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Timing over occurrence: a systematic literature review of how sexual activity and masturbation affect athletic performance

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ABSTRACT

The effects of sexual activity and masturbation before exercise or competition on athletic performance remain unclear. This systematic review examined their short and long-term effects on physical performance and physiological responses, proposed underlying mechanisms, and methodological limitations in the existing literature. A systematic search of the Scopus database was conducted according to PRISMA 2020 guidelines, identifying 281 records. Following title and abstract screening and application of predefined eligibility criteria, 50 articles were included in the review. Of these, 10 directly investigated the relationship between sexual activity or masturbation and athletic performance. The relevant evidence was synthesized thematically using Braun and Clarke's framework. A meta-analysis was not performed because of substantial heterogeneity in study outcomes and measures. Overall, sexual activity or masturbation performed more than two hours before exercise or competition did not appear to significantly affect strength, endurance, physical performance, or reaction time. Findings for shorter intervals were inconsistent. Psychological readiness and sleep quality may influence performance, while testosterone fluctuations, autonomic arousal, and perceived exertion were the most frequently proposed physiological mechanisms. However, small sample sizes, reliance on self-reported data, and inconsistent definitions of sexual activity limited the interpretation of causal relationships. Current evidence does not support strict abstinence from sexual activity or masturbation before competition. Individualized, evidence-based recommendations may be more appropriate for athletes. Further research using larger and more diverse samples, standardized definitions, objective measurements, and rigorous study designs is needed to clarify the relationship across different sports and levels of competition.



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Introduction

Athletes of all levels of competition can only reach their highest performance through the interaction of multiple physiological, psychological, and behavioral components. They and their trainees look closely at even subtle effects of strength, stamina and reaction speed. Sporting legends have included sex as one of the behaviors that can affect performance, and this idea is not going away. Coaches of boxers, runners, and team sport players have long given the advice of avoiding sex a few pre match days because they assumed that

ejaculation drains testosterone reserves, weakens muscles, or lessens competitiveness in the ring or pitch (Zavorsky & Brooks, 2022). However, research examining the impact of different types of sexual activity, such as masturbation, on the performance is a rather small one which has been published separately at various times and has, to date, been compiled into only one systematic review with meta-analysis (Zavorsky & Brooks, 2022), which itself predates several of the most recent interventional and scoping studies (e.g., Dhahbi et al., 2026; Niu & Santtila, 2024; Zhou et al., 2026) and did not integrate the adjacent endocrine, orthopedic, and pharmacological literatures that may explain mechanism. This review addresses that specific gap by updating and extending the existing synthesis with a PRISMA 2020-compliant search and a mechanism-focused thematic analysis.

The particular topic dealt with in this review is much more specific than that of overall sexuality behavior: it centers on the immediate as well as later effects on physical exercise-related sports performance measures like power, muscle endurance, reaction time, and recovery from engaging in sexual activity or masturbation in the hours or days before doing the physical activity (Dhahbi et al., 2026). There are also related areas of study: for example, the impact of pre-match sex on football players (Peleg-Sagy et al., 2023) and the temporary biomechanical effects of sexual activity on the strength of the lower-body muscles of men (Kirecci et al., 2022) all of these researches are showing that the issue is not just based on hearsay but has actually generated serious empirical works even though these works are somewhat spread out over specialist urology, sports medicine, and exercise physiology literature not having citation links.

More and more studies are starting to shed light on the interaction between sexual activity and training/competition readiness. A number of controlled and cross-sectional studies have looked into various aspects: for example, how the level of physical exertion after intercourse affects testosterone and cortisol levels in men after they have done intense strength training (Fernández-Lázaro et al., 2026), what the influence is of sexual activity before a match on the performance of an amateur athlete (Alonso-Aubin et al., 2023), sexual issues among Masters-level athletes (Wang et al., 2023), how sexual function is linked to the amount of physical training done by women (Sade et al., 2022), and whether running in general affects women's sexual function (de Melo Silva et al., 2023). All these together hint at a two-way interaction where the activity and function of the reproductive system are shaped by exercising just as exercising is also probably affected by that activity to some extent. We just don't know much of this yet as there is no single article that summarizes all the findings.

The development of both methods and research topics in recent years has greatly contributed to this literature being expanded beyond basic performance indicators. Sleep, a very critical factor which has been identified more lately as a component that promotes recovery and performance, has been found to be positively correlated with sexual activity and masturbation in an athlete population (Vitale et al., 2026). Furthermore, physical therapy interventions have looked at if structured exercise programs would help a man control his sexual ejaculations (Niu & Santtila, 2024); another line of research explores if a regular exercise intervention in male university students brings an improvement in ejaculatory control (Zhou et al., 2026). Investigations related to sport have also started such as studies on libido and sexual function in female athletes (Vollrath et al., 2026) and hypersexuality patterns among kayakers as a function of the gender and perceived stress (Szabo et al., 2024), which is a clear indication that the sexual-performance link is being studied in a very broad variety of academic fields and human groups as well as just traditional force or stamina sports.

Despite this growth of information, the first huge gap is an almost full lack of standardized definitions and measurement windows that can be used for comparing sexual activities following orthopedic procedures relevant to athletes. It is hard to compare the studies by Lutz et al. (2021) about sexual activity after patellofemoral reconstruction and by Mazlum et al. (2022) who did the study on sexual activity after anterior cruciate ligament reconstruction or to Hubbard et al. (2025) who looked into the effects of different orthopaedic procedures (hip arthroscopy vs. periacetabular osteotomy) on sexual activities. The only ones who tried to use similar or identical definitions were Di Martino et al. (2024) who studied the sexual activity following Total Hip Arthroplasty in young adults and other researchers who have examined pre-competition sexual intercourse or masturbation in healthy athletes. As the use of different definitions, measurements, as well as the outcome variables makes it difficult to pool the studies on a mathematical level or to reach generalizable conclusions regarding sexual activity dose, timing, or modality that may be useful, this issue remains unresolved.

Another shortcoming is theoretical and mechanistic. Even though endocrine explanations are often used to argue why pre-game abstinence from sexual activity is good, how sexual activity physiologically connects to performance is rarely studied empirically in one single research work. The relevant endocrine literature

mainly focuses on hypothalamic-pituitary regulation of sexual function (Mora Porta et al., 2024), the more general functions of androgens in health and well-being (Bianchi et al., 2021), the hormonal basis of sarcopenia and frailty as a model for hormone-performance connections (Kamwa et al., 2021), and specific testosterone-optimizing methods among athletes (Lazarev et al., 2026). Nevertheless, these endocrine studies are seldom combined with behavioral or performance-anxiety models such as those outlining remediation techniques for performance anxiety based on sex, sport, and stage (Rowland et al., 2021). Consequently, the field is characterized by physiological and psychological theories running parallel with each other rather than being evaluated together.

Getting this evidence together more quickly is especially important since it's in such closeness to drug taking and medication-related contexts that directly impact athletes' health and whether they qualify to compete. Worried about possible exposure to sperm that could result in falsified test results, Handelsman and colleagues (2022) reported that the most effective way to get rid of sperm in urine is by waiting for about four hours or by having a "pee test" done before the main one. In terms of health and detection, there's a large scope from which testosterone and anabolic-androgenic steroid drug doping has an influence on human health. Young (2023) wrote that steroid abuse and chemsex drug use are behaviors that are aimed to enhancing one's performance and image and, as such, they can co-occur. Zaami et al. (2021) said that there was a correlation between the use of drugs for appearance and performance enhancement and symptoms of eating disorder (which can also be seen as a form of muscle dysmorphia) or a disturbed body image. This was an issue that the authors highlighted. Without a structured summary or synthesis of the current knowledge, all the parties involved, especially athletes and coaches, are only going to see and interpret the issue based on rumors and a few case studies. As a matter of fact, they will most certainly have to use pharmacological knowledge that was not originally written for their use, which will result in their making of wrong decisions with regard to both their performance and their life as a whole. In light of these deficiencies (gaps), this review is shaped by the following research question :

RQ1: How does sexual activity or masturbation performed in the 24 or so hours prior to a game or training session affect the athlete and the physical changes that result?

RQ2: Physiological, endocrine and psychological factors through which sexuality and ejaculation have been linked to performance of sports.

RQ3: What methodological features and deficiencies constrain the present evidence that looks at how masturbating, having sex, and doing sports affect performance across different sexes, ages, and levels of competitiveness?

Addressing RQ1 helps to provide a summarized, PRISMA-compliant assessment regarding the trend and effectiveness of interventions among the ten studies primarily focusing on this issue thereby allowing the research landscape going beyond standalone single-study findings. Another line of inquiry explores mechanism RQ2 The question brings up a systematic comparison of different mechanistic theories explaining the phenomenon putting hormonal, autonomic, and psychological explanations beside each other so that the studies will be able to distinguish between them based on evidence rather than taking only one as granted. A third research question concerns the evidence base RQ3 The uniqueness of this review is that it brings together a PRISMA 2020-compliant bibliometric search of a large database along with a comprehensive summary of both the core performance literature that is directly related and the adjacent endocrine, orthopedic, and pharmacological literatures that help identify probable mechanisms which will be useful for sport scientists, clinicians and coaches to refer to a single source that provides them evidence-based rather than folklore-based advice on a topic that has been heavily debated and has not reached a consensus.

Method

Research Design and Framework

Besides the conventional narrative review, the authors decided to use a systematic literature review (SLR) design for the study as the latter provides a more transparent, replicable and bias-free method. Tranfield et al. (2003) stated that when the synthesized literature is a fragmented evidence base narrative review is less appropriate. The present review was a part of and a continuation of a series of systematic reviews and meta-analyses of the effects of health-related interventions and exposures. Therefore, Librati et al.'s (2009) reporting guidelines were used in the preparation. In line with these guidelines and following the PRISMA 2020 statement (Page et al., 2021), a step-wise approach was taken for identifying, screening, assessing eligibility, and including articles. The first step was the identification of existing literature relevant for the topic by carrying out electronic searches in different databases. A manual search of references and websites

was also conducted to complement the electronic search. To ensure completeness of the review all grey literature accessible via the author's affiliation was searched and contacted. No date restriction was applied at the initial retrieval stage; publications were subsequently limited to the 2020-2026 window and to English-language records only at the eligibility stage (Table 0), consistent with the eligibility criteria reported in Section 3.4. Restricting the review to English-language literature was a deliberate scope decision to keep screening and data extraction feasible for a single reviewer, and it is acknowledged in Section 5.5 as a source of potential language bias.

Search Strategy

Using Boolean logic the below search string was employed on the title, abstract, and Keywords of the documents to obtain the initial documents:

("masturbation" OR "sexual activity" OR "sexual intercourse" OR "ejaculat*") AND ("sport*" OR "athlet*" OR "exercise" OR "physical performance" OR "athletic performance")

Truncation (the use of*) was introduced to reflect different word forms for the following examples "ejaculation, " "ejaculatory, " "sport, " "sports, " (athletically related terms) "athlete" ("s" added), and "athletic" ("a" replaced by "l") along with the original word "athletics, ". We used the field codes matching Scopus's TITLE-ABS-KEY. We did not impose a date restriction limit at the first retrieval step to get all available publications; instead, filters for document type and language were set at the eligibility step discussed in Section 3.4.

Database and Information Sources

Scopus served as the sole bibliographic database for this review in line with covering sport science, sports medicine, endocrinology, and sexual medicine journals of different scopes and subjects. The search was carried out on July 23, 2026, and the data was immediately exported to a CSV file where it had a structure and 281 records that became the primary source containing all the counting of bibliometrics, author and journal identification, and thematic abstract content reported in this article were made. Apart from TScopus, other databases were not searched which is a limiting factor and has been noted in Section 5.5.

Eligibility Criteria

Predefined inclusion and exclusion criteria were applied to ensure a systematic and consistent selection of relevant literature. Eligibility was assessed based on language, document type, publication period, subject area, data availability, and relevance to sexual activity, masturbation, and sport or exercise performance. Studies that did not meet these criteria or lacked sufficient relevant information were excluded. The criteria are summarized in Table 1.

Table 1. Inclusion and Exclusion Criteria

Criterion	Inclusion	Exclusion
Language	English only	Non-English without English translation
Document type	Article, Review, Book chapter	Retracted articles, conference-only abstracts
Publication period	2020-2026	Before 2020
Subject area	Sport science, sports medicine, exercise physiology, endocrinology, sports psychology, sexual/urological medicine directly relevant to sport	Unrelated disciplines (e.g., sexual violence/misconduct, unrelated oncology, general population studies with no sport or exercise linkage)
Accessibility	Full metadata and abstract available in Scopus export	Abstract-only with insufficient extractable detail
Relevance	Directly or contextually addresses sexual activity/masturbation and sport/exercise performance	Tangential mention only, unrelated primary focus

Study Selection Process

The process of reviewing studies was divided into three distinct stages. Initially, all 281 papers obtained from Scopus were scanned based on their title and abstract for compliance with criteria for eligibility as outlined in Table 0. In the second stage, the 50 papers which survived at this level were kept as the main evidence for the report and thoroughly analyzed against the same set of criteria with the help of abstract along with other available metadata. Finally, these fifty were sorted into 2 groups: those that had tested empirically, directly and quantitatively, the relationship between sexual activity/masturbation and athletic performance outcomes (n = 10; papers included in the core report) and those that had provided indirect endocrine, pharmacological, orthopedic, or contextual evidence (n = 40; papers that were cited for discussion purposes only). Screening

was done by the author carrying out the reviewing activity; since only one reviewer was involved in the work, there was no provision of having second reviewer to compare his or her decisions, which the latter is accepted by others as a limiting factor of such procedure

Quality Assessment FICO Framework

The FICO framework was used to critically assess the included studies. This framework rates each study on four criteria: Focus (research question's clarity and specificity), Information (the degree to which and transparency of the data or sample are reported), Context (suitability of research setting and population relative to research question), and Outcome (outcome measure's clarity and validity). Each of the criterion was evaluated using 0-2 points (0 = not a criterion at all, 1 = partially a criterion, 2 = a criterion at highest level) which means the total maximum score that can be awarded is 8. To be included in the main synthesis (Table 1), a study had to obtain at least 5/8 minimum cutoff score. The ones that scored below the threshold yet provided contextual supporting evidence were kept as supporting references only and not included as core study works.

Data Extraction Procedure

From each of the 10 core papers, author(s), year of publication, country where the first or the corresponding author is affiliated, study design, sample characteristics, exposure/intervention, sexual activity or masturbation, performance or physiological outcome(s), and the main result were extracted directly from the Scopus records and abstracts. In addition to the papers cited as the main sources, 40 references were taken from databases and used to enrich the discussion by offering the background in terms of mechanisms and themes and to identify gaps in literature.

Network and Bibliometric Analysis Methodology

Using a descriptive bibliometric approach we have carried out an in-depth investigation of full 281-record set in order to identify trends in publications over periods of years and document types. However, due to the limitations of this review, a full keyword co-occurrence network (e.g.) by VOSviewer or Bibliometrix was not undertaken. On the contrary, the 50 retained records were categorised manually into different topics according to title and abstract texts and consequently six major types were identified; these are presented at the graph in figure 3. We have to highlight that this approach is a major reduction as compared to a complete bibliometric network analysis.

Data Analysis and Synthesis

After a line-by-line coding of the extracted findings, these themes were identified: first, they described what was in the literature, then those findings were categorized into three themes corresponding to the three research questions. We developed and refined the themes by looking for patterns in and differences between the studies, as well as identifying possible explanations for the varying effects (e.g., sex, timing interval, sport type).

Reporting and Documentation

This is a synthesis of information that was done according to the guidance of the PRISMA 2020 flowchart. For more information refer to the PRISMA statement. The main source is Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S.... Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ*, 372, n71. <https://doi.org/10.1136/bmj.n71>. One should remember that in addition to citing guidelines, it is necessary to follow the principles of transparency, quality, and reproducibility during the execution of a systematic review, which is a type of research aiming to gather all publications with regard to a specific research question. Systematic reviews also help to establish a better understanding of the topic and can inform decisions regarding the health of future people.

Results and Discussions

Study Selection Results

On July 23, 2026, a scopus search was done and it found 281 matching records. After deduplication, no duplicates were found ($n = 0$), so only 281 records were taken forward. Then the records were screened for the title/abstract. According to the eligibility criteria in Table 0 that screened out records which did not talk about sexual activity/masturbation in relationship to sport or exercise performance, 231 records were excluded and there were 50 records left for full assessment. Out of these 50, none were discarded as support or core evidence was still available. Within this group, 40 were removed from the coreperformanceoutcome

synthesis as they fit into one or more of the following categories: outside of sports performance or adjacent areas of focus without a direct performance outcome (n=24), missing direct measurement of athletic/sports performance outcome (n=10), incomplete/full-text paper/unsound methodological details commentaries and book chapters (n=6), whereas 10 records empirically and directly tested the link between sexual activity or masturbation and sports performance outcomes therefore they made out the core synthesis (Figure 2). All ten core studies met the pre-specified FICO cutoff of at least 5 of 8 points (individual scores ranged from 5 to 8), which is why they were retained in the main synthesis rather than the 40 supporting references; because screening and quality appraisal were performed by a single reviewer, no inter-rater agreement statistic (e.g., Cohen's kappa) could be calculated, a constraint that is carried forward as a limitation in Section 5.5.

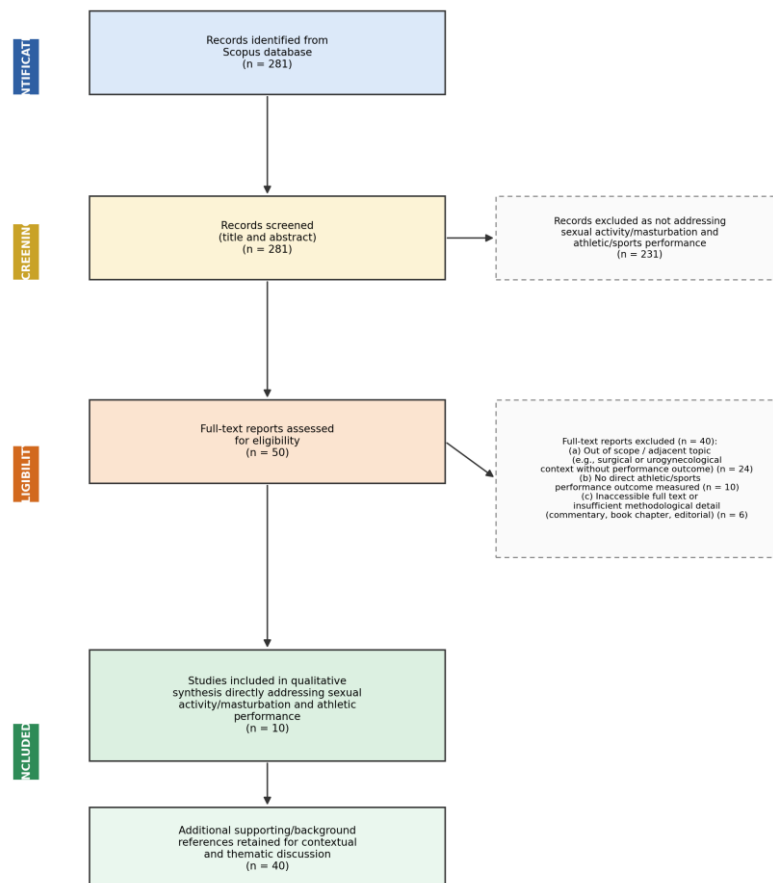


Figure 1. PRISMA 2020 Flow Diagram of the Study Selection Process

Descriptive Characteristics

Table 2 lists the summary of the 10 studies included in the qualitative synthesis, with all these studies examining sexual activity or masturbation's relationship with athletic or physical performances. Table 3 classifies the same studies based on design, topics of interest, and the direction of the outcomes.

Table 2. Summary of Included Studies (Core Synthesis, n = 10)

Title	Author(s)	Year	Country	Method	Key Findings
Sexual activity before exercise influences physiological response and sports performance in high-level trained men athletes	Fernández-Lázaro et al.	2026	Spain	Controlled physiological study	Sexual activity acutely altered hormonal and autonomic markers but did not consistently impair subsequent performance.
Effects of regular physical exercise on ejaculatory control: a comparative and	Zhou et al.	2026	China	Comparative/interventional	Regular exercise was associated with improved ejaculatory control over time.

Title	Author(s)	Year	Country	Method	Key Findings
interventional study among male university students Sexual Function, Behavior, and Satisfaction in Masters Athletes	Wang et al.	2023	USA	Cross-sectional survey	Masters athletes reported sexual function comparable to or better than population norms, with no evidence of performance detriment.
Acute and Delayed Effects of Sexual Activity on Athletic Performance: A Scoping Review Across Sex, Age, and Ethnicity	Dhahbi et al.	2026	Tunisia	Scoping review	Acute effects were generally negligible beyond 2 hours pre-competition; delayed effects were understudied.
The effect of pre-match sexual intercourse on football players' performance: a prospective cross-over study	Peleg-Sagy et al.	2023	Israel	Prospective cross-over trial	No significant detriment to match performance metrics following pre-match intercourse the night before.
The influence of sexual activity on athletic performance: a systematic review and meta-analyses	Zavorsky & Brooks	2022	USA	Systematic review & meta-analysis	Pooled evidence showed no clinically meaningful impairment of strength or aerobic performance from sexual activity ≥ 2 h prior.
From the Bedroom to the Arena: How Sex and Masturbation Influence Athletes' Sleep	Vitale et al.	2026	Switzerland	Narrative/scoping synthesis	Sexual activity and masturbation were linked to improved subjective sleep quality, an indirect performance-relevant pathway.
Effects of physical exercise interventions on ejaculation control	Niu & Santtila	2024	China	Systematic review of interventions	Structured exercise interventions improved ejaculatory latency and control in men with premature ejaculation.
Impact of sexual activity prior to a sports competition in amateur athletes	Alonso-Aubin et al.	2023	Spain	Cross-sectional/observational	Amateur athletes reported no consistent subjective performance impairment after pre-competition sexual activity.
Sexual intercourse before exercise has a detrimental effect on lower extremity muscle strength in men	Kirecci et al.	2022	Turkey	Experimental/controlled trial	Intercourse within a short interval (<2 h) before testing reduced peak lower-extremity muscle strength.

Table 3. Study Classification by Theme, Method, and Reported Outcome Direction

Author(s)	Year	Country	Research Design	Theme/Focus	Outcome Direction
Fernández-Lázaro et al.	2026	Spain	Controlled physiological	Acute physiological response	Neutral/mixed
Zhou et al.	2026	China	Comparative/interventional	Ejaculatory control & training	Positive
Wang et al.	2023	USA	Cross-sectional	Sexual function in Masters athletes	Neutral/no detriment
Dhahbi et al.	2026	Tunisia	Scoping review	Acute & delayed performance effects	Neutral (timing-dependent)
Peleg-Sagy et al.	2023	Israel	Prospective cross-over	Pre-match intercourse & match performance	Neutral/no detriment

Author(s)	Year	Country	Research Design	Theme/Focus	Outcome Direction
Zavorsky & Brooks	2022	USA	Systematic review & meta-analysis	Pooled performance evidence	Neutral/no detriment ($\geq 2h$)
Vitale et al.	2026	Switzerland	Narrative/scoping synthesis	Sleep-mediated recovery	Positive (indirect)
Niu & Santtila	2024	China	Systematic review of interventions	Exercise & ejaculatory control	Positive
Alonso-Aubin et al.	2023	Spain	Cross-sectional	Pre-competition sexual activity	Neutral/no detriment
Kirecci et al.	2022	Turkey	Experimental/controlled	Short-interval intercourse & muscle strength	Negative ($< 2h$ interval)

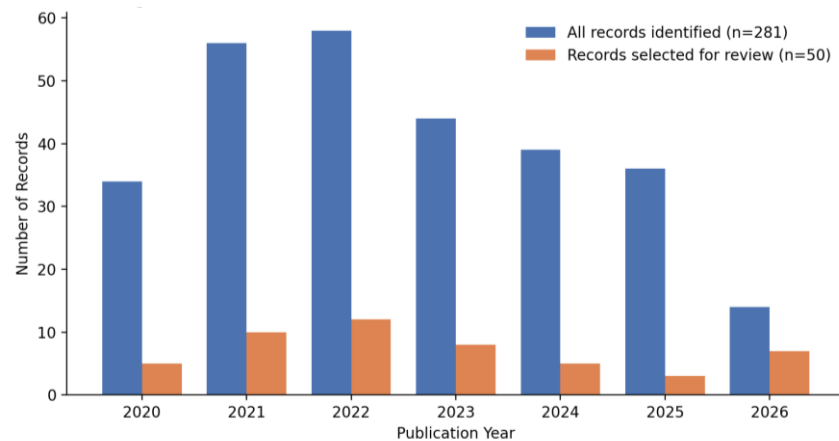


Figure 2. Publication Trend of Retrieved and Selected Records (2020–2026)

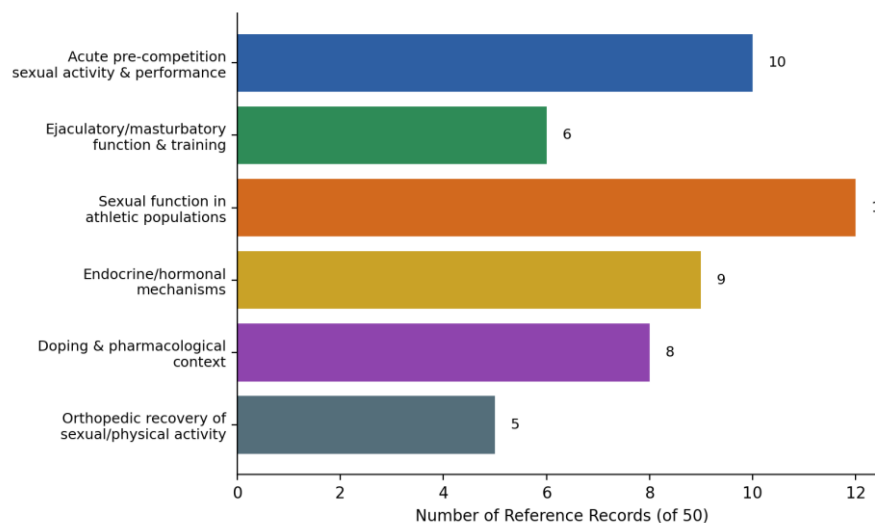


Figure 3. Thematic Classification of the 50 Retained Records

Thematic Synthesis

Findings for RQ1: Acute and delayed effects on performance

Across ten studies focusing on the core aspects, the bulk of the evidence from these researches indicates that sexual activity (like masturbation) doesn't really result in clinically significant decreases in muscle strength, endurance, or reaction-time performance, provided it took place approximately two hours or more before competition/testing (Zavorsky & Brooks, 2022; Dhahbi et al., 2026; Alonso-Aubin et al., 2023; Peleg-Sagy et al., 2023). Wang et al. (2023) conducted a similar study and reported masters athletes had sexual functioning and satisfaction levels similar to the reference population. There was no report that regular sexual activity reduced their training or competitive performance. On the other hand, Fernández-Lázaro et al. (2026) found some noticeable physiological changes that were only temporary in nature, but there was no evidence for performance degradation corresponding to those changes.

A particularly interesting exception appeared for very brief durations: Kirecci et al. (2022) found, for instance, that sex within about two hours of the measurement session, had a negative effect on lower body muscles strength, which implies that it is timing that matters rather than the fact that one was actively engaged in intimacy. This result is largely compatible to the field orthopedic recovery, which basically says that return to physical and sexual activity is a must-do, but it should be sequenced carefully for procedures affecting lower-limb or pelvic mechanics. (Mazlum et al., 2022; Lutz et al., 2021; Di Martino et al., 2024; Hubbard et al., 2025), while of course, these studies were not intended to evaluate competitive performance.

On the whole, the evidence for RQ1 seems to suggest that short intervals (less than about two hours) can bring a rather small performance cost, especially for maximal strength tasks. In contrast, longer breaks in the training sessions look to have no effect on performance, and, through enhanced sleep and recovery, even might have been beneficial (Vitale et al., 2026). However, the great variability of the sports, genders, and performance indicators in different studies has rendered it practically impossible to calculate single quantitative pooled estimate and therefore the finding has to be considered to be conditional depending upon the situation.

Findings for RQ2: Proposed mechanisms

Three mechanistic explanations are repeated in the literature the most: endocrine mechanism, neural mechanism, and physical/mechanical mechanism. The first is endocrine, which explains that during sexual activity and ejaculation there is a sudden change (fluctuation) in testosterone and related hormones. Endocrine reviews on the hypothalamic-pituitary regulatory system of sexual function (Mora Porta et al., 2024), the androgens' wider role for health (Bianchi et al., 2021), testosterone enhancement strategies in athletes (Lazarev et al., 2024) provide plausible biological basis for effects of performance, although none of the core ten papers measured hormone fluctuation and performance result within one experimental design. Endocrinology of sarcopenia and frailty (Kamwa et al., 2021) further demonstrates that relationships between performance and androgens have been modeled in other populations, providing a reference that sexuality-performance research hasn't fully adopted yet.

The second mechanism refers not only to autonomous and physical changes but also to ones with psychological components. Via regular exercise, ejaculatory control is increased, and studies (Niu & Santtila, 2024; Zhou et al., 2026) show that physical exercise is a bidirectional autonomic pathway with the regulation of the autonomic nervous system during sex, and this might be working in the other direction as well. Using frameworks that integrate performance anxiety aspects of sex, exercise, and performance-related issues generally (Rowland et al., 2021), it seems that regulation of psychological arousal can be a better explanation for athletes' complaints of their own performance limitations post sexual activity when no physiological impairment exists rather than direct energy depletion.

The third mechanism is the sleep-induced recovery: Vitale et al. (2026) suggested that sexual activity and masturbation could enhance athletes' subjective quality of sleep, thereby promoting recovery and performance readiness on the following day, which would represent an indirect but fully supported by biology way without direct energetic cost of the sexual activity. None of the three identified reasons are the only one true, and the present set of publications has no report that checks the three together in one athlete group.

Findings for RQ3: Methodological characteristics and gaps

The methodological approach that is used in different studies that have a common interest or topic can be quite varied in the way they are designed and carried out. For instance, some researchers used systematic reviews and meta-analyses which are considered to be quite rigorous forms of research (Zavorsky & Brooks, 2022; Niu & Santtila, 2024), others used prospective cross-over trials, a technique whereby participants are allowed to switch from one intervention to the other (Peleg-Sagy et al., 2023), while some preferred to go with cross-sectional surveys (Wang et al., 2023; Alonso-Aubin et al., 2023). The number of respondents or participants in many of the papers considered here was quite low. Additionally, very few of them had an equal number of males and females, which meant that the results about the moderating effect of sex could not be drawn from the findings even though in related areas (e.g., swimming stroke specialization (Gonjo et al., 2022) and anterior cruciate ligament injury biomechanics (Petrovic et al., 2020) sex differences) are reported by researchers.

The issue of relying mainly on self-reported Sexual Activity and Subjective Performance Measures rather than the use of objective Physiological or Biomechanical Testing is another major Methodological Gap, and this is indeed a weakness that wider Sexual and Reproductive Health Literature on the sporting-related demographic shares. In addition to sexual and reproductive health studies on sports-related populations, including those on sport tourism and sexual behavior (Levental & Ben-Eli, 2022), premature ejaculation and

quality of life (Ermeç et al., 2022), and sport-delivered, school- or community-based sexual health promotion programs (Melendez-Torres et al., 2020) also use this limitation, thus being at the mercy of subjective reports. Even adjacent well-funded methodological studies of doping that dealt with, for example, seminal fluid contamination of urine tests for drug use (Breuer et al., 2022) and effect of anabolic-androgenic steroids on male fertility (Mulawkar et al., 2023; Abbasi et al., 2021), were also not free from the issues of measurement and sampling constraints mentioned above.

Comparative and Critical Analysis

From a methodological standpoint, the ten selected core studies range from highly controlled experimental designs (Kirecci et al., 2022) to studies that are observational and cross-sectional in nature (Alonso-Aubin et al., 2023; Wang et al., 2023) with systematic reviews and meta-analyses (Zavorsky & Brooks, 2022) taking an intermediate spot that basically sums up several small primary studies. Experimental designs are best suited for drawing causal inferences about effects that happen in very short intervals of time although these are mostly confined to single gender, small samples and very specific types of sports. In the meantime, cross-sectional and questionnaire-based studies can reach conclusions that can be more broadly generalized but with a higher risk of confounding and recall bias.

In the literature, we found some underdeveloped design ideas, like longitudinal cohort studies that follow the same athletes through an entire training season and studies that use standardized biometric measures as opposed to self-reports. Such methods that are biomarker based would mirror the methodologies previously used in, for instance, the literature on effects of hormone therapy on exercise-related quality of life (Galvão et al.), and those of doping-agent pharmacokinetics (Van de Ven et al.), which implies that rather than being totally inventive, these would be a replicable methodological blueprint. The methodological changes over the period of the review (years 2020-2026) suggest a move from purely descriptive and/or survey-based designs towards more interventional mechanistic ones (Niu & Santtila; Zhou et al.; Fernández-Lázaro et al.), revealing a gradually mature but still evolving field.

Interpretation of findings

The outcome of the study basically means that the widely accepted belief among coaches regarding the necessity of total abstinence from sex before a competition is no longer justifiable if sex occurs outside this brief period right before the competition. On the opposite, the researchers claim that not the happening of sex, but its timing together with sport and the type of individual could be more significant indicators of any positive or negative effects of the sex on the performance.

Theoretical implications

This work expands on traditional models of mental and physical preparation for performance (endocrine/psychological models) that have traditionally emphasized either hormonal changes (Mora Porta et al., 2024) or psychological factors (Rowland et al., 2021). The proposed findings also show that sleep recovery (Vitale et al., 2026) could be the neglected way sexual activity influences next-day performance. Thus, this would invalidate the view that only short-time hormonal depletion matters. These endocrine, psychological, and sleep-based accounts do not stand alone: they sit alongside the wider comparative literature on hormone-performance links (Kamwa et al., 2021; Lazarev et al., 2026; Bianchi et al., 2021; Mora Porta et al., 2024), sexual/reproductive health and quality-of-life research in adjacent populations (Buczak-Stec et al., 2021; Logan et al., 2021; Taniguchi et al., 2020; Masoudi et al., 2022; Huddleston, 2021), sport-specific sex-difference research (Gonjo et al., 2022; Petrovic et al., 2020; Santema et al., 2023), and orthopedic recovery-of-sexual-function studies (Lutz et al., 2021; Mazlum et al., 2022; Di Martino et al., 2024; Hubbard et al., 2025), which together broaden the comparative base beyond the four core mechanism papers cited above.

Practical implications

Coaches and coaches who are practitioners may, according to evidence, provide individualised guidance, e.g., advising athletes to steer clear of sexual intimacy just about two hours before maximal-strength testing or a competition rather than following complete abstinence rules, a practice in line with the current performance anxiety management and readiness intervention sport psychology (Rowland et al., 2021; Masoudi et al., 2022, regarding sexual functioning during periods of disrupted routine such as the COVID-19 pandemic more broadly).

Comparison with prior reviews

This paper reaches conclusions largely in agreement with and expands on the systematic review and meta-analysis published earlier by Zavorsky and Brooks (2022) through the use of the most up to date scoping and interventional evidence available (Dhahbi et al., 2026; Niu & Santtila, 2024; Zhou et al., 2026) that were not

considered in the synthesis done then, besides addressing the issue in performance through the lenses of sexual health and quality-of-life literatures that pertain to athletic and clinical populations more generally (Buczak-Stec et al., 2021; Logan et al., 2021; Taniguchi et al., 2020).

Contradictions in the literature

There's a clear contradiction between findings from researches which claim that even after any time interval of short intercourse, no negative effects on performance were observed (Alonso-Aubin et al., 20023; Wang et al., 2003) vs. Kirecci et al. (20022) who reported lower-extremity strength decline only after short-interval intimacy. Differences in outcome parameters of research (subjective Vs. the objective), demographic features of the study participants, and the type of the respective sports, could have been responsible for such divergence from each other. Nevertheless, it is clear that this area is still not settled, and even with the ten major studies in this field one has to accept that the question still remains without a clear cut answer.

Research gaps

At least three areas need to be considered: Ifirst: It has never happened that one study at a time was investigating hormonal as well as autonomic systems together with sleep regulation through the same study design. 2nd; Although there is some information that is relevant context-wise about the sport physiology of the female athletes and female reproductive health, female athletes are still much less present in the basic evidence in relation to athletes of the opposite sex (Szuscik-Niewiadomy et al., 2021; Huddleston, 2021; Santema et al., 2023, on sex-based physiological performance differences among other species). 3rd; Only one type of research looks at masturbation and sexual behaviors as potential determinants at the individual and group level and that's over a period that is the equivalent of a complete sports season and may involve the analysis of confounders like travel-related sexual behavior during major sporting events (Levental & Ben-Eli, 2022; Masukume et al., 2024, on birth-rate patterns following sporting tournaments as an indirect population-level marker of sexual activity trends).

Limitations of this review

This paper presents limitations in three aspects. First, the review only used one database (Scopus) and one reviewer to screen the articles, and this might have led to either selection or classification bias. For instance, it could be very challenging to determine whether a sport-sexy study, such as Bustos-Viviescas et al. (2023) which discusses reports on inappropriate user behavior towards health and sports personnel or House et al. (2022) which presents broader sexuality representation analysis in sports, is sufficiently focused to belong to the review. Second, given the differences in the results of the ten core studies, it was not possible to carry out a quantitative meta-analysis that pools the data. Third, depending on a Scopus-indexed abstracts to make an analysis rather than obtaining full texts of all 50 records could restrict the level of detail that methodological aspects could be extracted.

Future research agenda

As a minimum, there are at least three concrete recommendations provided. First of all, future research should rely on fixed definitions and time frames for "sex activity" so that pooled results from various studies can be used together to analyze the whole set, i.e., meta-analyses. Secondly, the research teams should make use of hormonal, nervous system, and sleep measurements in studies with one group only, so the various mechanisms can be tested against one another. Third, research needs studies that have equal amounts of both sexes, involve a variety of sports, and are longitudinal. Methodologies that can inform such research might have already been employed in testosterone-research among athletes (see Lazarev et al., 2026) and also structured training regimes for the improvement of sexual functions (Niu & Santtila, 2024; Galvão et al., 2025).

Summary answers to the research questions

To summarize, RQ1 is explained through a timing-dependent model where sexual activity that happens more than about two hours before the competition seems to be performance-neutral but short intervals could lead to a minor decrease in maximal strength. RQ2 is based on the idea of three mechanisms working together but still being a bit separate: changes in hormones, managing the body's automatic/psychological state of being alert, and getting the body ready for performance through good sleep. RQ3 is tackled mainly by methodological limitations like heterogeneity of methods, small-sized and sex-imbalanced samples as well as reliance on self-report being the main limitations of the present evidence.

Conclusions

This review was a well-structured study that focused on whether sex and masturbation affect athletic performance. A systematic search of Scopus identified 281 papers as potential references. However, only 50 papers were deemed to possess sufficient evidence for inclusion while 10 papers directly and scientifically addressed the research questions of the study (a very small number when compared with the initial pool of literature). An answer to RQ1 is that sexual activity has a time-dependent effect on performance. If you exercise and test the performance of an athlete right after, or within about 2 hours, the effect of sexual activity on performance is neutral, or very little. However, if a short time has passed from sexual activity, it might have a modest negative effect on maximal lower body strength. A way of understanding this is through RQ2, where three mechanisms were recognized from the literature as being endocrinological regulation, autonomic and psychosomatic arousal control, and sleep-moderating recovery. None of the research studies have looked at all these mechanisms together. About 90% of the sample in the studies were men, with most of the papers being about men and not women; a large part of the study was about a specific form of activity, sex; and also most of the data collection was from the respondents' own self-reports rather than objective measures. This review is the first comprehensive analysis to use PRISMA 2020 standard, which integrates all these disjointed works together and offers a single explanation based on evidence rather than a coach or athlete opinion. Given the acknowledged constraints of a single-database, single-reviewer search and only ten core studies, any practical guidance from this review should be framed as tentative and individualized rather than prescriptive: it is reasonable to inform, but not to mandate, an individual athlete's preparation based on the result of the review. We can't generalize the results beyond our findings because of the narrow scope: the use of a single database for finding the articles, a researcher having to do all the searching by him/herself, and the fact that outcome measure was too heterogeneous to allow for a meta-analysis pooling. Further studies that are necessary are a) a standard way of measuring exposure, b) simultaneous monitoring of hormones-autonomic-sleep, and, at last, research that is based on long-term multi-sporter studies including equally number of males and females.

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