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Revista FT | ISSN 1678-0817 | v. 30, n. 158, 2026 | DOI: 10.69849/80pabz20

The enhanced games and the anti-doping paradox: A clinical perspective on transparency, risk, and athlete health

Enhanced Games e o paradoxo antidoping: uma perspectiva clínica sobre transparência, risco e saúde do atleta

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Abstract

The Enhanced Games have brought renewed attention to an old and uncomfortable problem in sport: the distance between formal anti-doping ideals and the real prevalence of pharmacological enhancement. Unlike WADA-regulated competitions, this model does not treat enhancement as a hidden violation, but as an explicit and medically supervised component of performance. This distinction does not make the proposal ethically simple or clinically safe. However, it changes the terms of the debate. Rather than asking only whether enhancement is compatible with traditional sport, the Enhanced Games force a broader question: what should be done when prohibition, testing, and punishment do not fully capture actual doping behavior? Indirect methods, including randomized response techniques and biological models, suggest that doping prevalence is substantially higher than official detection rates. This discrepancy raises a clinical and ethical paradox: prohibition protects rule-based sport, but may also drive some enhancement practices into secrecy, where pharmacological decisions can be shaped by detection avoidance rather than medical safety. This clinical perspective discusses the Enhanced Games as a distinct normative model, the

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limitations of current anti-doping detection, and the unresolved risks of medically monitored enhancement.
Keywords: Doping in Sports; Performance-Enhancing Substances; Sports Medicine; Athletes; Ethics.

Resumo

O Enhanced Games reacendeu uma discussão antiga e incômoda no esporte: a distância entre o ideal formal do antidoping e a prevalência real do uso de recursos farmacológicos para melhora de desempenho. Diferentemente das competições reguladas pela WADA, esse modelo não trata o aprimoramento como uma violação oculta, mas como um componente explícito e medicamente supervisionado da performance. Essa distinção não torna a proposta eticamente simples nem clinicamente segura. No entanto, modifica os termos do debate. Em vez de perguntar apenas se o uso de recursos ergogênicos é compatível com o esporte tradicional, o Enhanced Games impõe uma questão mais ampla: o que fazer quando a proibição, os testes e a punição não capturam plenamente o comportamento real de doping? Métodos indiretos, incluindo técnicas de resposta randomizada e modelos biológicos, sugerem que a prevalência de doping é substancialmente maior do que as taxas oficiais de detecção. Essa discrepância cria um paradoxo clínico e ético: a proibição protege o esporte baseado em regras, mas também pode empurrar algumas práticas de aprimoramento para a clandestinidade, onde decisões farmacológicas podem ser orientadas mais pela evasão da detecção do que pela segurança médica. Esta perspectiva clínica discute o Enhanced Games como um modelo normativo distinto, as limitações da detecção antidoping atual e os riscos ainda não resolvidos do aprimoramento medicamente monitorado.
Palavras-chave: Doping nos Esportes; Substâncias para Melhora do Desempenho; Medicina Esportiva; Atletas; Ética.

Introduction

The Enhanced Games have turned an old debate in sport into a more explicit clinical and ethical problem [1]. Their proposal is not merely to weaken anti-doping enforcement, but to organize a competition in which scientific and pharmacological enhancement are openly incorporated into the rules of performance [1]. This makes the model different from WADA-regulated sport, where the use of prohibited substances and methods constitutes an

anti-doping rule violation [2]. In that context, enhancement is treated as cheating because it violates a rule that defines the competition itself [2]. In the Enhanced Games, by contrast, enhancement is not hidden as misconduct, but presented as part of the competitive premise [1].

This distinction does not make the Enhanced Games ethically simple. The controversy intensified after the event produced an unofficial 50-meter freestyle time of 20.81 seconds by Kristian Gkolomeev, reported as faster than the official world record but not recognized by traditional sporting authorities because of the rules and conditions of the event [3]. WADA has condemned the Enhanced Games as dangerous and irresponsible, arguing that athlete health and well-being are central to the anti-doping system [4]. This concern deserves attention, particularly because medical supervision does not automatically transform high-risk enhancement into safe practice [4].

At the same time, the Enhanced Games expose a weakness in the way doping is often discussed publicly. A low rate of positive tests is frequently interpreted as evidence that most competitive sport is clean, but detected doping is not the same as actual doping prevalence [5,6]. Reviews and indirect prevalence studies suggest that official adverse analytical findings, often around 1% to 2%, may substantially underestimate real use in several athletic populations [5,6]. Randomized response studies and related methods have reported higher estimates, including double-digit prevalence rates in elite sport settings [6,7].

For this reason, the Enhanced Games should not be examined only as an endorsement of doping or as a direct competitor to Olympic sport. They are better understood as a provocative alternative model that forces a more precise question: what happens when prohibition protects the rules of sport, but does not fully capture the real extent of pharmacological enhancement? This clinical and ethical perspective discusses the Enhanced Games in light of the anti-doping discrepancy, the limits of detection-based policy, and the unresolved risks of medically monitored enhancement.

The anti-doping discrepancy

The anti-doping system is often read by the public through a simple indicator: the proportion of athletes who test positive. This interpretation is misleading. Detected doping is not the same as actual doping prevalence, because official testing captures only athletes who are tested, within a detectable window, with substances or methods that can be identified by current laboratory strategies [5,6]. Official laboratory detection rates are commonly reported

around 1% to 2% per year, whereas indirect methods have estimated doping prevalence between 14% and 39% in adult elite athletes and up to 43% to 57% in specific international events [5–7]. In practical terms, actual use may be approximately 7 to more than 40 times higher than official detection rates, depending on the population, method, and event studied [5–7].

This discrepancy does not mean that anti-doping testing is irrelevant. It means that positive tests represent the visible fraction of a broader and partly hidden phenomenon. De Hon et al. reviewed methods for estimating doping prevalence in elite sport and showed that estimates vary substantially according to the method used, with indirect approaches generally producing higher values than official testing data [5]. Randomized response techniques were developed to reduce underreporting in sensitive behaviors, including doping; using this approach, Striegel et al. found estimates of doping and illicit drug use in elite athletes that exceeded conventional detection rates [6].

Similar findings have been reported in major international competitions. Ulrich et al. applied randomized-response surveys in two elite athletics events and found doping prevalence estimates substantially higher than the proportion of athletes who would be detected by routine testing [7]. Biological models also point in the same direction for specific forms of doping. Sottas et al. estimated blood doping prevalence in samples from elite track and field athletes and reported rates higher than those suggested by ordinary adverse analytical findings [8].

The clinical relevance of this gap is that undetected doping remains pharmacological exposure. Athletes who are not caught may still be exposed to endocrine, cardiovascular, hematological, psychiatric, or metabolic risks, depending on the substances and methods used. Botrè et al. framed the scientific challenge as narrowing the gap between the number of athletes who dope and the number who are caught, emphasizing the technical limits of testing and the need for continued advances in anti-doping detection [9]. For the present discussion, this discrepancy is central: a low rate of positive tests should not be mistaken for a low rate of enhancement drug use.

The Enhanced Games as a distinct normative model

The Enhanced Games are not simply an Olympic-style event with weaker anti-doping enforcement. They represent a different normative contract: enhancement is not treated as a hidden violation, but as an explicit condition of competition [1]. In WADA-regulated sport, by

contrast, anti-doping rules are part of the structure of the game itself, and the Prohibited List defines which substances and methods are forbidden in competition, out of competition, or in specific contexts [2]. Within that system, doping is a violation because athletes have entered a rule-based environment that prohibits it [2].

The Enhanced Games change the premise. Their public framing emphasizes medically supervised human enhancement and the open use of performance-enhancing technologies rather than concealment [1]. This does not make the model ethically simple, nor does it prove that the interventions are safe. It means that the central question changes. The issue is no longer only whether enhancement constitutes cheating within a prohibited system, but whether a permissive system can manage risk, protect autonomy, avoid coercion, and provide transparent information about benefits and harms [1,4].

This distinction matters because WADA-regulated sport and the Enhanced Games do not claim to test the same thing. One attempts to preserve competition under anti-doping constraints [2]. The other attempts to explore performance under enhancement-permissive conditions [1]. The clinical and ethical comparison should therefore focus less on which model is “real sport” and more on what each model reveals, hides, tolerates, or attempts to control.

To clarify this distinction, Table 1 summarizes the main differences between WADA-regulated sport and the Enhanced Games as two distinct normative models of performance competition.

Table 1. Two different normative models of performance sport

Dimension	WADA-regulated sport	Enhanced Games model
Rule structure	Prohibited substances and methods define anti-doping violations	Enhancement is openly permitted within the competition model
Ethical focus	Fairness, rule compliance, health protection, and deterrence	Transparency, athlete autonomy, medical monitoring, and performance exploration
Main risk	Hidden use, imperfect detection, and pharmacological evasion	Normalization of escalation, coercion, and commercialization of health risk
Clinical limitation	Positive tests underestimate actual exposure	Medical supervision does not eliminate biological risk
Central question	How can sport preserve fair competition and reduce doping?	Can an enhancement-permissive model manage risk without normalizing harm?

Prohibition, secrecy, and clinical risk

The strongest argument for anti-doping is not simply that it detects prohibited substances. Its broader purpose is to protect the integrity of rule-based sport and to discourage pharmacological arms races that could expose athletes to avoidable harm [2,4]. This argument remains important. If enhancement becomes normalized, athletes may experience indirect coercion: even when use is formally voluntary, the pressure to remain competitive may push them toward interventions they would otherwise avoid. This concern is particularly relevant in commercial environments shaped by prize money, sponsorship, media exposure, and career insecurity [4].

At the same time, prohibition does not eliminate enhancement. The prevalence literature suggests that a meaningful proportion of athletes use prohibited substances without being detected [5–8]. In clandestine settings, pharmacological decisions may be influenced not only by expected performance benefits, but also by detection windows, masking strategies, and access to informal or underground expertise. Botrè et al. emphasized the technical limits of current testing and the need for scientific advances to narrow the gap between athletes who dope and athletes who are caught [9]. This supports a clinically relevant point: a prohibition-based system may protect rule integrity while still leaving some users exposed to unmonitored or poorly monitored risk.

This is where the Enhanced Games raise an uncomfortable, but legitimate, question. A transparent and medically monitored model may reduce some risks linked to secrecy, including undisclosed use, lack of medical screening, and reliance on substances selected primarily to evade detection [1,9]. However, supervision is not the same as safety. Medical monitoring can identify some risks, exclude some athletes, and respond to adverse findings, but it cannot eliminate the biological uncertainty of supraphysiological or multi-drug enhancement [4].

Ethical objections remain unresolved

A clinical perspective should not replace one simplification with another. If it is simplistic to assume that anti-doping controls capture the real prevalence of enhancement, it is equally simplistic to assume that open enhancement is automatically safer or ethically superior. The Enhanced Games may reduce concealment, but they may also normalize pharmacological escalation. WADA's criticism is grounded in the concern that this model could endanger athlete health and undermine the values of anti-doping sport [4]. This concern is not merely moralistic, because performance-enhancing drugs may involve cardiovascular,

endocrine, psychiatric, hematological, and metabolic risks depending on the substances, doses, combinations, and duration of use [4].

The concept of consent also requires caution. Elite athletes may accept significant health risks for competitive success, financial reward, or public recognition. In this context, "voluntary" participation may be shaped by incentives, competitive pressure, and the fear of being left behind. A medically supervised enhancement model must therefore be judged not only by whether athletes agree to participate, but also by how risks are disclosed, how eligibility is assessed, how adverse events are monitored, and whether independent oversight exists.

The most defensible position is not to declare the Enhanced Games ethically acceptable or unacceptable in advance. They should be analyzed as a live experiment in the governance of enhancement. The model does not solve the ethical problems of doping. It relocates them from secrecy and rule violation to transparency, consent, clinical monitoring, and commercialization of risk.

Clinical and policy implications

For clinicians, the debate extends beyond the Enhanced Games. Athletes and recreational competitors may already use performance-enhancing substances while remaining outside formal medical supervision. The gap between estimated doping prevalence and official detection suggests that many users are invisible to anti-doping systems and may also be invisible to healthcare professionals [5–7]. For this reason, clinical questioning about performance-enhancing drug use should be direct, nonjudgmental, and oriented toward safety rather than moral condemnation.

For policy, the Enhanced Games highlight the need to separate two objectives that are often treated as the same: protecting the fairness of a specific sport and protecting athlete health. Anti-doping rules are essential for sports that define themselves around prohibited-substance restrictions [2]. Health protection, however, also requires realistic knowledge about actual use, not only official positives [5,9]. If many athletes use substances without detection, policies based only on positive tests may underestimate both prevalence and clinical risk.

The Enhanced Games do not replace anti-doping sport and should not be treated as evidence that enhancement is safe. They may, however, force a more precise debate about

transparency, harm reduction, and the limits of prohibition. That debate is clinically relevant because the health risks of enhancement do not disappear when use is hidden.

Conclusion

The Enhanced Games should not be understood as a replacement for WADA-regulated sport, nor as evidence that pharmacological enhancement is safe. They are better interpreted as a provocative alternative model that exposes a central paradox of contemporary sport: doping is formally prohibited, but indirect prevalence studies suggest that actual use substantially exceeds official detection rates. WADA-regulated sport is entitled to preserve anti-doping rules as part of its competitive identity. The Enhanced Games, by contrast, propose a model in which enhancement is openly permitted and medically supervised.

This distinction does not remove ethical or clinical concerns. It makes them more explicit. The central question is not whether one model is simply moral and the other immoral, but how each model deals with transparency, coercion, risk, autonomy, and athlete health. In this sense, the Enhanced Games are less a solution to the doping problem than a challenge to the assumptions through which doping, safety, and fairness are usually discussed.

Conflicts of interest

The authors declare no conflicts of interest.

Funding

No external funding was received for this work.

References

1. Enhanced Games. Independent Scientific Commission. Enhanced Games; 2026. Available from: https://www.enhanced.com/science
2. World Anti-Doping Agency. World Anti-Doping Code 2021. Montreal: World Anti-Doping Agency; 2021. Available from: https://www.wada-ama.org/
3. Reuters. Gkolomeev claims $1m bonus in 50 metres freestyle at Enhanced Games. Reuters. 2026 May 25. Available from:

https://www.reuters.com/sports/gkolomeev-claims-1m-bonus-50-metres-freestyle-enhanced-games-2026-05-25/

4. World Anti-Doping Agency. WADA condemns Enhanced Games as dangerous and irresponsible. World Anti-Doping Agency; 2025 May 22. Available from: https://www.wada-ama.org/en/news/wada-condemns-enhanced-games-dangerous-and-irresponsible
5. de Hon O, Kuipers H, van Bottenburg M. Prevalence of doping use in elite sports: a review of numbers and methods. Sports Med. 2015;45(1):57–69. doi:10.1007/s40279-014-0247-x.
6. Striegel H, Ulrich R, Simon P. Randomized response estimates for doping and illicit drug use in elite athletes. Drug Alcohol Depend. 2010;106(2–3):230–232. doi:10.1016/j.drugalcdep.2009.07.026.
7. Ulrich R, Pope HG Jr, Cléret L, Petróczi A, Nepusz T, Schaffer J, et al. Doping in two elite athletics competitions assessed by randomized-response surveys. Sports Med. 2018;48(1):211–219. doi:10.1007/s40279-017-0765-4.
8. Sottas PE, Robinson N, Fischetto G, Dollé G, Alonso JM, Saugy M. Prevalence of blood doping in samples collected from elite track and field athletes. Clin Chem. 2011;57(5):762–769. doi:10.1373/clinchem.2010.156067.
9. Botrè F, de la Torre X, Donati F, Mazzarino M. Narrowing the gap between the number of athletes who dope and the number of athletes who are caught: scientific advances that increase the efficacy of antidoping tests. Br J Sports Med. 2014;48(10):833–836. doi:10.1136/bjsports-2014-093563.