suffering is a part of life", "May I be kind to myself"

Want more information on this exercise?
[Click here](#)



As a coach, it is important to **NORMALIZE and ENCOURAGE athletes' seeking help for mental or physical health issues** when needed. This will help **combat the stigma** that getting help means an athlete is mentally weak.

It is crucial to **recognize athletes as human beings, NOT MACHINES.**

Strategies to implement during training sessions

Simulation training

- Used to help athletes **employ self-regulation skills** in a high-pressure practice setting.
- **Do not confuse** added pressure with controlling behaviors and violence!
- Expose athletes to **simulated high-pressure and high support situations** during practice to help athletes **mobilize untapped resources, encourage them** to use their support system, and **feel a sense of control** over future high-pressure situations.
- **Collaborate with athletes** to determine what high-pressure situations they would like to practice.
- Make sure that the athletes **understand the purpose** of simulated high-pressure training and do not perceive it as a punishment for bad performances. **Transparency is important!**

If you are working on break outs in practice, simulate a real game time situation by adding defensemen who are pressuring the offense.

Simulate crowd noises, timed penalty shots, high-stake games, decision making under pressure.

- **Feedback and debriefing** are essential following simulation training to show the athlete you support their integration of tools they learned. For more guidance, refer to the **training journal** at the **end of this guide**.

Helping athletes set specific and challenging goals

- Goals should be **S.M.A.R.T** (specific, measurable, attainable, relevant, time-based). Coaches should **encourage different types of goals** including performance, and process goals as well as daily, short-term, and long-term goals. Want to learn more about goal setting? **[Click here](#)**

"Within the next month I want to improve the precision of my shots by dedicating 15 minutes to shooting free throws after every training session."

- Provide athletes with **positive and encouraging feedback** on their goals to increase efficacy. Provide **constructive feedback** by focusing on **observable facts** instead of personal attacks or criticism. See the **end of this guide** for a visual representation of the **feedback sandwich**.

"You're showing great improvement in your footwork, and I've noticed that you sometimes hesitate when going for the ball, which gives your opponent an advantage. Stay aggressive and trust your instincts. Keep up the hard work."

Want to learn more?

Coaching can be very **stressful**. It is important to also implement the abovementioned tools (i.e., mindfulness, self-compassion, constructive self-talk) for yourself. These can help you to **better manage your emotions** and be a **model for your athletes**.

Additional training

- Canadian Center for Mental Health and Sport
- Game Plan Canada

Resources

- Safe Sport 101
- Mindfulness
- Imagery
- Constructive self-talk
- Self-compassion exercises
- Simulation training
- Certified Mental Performance Consultants

Putting it into practice

Review this guide and **identify one mental skill** practice you wish to integrate in the upcoming week?

1. What practice will you integrate?

2. How do you plan on integrating this practice? Be specific.

3. Do you foresee any obstacles? How can you overcome them?

4. What effects do you think this practice will have on the athletes?

Training Journal

Name: _____ Event: _____ Date: _____

Goal(s): _____

1. How would you evaluate your mental preparation today?

1	2	3	4	5	6	7	8	9	10
Very bad				Neutral					Very good
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Do you think you achieved your goal(s) for this event?

Yes Partially No

3. In general, are you satisfied with your mental preparation?

Yes No I don't know

4. Evaluate your overall mental preparation for this event.

	1	2	3	4	5	6	NA	Notes
	Not optimal					Optimal		
Self-talk: Constructive and encouraging	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
Visualization: Mentally repeat your routines or game scenarios.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
Mindfulness: Be fully present and aware in the moment, without judgment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
Self-awareness: Look inward and reflect to understand your internal states (e.g., your emotions).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
Self-compassion: Be kind to yourself, view your experiences as part of the broader human experience, and maintain a balanced awareness of your emotions and thoughts.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____

5. After my warmup and before the start I felt ...

	1	2	3	4	5	6	NA	Notes
	Not at all					Very		
Physically ready	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
Technically ready	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
Mentally ready	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
Excited to compete	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
Confident	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
Worried about my performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
In control	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
Concentrated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____

Training Journal

6. Reinforce strong point and make adjustments.

What worked well for you today in your mental preparation?

What didn't work as well for you today in your mental preparation?

What adjustments do you want to make?

How will you make these adjustments?

As a coach, how can I help and support you with these adjustments?

7. Regarding this event, name one thing ...

You are proud of:

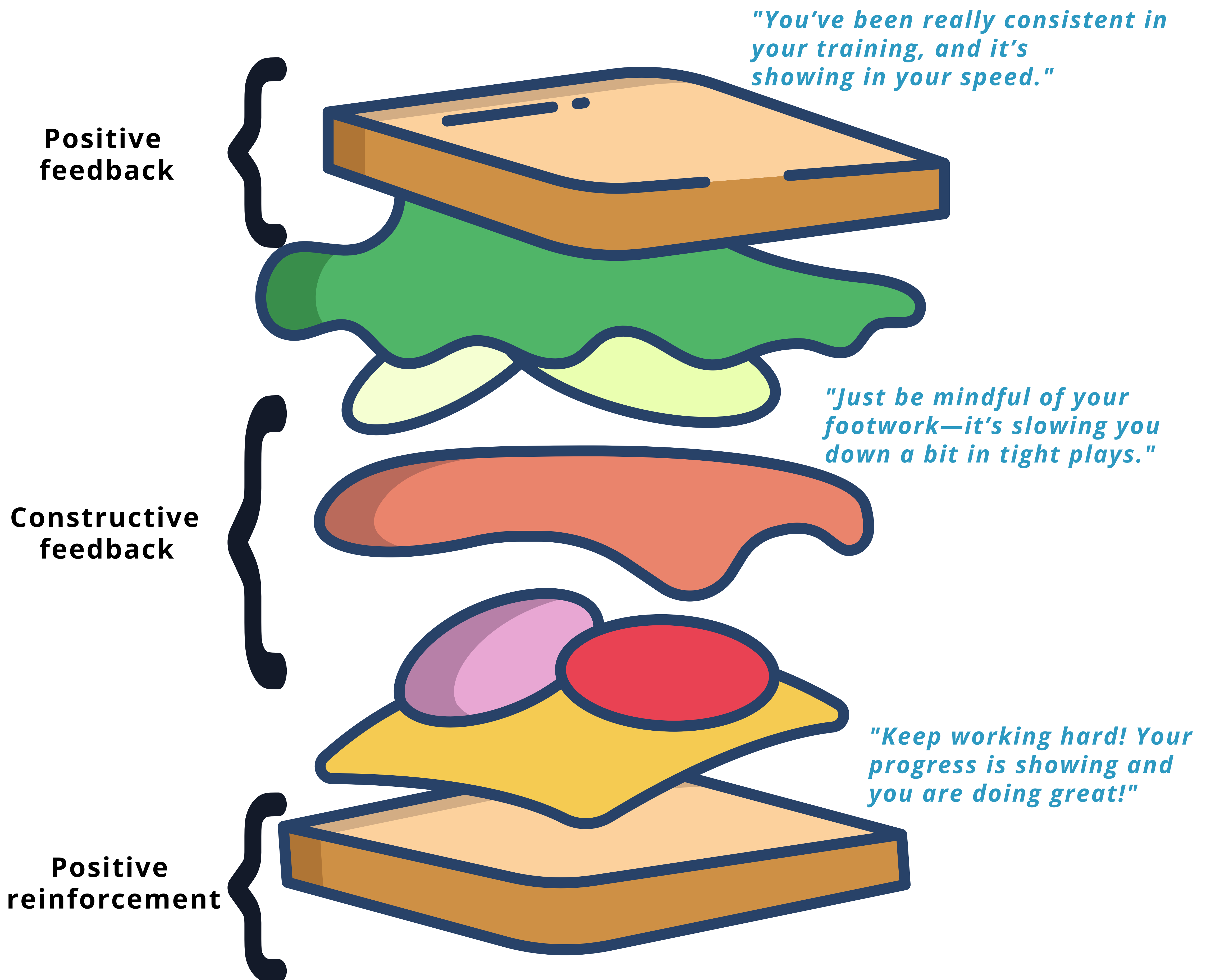
You learned:

You want to improve:

8. Any other elements you would like to note.

Feedback sandwich

A tool to implement when communicating points of improvement or constructive criticism to athletes.



References

- Adie, J. W., Duda, J. L., & Ntoumanis, N. (2012). Perceived coach-autonomy support, basic need satisfaction and the well- and ill-being of elite youth soccer players: A longitudinal investigation. *Psychology of Sport and Exercise*, 13(1), 51–59. <https://doi.org/10.1016/j.psychsport.2011.07.008>
- Ajlchi, B., Mohebi, M., Zarei, S., & Kisely, S. (2022). Effect of a mindfulness programme training on mental toughness and psychological well-being of female athletes. *Australasian psychiatry : bulletin of Royal Australian and New Zealand College of Psychiatrists*, 30(3), 352–356. <https://doi.org/10.1177/10398562211057075>
- Bartholomew, K. J., Ntoumanis, N., & Thøgersen-Ntoumani, C. (2009). A review of controlling motivational strategies from a self-determination theory perspective: Implications for sports coaches. *International Review of Sport and Exercise Psychology*, 2, 215–233. <https://doi.org/10.1080/17509840903235330>
- Bartholomew, K. J., Ntoumanis, N., & Thøgersen-Ntoumani, C. (2010). The controlling interpersonal style in a coaching context: development and initial validation of a psychometric scale. *Journal of sport & exercise psychology*, 32(2), 193–216. <https://doi.org/10.1123/jsep.32.2.193>
- Bartholomew K. J., Ntoumanis N., Mouratidis A., Katartzi E., Thogersen-Ntoumani C., Vlachopoulos S. (2018). Beware of your teaching style: A school-year long investigation of controlling teaching and student motivational experiences. *Learning and Instruction*, 53, 50–63. <https://doi.org/10.1016/j.learninstruc.2017.07.006>.
- Baumeister, R. F., Tice, D. M., & Vohs, K. D. (2018). The strength model of self-regulation: Conclusions from the second decade of willpower research. *Perspectives on Psychological Science*, 13(2), 141–145. <https://doi.org/10.1177/1745691617716946>
- Bédard Thom, C., Guay, F., & Trottier, C. (2020). Mental toughness in sport: The Goal-Expectancy-Self-Control (GES) model. *Journal of Applied Sport Psychology*, 33(6), 627–643. <https://doi.org/10.1080/10413200.2020.1808736>
- Benish, D., Langdon, J., & Culp, B. (2021). Examination of Novice Coaches' Previous Experience as Athletes: Examples of Autonomy Support and Controlling Behaviors as Influences on Future Coaching Practice. *International Sport Coaching Journal*, 8(1), 48–61. <https://doi.org/10.1123/iscj.2019-0031>
- Blanchard, C. M., Amiot, C. E., Perreault, S., Vallerand, R. J., & Provencher, P. (2009). Cohesiveness, coach's interpersonal style and psychological needs: Their effects on self-determination and athletes' subjective well-being. *Psychology of Sport and Exercise*, 10(5), 545–551. <https://doi.org/10.1016/j.psychsport.2009.02.005>
- Cormier, D. L., Kowalski, K. C., Ferguson, L. J., Mosewich, A. D., McHugh, T. L. F., & Röthlin, P. (2023). Self-compassion in sport: a scoping review. *International Review of Sport and Exercise Psychology*, 1–40. <https://doi.org/10.1080/1750984X.2022.2161064>
- Correia, M. E., & Rosado, A. (2018). Fear of failure and anxiety in sport. *Análise Psicológica*, 36(1), 75–86. <https://doi.org/10.14417/ap.1193>
- Deci, E. L., & Ryan, R. M. (2000). The “What” and “Why” of Goal Pursuits: Human Needs and the Self-Determination of Behavior. *Psychological Inquiry*, 11(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01
- De Muynck, G. J., Soenens, B., Delrue, J., Comoutos, N., & Vansteenkiste, M. (2020). Strengthening the assessment of self-talk in sports through a multi-method approach. *Scandinavian journal of medicine & science in sports*, 30(3), 602–614. <https://doi.org/10.1111/sms.13609>
- Durand-Bush, N., Baker, J., van den Berg, F., Richard, V., & Bloom, G. A. (2022). The Gold Medal Profile for Sport Psychology (GMP-SP). *Journal of Applied Sport Psychology*, 35(4), 547–570. <https://doi.org/10.1080/10413200.2022.2055224>
- Farnsworth, J. L., Marshal, A., & Myers, N. L. (2021). Mental toughness measures: A systematic review of measurement properties for practitioners. *Journal of Applied Sport Psychology*, 34(3), 479–494. <https://doi.org/10.1080/10413200.2020.1866710>
- Fortier, K., Parent, S., & Lessard, G. (2020). Child maltreatment in sport : Smashing the wall of silence: a narrative review of physical, sexual, psychological abuses and neglect. *British Journal of Sports Medicine*, 54(1), 4–7. <https://doi.org/10.1136/bjsports-2018-100224>
- Gillet, N., Vallerand, R.J., Amoura, S. and Baldes, B., Influence of Coaches' Autonomy Support on Athletes' Motivation and Sport Performance: A Test of the Hierarchical Model of Intrinsic and Extrinsic Motivation, *Psychology of Sport and Exercise*, 2010, 11, 155–61. <https://doi.org/10.1016/j.psychsport.2009.10.004>
- Gordon, S., Anthony, D. R., & Gucciardi, D. F. (2017). A case study of strengths-based coaching of mental toughness in cricket. *International Journal of Sport Psychology*, 48(3), 223–245. <https://doi.org/10.7352/IJSP.2017.48.223>

- Gucciardi D. F. (2017). Mental toughness: progress and prospects. *Current opinion in psychology*, 16, 17–23. <https://doi.org/10.1016/j.copsyc.2017.03.010>
- Gucciardi, D. F., Hanton, S., & Fleming, S. (2017). Are mental toughness and mental health contradictory concepts in elite sport? A narrative review of theory and evidence. *Journal of science and medicine in sport*, 20(3), 307–311. <https://doi.org/10.1016/j.jsams.2016.08.006>
- Gucciardi, D. F., Hanton, S., Gordon, S., Mallett, C. J., & Temby, P. (2015). The concept of mental toughness: tests of dimensionality, nomological network, and traitness. *Journal of personality*, 83(1), 26–44. <https://doi.org/10.1111/jopy.12079>
- Gucciardi, D. F., Jackson, B., Hanton, S., & Reid, M. (2015). Motivational correlates of mentally tough behaviours in tennis. *Journal of science and medicine in sport*, 18(1), 67–71. <https://doi.org/10.1016/j.jsams.2013.11.009>
- Gupta, S., & McCarthy, P. J. (2022). The sporting resilience model: A systematic review of resilience in sport performers. *Frontiers in psychology*, 13, 1003053. <https://doi.org/10.3389/fpsyg.2022.1003053>
- Hägglund, K., Kenttä, G., Wagstaff, C. R., & Bentzen, M. (2024). What Is Known About Mindfulness and Self-Compassion Among Sport Coaches? A Scoping Review. *International Sport Coaching Journal* (published online ahead of print 2024). Retrieved Jun 13, 2024, from <https://doi.org/10.1123/iscj.2023-0066>
- Hu, Q., Li, P., Jiang, B., & Liu, B. (2023). Impact of a controlling coaching style on athletes' fear of failure: Chain mediating effects of basic psychological needs and sport commitment. *Frontiers in psychology*, 14, 1106916. <https://doi.org/10.3389/fpsyg.2023.1106916>
- Hollembeak, J., & Amorose, A. J. (2005). Perceived Coaching Behaviors and College Athletes' Intrinsic Motivation: A Test of Self-Determination Theory. *Journal of Applied Sport Psychology*, 17(1), 20–36. <https://doi.org/10.1080/10413200590907540>
- Hsieh, Y.-C., Lu, F. J. H., Gill, D. L., Hsu, Y.-W., Wong, T.-L., & Kuan, G. (2023). Effects of mental toughness on athletic performance: A systematic review and meta-analysis. *International Journal of Sport and Exercise Psychology*. Advance online publication. <https://doi.org/10.1080/1612197X.2023.2204312>
- Ingstrup, M. S., Mosewich, A. D., & Holt, N. L. (2017). The Development of Self-Compassion Among Women Varsity Athletes. *The Sport Psychologist*, 31(4), 317–331. Retrieved Jun 13, 2024, from <https://doi.org/10.1123/tsp.2016-0147>
- Jones, G., Hanton, S., & Connaughton, D. (2002). What is this thing called mental toughness? An investigation of elite sport performers. *Journal of Applied Sport Psychology*, 14(3), 205–218. <https://doi.org/10.1080/10413200290103509>
- Jordet, G., Abrahamsen, F., & Lemyre, N (2021). Performance psychology interventions. In S. C. Sackett, N. Durand-Bush, & L. Tashman (Eds.), *The essential guide for mental performance consultants* (digital resource). Human Kinetics.
- Kerr, G., & Stirling, A. (2017). Mental toughness as a threat to athlete welfare. *Routledge Handbook of Talent Identification and Development in Sport*, 409.
- Kerr, G., & Stirling, A. (2017). Issues of maltreatment in high performance athlete development: Mental toughness as a threat to athlete welfare. In J. Baker (Ed.), *The Handbook of Talent Identification and Development in Sport*. Routledge/Taylor and Francis.
- Kosirnik, C., Antonini Philippe, R., & Pomini, V. (2022). Investigating the Links Between Performers' Self-Compassion, Mental Toughness and Their Social Environment: A Semi-Systematic Review. *Frontiers in psychology*, 13, 887099. <https://doi.org/10.3389/fpsyg.2022.887099>
- Johnson, K. L. (2020). Exploring the Relationship Between Mental Toughness and Self-Compassion in the Context of Sport Injury: A Mixed Methods Approach. University of Saskatchewan, CA.
- Lemelin, E., Kil, H., Petit, É., Carpentier, J., Forest, J., Gadoury, S., Richard, J., Joussemet, M., & Mageau, G. A. (2023). How to Support Athlete Autonomy in University Sports: Coaches' Experience of the reROOT Program. *The Sport Psychologist*, 37(4), 253–265. Retrieved Jun 4, 2024, from <https://doi.org/10.1123/tsp.2022-0124>
- Li, C., Kee, Y. H., Kong, L. C., Zou, L., Ng, K. L., & Li, H. (2019). Autonomy-Supportive Teaching and Basic Psychological Need Satisfaction among School Students: The Role of Mindfulness. *International journal of environmental research and public health*, 16(14), 2599. <https://doi.org/10.3390/ijerph16142599>
- Lin, Y., Mutz, J., Clough, P. J., & Papageorgiou, K. A. (2017). Mental Toughness and Individual Differences in Learning, Educational and Work Performance, Psychological Well-being, and Personality: A Systematic Review. *Frontiers in psychology*, 8, 1345. <https://doi.org/10.3389/fpsyg.2017.01345>
- Loehr J. (1995). *The New Mental Toughness Training for Sport*. New York, NY: Penguin.
- Low, W. R., Stoker, M., Butt, J., & Maynard, I. (2023). Pressure Training: From Research to Applied Practice. *Journal of Sport Psychology in Action*, 15(1), 3–18. <https://doi.org/10.1080/21520704.2022.2164098>

- Madrigal, L., Hamill, S., & Gill, D. L. (2013). Mind Over Matter: The Development of the Mental Toughness Scale (MSS). *The Sport Psychologist*, 27(1), 62-77. Retrieved Jun 7, 2024, from <https://doi.org/10.1123/tsp.27.1.62>
- Mageau, G. A., & Vallerand, R. J. (2003). The coach-athlete relationship: a motivational model. *Journal of sports sciences*, 21(11), 883-904. <https://doi.org/10.1080/0264041031000140374>
- Mahoney, J. W., Ntoumanis, N., Gucciardi, D. F., Mallett, C. J., & Stebbings, J. (2016). Implementing an Autonomy-Supportive Intervention to Develop Mental Toughness in Adolescent Rowers. *Journal of Applied Sport Psychology*, 28(2), 199-215. <https://doi.org/10.1080/10413200.2015.1101030>
- Mallett, C. J. (2005). Self-Determination Theory: A Case Study of Evidence-Based Coaching. *The Sport Psychologist*, 19(4), 417-429. <https://doi.org/10.1123/tsp.19.4.417>
- Mattie, P., & Munroe-Chandler, K. (2012). Examining the Relationship Between Mental Toughness and Imagery Use. *Journal of Applied Sport Psychology*, 24(2), 144-156. <https://doi.org/10.1080/10413200.2011.605422>
- Neff, K. (2003). Self-Compassion: An Alternative Conceptualization of a Healthy Attitude Toward Oneself. *Self and Identity*, 2(2), 85-101. <https://doi.org/10.1080/15298860309032>
- Ng, J. Y. Y., Ntoumanis, N., Thøgersen-Ntoumani, C., Deci, E. L., Ryan, R. M., Duda, J. L., & Williams, G. C. (2012). Self-determination theory applied to health contexts: A meta-analysis. *Perspectives on Psychological Science*, 7(4), 325-340. <https://doi.org/10.1177/1745691612447309>
- Nicholls, A. R., Perry, J. L., Jones, L., Sanctuary, C., Carson, F., & Clough, P. J. (2015). The mediating role of mental toughness in sport. *The Journal of sports medicine and physical fitness*, 55(7-8), 824-834.
- Occhino, J. L., Mallett, C. J., Rynne, S. B., & Carlisle, K. N. (2014). Autonomy-Supportive Pedagogical Approach to Sports Coaching: Research, Challenges and Opportunities. *International Journal of Sports Science & Coaching*, 9(2), 401-415. <https://doi.org/10.1260/1747-9541.9.2.401>
- Pelletier, L.G., Fortier, M.S., Vallerand, R.J. et al. Associations Among Perceived Autonomy Support, Forms of Self-Regulation, and Persistence: A Prospective Study. *Motivation and Emotion* 25, 279-306 (2001). <https://doi.org/10.1023/A:1014805132406>
- Quested, E., & Duda, J. L. (2010). Exploring the social-environmental determinants of well- and ill-being in dancers: a test of basic needs theory. *Journal of sport & exercise psychology*, 32(1), 39-60. <https://doi.org/10.1123/jsep.32.1.39>
- Richardson, G.E., Neiger, B.L., Jensen, S., Kumpfer, K.L. (1990). The resiliency model. *Health Education*, 21, p.33-9. <https://doi.org/10.1080/00970050.1990.10614589>
- Rigby, C.S.; Schultz, P.P.; Ryan, R.M. Mindfulness, interest-taking, and self-regulation: A self-determination theory perspective on the role of awareness in optimal functioning. In *Handbook of Mindfulness*; Ngoumen, A. Le.C.T., Langer, E., Eds.; Cambridge University Press: Cambridge, UK, 2014; pp. 216-235.
- Srivastava K. (2013). Emotional intelligence and organizational effectiveness. *Industrial psychiatry journal*, 22(2), 97-99. <https://doi.org/10.4103/0972-6748.132912>
- Stamatis, A., Deal, P. J., Morgan, G. B., Forsse, J. S., Papadakis, Z., McKinley-Barnard, S., Scudamore, E. M., & Koutakis, P. (2020). Can athletes be tough yet compassionate to themselves? Practical implications for NCAA mental health best practice no. 4. *PloS one*, 15(12), e0244579. <https://doi.org/10.1371/journal.pone.0244579>
- Stebbing, J., Taylor, I. M., Spray, C. M., & Ntoumanis, N. (2012). Antecedents of perceived coach interpersonal behaviors: the coaching environment and coach psychological well- and ill-being. *Journal of sport & exercise psychology*, 34(4), 481-502. <https://doi.org/10.1123/jsep.34.4.481>
- Vertommen, T., Decuyper, M., Parent, S., Pankowiak, A., & Woessner, M. N. (2022). Interpersonal Violence in Belgian Sport Today: Young Athletes Report. *International Journal of Environmental Research and Public Health*, 19(18). <https://doi.org/10.3390/ijerph191811745>
- Weinberg, R., Butt, J., & Culp, B. (2011). Coaches' views of mental toughness and how it is built. *International Journal of Sport and Exercise Psychology*, 9(2), 156-172. <https://doi.org/10.1080/1612197X.2011.567106>
- Wilson, D., Bennett, E. V., Mosewich, A. D., Faulkner, G. E., & Crocker, P. R. E. (2019). "The zipper effect": Exploring the interrelationship of mental toughness and self-compassion among Canadian elite women athletes. *Psychology of Sport and Exercise*, 40, 61-70. <https://doi.org/10.1016/j.psychsport.2018.09.006>

Chaire de recherche Sécurité et intégrité en milieu sportif

2300, rue de la Terrasse
Pavillon de l'Éducation physique
et des sports, local 3290
Université Laval
Québec (Québec) G1V 0A6



UNIVERSITÉ
LAVAL

SPORT + SOCIÉTÉ
ENGAGÉE

