

MAKING STRENGTH KNOWABLE: STRENGTH TRAINING, GYMNASTIKĒ, AND SPORT SCIENCE IN THE OLYMPIC TRADITION

Nikola Stojanović¹, Milica Filipović², Đorđe Savić¹,
Zvezdan Savić¹, Igor Ilić²

¹Faculty of Sport and Physical Education, University of Niš, Niš, Serbia

²Faculty of Sport and Physical Education, University of Priština in Kosovska Mitrovica, Leposavić, Serbia

ABSTRACT

This article examines the historical and epistemological transformation of strength training within the Olympic tradition, from ancient Greek athletic culture to contemporary sport science. Rather than narrating this history as a linear progression from pre-scientific practice to scientific precision, it asks how knowledge about strength, effort, fatigue, recovery, readiness, and performance was produced, authorized, contested, and reorganized across time. Using a qualitative historical-epistemological approach, the article interprets ancient poetic, philosophical, medical, historical, and gymnastic sources alongside scholarship on ancient athletics, Olympism, physical culture, objectivity, quantification, and strength-training science. The analysis identifies six regimes of bodily knowledge: agonistic commemoration, gymnasium-based practical training, medical and dietetic regulation, gymnastikē as specialized expertise, modern Olympism and physical culture, and laboratory-based sport science. The findings show continuity in the practical problems of athletic preparation, but rupture in the forms of authority through which those problems were explained and governed. The article argues that strength training in the Olympic tradition is not merely a history of methods, but a history of how the athletic body became visible, meaningful, trainable, and true.

Key words: Olympic tradition, strength training, gymnasium, bodily knowledge, sport science.

Corresponding author

Nikola Stojanović
nikola987_nish@hotmail.com

Copyright: © 2026 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

INTRODUCTION

The history of strength training within the Olympic tradition cannot be adequately written as a simple history of exercises, implements, or training methods. Such a history would certainly have value: it could trace a path from stones, halteres, wrestling drills, and running tracks to barbells, resistance machines, force platforms, and laboratory testing. Yet this would leave untouched a deeper historical question. The central issue is not only how athletes are trained, but how different cultures make the trained body knowable. What counted as bodily excellence? Who possessed the authority to interpret athletic condition? How was effort distinguished from excess, preparation from exhaustion, discipline from harm? And how did knowledge of the athletic body move from the practical world of the gymnasium to the quantitative world of modern sport science?

This article approaches strength training as a problem in the history of bodily knowledge. It argues that the movement from ancient Greek athletic culture to contemporary strength and conditioning should not be understood as a linear progression from ignorance to science. Ancient athletics lacked modern physiology, biomechanics, and experimental training theory. Yet it was not a merely instinctive or unreflective practice. The surviving evidence points to a complex field of bodily knowledge in which athletic preparation, medicine, dietetics, philosophy, civic identity, religious meaning, and practical expertise overlapped (Golden, 2004; Kyle, 2015; Miller, 2004; Young, 2004). Modern sport science did not simply discover what antiquity lacked. It reorganized the athletic body within a different epistemic order, one grounded in measurement, standardization, quantification, prediction, and experimental control.

The earliest layers of Greek athletic culture already show that athletic performance was never only physical. In Homer's funeral games for Patroclus, competition distributes honor, gifts, rank, and memory within a heroic community, where the athlete's body is tested before witnesses, and the prize becomes a public sign of worth (Homer, trans. 1924, *Iliad* 23.257–897). Hesiod similarly links contest, strength, victory, divine favor, and household honor, presenting athletic success as a socially meaningful distinction rather than a purely bodily event (Hesiod, trans. 1914, *Theogony* 435–438). By the archaic and classical periods, this agonistic culture had become inseparable from the Panhellenic festivals. Pindar's epinician poetry transformed victory into myth, genealogy, civic prestige, moral reflection, and poetic memory (Pindar, trans. 2007, *Olympian* 8.54–66; *Nemean* 5.48–49). Pausanias' description of Olympia later shows the same logic in material form: statues, inscriptions, dedications, and punitive monuments preserved both the glory of victors and the moral boundaries of legitimate competition (Pausanias, trans. 1926, 5.21.2–18).

The institutional center of this athletic world was the gymnasium. To call it an ancient "gym" is to reduce it to a modern functional analogy. The gymnasium and palaestra were not merely places of physical exercise, but spaces of training, socialization, discipline, education, display, and civic formation (Crowther, 2007; Miller, 2004; Scanlon, 2002). They formed the body within a broader culture of visibility and judgment. The athlete

was trained, exposed, corrected, compared, praised, and regulated. The gymnasium, therefore, made the body intelligible through practice. It was an institution in which bodily capacity was not simply developed, but observed and interpreted.

This point is reinforced by ancient philosophical and medical distinctions between different arts of the body. In Plato's *Gorgias*, medicine and gymnastics appear as forms of expertise concerned with bodily care and formation (Plato, trans. 1997, *Gorgias* 464b). The distinction matters because it shows that the ancient body was not the object of a single undifferentiated practice. It could be healed, preserved, trained, beautified, strengthened, disciplined, or corrupted, depending on the art that claimed authority over it. Galen would later return to this distinction in *Thrasylbulus*, where he separates health-oriented bodily care from competitive athletic practices and criticizes forms of training that, in his view, damage rather than preserve health (Galen, trans. 1997, *Thrasylbulus*, K. 5.872–876). The history of athletic preparation in antiquity was therefore also a history of dispute. Medicine and gymnastics were adjacent arts, but their purposes were not identical.

The Hippocratic tradition adds a further layer to this problem. In *On Regimen*, health is not treated as a static possession but as a balance to be maintained through the regulated relation of food, exercise, sleep, season, age, environment, and individual constitution (Hippocrates, trans. 1931, *Regimen* 1.2; Bartoš, 2015). The body is understood dynamically as a changing system that requires adjustment. The same concern appears in *Aphorisms* 1.3, where the peak condition of athletes is described as precarious because it cannot remain fixed at its limit (Hippocrates, trans. 1931, *Aphorisms* 1.3). This is not modern periodization, but it is an ancient recognition that the maximal condition is unstable and must be managed. Athletic preparation was thus already situated within a broader concern with balance, timing, excess, and bodily risk.

No surviving ancient text is more important for this problem than Philostratus' *Gymnasticus*. Written in the third century CE, it is the closest extant approximation to an ancient treatise on athletic training and the best surviving evidence for *gymnastikē* as a distinct form of bodily knowledge (Philostratus, trans. 2014, *Gymnasticus*; Stocking, 2016). Its significance lies not only in the information it preserves, but in the kind of knowledge it defends. Philostratus presents *gymnastikē* as a legitimate *technē* of the body, one that stands beside medicine but is not reducible to it. His discussion of the tetrad, a four-day training cycle of preparation, intensification, relaxation, and a mediating day, suggests that ancient trainers conceptualized training as an ordered relation between stress and recovery (Philostratus, trans. 2014, *Gymnasticus* 47). Yet his criticism of the tetrad is equally important. He objects to rigid application when it fails to account for *kairos*, the right moment, appropriate timing, and individual circumstance (Philostratus, trans. 2014, *Gymnasticus* 54). The *Gymnasticus*, therefore, offers a powerful corrective to anachronism; it does not reveal modern training science hidden in antiquity, but an ancient debate about whether the body should be governed by fixed procedure or by expert judgment.

The modern Olympic movement transformed this ancient inheritance rather than restoring it. Pierre de Coubertin and the early Olympic movement appealed to

antiquity, but the modern Games were created within the political, educational, and cultural conditions of the late nineteenth century. They were shaped by nationalism, internationalism, liberal humanism, educational reform, imperial networks, and modern institutions. Guttmann's history of the modern Olympics makes clear that the Games were never merely athletic events, while Chatziefstathiou and Henry show that Olympism is a historically changing discourse rather than a timeless doctrine (Chatziefstathiou & Henry, 2012; Guttmann, 1992). The modern Olympic tradition, therefore, did not inherit the ancient gymnasium intact. It reimagined ancient athletic ideals through the language of education, moral reform, international peace, national representation, and eventually global spectacle.

The epistemological consequences of this transformation were profound. In the ancient gymnasium, the authority of training depended largely on embodied expertise, practical experience, observation, timing, reputation, and the trainer's capacity to judge the athlete in context. In modern sport science, authority increasingly depends on measurement. The body is no longer only seen, trained, and compared; it is tested, quantified, modeled, monitored, and standardized. Porter's account of quantification as a technology of distance, Daston and Galison's history of objectivity, and Rabinbach's analysis of the human motor together illuminate the modern transformation of the body into a measurable system of energy, fatigue, work, efficiency, and output (Daston & Galison, 2007; Porter, 1995; Rabinbach, 1990).

Contemporary strength and conditioning represents one of the clearest expressions of this modern regime. Strength is no longer treated as a single visible quality. It is divided into maximal force, rate of force development, power, hypertrophy, neuromuscular coordination, fatigue resistance, and sport-specific transfer. Modern training theory organizes these capacities through concepts such as overload, specificity, adaptation, fatigue management, periodization, velocity, and transfer to performance (Cormie et al., 2011a, 2011b; Suchomel et al., 2016; Zatsiorsky & Kraemer, 2006). The modern athletic body is therefore made knowable through variables, tests, models, and outcomes that can be compared across athletes and repeated across settings.

This article advances a historical argument about continuity and rupture. The continuity lies in the enduring problem of forming the athletic body: how to prepare it, strengthen it, regulate it, time its peak, protect it from excess, and make it victorious. The rupture lies in the changing forms of knowledge through which that problem has been understood. Ancient athletic culture framed bodily preparation through honor, memory, civic formation, dietetic balance, medical critique, and kairotic judgment. Modern Olympism and sport science reorganized the same practical problem through ideology, institutions, quantification, objectivity, experimentation, and performance optimization.

Accordingly, this study aims to reconstruct the transformation of strength training from an ancient regime of practical bodily knowledge, rooted in the gymnasium, dietetics, athletic expertise, and competitive judgment, into a modern regime of scientific knowledge structured by measurement, standardization, experimentation, and performance optimization within the Olympic tradition.

SOURCES AND METHOD

This study is designed as a qualitative historical-epistemological analysis of strength training within the Olympic tradition. It does not attempt to reconstruct a continuous technical lineage of exercises, implements, or training systems, nor does it evaluate ancient athletic practices according to modern physiological or experimental standards. Its purpose is instead to examine how knowledge about athletic preparation, bodily strength, effort, fatigue, recovery, readiness, and performance was produced, authorized, contested, and transformed across different historical contexts.

The primary source corpus was selected purposively according to its relevance to athletic competition, bodily preparation, regimen, gymnastics, and the interpretation of athletic excellence. Homer, Hesiod, Pindar, and Pausanias are used to examine the agonistic, symbolic, religious, and commemorative dimensions of athletic performance. Plato is used to clarify ancient distinctions between medicine, gymnastics, bodily care, and the arts claiming authority over the body. Hippocratic writings and Galen are used to analyze ancient medical and dietetic conceptions of exercise, nourishment, balance, health, peak condition, and athletic excess. Philostratus' *Gymnasticus* is treated as the central ancient source for *gymnastikē* as a distinct form of practical bodily knowledge, particularly in relation to training order, the tetrad, *kairos*, and the contested authority of the trainer.

The secondary literature was selected to support three interpretive levels. First, scholarship on ancient athletics, the gymnasium, and Greek athletic culture provides the historical and material context for interpreting ancient evidence (Crowther, 2007; Golden, 2004; Kyle, 2015; Miller, 2004; Scanlon, 2002; Young, 2004). Second, scholarship on ancient medicine, dietetics, and gymnastic knowledge is used to clarify the relationship between regimen, bodily balance, health, training, and competitive performance (Bartoš, 2015; Stocking, 2016). Third, scholarship on modern Olympism, physical culture, objectivity, quantification, and sport science is used to analyze the modern reorganization of training knowledge through institutional authority, measurement, laboratory practice, and performance optimization (Budd, 1997; Chatziefstathiou & Henry, 2012; Cormie et al., 2011a, 2011b; Daston & Galison, 2007; Guttmann, 1992; Porter, 1995; Rabinbach, 1990; Suchomel et al., 2016; Todd, 1995; Zatsiorsky & Kraemer, 2006).

The analysis follows a contextual source-critical method. Ancient texts are not treated as transparent descriptions of training practice, but as historically situated documents shaped by genre, purpose, audience, rhetoric, and intellectual context. Poetic sources are therefore used primarily to interpret the cultural meaning of victory, honor, praise, and commemoration rather than to reconstruct technical training procedures. Philosophical and medical sources are read as normative and polemical interventions into debates about the body, health, discipline, and excess. Philostratus is interpreted both as a valuable witness to ancient athletic training and as a rhetorically shaped text of the Roman Imperial period. Claims about ancient athletic knowledge are made only where the evidence can be supported by the character and limits of the source.

The study proceeds through comparative historical interpretation in three stages. First, it identifies how ancient athletic, medical, philosophical, and gymnastic sources conceptualized bodily preparation and athletic excellence. Second, it examines how modern Olympism and physical culture reconfigured ancient athletic ideals within new educational, ideological, institutional, and political settings. Third, it considers how contemporary sport science transformed strength training into an object of measurement, experimentation, modeling, and performance optimization. This sequence is not intended to establish direct continuity between ancient *gymnastikē* and modern strength and conditioning, but to trace changes in the authority, language, and evidentiary basis of knowledge about the athletic body.

A central methodological concern is avoiding presentism. Modern terms such as “strength training,” “periodization,” “adaptation,” “training load,” and “sport science” are used as analytical categories, not as direct equivalents of ancient concepts. The comparison between ancient *gymnastikē* and modern strength and conditioning is therefore based on functional analogy rather than conceptual identity. Ancient and modern systems may address similar practical problems, fatigue, recovery, peak condition, training order, bodily excess, and performance readiness, but they explain and legitimize those problems through different epistemic frameworks.

Accordingly, the study does not ask whether the ancient Greeks possessed modern sport science. They did not. The more historically appropriate question is how ancient athletic cultures produced practical knowledge about the trained body, how that knowledge was disputed by medical and philosophical authorities, and how the modern Olympic and scientific worlds later reorganized bodily preparation through measurement, standardization, objectivity, and experimental control. This methodological position allows ancient athletic knowledge to be taken seriously without anachronistically translating it into modern scientific terms.

RESULTS

The source analysis identified six historical regimes through which athletic strength and bodily preparation were understood within the Olympic tradition: agonistic commemoration, gymnasium-based practical training, medical and dietetic regulation, *gymnastikē* as specialized expertise, modern Olympism and physical culture, and laboratory-based sport science. These regimes are summarized in Table 1. The sections that follow present the principal source-based findings supporting this sequence.

Table 1. Historical Regimes of Bodily Knowledge in the Olympic Tradition

Historical regime	Representative sources	Main finding	Link to discussion
Agonistic and commemorative body	Homer; Hesiod; Pindar; Pausanias	Athletic strength was publicly recognized through contests, prizes, honors, and memorials.	Strength first appears as social and symbolic excellence rather than physiological abstraction.

Historical regime	Representative sources	Main finding	Link to discussion
Gymnasion and practical training	Plato; Miller; Kyle; Crowther; Scanlon	The gymnasion made the athletic body visible, trainable, comparable, and interpretable.	Ancient training knowledge was practical, institutional, and embodied.
Medical and dietetic regulation	Hippocratic On Regimen; Aphorisms; Galen; Bartoš	Bodily preparation was framed through balance, regimen, health, and the danger of excess.	Athletic preparation was contested between health-oriented and victory-oriented aims.
Gymnastikē as technē	Philostratus; Stocking	Philostratus presents training as specialized expertise governed by timing, judgment, and kairos.	Ancient athletic knowledge was sophisticated but not equivalent to modern sport science.
Modern Olympism and physical culture	Guttman; Chatziefsthathiou & Henry; Todd; Budd	Modern Olympism reinterpreted antiquity through education, ideology, nationalism, spectacle, and body culture.	The Olympic body was re-symbolized within modern institutions.
Laboratory and sport science	Porter; Daston & Galison; Rabinbach; Zatsiorsky & Kraemer; Cormie et al.; Suchomel et al.	Strength became a measurable and experimentally organized performance variable.	The laboratory transformed bodily knowledge into quantified performance science.

Note: Sources are representative rather than exhaustive. The table summarizes the analytical sequence of the Results section and indicates how each finding leads into the Discussion.

Athletic Strength as Public Excellence and Commemorative Value

The earliest source layer shows that athletic performance was embedded in a culture of agonistic recognition before it became an object of technical or scientific analysis. In Homer’s funeral games for Patroclus, competition distributes honor, rank, gifts, and memory within a heroic community; the athletic body is tested before witnesses and made meaningful through public judgment (Homer, trans. 1924, Iliad 23.257–897; Kyle, 2015). Hesiod similarly links contest, strength, victory, divine favor, and household honor, suggesting that athletic excellence was understood as a visible, socially recognized capacity rather than an abstract physiological property (Hesiod, trans. 1914, Theogony 435–438; Young, 2004).

Pindar’s epinician poetry develops this agonistic logic into a language of victory, aretē, civic prestige, lineage, divine sanction, and poetic memory (Pindar, trans. 2007, Olympian 8.54–66; Nemean 5.48–49; Kyle, 2015). Pausanias’ account of Olympia shows the same structure in material form. Statues, inscriptions, dedications, and punitive monuments preserved both the memory of victory and the moral boundaries

of legitimate competition. The Zanes statues, funded by fines for rule violations, indicate that Olympic victory was not only celebrated but also normatively regulated (Pausanias, trans. 1926, 5.21.2–18). The first finding is therefore that ancient athletic strength was socially embedded: it became meaningful through contest, witness, honor, memory, and institutional recognition.

The Gymnasion as an Institutional Space of Bodily Knowledge

The second finding concerns the gymnasion as the principal ancient institution in which athletic bodies were trained and interpreted. The evidence does not support reducing the gymnasion to a simple exercise facility. The gymnasion and palaistra were spaces of training, instruction, socialization, education, civic formation, and bodily display (Crowther, 2007; Golden, 2004; Miller, 2004; Scanlon, 2002). Miller's reconstruction of the gymnasion and palaistra shows that athletic preparation was embedded in a broader environment of discipline, teaching, and social visibility rather than confined to physical conditioning alone (Miller, 2004).

The vocabulary of Greek athletics reinforces this institutional and epistemic structure. Terms such as *gymnos*, *gymnazein*, *gymnastes*, *agon*, *athlon*, and *athletes* reveal a culture in which nudity, contest, prize, training, and judgment were organized through shared categories of meaning (Miller, 2004). Plato's distinction between gymnastics and medicine provides the conceptual background for this division of bodily expertise: medicine addressed health and restoration, whereas gymnastics concerned formation, condition, and preparation (Plato, trans. 1997, *Gorgias* 464b). The gymnasion, therefore, emerges as an epistemic space in which the athletic body was not only exercised but observed, corrected, compared, disciplined, and known.

Regimen, Balance, and the Medical Problem of Athletic Excess

The third finding is that ancient medical and dietetic sources conceptualized bodily preparation in terms of balance, proportion, and regulation. In the Hippocratic *On Regimen*, food and exercise are treated as opposing but complementary forces: exercise expends the body's resources, while food replenishes them. Health depends on their appropriate proportion in relation to constitution, age, season, environment, and way of life (Hippocrates, trans. 1931, *Regimen* 1.2; Bartoš, 2015). This is not a theory of strength training in the modern sense, but it shows that ancient medical thought understood bodily condition as dynamic, relational, and dependent on regulated practice.

The Hippocratic Aphorisms add that extreme good condition in athletes is precarious because it cannot remain fixed at its limit (Hippocrates, trans. 1931, *Aphorisms* 1.3). Stocking places this concern within broader ancient ideas of bodily periodicity and the management of athletic readiness (Stocking, 2016, pp. 91–93). Galen develops the tension more explicitly by distinguishing health-oriented bodily care from competitive athletic training, which he treats as potentially excessive when victory overrides health (Galen, trans. 1997, *Thrasylbulus*, K. 5.872–876). The medical

and dietetic evidence, therefore, establishes a regime of bodily knowledge in which athletic preparation was assessed through balance, moderation, and the danger of excess.

Philostratus and Gymnastikē as Practical Expertise

The fourth and most central finding concerns Philostratus' *Gymnasticus*. The text preserves the strongest ancient evidence for gymnastikē as a distinct form of practical bodily knowledge. Stocking characterizes the *Gymnasticus* as the closest surviving approximation to an ancient treatise on athletic training and as a crucial source for understanding gymnastics as an underrepresented form of ancient bodily expertise (Philostratus, trans. 2014, *Gymnasticus*; Stocking, 2016). Philostratus presents athletic training neither as mere habit nor as medicine, but as a specialized technē concerned with preparing the competitive body.

The tetrad is the key example. In *Gymnasticus* 47, Philostratus describes a four-day training cycle consisting of preparation, intensification, relaxation, and a mediating or intermediate day (Philostratus, trans. 2014, *Gymnasticus* 47). Stocking argues that this sequence may be cautiously compared with modern ideas of training periodicity, though it should not be equated with modern periodization (Stocking, 2016). Philostratus' criticism of the tetrad is equally important. In *Gymnasticus* 54, he criticizes fixed systems that ignore *kairos*, the appropriate moment and circumstance (Philostratus, trans. 2014, *Gymnasticus* 54; Stocking, 2016). The finding is that ancient gymnastikē was not simple rule-following; it depended on practical judgment applied to a changing body.

Modern Olympism and the Reorganization of Athletic Meaning

The fifth finding concerns the modern transformation of the Olympic tradition. The modern Olympic movement did not simply restore ancient athletics; it reinterpreted antiquity through the political, educational, and moral concerns of the late nineteenth and twentieth centuries. Guttmann emphasizes that politics, broadly understood, has always been part of the modern Olympics, while Chatziefstathiou and Henry show that Olympism is not a timeless doctrine but a historically changing discourse shaped by institutional, political, and cultural contexts (Chatziefstathiou & Henry, 2012; Guttmann, 1992).

The modern period also introduced new forms of physical culture that reactivated classical imagery while transforming the body into an object of display, commerce, discipline, and national or imperial symbolism. Budd's account of physical culture and Sandow shows how antique bodily ideals were reorganized through modern markets, spectacle, gender norms, and imperial culture (Budd, 1997). Todd's history of barbells, dumbbells, and Indian clubs similarly shows that modern resistance training equipment developed through a complex history of implements, therapeutic practices, commercial systems, and technical innovation rather than through a direct line from antiquity to modern strength training (Todd, 1995). The modern strong body was therefore reconstructed rather than simply inherited.

Quantification, Objectivity, and the Laboratory Body

The final finding is that contemporary strength training belongs to a modern regime of quantified and objectified bodily knowledge. Porter's account of quantification as a "technology of distance" explains why modern institutions increasingly rely on numbers, standardized measures, and impersonal procedures to create trust across distance (Porter, 1995). Daston and Galison's history of objectivity further shows that modern scientific authority developed through changing epistemic virtues, including mechanical objectivity and trained judgment (Daston & Galison, 2007). In this context, the athletic body became an object to be tested, measured, compared, classified, and optimized.

Rabinbach's account of the "human motor" adds another layer to this transformation by showing how the modern body was increasingly conceptualized in terms of energy, fatigue, work, productivity, and efficiency (Rabinbach, 1990). Contemporary strength and conditioning literature represents the most developed form of this laboratory-oriented regime. Zatsiorsky and Kraemer organize strength training through adaptation, specificity, intensity, variation, and periodization (Zatsiorsky & Kraemer, 2006). Cormie et al. analyze maximal neuromuscular power through biological, mechanical, and training-specific factors, while Suchomel et al. link muscular strength to force-time characteristics, sprinting, jumping, change of direction, sport-specific performance, and reduced injury risk (Cormie et al., 2011a, 2011b; Suchomel et al., 2016). Modern strength training, therefore, defines the athletic body through measurable variables and experimentally organized interventions.

DISCUSSION

This study examined the historical and epistemological transformation of strength training within the Olympic tradition by asking how knowledge about athletic preparation, bodily strength, effort, recovery, readiness, and performance was produced, authorized, contested, and reorganized across different historical contexts. The six regimes identified in the Results should not be read as a simple, chronological sequence of technical steps. They are better understood as historically distinct ways of making the athletic body intelligible. The central finding is that strength training in the Olympic tradition is not merely a history of better methods, but a history of changing authority: who could define bodily excellence, how the trained body was interpreted, and what counted as credible knowledge about performance.

The argument begins from a basic historical premise: strength is biological, but it is never only biological. As a bodily capacity, strength exists across time; as an object of knowledge, it is shaped by the cultural, institutional, and epistemic systems that recognize, train, regulate, measure, and compare it. This distinction allows us to avoid two misleading narratives. The first is the romantic view that ancient Greek athletics already contained the principles of modern sport science in embryonic form. Such a reading is tempting because some ancient concerns appear familiar: Hippocratic regimen resembles training regulation, Philostratus' tetrad resembles

cyclical training, and the story of Milo is often invoked as a classical image of progressive overload (Todd, 1995). Yet resemblance at the level of practical problem does not establish identity at the level of concept. The second misleading narrative is the dismissive view that ancient training was merely empirical, unreflective, or intellectually primitive. The evidence does not support this either. Ancient athletic cultures produced sophisticated forms of bodily observation, regimen, medical critique, institutional training, and practical expertise, even though these did not operate within the conceptual or experimental framework of modern sport science (Bartoš, 2015; Miller, 2004; Stocking, 2016).

The first regime identified in the Results shows that ancient athletic strength was initially constituted as public excellence before it became a technical or physiological object. Homer's funeral games for Patroclus present athletic performance as a public drama of competition, prize, rank, honor, and memory (Homer, trans. 1924, *Iliad* 23.257–897). Hesiod links contest and victory with divine favor and household honor (Hesiod, trans. 1914, *Theogony* 435–438), while Pindar transforms athletic success into poetry, genealogy, civic prestige, divine sanction, and enduring fame (Pindar, trans. 2007, *Olympian* 8.54–66; *Nemean* 5.48–49). Pausanias shows the same logic in material form: Olympia preserved athletic achievement through statues, inscriptions, dedications, and monuments that also marked the moral boundaries of legitimate victory (Pausanias, trans. 1926, 5.21.2–18). In this world, strength was not an isolated muscular property. It was a social fact produced by contest and sustained by commemoration.

This point shifts the history of strength training away from the search for exercises alone. Before strength was programmed, measured, or experimentally studied, it was recognized. The victor's body acquired public reality through institutions that witnessed, ranked, praised, and remembered performance. Scholarship on ancient athletics has consistently shown that Greek sport must be understood in relation to religion, civic identity, education, sexuality, spectacle, competition, and public value rather than through modern sport categories alone (Crowther, 2007; Golden, 2004; Kyle, 2015; Miller, 2004; Scanlon, 2002; Young, 2004). The ancient Olympic body was therefore not simply a trained body. It was a body whose excellence had to be seen, judged, celebrated, and preserved.

The gymnasium introduced a second regime by shifting the athletic body from public recognition after competition to disciplined formation before competition. It was not merely a site of physical exercise, but an institution in which bodies were trained, observed, corrected, compared, socialized, and educated (Miller, 2004). This setting produced a form of bodily knowledge grounded in proximity and practice. The trainer, the athlete, the rhythm of exercise, the visible signs of fatigue or readiness, and the norms of the athletic community together made the body interpretable. Plato's distinction between medicine and gymnastics confirms that bodily expertise was already differentiated in antiquity: medicine concerned healing and preservation, whereas gymnastics concerned formation and condition (Plato, trans. 1997, *Gorgias* 464b). The gymnasium, therefore, made the athletic body knowable through embodied practice rather than through abstract measurement.

The medical and dietetic tradition complicated this practical regime by introducing the problem of excess. In the Hippocratic *On Regimen*, food and exercise are presented as opposing but complementary forces whose balance sustains health (Hippocrates, trans. 1931, *Regimen* 1.2). Bartoš's interpretation of Hippocratic dietetics confirms that regimen was a major framework for thinking about the relation between body, environment, activity, and balance (Bartoš, 2015). The Hippocratic *Aphorisms* add that the extreme condition of athletes is precarious because it cannot remain fixed at the limit (Hippocrates, trans. 1931, *Aphorisms* 1.3). Galen sharpens the tension by distinguishing health-oriented bodily care from the potentially excessive practices of competitive athletics (Galen, trans. 1997, *Thrasybulus*, K. 5.872–876). The trained athlete could be admired as a victor and criticized as a body distorted by the pursuit of victory. Athletic preparation was therefore never neutral; it was already contested among the public authority of competition, the practical authority of the trainer, and the medical authority of health.

Philostratus' *Gymnasticus* is the decisive ancient case because it defends *gymnastikē* as a distinct form of practical expertise. Philostratus presents gymnastics as a *technē*: not medicine, not habit, and not simple exertion, but an art concerned with preparing the competitive body (Philostratus, trans. 2014, *Gymnasticus*; Stocking, 2016). The tetrad is the clearest example. Its four-day sequence of preparation, intensification, relaxation, and a mediating day appears to invite comparison with modern cyclical training (Philostratus, trans. 2014, *Gymnasticus* 47). Yet the stronger historical point is not that the tetrad anticipates modern periodization. It is that Philostratus criticizes fixed systems when they ignore *kairos*, the right moment, circumstance, and individual condition (Philostratus, trans. 2014, *Gymnasticus* 54). Stocking's analysis is crucial here because it shows that *Gymnasticus* should not be read as a hidden manual of ancient sport science, but rather as a text that negotiates the authority and limits of athletic expertise (Stocking, 2016).

This gives ancient *gymnastikē* its deepest intellectual value. It was not a primitive form of modern training theory, but a different rationality of training. Its central virtue was not numerical precision, but *kairotic* judgment. The trainer's expertise lay in knowing when to intensify, when to withhold, when to relax, when to modify, and when a system had become harmful because it no longer responded to the athlete before him. This finding makes the usual opposition between "science" and "experience" inadequate. Philostratus' trainer is not anti-rational. He is rational in a situated, practical, and interpretive way.

Modern Olympism transformed this ancient inheritance by turning selected images of antiquity into a modern educational, political, and institutional project. The modern Olympic Games did not revive the ancient Olympics as they were. They translated antiquity into a discourse of moral education, international reconciliation, disciplined youth, national representation, and global spectacle. Guttmann's history of the modern Games shows that politics has always been inseparable from the Olympic project, while Chatziefstathiou and Henry demonstrate that Olympism is a historically changing discourse rather than a timeless essence (Chatziefstathiou & Henry, 2012; Guttmann, 1992). Modern Olympism, therefore, did not simply inherit

the ancient athletic body. It re-authored it. This re-authoring also changed the cultural identity of the strong body. Nineteenth- and early twentieth-century physical culture reactivated classical bodily imagery while embedding it in commerce, spectacle, masculinity, health reform, imperial culture, and the emerging market for exercise systems. Budd's account of physical culture and Sandow shows how the classical body became a modern object of display, discipline, and body politics (Budd, 1997). Todd's history of barbells, dumbbells, and Indian clubs shows that modern resistance training emerged through technical innovation, commercial circulation, therapeutic practice, and cultural mythmaking rather than through a simple continuation of ancient implements (Todd, 1995). The modern strong body was therefore not merely a continuation of the ancient athlete. It was a new cultural construction that used antiquity as symbolic capital.

The final regime is the laboratory body. Modern sport science reorganized strength through measurement, quantification, objectivity, and experimentation. Porter's analysis of quantification explains why numbers became central to modern trust: they make comparison, standardization, and authority possible across distance (Porter, 1995). Daston and Galison's history of objectivity shows that scientific truth depends on historically specific epistemic virtues, including mechanical objectivity and trained judgment (Daston & Galison, 2007). Rabinbach's account of the human motor adds the broader intellectual context in which bodies came to be understood through concepts such as energy, fatigue, work, efficiency, and productivity (Rabinbach, 1990). Together, these works explain why the modern athletic body could become an object of testing, modeling, monitoring, and optimization. Contemporary strength and conditioning science represents this transformation in its most developed form. Zatsiorsky and Kraemer organize strength training around adaptation, specificity, intensity, variation, and periodization (Zatsiorsky & Kraemer, 2006). Cormie, McGuigan, and Newton analyze maximal neuromuscular power through biological, mechanical, and training-specific mechanisms (Cormie et al., 2011a, 2011b). Suchomel, Nimphius, and Stone show that muscular strength is related to sprinting, jumping, change of direction, potentiation, sport-specific performance, and injury reduction (Suchomel et al., 2016). In this regime, strength becomes divisible, measurable, and trainable through explicit manipulation of variables. The body is no longer known primarily through victory, honor, trainerly judgment, or medical moderation, but through data, mechanisms, protocols, and outcomes.

The contrast between ancient *gymnastikē* and modern sport science should not be framed as a simple replacement of error by truth. A stronger interpretation is that modern science changes the conditions under which bodily knowledge becomes authoritative. In the ancient gymnasium, authority was local, embodied, and relational. It depended on the trainer, the athlete, the circumstance, and the occasion. In modern science, authority increasingly depends on measurement, reproducibility, abstraction, and comparison. The ancient trainer asked what this athlete needed at this moment. The modern scientist asks which variables explain and improve performance across athletes, conditions, and populations. Both questions matter, but they belong to different epistemic worlds.

The most compelling historical synthesis is therefore continuity of bodily problems and rupture of knowledge systems. The problems of training are persistent: effort, fatigue, recovery, readiness, excess, adaptation, and performance. The languages through which these problems are understood, however, are historically discontinuous. Ancient athletics were framed by honor, regimen, civic formation, medical balance, and *kairos*. Modern sport science frames them through physiology, biomechanics, quantification, and optimization. This distinction allows ancient and modern training to be connected without collapsing them into a single conceptual system. This argument changes how the history of strength training should be written. It should not be written only as a history of implements, exercises, strongmen, training systems, or scientific discoveries, although all of these matter. It should also be written as a history of epistemic regimes: the changing ways in which the athletic body was made visible, credible, trainable, and true. From this perspective, the gymnasium and the laboratory are not simply places where training occurs. They are institutions that produce different kinds of athletic bodies. The gymnasium produces the body of practice, judgment, civic formation, and agonistic readiness. The laboratory produces the body of variables, mechanisms, measurement, and intervention.

Therefore, the study contributes to Olympic historiography by showing that the Olympic body is not historically stable. The body that appears in Homeric competition, Pindaric praise, the gymnasium, Hippocratic regimen, Philostratan *gymnastikē*, Coubertinian Olympism, modern physical culture, and contemporary sport science is never simply the same body under different names. It is repeatedly redefined as a heroic body of honor, a civic body of education, a medical body of balance and excess, a technically prepared body of *kairos*, a national and ideological body, and, finally, a measurable body of performance optimization. The Olympic tradition is therefore not only a continuity of games, symbols, and institutions. It is also a continuity of redefinitions of the athletic body.

This historical perspective also speaks back to contemporary sport science. To say that modern training science is historically situated does not weaken it; on the contrary, it clarifies its power. Modern strength and conditioning is effective precisely because it can measure, isolate, compare, and manipulate performance variables. Yet the ancient evidence reminds us that athletic preparation has always involved more than measurement alone. The athlete is also a situated body, interpreted in time, shaped by institutions, motivated by ideals, exposed to risk, and judged by standards that are not purely physiological. Philostratus's insistence on *kairos* remains historically valuable not because it can replace science, but because it preserves the problem of timing and judgment within any training system.

However, several limitations should be acknowledged. The ancient evidence is fragmentary, genre-bound, and often mediated by elite concerns in literary, philosophical, medical, or rhetorical fields. Poetic texts do not describe training practice directly; medical texts often evaluate athletics from the perspective of health; and Philostratus' *Gymnasticus*, although indispensable, is not a modern technical manual. The study, therefore, does not claim to reconstruct ancient strength-training programs in detail. Its contribution is historical and epistemological: it identifies the

forms of bodily knowledge through which athletic preparation was understood and compares them with the modern scientific reorganization of training.

CONCLUSION

This study has argued that the history of strength training within the Olympic tradition should not be understood as a simple progression from ancient practice to modern science. It is better understood as a history of changing regimes of bodily knowledge. In the ancient world, athletic strength was made meaningful through contest, honor, public memory, gymnasium-based practice, regimen, and the situated judgment of the trainer. In modern Olympism and contemporary sport science, the athletic body was reorganized through ideology, institutions, quantification, objectivity, experimentation, and performance optimization. The central continuity across this long history is the practical problem of preparing the body for excellence: managing effort, fatigue, recovery, readiness, excess, and performance. The central rupture lies in the authority through which these problems were explained and governed. Ancient athletics relied on embodied observation, practical experience, medical and dietetic balance, and *kairos*. Modern sport science relies on measurement, standardization, modeling, and controlled intervention. Both are serious forms of bodily knowledge, but they belong to different epistemic worlds. The take-home message is that strength training in the Olympic tradition is not merely a history of exercises, methods, or equipment. It is a history of how cultures have made the athletic body visible, meaningful, trainable, and true — from the gymnasium to the laboratory.

REFERENCES

1. Bartoš, H. (2015). *Philosophy and dietetics in the Hippocratic On Regimen: A delicate balance of health*. Brill. <https://doi.org/10.1163/9789004289550>
2. Budd, M. A. (1997). *The sculpture machine: Physical culture and body politics in the age of empire*. Macmillan Press. <https://doi.org/10.1057/9780230377127>
3. Chatziefstathiou, D., & Henry, I. P. (2012). *Discourses of Olympism: From the Sorbonne 1894 to London 2012*. Palgrave Macmillan. <https://doi.org/10.1057/9781137035561>
4. Cormie, P., McGuigan, M. R., & Newton, R. U. (2011a). Developing maximal neuromuscular power: Part 1—Biological basis of maximal power production. *Sports Medicine*, 41(1), 17–38. <https://doi.org/10.2165/11537690-000000000-00000>
5. Cormie, P., McGuigan, M. R., & Newton, R. U. (2011b). Developing maximal neuromuscular power: Part 2—Training considerations for improving maximal power production. *Sports Medicine*, 41(2), 125–146. <https://doi.org/10.2165/11538500-000000000-00000>
6. Crowther, N. B. (2007). *Sport in ancient times*. Praeger.
7. Daston, L., & Galison, P. (2007). *Objectivity*. Zone Books.
8. Galen. (1997). *Selected works* (P. N. Singer, Trans.). Oxford University Press.
9. Golden, M. (2004). *Sport in the ancient world from A to Z*. Routledge.

10. Guttmann, A. (1992). *The Olympics: A history of the modern games*. University of Illinois Press.
11. Hesiod. (1914). Theogony. In H. G. Evelyn-White (Trans.), *The Homeric hymns and Homerica*. William Heinemann; G. P. Putnam's Sons.
12. Hippocrates. (1931). *Hippocrates: Vol. 4. Nature of man. Regimen in health. Humours. Aphorisms. Regimen 1-3. Dreams* (W. H. S. Jones, Trans.). Harvard University Press.
13. Homer. (1924). *The Iliad: Vol. 2. Books 13-24* (A. T. Murray, Trans.). Harvard University Press.
14. Kyle, D. G. (2015). *Sport and spectacle in the ancient world* (2nd ed.). Wiley Blackwell.
15. Miller, S. G. (2004). *Ancient Greek athletics*. Yale University Press.
16. Pausanias. (1926). *Description of Greece: Vol. 2. Books 3-5* (W. H. S. Jones & H. A. Ormerod, Trans.). Harvard University Press.
17. Philostratus. (2014). *Heroicus. Gymnasticus. Discourses 1 and 2* (J. Rusten & J. König, Eds. & Trans.). Harvard University Press.
18. Pindar. (2007). *The complete odes* (A. Verity, Trans.; S. Instone, Intro. & Notes). Oxford University Press.
19. Plato. (1997). Gorgias (D. J. Zeyl, Trans.). In J. M. Cooper & D. S. Hutchinson (Eds.), *Plato: Complete works* (pp. 791-869). Hackett Publishing Company.
20. Porter, T. M. (1995). *Trust in numbers: The pursuit of objectivity in science and public life*. Princeton University Press.
21. Rabinbach, A. (1990). *The human motor: Energy, fatigue, and the origins of modernity*. Basic Books.
22. Scanlon, T. F. (2002). *Eros and Greek athletics*. Oxford University Press.
23. Stocking, C. H. (2016). The use and abuse of training "science" in Philostratus' *Gymnasticus*. *Classical Antiquity*, 35(1), 86-125. <https://doi.org/10.1525/ca.2016.35.1.86>
24. Suchomel, T. J., Nimphius, S., & Stone, M. H. (2016). The importance of muscular strength in athletic performance. *Sports Medicine*, 46(10), 1419-1449. <https://doi.org/10.1007/s40279-016-0486-0>
25. Todd, J. (1995). From Milo to Milo: A history of barbells, dumbbells, and Indian clubs. *Iron Game History*, 3(6), 4-16.
26. Young, D. C. (2004). *A brief history of the Olympic Games*. Blackwell Publishing.
27. Zatsiorsky, V. M., & Kraemer, W. J. (2006). *Science and practice of strength training* (2nd ed.). Human Kinetics.

Received on 18.06.2026.

Accepted on 15.07.2026.