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Exercise Blood Pressure and Masked Hypertension in Adult Athletes: Diagnostic Evidence, Limitations, and the Role of Ambulatory Monitoring — A Narrative Review

Maciej Mariusz Lesiczka
ORCID: https://orcid.org/0009-0003-3234-9549
lesiczkamaciek@gmail.com
Medical University of Lublin
1 Aleje Racławickie; 20-059 Lublin; Poland
Jarosław Józef Kucharski
ORCID: https://orcid.org/0009-0007-7470-6451
jarek.kucharski661@gmail.com
Medical University of Lublin
1 Aleje Racławickie; 20-059 Lublin; Poland
Zuzanna Zofia Cecot
ORCID: https://orcid.org/0009-0009-6280-4278
zuzanna.cecot.048@gmail.com
Medical University of Lublin
Aleje Racławickie 1; 20-059 Lublin; Poland

Filip Lenartowicz
ORCID: https://orcid.org/0009-0004-1980-9640
lenartowiczfilip00@gmail.com
Medical University of Lublin
1 Aleje Racławickie; 20-059 Lublin, Poland
Dawid Oskar Mazurek
ORCID: https://orcid.org/0009-0004-7501-5941
mazurekdawid6@gmail.com
Medical University of Lublin
1 Aleje Racławickie; 20-059 Lublin, Poland
Alicja Martyna Lewczuk
ORCID: https://orcid.org/0009-0004-8827-3739
alicja.lewczuk00@gmail.com
Medical University of Lublin
Aleje Racławickie 1; 20-059 Lublin, Poland
Julia Weronika Duszejko
ORCID: https://orcid.org/0009-0000-0974-5170
dus6@op.pl
Medical University of Lublin
1 Aleje Racławickie; 20-059 Lublin; Poland
Katarzyna Kuklińska
ORCID: https://orcid.org/0009-0007-1242-3958
kasia.kuklinska03@gmail.com
Medical University of Lublin
1 Aleje Racławickie; 20-059 Lublin; Poland
Anna Maciaszczyk
ORCID: https://orcid.org/0009-0003-3872-0310
anna.maciaszczyk05@gmail.com
Medical University of Lublin
1 Aleje Racławickie; 20-059 Lublin, Poland
Oliwia Gałczyńska
ORCID: https://orcid.org/0009-0004-0738-8199
oliwiagalczynska07@gmail.com
Medical University of Lublin
1 Aleje Racławickie; 20-059 Lublin, Poland

Corresponding author: Maciej Mariusz Lesiczka, lesiczkamaciek@gmail.com

Abstract

Background: Exercise blood pressure (BP) may reveal a reason to investigate hypertension outside the office, but interpreting this signal in trained athletes is difficult.

Aim: To critically examine evidence linking exercise BP measurements with ambulatory BP monitoring (ABPM) in adult athletes and distinguish diagnostic findings from physiological reference values and prognostic associations.

Material and methods: A focused narrative synthesis of 29 full-text publications from 2021–2026 distinguished athlete-specific evidence from general and clinical populations.

Results: Selected male athlete cohorts showed incomplete overlap between exaggerated exercise BP and ambulatory hypertension. Definitions, office eligibility and ABPM criteria differed. Workload and fitness influenced exercise indices, while reference and outcome studies did not establish their accuracy for detecting masked hypertension. The reconstructed whole-cohort comparison yielded sensitivity of 66.7% and specificity of 65.8% for any ABPM hypertension. Full-text access to a directly relevant diagnostic study remained unavailable. ABPM interpretation required adequate recordings and documentation of sleep and activity.

Conclusions: Exercise BP can support clinical suspicion, but diagnosis requires appropriately obtained office and out-of-office measurements. The assessed evidence does not establish a universal exercise threshold for masked hypertension in adult athletes.

Key words: masked hypertension; athletes; exercise blood pressure; ambulatory blood pressure monitoring; cardiac remodelling.

1. Introduction

Masked hypertension describes BP below the office hypertension threshold accompanied by hypertension outside the office. This discordance matters because office measurements alone may miss elevated pressure during daily activities or sleep. ABPM provides a reference assessment of these periods, although its interpretation depends on recording quality and the criteria applied [1, 2]. Athletic training does not exclude hypertension, and exercise measurements must be interpreted within the athlete's wider clinical context [3].

Two selected cohorts of middle-aged male athletes illustrate the practical problem: unsuspected ambulatory hypertension was found despite the absence of a previous diagnosis, and the exercise and ambulatory classifications overlapped incompletely [4, 5]. These observations justify examining the diagnostic contribution of exercise BP. They cannot provide a population-wide prevalence estimate or determine whether a screening strategy improves clinical outcomes.

A meta-analysis supports an association between an exaggerated exercise BP response and masked hypertension but predominantly draws on non-athlete populations [6]. Meanwhile, exercise BP varies with the workload achieved and cardiorespiratory fitness [7]. An association, a physiological reference limit and a threshold that

predicts future events therefore answer different questions. The relevant diagnostic question is whether a specified measurement correctly identifies a defined ambulatory phenotype in the population in which it will be used.

Earlier reviews already addressed exercise hypertension in adult athletes and the role of ambulatory assessment [8]. Later reviews discussed workload, fitness and limitations of clinical interpretation [9, 10], and a 2026 editorial questioned how exercise BP metrics should be characterised in athletes [11]. A review published in Quality in Sport focused mainly on hypertension epidemiology and prevention in adolescents [12]. The present review updates the adult-athlete diagnostic question through a critical separation of evidence types; its scope overlaps with these publications.

1.1. Objective and questions

The objective is to evaluate the diagnostic evidence and limitations of peak, submaximal and workload-indexed exercise BP measurements for identifying masked hypertension in adult athletes, with ABPM as the out-of-office reference. The review asks which studies directly compare exercise BP with ABPM; whether their target is masked hypertension or any ambulatory hypertension; how protocol, workload, fitness and measurement affect interpretation; and what evidence supports using the findings to prompt further assessment.

2. Research materials and methods

2.1. Review design and literature sources

This focused narrative review considered publications dated 2021–2026. PubMed and Europe PMC searches, reference checking, publisher pages and repositories were used to identify relevant publications. Search concepts included athletes, masked hypertension, ambulatory blood pressure monitoring, exercise blood pressure, exaggerated blood pressure response and workload-indexed blood pressure. Crossref and publisher records supported bibliographic verification. Broader searches for earlier reviews were used to assess thematic overlap. Google Scholar, Scopus and Web of Science were not successfully searched and are not claimed as independently searched databases.

2.2. Selection and applicability

Adult-athlete studies were prioritised for direct diagnostic evidence. General-population and clinical studies were retained for measurement, haemodynamic interpretation, prognosis or clinical context. Mixed-age athlete reference studies and adolescent reviews were used only as explicitly identified background or scope comparators. Original studies, systematic reviews, meta-analyses, guidance and relevant critical commentaries were considered. Full-text assessment required legally accessible, free content, including deposited author manuscripts. This practical restriction may introduce availability bias.

The assessed evidence base comprises 29 full-text publications. Records identified only through metadata or abstracts were not treated as full-text evidence, including a directly relevant study of exercise BP diagnostic accuracy against ABPM in athletes. Its existence was acknowledged without importing its diagnostic estimates.

2.3. Data extraction and narrative synthesis

Extraction considered design, population, sample size, office BP eligibility, medication status, exercise modality and protocol, the definition of each BP metric, ABPM criteria, recording conditions, principal findings and limitations. Findings were synthesised qualitatively. Associations, reference distributions, diagnostic classification and prognosis were kept separate. No new pooled effect estimates, or formal risk-of-bias score was produced. Narrative judgements are not equivalent to a systematic diagnostic-accuracy review.

One unpooled descriptive reconstruction used exact exercise-by-ABPM counts reported by O'Driscoll et al. [5]. Sensitivity, specificity and predictive values were calculated against any ABPM hypertension in the complete cohort, with 95% Wilson binomial confidence intervals. These are calculations for this synthesis, not author-reported estimates for masked hypertension. No masked-hypertension contingency table was inferred, and rounded percentages in other studies were not converted into assumed counts.

3. Results

3.1. Diagnostic target and BP phenotypes

For an untreated athlete, masked hypertension requires office BP below the diagnostic threshold and hypertension on out-of-office assessment. Controlled office BP with elevated out-of-office BP during antihypertensive treatment represents masked uncontrolled hypertension and should be analysed separately [1]. Being below the office hypertension threshold does not necessarily mean being in the lowest-risk BP category.

The 2024 ESC definitions use office systolic BP ≥140 mmHg and/or diastolic BP ≥90 mmHg. Corresponding ABPM thresholds are a 24-hour mean ≥130/80 mmHg, daytime mean ≥135/85 mmHg, or night-time mean ≥120/70 mmHg; elevation of either component meets the relevant threshold [2]. Table 1 describes untreated phenotypes. Study-specific definitions are retained throughout this review, including lower US thresholds in a non-athlete study.

Table 1. Office and ambulatory BP phenotypes in untreated adults

BP phenotype	Office BP	ABPM
Concordant readings below hypertension thresholds	Below the office threshold	Below the applicable thresholds
White-coat hypertension	At or above the office threshold	Below the applicable thresholds
Masked hypertension	Below the office threshold	At or above an applicable threshold
Sustained hypertension	At or above the office threshold	At or above an applicable threshold

Source: synthesis of Lee and the 2024 ESC guidelines [1, 2]. These definitions do not establish an exercise BP threshold. ABPM, ambulatory BP monitoring; BP, blood pressure.

Nocturnal hypertension and nondipping are distinct. The former concerns absolute BP during sleep; the latter describes the relative change from awake BP. One cannot be inferred from the other. Actual sleep periods, cuff-related disturbance and recording quality influence interpretation [13].

3.2. Direct comparisons in adult athletes

Małek et al. studied 71 untreated male amateur athletes aged 30–55 years. Resting office assessment excluded initial hypertension, while home entry measurements used <140/90 mmHg. ABPM identified hypertension in 33 participants. Exaggerated peak exercise BP was more frequent in the hypertensive group, but the primary comparison concerned mild ventricular hypertrophy [4]. The home entry threshold was higher than the European home hypertension threshold, limiting interpretation of the pre-test phenotype [2].

O'Driscoll et al. examined 198 male masters endurance athletes aged 40–65 years. Of 78 participants with hypertension on ABPM, 70 had normal clinic BP; 70/198 corresponds to 35.4%, calculated from the reported counts. Office hypertension detected during assessment did not automatically exclude an otherwise eligible

participant. Consequently, the whole-cohort exercise-by-ABPM comparison concerns any ambulatory hypertension [5]. Table 2 retains these differences.

Table 2. Assessed studies comparing exercise BP with ABPM in adult athletes

Study and population	Office eligibility and ABPM target	Exercise assessment	Reported comparison	Diagnostic boundary
Małek et al. [4] 71 male amateurs; 30–55 years; predominantly endurance sports.	Three resting office readings to exclude initial hypertension; home BP <140/90 mmHg. Target: mean 24-hour SBP ≥130 and/or DBP ≥80 mmHg.	Maximal Bruce treadmill test; manual BP at baseline and every 3 minutes. EBPR: peak SBP ≥210 mmHg.	33/71 had ABPM hypertension. EBPR was reported in 51% with versus 13% without hypertension.	Association study; no externally validated MH threshold. Home entry criterion differs from European HBPM criteria.
O'Driscoll et al. [5] 198 male masters endurance athletes; 40–65 years.	No known hypertension; newly detected office hypertension could remain eligible. Target: any 24-hour, daytime or night-time ABPM hypertension.	Upright cycle CPET; ramp 25–30 W/min; manual BP every 2 minutes. HRE: peak SBP ≥210 mmHg.	78 had ABPM hypertension; 70 of these had normal clinic BP. HRE in 93; 52 had both HRE and ABPM hypertension.	Full-cohort classification is not MH-specific. Selected male cohort; analysis primarily addressed coronary atherosclerosis.

Both studies restricted exercise during ABPM. Neither row establishes a population-wide prevalence or a validated screening strategy. EBPR/HRE, exaggerated or hypertensive response to exercise; CPET, cardiopulmonary exercise testing; HBPM, home BP monitoring.

3.2.1. What the published classification counts allow

The exact counts in O'Driscoll et al. allow a descriptive reconstruction for any ABPM hypertension [5]. Table 3 shows the classification. Using peak SBP ≥210 mmHg, the calculated sensitivity was 66.7% (95% CI 55.6–76.1), specificity 65.8% (57.0–73.7), positive predictive value 55.9% (45.8–65.6) and negative predictive value 75.2% (66.2–82.5). These values describe this selected cohort and its prevalence; they are not estimates for masked hypertension.

Table 3. Descriptive reconstruction against any ABPM hypertension in the complete O'Driscoll cohort

Peak exercise SBP	ABPM hypertension	No ABPM hypertension	Total
≥210 mmHg	52	41	93
<210 mmHg	26	79	105

Peak exercise SBP	ABPM hypertension	No ABPM hypertension	Total
Total	78	120	198

Calculated from the published data and cohort totals in O'Driscoll et al. [5]: false negatives = 78 − 52; true negatives = 120 − 41. Confidence intervals are analyst-calculated Wilson binomial intervals. The cross-classification within the normal-office subgroup was not reconstructed; no MH-specific accuracy or AUC was inferred.

The comparison illustrates why a high exercise value and an abnormal ambulatory profile should not be treated as equivalent. A positive exercise classification occurred without ABPM hypertension in some participants, while others with ambulatory hypertension were below the exercise threshold. The study was not designed to establish the benefit of an exercise-guided screening strategy, and its atherosclerosis associations do not prove that hypertension caused the coronary findings.

3.2.2. Non-athlete evidence and association studies

Cuspidi et al. pooled nine studies involving 793 participants and found an association between exaggerated exercise BP and masked hypertension [6]. Definitions and populations varied, and the synthesis was predominantly non-athletic. It included Małek et al.; counting that study and the meta-analysis as independent athlete samples would duplicate evidence. The pooled association does not supply a validated sensitivity, specificity or predictive value for adult athletes.

Chang et al. compared 16 young men with masked hypertension with 17 controls in a non-athlete sample. They found no significant difference in peripheral BP responses to maximal cycle exercise [14]. Office BP was <130/80 mmHg; ambulatory thresholds were 24-hour ≥125/75, daytime ≥130/80 or night-time ≥110/65 mmHg. Their adequacy criterion was at least ten daytime and five night-time readings. These US definitions differ from the European athlete studies. The small comparison did not derive a diagnostic threshold, and a nonsignificant result does not prove equivalence.

3.3. Exercise metrics and the question they answer

3.3.1. Peak and submaximal BP

Peak BP is easy to report, but its meaning depends on the work achieved and when the measurement is obtained. In 589 adults spanning age and fitness levels, including athletes and non-athletes, Janssens et al. associated higher peak systolic BP with higher fitness and a steeper SBP/workload slope with lower fitness. ABPM was not performed [7]. This finding informs physiological interpretation; it does not classify masked hypertension.

Fixed submaximal workloads can facilitate comparison across tests, although the same absolute workload represents different relative intensities across athletes. Schultz et al. proposed 170 mmHg at a moderate submaximal workload as a signal for physician follow-up. They explicitly described the threshold as expert opinion requiring confirmation [15]. It should not be imported as an athlete-specific diagnostic criterion. The 2025 AHA/ACC statement likewise identifies insufficient evidence for exercise BP alone to diagnose hypertension or guide its management in competitive athletes [16].

3.3.2. Workload indexing and reference populations

Bauer et al. found sex differences in peak SBP and watt-indexed slopes among 72 young professional athletes. Sex was also linked to sporting discipline and different exercise increments, limiting an isolated interpretation of

sex effects [17]. In a reference registry of 12,083 athletes, Pesova et al. evaluated peak and endpoint indices; the median age was 15 years and peak BP was recorded immediately after cycling stopped [18]. This youth-dominated, mixed-age dataset should not be described as adult-athlete diagnostic validation.

The index definition matters. A regression slope using serial measurements, an endpoint change divided by peak watts and a stage BP divided by peak estimated MET capacity are different quantities. Their thresholds are not interchangeable. Table 4 summarises supportive studies by the question addressed, and Table 5 specifies the principal calculations.

Table 4. Supportive evidence separated from adult-athlete ABPM diagnosis

Question and population	Study and sample	Main contribution	Boundary for this review
Athlete physiology	Bauer et al. [17] 72 young professionals.	Peak and watt-indexed responses differed between male and female groups.	Sport and exercise increments differed by sex; no MH classification against ABPM.
Physiology across age and fitness	Janssens et al. [7] 589 athletes and non-athletes.	Peak SBP and SBP/workload slope had different relationships with fitness.	ABPM was absent; physiological associations do not establish diagnostic accuracy.
Mixed-age athlete reference values	Pesova et al. [18] 12,083; median age 15 years.	Reference distributions and endpoint workload indices.	Predominantly young sample; immediate post-exercise measurement; no ABPM validation.
Athlete vascular associations	Most et al. [19, 20] 618 and 652 male elite athletes.	Associations with central BP, vascular function and aortic dimensions.	Cross-sectional vascular findings do not diagnose MH. Potentially related registry samples should not be assumed independent.
Clinical prognosis	Schultz et al. [21] 12,743 referral patients.	Exercise SBP relative to peak fitness predicted cardiovascular outcomes.	Fitness contributes to the denominator; outcome prediction is not ABPM classification in athletes.
Clinical prognosis at end exercise	Carlén et al. [22] 6,329 referral patients.	Late SBP drop retained an incident-CVD association after full adjustment; other categories did not.	Eligibility, timing and outcome differ from hypertension diagnosis; not an athlete ABPM study.

Question and population	Study and sample	Main contribution	Boundary for this review
Exploratory clinical trajectories	Nene et al. [23] 13,945 eligible; 9,991 in the SBP model.	Resting-plus-exercise BP trajectories were associated with cardiovascular outcomes.	Referral, missing-stage and baseline-risk effects; no external athlete or ABPM-based diagnostic validation.
Community home BP association	Wang et al. [24] 808 adults.	Exercise indices were related to repeated home SBP.	Home cuff data, selected smartphone users and some treated participants; no ABPM or sleep BP assessment.

The table classifies the question each publication addresses; it is not a pooled analysis. CVD, cardiovascular disease; MET, metabolic equivalent of task; SBP, systolic BP.

Table 5. Distinct exercise BP measurements and calculations

Metric	Calculation or measurement	Interpretive requirement
Peak SBP	Highest recorded SBP at the achieved exercise level.	State the workload and whether measurement occurred during exercise or immediately after stopping [7, 18].
Regression SBP/W slope	Regression coefficient for serial SBP measurements against external workload in watts.	Report included stages and the measurement method; not equivalent to a rest-to-peak endpoint index [7].
Endpoint SBP/WR slope	(SBP_peak − SBP_rest) / WR_peak; in Pesova et al. only rest and peak measurements were used.	The name “slope” does not imply a regression over serial stages. Units and the rest reference must be specified [18].
Exercise SBP / MET_peak	SBP at a specified exercise stage divided by estimated peak MET capacity.	Stage BP is the numerator; peak fitness is the denominator. This is not an SBP/MET regression slope [21].
Fixed submaximal SBP	Absolute SBP at a prespecified workload during a stated protocol.	A fixed workload represents different relative intensity across people; a referral signal requires diagnostic validation in the intended population [15].

WR, external work rate; W, watts. Examples reflect the specified papers rather than a universal nomenclature. Formula components are editable text. Numerical cutoffs should not be transferred between these quantities.

3.3.3. Fitness denominators and exercise-stage selection

Romano et al. highlighted two interpretation problems: dividing by peak fitness can incorporate a fitness effect into the index, and fewer participants contribute measurements at high exercise stages [11]. Apparent changes across stage averages can therefore reflect participant selection as well as within-person physiology. This commentary provides a methodological critique; it is not a new cohort or direct diagnostic validation. Numerical findings from the Bauer study discussed in that editorial were not imported as independently assessed primary evidence.

3.4. ABPM as the out-of-office reference assessment

3.4.1. Recording quality and actual sleep periods

ABPM contributes only when the recording is technically adequate. Device validation and cuff fit are important, including in athletes with large upper arms [3, 1]. The ESC guidelines require at least 70% usable readings; commonly used adequacy criteria also specify at least 20 awake and seven asleep readings [2, 1]. A diary supports classification by actual sleep and waking periods. Movement artefacts, disrupted sleep and limited reproducibility of dipping status should be considered before interpreting an isolated nocturnal result [13].

3.4.2. Activity and training conditions

Recording-day conditions are part of the reference assessment. Małek et al. prohibited exercise during ABPM, while O'Driscoll et al. allowed usual daily activities but excluded exercise and vigorous movement [4, 5]. Their results describe those conditions. They do not validate BP thresholds for readings obtained during training. A non-training-day profile should therefore be identified as such, with recent training, sleep and medication documented as relevant to interpretation.

Conventional morning and evening HBPM can complement repeated resting assessment but does not measure sleeping BP. Specifically designed nocturnal home devices require separate consideration of their validation and protocol [1, 13]. Neither disagreement between home and ambulatory readings nor an isolated exercise value should be resolved by assuming that the methods measure identical exposure.

3.4.3. Office technique and method-dependent classification

Bertram et al. classified more masked hypertension using unattended than attended office BP in 213 primary-care patients. However, devices, the number of readings and measurement order differed [25]. The result cannot be attributed solely to staff presence, and many participants were treated. This is a methodological caution rather than evidence for a new athlete office threshold.

In the AMUSE-BP comparison, Groenland et al. analysed 113 clinic patients, most receiving treatment, and found only fair-to-moderate agreement between app-assisted HBPM and ABPM phenotype classifications [26]. These data support documenting the complete procedure and examining discordance. They do not establish interchangeability in untreated athletes.

3.5. Cardiac remodelling as clinical context

Cardiac structure can provide a reason for closer BP assessment, but it answers a separate question. The association between mild ventricular hypertrophy and ambulatory hypertension in Małek et al. does not establish a hypertensive cause for every cardiac finding [4]. Athletic remodelling varies with discipline, exposure and individual characteristics; wall thickness, cavity size and function require integrated interpretation [27]. Imaging

characterises structure and function, while ABPM characterises the BP phenotype. Neither result alone attributes all accompanying remodelling to training or hypertension.

4. Discussion

4.1. Association, classification and clinical usefulness

A statistical association can justify investigating an exercise signal but does not establish its classification performance. The meta-analysis by Cuspidi et al. supports a relationship between exaggerated exercise BP and masked hypertension, with heterogeneous definitions and limited athlete representation [6]. The descriptive reconstruction in Table 3 adds a narrower observation: substantial misclassification remains when a peak threshold is compared with any ABPM hypertension in a selected male athlete cohort. That calculation does not resolve accuracy within the normal-office subgroup.

Physiological reference limits identify values unusual for the reference sample. Prognostic studies identify measurements associated with later outcomes. Diagnostic studies test classification against a reference assessment. Combining these categories into a single cutoff obscures their different denominators, endpoints and eligibility criteria. Predictive values also depend on the prevalence and selection of the evaluated population. A threshold derived in a referral clinic, or optimised within one cohort, requires validation before being applied to a different athlete population.

4.2. Clinical implications within the assessed evidence

The practical role of exercise BP is to contribute to a reasoned decision about further assessment, alongside office BP, symptoms, history and measurement quality. Earlier guidance already proposed physician follow-up and out-of-office monitoring after an abnormal exercise response [15, 8]. The AHA/ACC statement provides an important boundary: exercise BP alone is insufficient for diagnosing hypertension or guiding its management in competitive athletes [16]. This review does not establish a new screening algorithm.

Treatment of confirmed masked hypertension is another question. In the 320-participant ANTI-MASK trial, treatment improved a composite organ-protection endpoint over one year, primarily through a vascular measure; the study was conducted in Chinese patients rather than athletes [28]. It did not establish fewer cardiovascular events or benefit from treating an isolated exercise BP response. It therefore cannot validate an exercise-guided diagnostic or treatment strategy in athletes.

A useful exercise report should make the measurement reproducible: modality, protocol, timing, absolute workload, relevant fitness measure and calculation method should accompany BP values. ABPM reports should identify office eligibility, treatment, recording adequacy, sleep periods and activity restrictions. These requirements help the reader evaluate whether the index and reference assessments address the stated phenotype.

4.3. Relationship to earlier reviews

Würzburger et al. included adult populations and 30 studies, ten involving athletes, with a search ending in April 2020 [8]. Its publication year should not be mistaken for coverage through 2022. Pesova et al. discussed general and athlete exercise BP dynamics [9]; Kosowski and Aleksandrowicz reviewed definitions, mechanisms and clinical uncertainty [29]. Kabaklić's 2026 narrative review and Romano et al.'s editorial further overlap with the critique of peak and indexed measurements [10, 11].

The adult focus distinguishes the diagnostic population from the mainly adolescent epidemiology and prevention reviewed by Hejnosz et al. [12], but adult eligibility was already present in Würzburger et al. The potential

contribution of this synthesis is the explicit mapping of studies to their diagnostic target, the separation of direct ABPM comparisons from supportive evidence, and the retention of access-related uncertainty. This is an update and critical organisation of an existing field, not a claim that the exercise-BP–ABPM relationship has not been reviewed.

4.4. Limitations of this synthesis

The selection was focused and narrative, rather than exhaustive or independently duplicated. No formal QUADAS-2 assessment or new meta-analysis was undertaken. The free-full-text criterion can exclude the most directly relevant evidence. In particular, the diagnostic study by Janssens et al. was identified but could not be assessed in full [30]. A lack of validation within this assessed subset must not be expressed as proof that diagnostic studies do not exist.

The direct athlete evidence presented here comes from selected male cohorts. Athlete status, age, office criteria, exercise modality and ABPM definitions vary. Mixed-age reference data, adolescent reviews and clinical cohorts provide context but cannot fill a missing adult-athlete diagnostic validation. Medication use and different US and European criteria further limit direct comparisons. Neither a pooled athlete prevalence nor a universal cutoff can be justified by combining these heterogeneous populations.

Secondary reviews repeat primary studies, and related registry reports may include overlapping participants. Their publication counts do not equal independent samples. The reconstructed classification table uses aggregate data from one study, has no external validation and cannot recover the unreported normal-office subgroup cross-classification. These qualifications limit both the precision and the clinical generalisability of the interpretation.

4.5. Priorities for diagnostic research

Future studies should recruit consecutive adult athletes with prespecified office eligibility and analyse treatment status separately. Women, older athletes and different disciplines should be represented. Peak, fixed-submaximal and precisely defined indexed measurements should be compared with adequately recorded ABPM, with blinded interpretation where feasible. Threshold derivation should be distinguished from validation in an independent cohort, and uncertainty, missing data and the consequences of false classifications should be reported.

Longitudinal and strategy-level evaluations are also needed to determine whether improved identification changes management or cardiovascular outcomes. These are research priorities inferred from the limitations of the assessed literature; they are not demonstrated benefits of a proposed algorithm.

5. Conclusions

Exercise BP can add a contextual signal in an adult athlete whose office BP is below the hypertension threshold. Its meaning depends on measurement timing, protocol, workload and fitness. The assessed evidence supports further evaluation when clinical suspicion persists but does not establish a universally validated exercise threshold for masked hypertension. Direct comparisons, reference values and prognostic associations should be presented as distinct evidence.

Appropriately obtained office measurements and ABPM define the relevant phenotype. The whole-cohort diagnostic reconstruction in this review concerns any ABPM hypertension and cannot be used as a masked-hypertension accuracy estimate. Recording quality, sleep, activity and medication require explicit documentation. Important inaccessible diagnostic evidence remains a limitation, while the interpretation of cardiac remodelling remains a separate clinical assessment.

Disclosure

Author's contribution:

Conceptualization: Maciej Lesiczka

Methodology: Maciej Lesiczka, Filip Lenartowicz, Jarosław Kucharski, Zuzanna Cecot

Software: Not applicable

Validation: Anna Maciaszczyk

Formal analysis: Alicja Lewczuk, Dawid Mazurek

Investigation: Oliwia Gałczyńska, Julia Duszejko

Resources: Maciej Lesiczka, Katarzyna Kuklińska

Data curation: Alicja Lewczuk, Jarosław Kucharski

Writing—original draft: Maciej Lesiczka, Zuzanna Cecot, Filip Lenartowicz, Oliwia Gałczyńska

Writing—review and editing: Julia Duszejko, Katarzyna Kuklińska

Visualization: Anna Maciaszczyk, Alicja Lewczuk

Supervision: Maciej Lesiczka

Project administration: Dawid Mazurek

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