

The Nontechnical Summary: A New Initiative to Enhance the Translation of Sports Science Research and Reduce the Spread of Misinformation

Nicholas B. Tiller,¹ Trent Stellingwerff,^{2,3} Oliver C. Witard,⁴ John A. Hawley,⁵
Louise M. Burke,⁶ and James A. Betts⁷

¹Institute of Respiratory Medicine and Exercise Physiology, The Lundquist Institute for Biomedical Innovation at Harbor-UCLA Medical Center, Torrance, CA, USA;

²Canadian Sport Institute-Pacific, Victoria, BC, Canada; ³Exercise Science, Physical and Health Education, University of Victoria, Victoria, BC, Canada;

⁴Center for Human and Applied Physiological Sciences, Faculty of Life Sciences and Medicine, King's College London, London, United Kingdom;

⁵Exercise and Nutrition Research Program, The Mary MacKillop Institute for Health Research, Australian Catholic University, Melbourne, VIC, Australia;

⁶Mary MacKillop Institute for Health Research, Australian Catholic University, Melbourne, VIC, Australia; ⁷Center for Nutrition, Exercise and Metabolism, University of Bath, Bath, United Kingdom

“If you don’t tell your own story, someone else will tell it for you, and you probably won’t like how they do it.”

—Shirley Malcolm, American Association for the Advancement of Science.

Research in sport nutrition and exercise metabolism has proliferated at an unprecedented rate. According to Scopus, more studies have been published in the discipline in the last decade than in the preceding five, with a 1.5-fold increase in new “sports science” journals since 2000 (Tiller & Ekkekakis, 2022). Annually, more than 3,500 papers are published in sports nutrition alone (Jonvik et al., 2022). Although the empirical study of sports and exercise science is in its relative infancy, a century of pioneering work has laid the foundation for today’s academics, practitioners, and health professionals to meet many of society’s health and fitness challenges.


Unfortunately, most of our hard-won scientific breakthroughs aren’t reaching the public. Despite agreement among scientists on the central tenets of a healthy lifestyle, most Americans when surveyed weren’t able to accurately predict the quality of their diet unless it was “low quality” (Thomson et al., 2023), and less than half of U.S. adults meet the physical activity guidelines of at least “150–300 min of moderate-intensity physical activity and two strength sessions per week” (World Health Organization, 2020). Less than 10% of the population even know what the guidelines propose (Vaara et al., 2019). Global obesity rates are rising, mental health and well-being are falling, and smoking prevalence remains stubbornly high in many countries. Even elite athletes aren’t consistently implementing gold-standard, evidence-based advice on aspects of health and performance (Esh et al., 2024; Tiller, 2022, 2024). Manifestly, mainstream practice has become disconnected from day-to-day advances in sport and exercise science, and it’s largely due to ineffective and often inaccurate science communication.

What precipitated this harmful paradigm? And how can we fix it? For too long researchers have been apprehensive and even derogatory about public-facing science communication. This is partly due to a lack of time owing to intense pressure to publish in academic journals, secure research funding, and improve quantitative performance metrics (e.g., H-Index; Tiller & Ekkekakis, 2022). But there’s also a long-standing fear among academics and practitioners that building a reputation as a public communicator will somehow undermine a career in science—a stigma known as the Sagan Effect, so named after astronomer and science popularizer Carl Sagan (Martinez-Conde, 2016). Many scientists also lack experience in mainstream science communication and believe their contributions to be redundant or ineffective in a landscape dominated by would-be science writers, journalists, influencers, podcasters, and pseudoexperts with extensive reach and industry sponsors.

Our timidity and unwillingness to engage with the public have hampered efforts at knowledge transfer; we have, in essence, given digital media free rein to shape the scientific narrative of our field. It’s well documented that entertainment news and magazines prefer sensational headlines and hyperbole to technical accuracy—a practice known as “yellow journalism” (Samuel, 2016). Not only does this *style-over-substance* approach lead to biased and oversimplified health and wellness reporting (Oxman et al., 2021), but the problem is exacerbated by pervasive social media—a prominent health and fitness resource for nearly half of U.S. adults (AMG/Parade, 2019). These online spaces are monopolized by fitness influencers and health gurus disseminating low-quality exercise and nutrition advice to millions of digital disciples (Marocolo et al., 2021; Sabbagh et al., 2020). And so, even if scientific breakthroughs do reach the public, they do so having been distorted and misappropriated to serve some ulterior motive. The health and fitness industry has become a breeding ground for pseudoscience, myth, and misinformation (Tiller et al., 2023). If scientists continue to exhibit apathy toward public-facing discourse, the gap between the lab and the layperson will continue to expand. The consequences for population health may be dire.

To improve and extend the translation of sports, exercise, and nutrition-science research to the public, the *International Journal of Sport Nutrition and Exercise Metabolism* is launching a new

The authors are members of the *IJSNEM* editorial leadership team.

Stellingwerff  <https://orcid.org/0000-0002-4704-8250>

Witard  <https://orcid.org/0000-0002-5875-8397>

Hawley  <https://orcid.org/0000-0002-0886-9881>

Burke  <https://orcid.org/0000-0001-8866-5637>

Betts  <https://orcid.org/0000-0002-9129-5777>


Tiller (nicholas.tiller@lundquist.org) is corresponding author,  <https://orcid.org/0000-0001-8429-658X>



Figure 1 — The nontechnical summary will enable researchers to bypass the media maelstrom and forge direct relationships with the public, i.e., athletes, coaches, health professionals, and consumers in the commercial health and wellness industry. The aim is to reduce dependence on flawed third-party interpretations of new sports science research.

initiative: the Nontechnical Summary (NTS). The NTS is a simple, jargon-free overview of each new manuscript published in the journal, including original research investigations, rapid communications, case studies, scholarly reviews, and methodology reviews. The initiative gives authors the opportunity to distill their manuscripts into the essential components (the rationale, primary methods, findings, and interpretations) and translate them for the lay reader in 1,000 words or fewer.¹ The NTS is subject to editorial review to ensure it aligns with the peer-reviewed manuscript and will be integrated into the online and print versions after the reference list.

The NTS isn't the only solution to the problem of a burgeoning expanse between science and the public, but it's one with enormous potential. Popular science writing was shown to be better at improving comprehension of technical ideas in science students than academic textbooks (Nigro, 2022), and by making complex ideas accessible to nonexperts, popular science resources can play a crucial role in science education (Parkinson & Adendorff, 2004). Others have argued that scientists should simplify their technical writing, adopt informal prose, and improve their storytelling if they're to reach beyond their usual, self-selecting audience of academics and researchers (Olson, 2018). Popular writing accomplishes this, at least partly, by humanizing the authors, making them more affable and relatable (Peters, 2013)—something rarely achieved in formal scientific writing. Accordingly, the NTS has several applications: (a) to reduce the public's misinterpretation of original research, and (b) to help journalists and science writers as they report on various subjects in the fast-paced, pressurized world of mainstream publishing.

Science and the general public have a strained relationship, described in the literature using terms like “distance,” “gap,” “barrier,” and “oil and water.” (Peters, 2013). This must change if we're to restore public trust in scientific experts and if sports, exercise, and nutrition science is to benefit the society it's supposed to serve. The NTS is an invitation. It's an invitation to researchers to *tell their own stories* and contribute to the public understanding of science, and it's an invitation to the public and the media to take ownership of how they consume health and wellness research to

inform better exercise, dietary, and lifestyle choices (Figure 1). We're excited to launch this new initiative which, to our knowledge, is the first of its kind in our discipline. Given that the impact of the NTS will depend on how broadly it's implemented, we encourage other journals to establish similar initiatives and join us in reforming the science communication paradigm.

Notes

1. The word count is an upper limit, one that allows authors to retain the scientific rigor and messaging of their original manuscript while obligating them to articulate only the pertinent information. It's a balance of accuracy and accessibility; this is the key to good science communication.

References

- AMG/Parade. (2019). Parade/Cleveland Clinic Healthy Now Survey reveals: Technology's growing influence on healthy living behaviors; Americans spend more time on social media vs. socializing. *PR Newswire*. <https://www.prnewswire.com/news-releases/paradecleveland-clinic-healthy-now-survey-reveals-technologys-growing-influence-on-healthy-living-behaviors-americans-spend-more-time-on-social-media-vs-socializing-300936859.html>
- Esh, C.J., Carter, S., Galan-Lopez, N., Garrandes, F., Bermon, S., Adami, P.E., Racinais, S., James, L., Stellingwerff, T., Adams, W.M., Christmas, B., Stevens, C.J., Périard, J.D., Brade, C., Henderson, M.J., & Taylor, L. (2024). A review of elite athlete evidence-based knowledge and preparation for competing in the heat. *Journal of Science in Sport and Exercise*. Advance online publication. <https://doi.org/10.1007/s42978-024-00283-y>
- Jonvik, K.L., King, M., Rollo, I., Stellingwerff, T., & Pitsiladis, Y. (2022). New opportunities to advance the field of sports nutrition. *Frontiers in Sports and Active Living*, 4, 852230. <https://doi.org/10.3389/fspor.2022.852230>
- Marocolo, M., Meireles, A., de Souza, H.L.R., Mota, G.R., Oranchuk, D.J., Arriel, R.A., & Leite, L.H.R. (2021). Is social media spreading misinformation on exercise and health in Brazil? *International*

- Journal of Environmental Research and Public Health*, 18(22), 11914. <https://doi.org/10.3390/ijerph182211914>
- Martinez-Conde, S. (2016). Has contemporary academia outgrown the Carl Sagan effect? *Journal of Neuroscience*, 36(7), 2077–2082. <https://doi.org/10.1523/JNEUROSCI.0086-16.2016>
- Nigro, R.G. (2022). Textbook and popular science text reading: Boys' and girls' comprehension and assimilation of academic language. *International Journal of Science Education*, 44(11), 1792–1815. <https://doi.org/10.1080/09500693.2022.2095681>
- Olson, R. (2018). *Don't be such a scientist: Talking substance in an age of style*. Island Press/Center for Resource Economics. <https://doi.org/10.5822/978-1-61091-918-0>
- Oxman, M., Larun, L., Gaxiola, G.P., Alsaid, D., Qasim, A., Rose, C.J., Bischoff, K., & Oxman, A.D. (2021). Quality of information in news media reports about the effects of health interventions: Systematic review and meta-analyses. *F1000Research*, 10, 433. <https://doi.org/10.12688/f1000research.52894.2>
- Parkinson, J., & Adendorff, R. (2004). The use of popular science articles in teaching scientific literacy. *English for Specific Purposes*, 23(4), 379–396. <https://doi.org/10.1016/j.esp.2003.11.005>
- Peters, H.P. (2013). Gap between science and media revisited: Scientists as public communicators. *Proceedings of the National Academy of Sciences of the United States of America*, 110 (Suppl. 3), 14102–14109. <https://doi.org/10.1073/pnas.1212745110>
- Sabbagh, C., Boyland, E., Hankey, C., & Parrett, A. (2020). Analysing credibility of UK social media influencers' weight-management blogs: A pilot study. *International Journal of Environmental Research and Public Health*, 17(23), E9022. <https://doi.org/10.3390/ijerph17239022>
- Samuel, A. (2016, November 29). To fix fake news, look to yellow journalism. *JSTOR Daily*. <https://daily.jstor.org/to-fix-fake-news-look-to-yellow-journalism/>
- Thomson, J.L., Landry, A.S., & Walls, T.I. (2023). Can United States adults accurately assess their diet quality? *American Journal of Health Promotion*, 37(4), 499–506. <https://doi.org/10.1177/08901171221137056>
- Tiller, N.B. (2022). Why do so many athletes turn to extreme and unproven remedies? | Psyche Ideas. *Psyche*. <https://psyche.co/ideas/why-do-so-many-athletes-turn-to-extreme-and-unproven-remedies>
- Tiller, N.B. (2024, June 25). From gods to gurus: The evolution of Olympic superstition and pseudoscience. *Skeptical Inquirer*. <https://skepticalinquirer.org/2024/06/from-gods-to-gurus-the-evolution-of-olympic-superstition-and-pseudoscience/>
- Tiller, N.B., & Ekkekakis, P. (2022). Overcoming the “Ostrich Effect”: A narrative review on the incentives and consequences of questionable research practices in kinesiology. *Kinesiology Review*, 12(3), 201–216. <https://doi.org/10.1123/kr.2022-0039>
- Tiller, N.B., Sullivan, J.P., & Ekkekakis, P. (2023). Baseless claims and pseudoscience in health and wellness: A call to action for the sports, exercise, and nutrition-science community. *Sports Medicine*, 53(1), 1–5. <https://doi.org/10.1007/s40279-022-01702-2>
- Vaara, J.P., Vasankari, T., Koski, H.J., & Kyröläinen, H. (2019). Awareness and knowledge of physical activity recommendations in young adult men. *Frontiers in Public Health*, 7, 310. <https://doi.org/10.3389/fpubh.2019.00310>
- World Health Organization. (2020). *Guidelines on physical activity and sedentary behavior*. <http://www.ncbi.nlm.nih.gov/books/NBK566045/>