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Letter to the Editor

Letter to the editor on "Return to sport following Lisfranc injuries: A systematic review and meta-analysis"

To the Editor,

We would like to thank the team of Dr. Robertson [1] for having performed an interesting systematic review on the sports outcomes of the treatment of Lisfranc injuries. The purpose of the study entitled "Return to sport following Lisfranc injuries: A systematic review and meta-analysis" was to compare the return to sports rates and times in patients having undergone non-operative management and surgical management of different stages of Lisfranc injuries aiming at identifying the golden standard with reference to sports outcomes. Although we read the work with pleasure, it must be stated that the research raised some thought-provoking issues. Through the present Letter to the Editor, we wish to take the opportunity to thoroughly and respectfully comment on these.

Firstly, it should be stated that a number of the methodological aspects of the review could be ameliorated. One of the vital aspects is that study question did not accurately correspond to the stated purpose of the research. In the last paragraph of the introduction the aim of the study is stated as to determine the 'optimal management methods'. In order to achieve such an aim, a comparative character alongside accompanying appropriate statistical methods is required. To be able to compare studies in a methodological sound manner, pooling of studies with equal methodological quality is necessary. It should be stated that the authors of the review did not adhere to this principle. Although the Modified Coleman Methodology Score [2] was used, its results were not incorporated nor accounted for in any of the comparative analyses of the study thereby introducing a substantial risk of bias affecting the conclusions based on the performed meta-analysis. Furthermore, it is difficult to understand the exact execution of the statistical calculation and its associated p-values concerning the comparison between treatment groups, as it was not mentioned what specific statistical tests were utilized in the paper. It would have been of better methodological quality when the authors would have used a best-evidence synthesis methodology in which articles with higher methodology scores would weigh more than those with lower scores. Furthermore, when closely analyzing the conclusions based on the comparison of the pooled outcomes, another critical aspect can be identified. When appreciating Table 4, one can observe that two types of return to sports were pooled, one of them being return to sports (without associated pre-injury or post-injury level of sports), and the other being return to same pre-injury level of sports. Although the separation of these two outcomes is methodologically correct, it should be stated that the analyses and conclusions are actually based on return to any level of sports rather than the return to same pre-injury level of sports. The same accounts for the calculated and pooled return to sports times where one notices that the level of pre-injury sports is not mentioned anywhere in the analysis of the primary outcomes. Therefore, from a methodological point of view, it is not possible to compare a group of athletes returning to a high sports level (e.g. professional rugby) to a group of athletes returning to sports with a lower impact (e.g. swimming and walking). This affects the results in such a manner that the return to sports rates and times are higher and faster, respectively, than what the actual athlete at a high sports level would experience. A separation between sports level is therefore advisable.

Secondly, the review of the team of Dr. Robertson did not adhere to an important ingredient of the Preferred Reporting Items of for Systematic Reviews and Meta-Analyses (PRISMA) guidelines concerning the search strategy. The authors should have presented the full electronic search strategy for at least one database [3–5]. Instead, the authors solely reported keywords, which is only a part of the search strategy. Moreover, there is no appendix describing the complete method through which the literature is searched. Furthermore, it is unclear how the exact identification of suitable articles was achieved when assessing the search results of the databases. For instance, the information regarding the number of duplicate articles is not reported. The study also gives the impression that in the first screening the articles were only screened by title, whereas this should have been by title and abstract. Furthermore, it is unclear on which basis the articles after 'full-text screening' were excluded. Given the search as described in the study, it would be impossible to reproduce the systematic review.

Finally, the present systematic review was not registered in any of the suitable registers available for this purpose. Registering a systematic review or meta-analysis is recommended when aiming to conduct one. The most frequently used register is the International Prospective Register of Systematic Review Protocols register (PROSPERO) [6,7]. When a systematic review is submitted to this register, it is peer-reviewed to check whether a similar review was published in the register. Peer-reviewing therefore prevents identical systematic reviews from being performed [8], and minimizes the risk of publication bias as well as selective reporting of outcome-related bias [9,10]. Moreover, registration improves the quality of conduct of the review and its subsequent reporting and also provides transparency in the review process as well as aiming to minimize reporting bias [8,9]. Additionally, one of the obligatory steps of the registration concerns the adherence to specific guidelines of the conduct of the review, such as chosen primary outcomes, preliminary search strategies, and expected statistical analyses. This enhances the quality of the review to be performed [8], as any deviation from the protocol gives a risk of bias or the perception of bias. Therefore, the checklists of the

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PRISMA guidelines included a statement in the methods section that prospectively registering a systematic review in the PROSPERO register must be part of conducting a systematic review [3–5]. The review by Robertson describes that they have followed the PRISMA guidelines, but ultimately failed to report that they did not fully comply with the guidelines.

In conclusion, the review in question aimed at answering a research question being based on calculations supported by incorrect selection of its sources and inappropriate associated pooling methodologies for which the pre-injury level of sports was not taken into account. Furthermore, a more accurate description of the search strategy should have been given as presently it is unclear how the articles were screened and how exactly suitable articles were identified. It is advised that a systematic review should be performed according to a set of principles formulated in the PRISMA guidelines, including its obligatory prospective registration of the review and its protocol in the PROSPERO-register.

Declarations of interest

None reported for any of the authors.

Author involvement and publication

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Carlijn S. ter Laak Bolk[a,b,c]
Jari Dahmen[a,b,c]
Kaj T.A. Lambers[a,b,c]
Leendert Blankevoort[a,b,c]
Gino M.M.J. Kerkhoffs[a,b,c,*]

[a]*Amsterdam UMC, University of Amsterdam, Department of Orthopaedic Surgery, Amsterdam Movement Sciences, Meibergdreef 9, Amsterdam, The Netherlands*

[b]*Academic Center for Evidence Based Sports Medicine (ACES), The Netherlands*

[c]*Amsterdam Collaboration for Health and Safety in Sports (ACHSS), International Olympic Committee (IOC) Research Center Amsterdam UMC, The Netherlands*

* Corresponding author at: Amsterdam UMC, University of Amsterdam, Department of Orthopaedic Surgery, Amsterdam Movement Sciences, Meibergdreef 9, Amsterdam, The Netherlands.
E-mail address: g.m.kerkhoffs@amsterdamumc.nl (G. Kerkhoffs).

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