

# INPLASY PROTOCOL

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None declared.

## Feasibility of the Y-balance test to predict the risk of sports injuries - a prospective diagnostic trial meta-analysis

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**Review question / Objective:** (1)Subjects are mostly athletes in various sports;(2)The study subjects were divided into the injured and uninjured groups through long follow-up observations, the YBT anterior differential, posterior internal differential, and posterior external differential were used to define the risk of injury;(3)Studies that can impute or 2x2 lists that directly give data on the number of true positives, false positives, true negatives, and false negatives.;(4)The type of study included was a prospective cohort study.

**Condition being studied:** Research has shown that abnormal dynamic balance is an important mechanism affecting sports performance and injury risk, and is commonly used clinically to assess the risk of lower limb sports injuries and as a criterion for athletes returning to competition after injury. In the ongoing search for methods and models to predict sports injuries based on performance or athletic ability, the Y Balance Test has received much attention for its ability to provide a more comprehensive picture of a subject's dynamic balance, muscle strength and joint mobility. However, its validity in predicting sports injuries has been controversial, not only because of its own characteristics, but also because of the research methods and perspectives of different researchers. Therefore, it is important to critically analyse the high quality research results and to summarise the commonalities.

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 10 May 2022 and was last updated on 10 May 2022 (registration number INPLASY202250060).

### INTRODUCTION

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study subjects were divided into the injured and uninjured groups through long follow-up observations, the YBT anterior differential, posterior internal differential,

and posterior external differential were used to define the risk of injury;(3)Studies that can impute or 2x2 lists that directly give data on the number of true positives, false positives, true negatives, and false negatives.:(4)The type of study included was a prospective cohort study.

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## METHODS

**Participant or population:** The subjects included in the study were mainly athletes5 researchers participated in this study.

**Intervention:** A sports injury is defined as being caused by a mechanism other than direct impact; requiring medical intervention; resulting in inability to participate in training for more than one dayThe risk of injury was defined by the anterior difference, posterior internal difference and posterior external difference of the YBT, and the study population was divided into injured and uninjured groups by follow-up observations.

**Comparator:** The exposed group is the population with a sports injury and the non-exposed group is the population without a sports injury Number of uninjured.

**Study designs to be included:** Prospective cohort study.

**Eligibility criteria:** The YBT predifference, posterior indifference and posterior out difference values were used to define the risk of injury and to derive or 2 x 2 list the number of true positives, false positives, true negatives and false negatives directly.

**Information sources:** Web of Science, Google Scholar、PubMed、Elsevier, CNKI、WANFANG、WEIPU.

**Main outcome(s):** True positives, false positives, true negatives, false negatives given directly in the imputed or 2 x 2 list as outcome indicators.

**Quality assessment / Risk of bias analysis:** Methodological quality was assessed using the Newcastle-Ottawa scale (NOS) scale. publication bias tests were performed using Deek's funnel plot.

**Strategy of data synthesis:** The plan was to explore threshold effects by calculating Spearman's correlation coefficients between the log of sensitivity and the log of (1-specificity) using SPSS 18.0 software. Statistical processing was performed using Stata 13.0 software. Forest plots were created using the MIDAS module to visually assess the sensitivity and specificity between studies to test for heterogeneity between studies. The area under curve (AUC) of the summary receiver operating characteristic (SROC) curve was used to reflect the accuracy of the diagnostic results using the 95% CI. Finally, potential sources of heterogeneity in sensitivity and specificity were explored and one-way meta-regression analysis was performed with 95% CI covariates.

**Subgroup analysis:** The study was planned to include sample size, type of literature, study population, gender, observation period, and quality of literature as moderating variables for subgroup analysis.

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**Sensitivity analysis:** Sensitivity analysis was carried out by stata software to reflect the sensitivity of this study through the change in effect size by removing one of the literature.

**Country(ies) involved:** China.

**Keywords:** Y-balance test; sports injury; diagnostic meta-analysis; prospective study.

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