

INPLASY PROTOCOL

To cite: Zhou et al. The association between passing return-to-sport testing and prognosis for patients after anterior cruciate ligament reconstruction surgery: A systematic review and meta-analysis. Inplasy protocol 202360027. doi: 10.37766/inplasy2023.6.0027

Received: 08 June 2023

Published: 08 June 2023

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Support: None.

Review Stage at time of this submission: The review has not yet started.

Conflicts of interest:
None declared.

The association between passing return-to-sport testing and prognosis for patients after anterior cruciate ligament reconstruction surgery: A systematic review and meta-analysis

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Review question / Objective There was inconsistent results regarding the role of return-to-sport (RTS) testing on subsequent risk of re-injury following anterior cruciate ligament reconstruction (ACLR) remains controversial. We therefore conducted a systematic review and meta-analysis to assess the potential role of RTS on the risk of re-injury for patients after ACLR.

Eligibility criteria The inclusion criteria of this study included: (1) Participants: athletes after ACL injury; (2) Exposure: passing RTS testing; (3) Control: failure passing RTS testing; (4) Outcomes: knee injury (all knee injuries and ACL injury), secondary ACL injury (defined as contralateral ACL injury and graft rupture), contralateral ACL injury, or graft rupture; and (5) Study design: no restrictions were placed on study design, including prospective and retrospective design.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 08 June 2023 and was last updated on 08 June 2023 (registration number INPLASY202360027).

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Condition being studied The electronic databases of MedLine, EmBase, and the Cochrane library were systematically searched to identify eligible study from

INTRODUCTION

Review question / Objective There was inconsistent results regarding the role of return-to-sport (RTS) testing on subsequent risk of re-injury following anterior cruciate ligament reconstruction (ACLR) remains controversial. We therefore

their inception up to May 2020. The investigated outcomes including knee injury, secondary ACL, contralateral ACL injury, and graft rupture, and the pooled odds ratios (ORs) and 95% confidence intervals (CIs) was calculated by using the random-effects model.

METHODS

Search strategy This review was conducted and reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analysis Statement [20]. Study examined the role of RTS test on the risk of subsequent re-injury for athletes after ACL injury was eligible for inclusion in our study, and no restrictions were placed on publication language. We searched the MedLine, EmBase, and Cochrane Library electronic databases for articles published throughout May 2020 and used (“anterior cruciate ligament reconstruction” OR “ACL reconstruction”) AND (“return to sport” OR “return to sport criteria” OR “return to play” OR “return to play criteria” OR “functional testing” OR “return to athletic*”) as the core search terms. The reference lists of relevant articles were also manual searches to identify additional eligible studies. The study selection was conducted based on medical subject heading, methods, patient population, design, exposure, and outcome variables.

Participant or population Participants: athletes after ACL injury.

Intervention Exposure: passing RTS testing; Control: failure passing RTS testing.

Comparator The inclusion criteria of this study included: (1) Participants: athletes after ACL injury; (2) Exposure: passing RTS testing; (3) Control: failure passing RTS testing; (4) Outcomes: knee injury (all knee injuries and ACL injury), secondary ACL injury (defined as contralateral ACL injury and graft rupture), contralateral ACL injury, or graft rupture; and (5) Study design: no restrictions were placed on study design, including prospective and retrospective design.

Study designs to be included Study design: no restrictions were placed on study design, including prospective and retrospective design.

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Main outcome(s) Outcomes: knee injury (all knee injuries and ACL injury), secondary ACL injury (defined as contralateral ACL injury and graft rupture), contralateral ACL injury, or graft rupture.

Quality assessment / Risk of bias analysis The Newcastle-Ottawa Scale (NOS) was applied to assess the methodological quality of individual study in meta-analysis, which on the basis of selection (4 items), comparability (1 item), and outcome (3 items) [21]. A "star system" (range, 0-9) has been developed for assessment in each study. These processes were independently performed by 2 authors, and any disagreement was examined and adjudicated by an additional author reviewing the full-text of original article.

Strategy of data synthesis We examined the role of RTS testing with the risk of knee injury, secondary ACL injury, contralateral ACL injury, and graft rupture on the basis of the incidence rate and sample size in each

individual study. After this, the pooled odds ratios (ORs) and 95% confidence intervals (CIs) were calculated using the random-effects model.

Subgroup analysis We examined the role of RTS testing with the risk of knee injury, secondary ACL injury, contralateral ACL injury, and graft rupture on the basis of the incidence rate and sample size in each individual study. After this, the pooled odds ratios (ORs) and 95% confidence intervals (CIs) were calculated using the random-effects model.

Sensitivity analysis The robustness of pooled conclusions were assessed by using a sensitivity analysis.

Country(ies) involved China.

Keywords: passing return-to-sport testing, prognosis, anterior cruciate ligament reconstruction surgery.

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