

Editorial

Acronym inflation in sport science: are we naming progress or renaming it?

Daniel Boullosa^{1,2,3}*¹ Faculty of Physical Activity and Sports Sciences, Universidad de León, Spain.² Faculty of Physical Education, University of Brasilia, Brazil.³ College of Healthcare Sciences, James Cook University, Australia.

*Correspondence: (DB) dboua@unileon.es  ORCID ID n° 0000-0002-8477-127X

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Over recent decades, sport science has witnessed a steady proliferation of acronyms intended to label training methods and performance constructs. While nomenclature is indispensable for scientific communication, its uncontrolled expansion risks fragmenting knowledge rather than consolidating it. In several instances, new acronyms appear to describe minor—or even negligible—variations of existing protocols and parameters, offering an appearance of novelty without a clear conceptual or methodological advance. This trend may also complicate literature searches in bibliographic databases. When naming becomes detached from meaning, terminology risks turning into noise.

This editorial argues that acronyms should be introduced only when they reflect a demonstrable shift in physiological intention, methodological structure, or conceptual framing. Sprint-based training paradigms provide a particularly illustrative case, given the number of

acronyms derived from different classifications, measurement advances, and disciplinary traditions developed by different research groups.

The concept of repeated sprint ability (RSA) initially emerged to describe a performance quality central to many intermittent sports: the capacity to perform repeated short-duration, high-intensity sprints with limited recovery during match play. Seminal work established RSA as a construct distinct from single-sprint speed or aerobic capacity (Bishop et al., 2001; Girard et al., 2011). Importantly, RSA was framed as a performance outcome grounded in the interaction between neuromuscular function, metabolic stress, and fatigue accumulation under conditions of incomplete recovery.

Repeated-sprint training (RST) was subsequently proposed as a logical training approach to improve RSA (Bishop et al., 2011). RST typically involves brief maximal efforts separated by short recovery periods, resulting in progressive fatigue and



increasing metabolic strain. Its defining feature is therefore not sprinting *per se*, but sprinting under constrained recovery, with the maintenance of performance across repetitions as the primary objective.

The influential classification proposed by Buchheit and Laursen (2013) anchored high-intensity interval training (HIIT) modalities to percentages of the velocity or power associated with maximal oxygen uptake ($\text{VO}_{2\text{max}}$). Within this framework, RST is positioned at intensities around 130–160% of $v/p\text{VO}_{2\text{max}}$, implicitly linking it to substantial anaerobic contribution. While this approach has been highly useful for contextualizing training intensity, it may also encourage a dose-driven interpretation of sprint-based training that lacks precision when applied to “all-out” efforts, where external intensity anchors become difficult to operationalize.

Advances in time-motion analysis prompted further conceptual refinement. The proposal of repeated acceleration ability (RAA) (Barbero-Álvarez et al., 2014) responded to evidence that many high-intensity actions in team sports are characterized more by repeated accelerations than by maximal-velocity sprinting (Osgnach et al., 2010). In this case, new terminology served to correct a mismatch between traditional labels and the actual mechanical demands observed in competition, illustrating how acronym introduction can be justified when it improves ecological validity.

A related but conceptually distinct paradigm is speed endurance training (SET) (Mohr et al., 2007; Bangsbo et al., 2025). SET typically involves longer high-intensity

efforts (20–60 s) designed to enhance the capacity to sustain speed under pronounced metabolic stress. Here, high glycolytic involvement is not incidental but central to the training stimulus, reflecting the energetic demands of many team-sport scenarios. Together, RST and SET reflect a long-standing assumption that adaptations at very high intensities necessarily require substantial glycolytic activation.

Parallel to these sport-performance-oriented approaches, repeated maximal efforts based on Wingate-type protocols (20–30 s) were extensively used in laboratory settings to investigate both aerobic and anaerobic adaptations (Gibala et al., 2006, 2012). These protocols, later widely referred to as sprint interval training (SIT), became a dominant experimental model due to their efficiency in eliciting aerobic adaptations relative to traditional endurance training, albeit with considerable perceptual and metabolic strain.

Subsequent research questioned whether the high levels of fatigue and discomfort associated with classical SIT were necessary to elicit meaningful physiological adaptations. This line of inquiry coincided with the emergence of reduced-exertion high-intensity training (REHIT) (Metcalf et al., 2012), which proposed that fewer and shorter maximal efforts could still induce meaningful aerobic adaptations. Thereafter, several studies demonstrated that very short efforts can preserve key adaptive stimuli while reducing cumulative metabolic disturbance for a comparable external load (Islam et al., 2017; Townsend et al., 2017; Benítez-Flores et al., 2018, 2019). These findings also

suggested potential advantages when short sprint-based exercise with sufficient recovery is combined with short-effort resistance training (Benítez-Flores et al., 2019), as the reduced metabolic stress may attenuate interference effects in concurrent training (Vechin et al., 2021).

Building on these converging observations, the term short sprint interval training (sSIT) was formally proposed to describe protocols involving very short (≤ 10 s) cyclic sprint efforts, performed either at maximal ("all out") or near maximal intensities, with the aim of promoting oxidative and anaerobic adaptations while limiting glycolytic strain (Boullosa et al., 2022).

From a conceptual standpoint, sSIT does not represent a rejection of existing SIT frameworks but rather a refinement based on effort duration, recovery structure, and inferred metabolic contribution. Its rationale aligns with more recent classification proposals that prioritize metabolic

involvement as an organizing principle for high-intensity exercise (Coates et al., 2023), a dimension that is not adequately captured by earlier percentage-based intensity anchors.

The purpose of this editorial is not to promote any specific training method, but to highlight the responsibility inherent in scientific naming. New acronyms should emerge from clear conceptual necessity, supported by defined protocols, physiological rationale, and demonstrable adaptations. When these conditions are not met, nomenclature risks obscuring understanding rather than enhancing it. In a field already rich in methods and models, conceptual clarity and historical continuity are scientific obligations. Fewer acronyms—better justified, contextually grounded, and precisely defined—would better serve cumulative knowledge and practical application in sport science.

References

- Bangsbo, J., Kissow, J., & Hostrup, M. (2025). Speed Endurance Training to Improve Performance. *Scandinavian journal of medicine & science in sports*, 35(7), e70091. <https://doi.org/10.1111/sms.70091>
- Barbero-Álvarez, J. C., Boullosa, D., Nakamura, F. Y., Andrín, G., & Weston, M. (2014). Repeated Acceleration Ability (RAA): A New Concept with Reference to Top-Level Field and Assistant Soccer Referees. *Asian journal of sports medicine*, 5(1), 63–66. <https://brieflands.com/journals/asjasm/articles/73547>
- Benítez-Flores, S., De Sousa, A.F., Da Cunha Totó, E.C., Rosa, T.S., Del Rosso, S., Foster, C., Boullosa, D.A. (2018). Shorter sprints elicit greater cardiorespiratory and mechanical responses with less fatigue during time-matched sprint interval training (SIT) sessions. *Kinesiology*, 50(2),137–148. <https://ojs.srce.hr/index.php/kinesiology/article/view/5783>
- Benítez-Flores, S., Medeiros, A. R., Voltarelli, F. A., Iglesias-Soler, E., Doma, K., Simões, H. G., Rosa, T. S., & Boullosa, D. A. (2019). Combined effects of very short "all out" efforts during sprint and resistance training on physical and physiological adaptations after 2 weeks of training. *European journal of applied physiology*, 119(6), 1337–1351. <https://doi.org/10.1007/s00421-019-04125-6>
- Bishop, D., Girard, O., & Mendez-Villanueva, A. (2011). Repeated-sprint ability - part II: recommendations for training. *Sports medicine (Auckland, N.Z.)*, 41(9), 741–756. <https://doi.org/10.2165/11590560-000000000-00000>
- Bishop, D., Spencer, M., Duffield, R., & Lawrence, S. (2001). The validity of a repeated sprint ability test. *Journal of science and medicine*

- in sport, 4(1), 19–29.
[https://doi.org/10.1016/s1440-2440\(01\)80004-9](https://doi.org/10.1016/s1440-2440(01)80004-9)
- Boullosa, D., Dragutinovic, B., Feuerbacher, J. F., Benítez-Flores, S., Coyle, E. F., & Schumann, M. (2022). Effects of short sprint interval training on aerobic and anaerobic indices: A systematic review and meta-analysis. *Scandinavian journal of medicine & science in sports*, 32(5), 810–820.
<https://doi.org/10.1111/sms.14133>
- Buchheit, M., & Laursen, P. B. (2013). High-intensity interval training, solutions to the programming puzzle: Part I: cardiopulmonary emphasis. *Sports medicine (Auckland, N.Z.)*, 43(5), 313–338.
<https://doi.org/10.1007/s40279-013-0029-x>
- Coates, A. M., Joyner, M. J., Little, J. P., Jones, A. M., & Gibala, M. J. (2023). A Perspective on High-Intensity Interval Training for Performance and Health. *Sports medicine (Auckland, N.Z.)*, 53(Suppl 1), 85–96.
<https://doi.org/10.1007/s40279-023-01938-6>
- Gibala, M. J., Little, J. P., van Essen, M., Wilkin, G. P., Burgomaster, K. A., Safdar, A., Raha, S., & Tarnopolsky, M. A. (2006). Short-term sprint interval versus traditional endurance training: similar initial adaptations in human skeletal muscle and exercise performance. *The Journal of physiology*, 575(Pt 3), 901–911.
<https://doi.org/10.1113/jphysiol.2006.112094>
- Gibala, M. J., Little, J. P., Macdonald, M. J., & Hawley, J. A. (2012). Physiological adaptations to low-volume, high-intensity interval training in health and disease. *The Journal of physiology*, 590(5), 1077–1084.
<https://doi.org/10.1113/jphysiol.2011.224725>
- Girard, O., Mendez-Villanueva, A., & Bishop, D. (2011). Repeated-sprint ability - part I: factors contributing to fatigue. *Sports medicine (Auckland, N.Z.)*, 41(8), 673–694.
<https://doi.org/10.2165/11590550-000000000-00000>
- Islam, H., Townsend, L. K., & Hazell, T. J. (2017). Modified sprint interval training protocols. Part I. Physiological responses. *Applied physiology, nutrition, and metabolism = Physiologie appliquee, nutrition et metabolisme*, 42(4), 339–346.
<https://doi.org/10.1139/apnm-2016-0478>
- Metcalf, R. S., Babraj, J. A., Fawcner, S. G., & Vollaard, N. B. (2012). Towards the minimal amount of exercise for improving metabolic health: beneficial effects of reduced-exertion high-intensity interval training. *European journal of applied physiology*, 112(7), 2767–2775.
<https://doi.org/10.1007/s00421-011-2254-z>
- Mohr, M., Krstrup, P., Nielsen, J. J., Nybo, L., Rasmussen, M. K., Juel, C., & Bangsbo, J. (2007). Effect of two different intense training regimens on skeletal muscle ion transport proteins and fatigue development. *American journal of physiology. Regulatory, integrative and comparative physiology*, 292(4), R1594–R1602.
<https://doi.org/10.1152/ajpregu.00251.2006>
- Osgnach, C., Poser, S., Bernardini, R., Rinaldo, R., & di Prampero, P. E. (2010). Energy cost and metabolic power in elite soccer: a new match analysis approach. *Medicine and science in sports and exercise*, 42(1), 170–178.
<https://doi.org/10.1249/MSS.0b013e3181ae5cfd>
- Townsend, L. K., Islam, H., Dunn, E., Eys, M., Robertson-Wilson, J., & Hazell, T. J. (2017). Modified sprint interval training protocols. Part II. Psychological responses. *Applied physiology, nutrition, and metabolism = Physiologie appliquee, nutrition et metabolisme*, 42(4), 347–353.
<https://doi.org/10.1139/apnm-2016-0479>
- Vechin, F. C., Conceição, M. S., Telles, G. D., Libardi, C. A., & Ugrinowitsch, C. (2021). Interference Phenomenon with Concurrent Strength and High-Intensity Interval Training-Based Aerobic Training: An Updated Model. *Sports medicine (Auckland, N.Z.)*, 51(4), 599–605.
<https://doi.org/10.1007/s40279-020-01421-6>