INPLASY

INPLASY2026110092

doi: 10.37766/inplasy2026.11.0092

Received: 23 November 2026

Published: 23 November 2026

Corresponding author:
Duarte Afonso

a22412931@alunos.ulht.pt

Author Affiliation:
Faculty of Sport and Physical Education (FDEF), Universidade Lusófona, Lisbon, Portugal; CIDEFES – Research Center in Sport, Physical Education, Exercise and Health.

Indicators of current performance and future potential in male youth football players aged 12 - 14 years in elite talent development settings: protocol for a systematic review with evidence mapping

Afonso, D; Gomes, L; Ramos, S; Costa, DC; Valente-dos-Santos, J.

ADMINISTRATIVE INFORMATION

Support - This work was supported by national funds through FCT, Fundação para a Ciência e a Tecnologia, I.P., under the project UID/05913/2025 (DOI: https://doi.org/10.54499/UID/05913/2025). The funder has no role in the design, conduct, interpretation or dissemination of the review.

Review stage at the time of initial registration - Preliminary searches.

Conflicts of interest - The authors declare no financial conflicts of interest. Duarte Afonso works as a youth football scout at Sporting Clube de Portugal; this professional role is declared as a non-financial interest, and the club has no role in the design, conduct, interpretation or dissemination of the review. The remaining authors declare no competing interests. If any author has authored a potentially eligible study, that author will not participate in its eligibility decision, data extraction or risk-of-bias assessment, which will be performed by other members of the review team.

INPLASY registration number: INPLASY2026110092

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 23 November 2026 and was last updated on 23 November 2026.

INTRODUCTION

Review question / Objective Primary question: In male youth association football players aged 12.00–14.99 years in elite talent development settings, which indicators and assessment procedures have been used to assess current performance and future potential, and what empirical evidence supports (i) their association with concurrent performance level, (ii) their association with player selection and (iii) their prognostic validity for later performance outcomes?

Secondary question: What evidence exists on the measurement properties (reliability, measurement error and validity) of the instruments and tests used to assess these indicators in the target population?

Objectives:
(1) To identify and characterise the indicators, their domains, operational definitions, assessment procedures and instruments; (2) to critically appraise and synthesise the evidence on their association with current performance, their use in

Afonso et al. INPLASY protocol 2026110092. doi:10.37766/inplasy2026.11.0092 Downloaded from https://inplasy.com/inplasy-2026-11-0092/

player selection and, where investigated, their prognostic validity;
(3) to summarise the available measurement-property evidence for each instrument or test;
(4) to integrate these findings into an indicator-level evidence map that will inform the candidate list for a subsequent Delphi consensus study. The review does not aim to produce a definitive ranking of talent indicators.

The review question is structured according to the PICOTS framework (Population, Index factor, Comparator, Outcome, Timing, Setting) recommended for prognostic factor reviews (Riley et al., 2019):
Population: Male association football players (outfield players and goalkeepers) aged 12.00–14.99 years at the time of (baseline) assessment.
Index indicators: Any player-level variable measured, observed or rated to assess current performance or future potential (technical, tactical, physical/physiological, psychological, anthropometric/biological, perceptual-cognitive, social/contextual), including coach or scout ratings.
Comparator: Concurrent and selection evidence: players of different performance or selection levels, or a continuous criterion of current performance. Prognostic evidence: players with different baseline values of the indicator. Not required for measurement-property or qualitative studies.
Outcomes: Concurrent performance level; selection status; later performance outcomes (see Main outcome(s)); measurement properties.
Timing:
Concurrent: indicator and criterion measured within the same assessment period.
Prognostic: outcome measured at least one competitive season (approximately 12 months) after baseline.
Setting: Elite talent development settings, as operationally defined in Participant or population.

Rationale Talent identification and development are central to youth football. Performance and potential emerge from the interaction of technical, tactical, physical, psychological and anthropometric/biological factors, so approaches focused on a single domain are insufficient (Sarmento et al., 2018; Bergkamp et al., 2019; Gong et al., 2026).

The focus on players aged 12–14 years reflects the relevance of this period to growth and development. Players of similar chronological age may differ considerably in biological maturity status, which influences body size, physical capacity and skill and, consequently, observed performance and selection decisions (Figueiredo et al., 2009; Malina et al., 2015; Cumming et al., 2017; Massa et al., 2022). In many federations, this age range also coincides with the transition from reduced-sided formats to 11-a-side competition, in which players perform within standard positional structures (e.g., 11-a-side from under-13 in England; 9-a-side at under-13 in Portugal, with the full format thereafter) (The Football Association, n.d.; Federação Portuguesa de Futebol, 2024). This allows indicators to be compared across playing positions under broadly comparable game demands. The age range corresponds to the target population of the position-specific assessment instrument to be developed in the doctoral project, focusing on the period in which 11-a-side competition, maturity-related variability and initial academy selection decisions converge.

Several reviews have addressed talent identification and development in male football. Sarmento et al. (2018) reviewed the field systematically; Murr, Raabe and Höner (2018) and Murr et al. (2018) reviewed the prognostic relevance of physical and psychological predictors in youth players up to U19; Williams, Ford and Drust (2020) appraised progress since 2000; Clemente et al. (2022) reviewed the validity and reliability of technical and tactical field tests; and Gong et al. (2026) mapped the evolution of talent identification indicators in U9–U19 players. Searches of INPLASY, PROSPERO and OSF Registries on 16 November 2026 identified related registered reviews, most addressing a single domain or factor in broader populations: physical indicators of selection in players aged 12–20 years of both sexes (PROSPERO CRD420251049786; Amiri-Khorasani et al., OSF Registries, 2026); psychological and psychosocial predictors in players aged 19 years or younger (PROSPERO CRD420261295377); and maturation and neuromuscular performance in players aged 10–14 years (Marcela et al., OSF Registries, 2026). Others map the field more broadly: an updated (2017–2026) scoping review of talent identification and development in male football (Sarmento et al., OSF Registries, 2026; INPLASY202210074), a scoping review of competences by playing position (Valencia-Sánchez et al., OSF Registries, 2025), and reviews of talent recruitment processes in football clubs (INPLASY2024120104; INPLASY202670019).

To our knowledge, none of these reviews (i) restricts eligibility to male players aged 12.00–14.99 years in operationally defined elite settings, (ii) synthesises indicators across all performance domains, classifying each by its inferential role

Afonso et al. INPLASY protocol 2026110092. doi:10.37766/inplasy2026.11.0092 Downloaded from https://inplasy.com/inplasy-2026-11-0092/

(concurrent performance, selection or prognostic validity) together with its measurement-property evidence, or (iii) produces an indicator-level evidence map, combining design-specific risk-of-bias and certainty-of-evidence judgements, to inform a position-specific Delphi consensus study. Because reporting an indicator or observing a group difference does not establish prognostic usefulness, such a synthesis is warranted and will provide a robust basis for developing multidimensional, position-specific assessment tools in youth football.

Condition being studied This review addresses empirical evidence on the indicators used to assess male youth football players in elite talent development settings. Indicators will be coded by technical, tactical, physical/physiological, psychological, anthropometric/biological, perceptual-cognitive and social/contextual constructs, together with their operational definitions, instruments and intended inferential roles. Chronological age and biological maturation will be distinguished. Coach and scout judgements of potential will be coded as perceptions or selection judgements rather than as demonstrated predictions. The following definitions apply:

- Indicator: any player-level variable that is measured, observed or rated and used, or proposed, to assess current performance or future potential.
- Current performance: the player's performance level at the time of assessment, operationalised by a contemporaneous criterion (e.g., competitive level, coach-rated performance, match or test performance).
- Selection: a decision by coaches, scouts or clubs to retain, select, release or deselect players within the same assessment period; selection evidence does not imply prognostic validity.
- Prognostic validity: the association between an indicator measured at baseline and a performance outcome measured at a later time point (Riley et al., 2013). A later selection decision (e.g., enrolment in a professional academy several seasons after baseline) is treated as a prognostic outcome, not as concurrent selection evidence.
- Elite talent development setting: as defined in participant or population.

This distinction is important because an indicator may be associated with current performance without being able to predict a player's development. For example, physical characteristics linked to advanced biological maturation may favour performance at a given moment without demonstrating, by themselves, greater long-term development potential (Malina et al., 2015; Cumming et al., 2017).

METHODS

Search strategy The search strategy was developed by Duarte Afonso (DA) in consultation with the co-authors. Concept blocks address (1) association football/soccer, (2) youth/academy populations and (3) talent, performance, potential, selection, prediction and assessment. Synonyms are combined with OR and blocks with AND, using controlled vocabulary where available (MeSH in MEDLINE; SPORTDiscus subject headings) and free-text terms in titles and abstracts. No date, language or age filters will be applied at the search stage; language eligibility will be applied during screening. The complete draft MEDLINE (PubMed) strategy is reported below; strategies for the remaining databases will be translated from it, adapting syntax and field codes, and all executed strategies, interfaces, coverage dates and search dates will be reported in the final review in accordance with the PRISMA extension for reporting literature searches (PRISMA-S; Rethlefsen et al., 2021).

Before execution, the MEDLINE strategy will be peer reviewed by Daniela C. Costa (DCC) using the Peer Review of Electronic Search Strategies (PRESS) 2015 checklist (McGowan et al., 2016). Search sensitivity was checked against a validation set of 10 known eligible studies; on 19 November 2026 the MEDLINE (PubMed) strategy retrieved 5,836 records and all 10 validation studies. Any further revision of the strategy (e.g., following peer review) will be re-tested against the same validation set, and any missed study will prompt revision of the strategy. Backward and forward citation searching (Scopus/Web of Science citation indices) of included studies and of relevant reviews will be performed. Searches will be rerun before the final analyses and, if more than 12 months have elapsed, before submission for publication.

MEDLINE (PubMed) strategy (tested on 19 November 2026: 5,836 records; 10/10 validation studies retrieved)

#1 "Soccer"[Mesh] OR soccer[tiab] OR football[tiab] OR footballer*[tiab]

#2 "Adolescent"[Mesh] OR "Child"[Mesh] OR youth*[tiab] OR young[tiab] OR adolescen*[tiab] OR junior*[tiab] OR academy[tiab] OR academies[tiab] OR "under 13"[tiab] OR "under 14"[tiab] OR "under 15"[tiab] OR U13[tiab] OR U14[tiab] OR U15[tiab]

Afonso et al. INPLASY protocol 2026110092. doi:10.37766/inplasy2026.11.0092 Downloaded from https://inplasy.com/inplasy-2026-11-0092/

OR "U-13"[tiab] OR "U-14"[tiab] OR "U-15"[tiab] OR "talent development"[tiab]

#3 "Aptitude"[Mesh] OR "Athletic Performance"[Mesh] OR talent*[tiab] OR potential[tiab] OR select*[tiab] OR deselect*[tiab] OR predict*[tiab] OR prognos*[tiab] OR "performance level"[tiab] OR "playing level"[tiab] OR elite[tiab] OR scout*[tiab] OR recruit*[tiab] OR "test battery"[tiab] OR reliab*[tiab] OR validity[tiab] OR reproducib*[tiab]

Participant or population The target population comprises male association football players (outfield players and goalkeepers) aged 12.00–14.99 years at the time of assessment (baseline assessment in prospective studies), competing in elite talent development settings.

Age eligibility: A study, or a separately reported subgroup, will be eligible when (a) the reported age range of participants lies entirely within 12.00–14.99 years at assessment, or (b) data for participants within this range are reported separately or can be obtained from the authors. Age-group labels (e.g., U13–U15) will not be accepted as evidence of eligibility, because birth-date cut-offs and assessment dates vary across federations and seasons. Studies reporting only a mean age or only an age-group label will be classified as "age uncertain"; authors will be contacted, and these studies will be included, flagged and examined in sensitivity analyses.

Elite setting: An elite setting is defined as meeting at least one of the following criteria: (i) a youth academy belonging to, or formally affiliated with, a professional club competing in the top two senior national divisions of its country; (ii) an academy holding a formal certification or classification awarded by a national federation, league or other recognised body (e.g., Category 1 status under the English Elite Player Performance Plan (EPPP; Premier League, 2011) or equivalent national systems); (iii) players competing in the highest national youth competitive tier for their age group; or (iv) a national or regional federation talent development programme that selects players through a documented process, with the selection criteria or the selected proportion of the age cohort reported. The criterion met will be recorded for each study. Samples described only as "elite", "high-level" or "talented" without verifiable supporting information will be classified as having uncertain status; authors will be contacted, and these studies will be included, flagged and examined in sensitivity analyses.

Mixed samples: Studies including non-eligible participants (other ages, female players or non-elite players) will be eligible only when data for eligible participants are reported separately. In studies comparing elite with non-elite players, the non-elite group will be accepted as a comparator, provided that the elite group meets the criteria above. Measurement-property studies conducted in players aged 12.00–14.99 years outside elite settings will be included as indirect evidence, flagged as such and considered under indirectness when rating the certainty of evidence.

Two reviewers will independently verify age and setting eligibility; disagreements will be resolved as described in Data management.

Intervention Not applicable; no intervention is evaluated. The focal exposures are the index indicators defined in the review question: any player-level variable measured, observed or rated to assess current performance or future potential, including coach or scout ratings.

Comparator For concurrent and selection evidence, players of different performance or selection levels (e.g., elite vs sub-elite; selected vs deselected; starters vs non-starters) or a continuous criterion of current performance. For prognostic evidence, players with different baseline values of the indicator, compared on a later outcome. No comparator is required for measurement-property or qualitative studies.

Study designs to be included Empirical primary studies: analytical cross-sectional; case-control or retrospective comparisons of selected vs deselected players; prospective or retrospective cohorts; prediction model development or validation; measurement-property studies (reliability, measurement error, validity); qualitative; and mixed methods. Excluded: purely descriptive studies without a performance, selection, later-outcome or measurement-property analysis. Intervention studies are eligible only if baseline indicators are analysed against such criteria independently of the intervention.

Eligibility criteria Inclusion criteria

1. Population: male association football players meeting the age and elite-setting criteria defined in Participant or population; or, for qualitative and mixed-methods studies, coaches, scouts, practitioners or players reporting on the assessment of players who meet these criteria.

Afonso et al. INPLASY protocol 2026110092. doi:10.37766/inplasy2026.11.0092 Downloaded from https://inplasy.com/inplasy-2026-11-0092/

2. Indicators: at least one player-level indicator, or assessment procedure, used or proposed to assess current performance or future potential.
3. Evidence: at least one of the following: (a) association with concurrent performance level or discrimination between performance levels; (b) association with selection status; (c) association between a baseline indicator and a later outcome; (d) measurement properties of an instrument or test in the target population; (e) qualitative or mixed-methods data on indicators used to assess players in the target population. Longitudinal or prognostic evidence is not required for inclusion.
4. Design: empirical primary studies as defined in Study designs to be included.
5. Publication: full reports published in peer-reviewed journals from database inception to the date of the final search.
6. Language: English, Portuguese or Spanish.

Exclusion criteria

1. Other football codes (American, Australian rules or Gaelic football; rugby), futsal and beach soccer.
2. Female-only samples, or mixed-sex samples without separately reported male data.
3. Participants outside the age or elite-setting criteria, without separately reported data for eligible participants (except measurement-property studies included as indirect evidence, as defined in Participant or population).
4. Purely descriptive studies without a performance criterion, selection status, later outcome or measurement-property analysis; studies of match or training demands without such a link; and injury, health or medical screening studies in which indicators are not used to assess performance or potential.
5. Reviews, meta-analyses, editorials, commentaries, letters, protocols, conference abstracts, book chapters, and theses or dissertations, to restrict inclusion to peer-reviewed full reports; where a thesis is identified as the source of a later journal article, the article will be used.

Multiple reports of the same cohort will be linked and treated as one study, with the most complete report designated as the primary reference. Reports whose full text cannot be obtained after documented attempts (institutional access, interlibrary loan and two emails to the corresponding author) will be recorded as "reports not retrieved" in the PRISMA 2020 flow diagram, not as exclusions on eligibility grounds. Potentially eligible studies in other languages will be listed and counted as excluded on language grounds.

Information sources The following databases will be searched from inception: MEDLINE via PubMed; Scopus (Elsevier); Web of Science Core Collection (Clarivate; all indexes available through the institutional subscription, which will be reported in the final review); and SPORTDiscus with Full Text via EBSCOhost. Embase will not be searched because of its expected overlap with MEDLINE and its limited coverage of sport-science journals not indexed elsewhere. Supplementary sources will comprise backward and forward citation searching of included studies and relevant reviews, and contact with authors of included studies for missing data. Coverage dates and the date of each search will be recorded.

Main outcome(s) The primary outcome is a structured inventory of indicators and assessment procedures, classified by domain, construct, operational definition, instrument and inferential role, and mapped onto three evidence categories: (i) current performance (concurrent association with a performance criterion or discrimination between performance levels); (ii) player selection (selected vs deselected, or retained vs released, players within the same assessment period; coach/scout selection judgements; qualitative perceptions of selection criteria); and (iii) prognostic validity (baseline indicator associated with an outcome measured at least one competitive season, approximately 12 months, later, including later selection or progression). Measurement-property evidence (reliability, measurement error, validity) will be reported as supporting information for each indicator.

Eligible later outcomes include subsequent selection, retention or release; progression to a higher age group or team; youth international selection; professional contract; senior debut or appearances; attained senior competitive level; and later test or match performance. When several outcomes or time points are reported, all will be extracted and the longest follow-up for the most distal career outcome will be prioritised.

Indicator frequency will not be interpreted as validity, importance or predictive utility. Because no consistent set of variables predicting future success has been established (Johnston et al., 2018), the absence of prognostic studies for an indicator will be reported as an evidence gap, not as evidence that the indicator lacks value.

Additional outcome(s) Secondary outcomes will characterise the evidence base at study, cohort, indicator and outcome levels, including:

Afonso et al. INPLASY protocol 2026110092. doi:10.37766/inplasy2026.11.0092 Downloaded from https://inplasy.com/inplasy-2026-11-0092/

- Country, study design, recruitment, sample size, sex, age definition and date of assessment.
- Elite-setting criterion met (i–iv) and its source, competition tier and selection pathway.
- Playing position, with goalkeepers distinguished from outfield players.
- Method of maturity assessment, recorded explicitly: somatic (maturity offset, e.g., Mirwald et al., 2002, or Moore et al., 2015; percentage of predicted adult height, e.g., Khamis & Roche, 1994), skeletal age (method specified) or sexual maturation (e.g., Tanner stages), with the timing of assessment.
- Relative age (birth month or quartile relative to the selection cut-off) and whether it was analysed as an indicator or as a confounder.
- Training exposure and history, when reported.
- Indicator definition, instrument, assessor, protocol and measurement properties.
- Outcomes, follow-up, confounders, statistical models, estimates and missing data.
- Design-specific risk-of-bias judgements.
- Study funding sources and authors' declared conflicts of interest.

Data management This protocol has been prepared in accordance with the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P 2015; Moher et al., 2015; Shamseer et al., 2015), and the completed review will be reported according to PRISMA 2020 (Page et al., 2021).

Records from each database will be exported in RIS format, with the export date and number of records documented. Duplicates will be identified in Zotero (version 10.0.3) using automated detection followed by manual verification, and records will then be imported into Rayyan (Ouzzani et al., 2016), where residual duplicates will be removed manually. Rayyan's automated relevance-ranking and other AI-assisted features will not be used to make or prioritise eligibility decisions.

Two reviewers (DA and DCC) will independently screen titles/abstracts and then full texts in Rayyan with blind mode enabled. Before formal screening, both reviewers will pilot the eligibility criteria on a random sample of 100 titles/abstracts and 10 full texts; the wording of the criteria will be clarified, without changing their scope, until agreement is satisfactory, and percentage agreement and Cohen's κ will be reported for each stage. Disagreements will be resolved by discussion and, when necessary, by a third reviewer (JVS). Full-text exclusion reasons will be recorded using a predefined, hierarchical list.

Data will be extracted using a standardised form implemented in Microsoft Excel and piloted on five included studies. Data on results and risk of bias will be extracted independently by two reviewers; descriptive study characteristics will be extracted by one reviewer and verified by a second reviewer against the source report. Discrepancies will be resolved as above. Extraction items for prognostic factor and prediction model studies will be informed by the CHARMS-PF (Riley et al., 2019) and CHARMS (Critical Appraisal and Data Extraction for Systematic Reviews of Prediction Modelling Studies; Moons et al., 2014) checklists, respectively. Corresponding authors will be contacted by email, up to two times over three weeks, to obtain missing information on eligibility or results.

All records, extraction forms, risk-of-bias judgements and analysis files will be stored on institutional storage with restricted access and will be shared in a public repository (Open Science Framework) upon publication of the review.

Quality assessment / Risk of bias analysis Risk of bias will be assessed independently by two reviewers (DA and DCC) using design-specific tools in their current versions: the revised JBI tool for analytical cross-sectional studies (Barker et al., 2026); the Quality In Prognosis Studies (QUIPS) tool for prognostic factor studies, including retrospective comparisons in which baseline data precede selection (Hayden et al., 2013); PROBAST+AI for prediction model studies (Moons et al., 2025); the JBI checklist for qualitative research (Lockwood et al., 2015); component-specific tools plus the Mixed Methods Appraisal Tool (MMAT) for mixed-methods studies (Hong et al., 2018); and COSMIN risk-of-bias methodology for measurement-property studies (Mokkink et al., 2018, 2020). Tools will be piloted on three studies per design. Judgements will be recorded at domain level with supporting rationale; no summary score will be calculated and no study will be excluded because of its risk of bias. Studies authored by review team members will be assessed by other reviewers.

Certainty of evidence for prognostic indicators will be rated with the GRADE approach for prognostic factors (Foroutan et al., 2020; Huguet et al., 2013), considering risk of bias, inconsistency, imprecision, indirectness and publication bias (high, moderate, low or very low). The same domains will qualify narrative judgements for concurrent and selection evidence. Confidence in synthesised qualitative findings will be assessed with GRADE-CERQual (Lewin et al., 2018).

Afonso et al. INPLASY protocol 2026110092. doi:10.37766/inplasy2026.11.0092 Downloaded from https://inplasy.com/inplasy-2026-11-0092/

Selective non-reporting will be assessed by comparing the indicators and outcomes planned in each study's methods (or registration) with those reported. Funnel plots and small-study tests will be used only if a meta-analysis includes at least 10 studies.

Strategy of data synthesis Structure: Studies will be grouped by domain, indicator (operationally distinct tests kept separate) and evidence category (current performance, selection, prognostic validity). Quantitative, qualitative and measurement-property evidence will be synthesised separately before narrative integration. Synthesis without meta-analysis will be reported in accordance with the Synthesis Without Meta-analysis (SWiM) guideline (Campbell et al., 2020).

Effect measures: Where data allow, results will be expressed on a common metric: standardised mean differences (Hedges' g) for comparisons between performance or selection levels; correlation coefficients for associations with continuous criteria; odds ratios, area under the ROC curve, sensitivity and specificity for prognostic and classification analyses; and intraclass correlation coefficients, standard error of measurement or typical error for reliability. When effect estimates cannot be derived, the direction of effect will be tabulated and summarised by vote counting based on the direction of effect, not on statistical significance.

Conditional meta-analysis: A random-effects meta-analysis will be undertaken when at least three independent cohorts report an operationally comparable indicator, within the same evidence category, against a comparable criterion or outcome, with extractable effect estimates. The restricted maximum-likelihood estimator of between-study variance will be used, with Hartung–Knapp–Sidik–Jonkman confidence intervals and 95% prediction intervals. Heterogeneity will be described with τ^2, I^2 and the prediction interval; the choice of model will not be based on a heterogeneity test. When a cohort contributes several eligible estimates, one estimate per cohort will be selected using a prespecified hierarchy (longest follow-up; most distal career outcome; unadjusted before adjusted only if adjusted estimates are unavailable) or dependency will be modelled using a multilevel model or robust variance estimation.

Qualitative evidence: Qualitative findings on the indicators used by coaches and scouts will be synthesised thematically (Thomas & Harden, 2008) and then compared with the quantitative evidence for the same indicators.

Evidence map and Delphi input: The synthesis will culminate in an indicator-by-evidence matrix reporting, for each indicator: domain; assessment procedures; number of independent cohorts per evidence category; direction and magnitude of effects; risk-of-bias profile; certainty of evidence (where rated); and available measurement-property evidence. All indicators will be forwarded to the Delphi study with their evidence profile, classified into three tiers: Tier A, prognostic evidence and acceptable measurement-property evidence; Tier B, concurrent or selection evidence only; Tier C, identified but with insufficient evidence (evidence gap). No indicator will be discarded because it lacks prospective evidence.

Subgroup analysis Where at least two independent cohorts per subgroup are available, results will be explored by: (1) biological maturity status (e.g., pre-, circa- and post-peak height velocity), because maturity-related advantages may inflate concurrent and selection associations; (2) chronological age band (12, 13 and 14 years), because the predictive value of indicators may change across early adolescence; (3) playing position (goalkeepers vs outfield players, and outfield positions where reported), because position-specific demands affect indicator relevance; (4) assessment context (standardised test vs match-derived indicator); and (5) length of follow-up for prognostic evidence. Subgroups will not be derived from mean ages or age-group labels. In meta-analyses, subgroup differences will be examined with tests for subgroup differences or meta-regression and interpreted cautiously; in narrative synthesis, they will be described as exploratory.

Sensitivity analysis Where the number of studies allows, the robustness of the findings will be examined by: (1) excluding studies at high risk of bias in one or more key domains (confounding by maturation or relative age; outcome measurement; attrition); (2) excluding studies with uncertain age or elite-setting status; (3) restricting prognostic evidence to prospective designs; (4) excluding measurement-property studies included as indirect evidence; and (5) in meta-analyses, using alternative between-study variance estimators and alternative choices among dependent estimates. When these analyses are not feasible, the potential influence of these factors will be discussed narratively, and scores from different tools will not be combined.

Afonso et al. INPLASY protocol 2026110092. doi:10.37766/inplasy2026.11.0092 Downloaded from https://inplasy.com/inplasy-2026-11-0092/

Language restriction No language limits in the searches. Studies in English, Portuguese or Spanish are eligible; potentially eligible studies in other languages will be listed and excluded on language grounds.

Country(ies) involved Portugal.

Other relevant information Ethical considerations: Ethics approval is not required because this review synthesises published evidence without direct participant recruitment or collection of new individual-level data.

Limitations: Potential limitations include language and publication-type restrictions, incomplete reporting of age or elite-setting status, unretrieved reports, overlapping cohorts, and heterogeneity of designs, instruments, maturation assessments and outcomes.

Amendments.:Any change to the protocol will be submitted to INPLASY as a dated amendment before implementation, stating the affected section, the previous and revised wording, the rationale, the review stage at the time of the decision and whether study results were known. All deviations will also be reported in the completed review.

Relationship to the doctoral project: This review is the first study of a doctoral project in Physical Education and Sport at Universidade Lusófona. Its evidence map will inform the candidate indicators presented to experts in a subsequent Delphi study aimed at developing a position-specific assessment instrument for male youth football players aged 12–14 years in elite talent development settings.

Use of AI tools: Generative AI tools were used to assist with the translation, drafting and editing of this protocol. All content was reviewed, verified and approved by the authors, who take full responsibility for it. No AI tool will be used to make screening, extraction or appraisal decisions.

Appraisal tools and main domains: Analytical cross-sectional: revised JBI tool (selection and allocation; exposure classification; outcome assessment; confounding; statistical conclusion validity). Prognostic factor: QUIPS (study participation; attrition; prognostic factor measurement; outcome measurement; confounding; analysis and reporting). Prediction model: PROBAST+AI (participants and data sources; predictors; outcome; analysis). Qualitative: JBI qualitative checklist. Mixed methods: component tools plus MMAT. Measurement properties: COSMIN (design requirements and statistical methods for each property).
Current review status: Ongoing.

Keywords Soccer; Talent identification; Youth football; Prognostic factors; Player selection; Biological maturation; Elite academies; Systematic review.

Dissemination plans The findings will be submitted for publication in a peer-reviewed, preferably open-access, sport-science journal and presented at scientific conferences; they will also form a chapter of the first author's doctoral thesis. The completed review will cite the INPLASY registration number and DOI and report any deviations from this protocol. Search strategies, extraction forms, risk-of-bias judgements and analysis files will be made publicly available in an open repository (Open Science Framework). A plain-language summary will be prepared for coaches and academy practitioners.

Contributions of each author

Author 1 - Duarte Afonso. Conceptualization, methodology, search strategy, screening, data extraction, risk-of-bias assessment, formal analysis, writing - original draft.
Email: a22412931@alunos.ulht.pt
ORCID: 0009-0008-6599-6933
Author 2 - Lúcia Gomes. Conceptualization, methodology, data analysis, validation, writing - review and editing.
Email: lucia.gomes@ulusofona.pt
ORCID: 0000-0002-3281-2877
Author 3 - Sérgio Ramos. Conceptualization, methodology, data analysis, validation, writing - review and editing.
Email: sergio.ramos@ulusofona.pt
ORCID: 0000-0001-9061-3027
Author 4 - Daniela Costa. Methodology, supervision, validation, writing - review and editing, project administration.
Email: p7623@ulusofona.pt
ORCID: 0000-0003-0926-6617
Author 5 - João Valente dos Santos. Conceptualization, methodology, third reviewer/ adjudication, supervision, validation, project administration, writing - review and editing.
Email: joao.valente.santos@ulusofona.pt
ORCID: 0000-0003-0980-0269

Afonso et al. INPLASY protocol 2026110092. doi:10.37766/inplasy2026.11.0092 Downloaded from https://inplasy.com/inplasy-2026-11-0092/