Scoring method – MINORS

(Items 8-12 were only used for comparative studies. Items 6 and 7 were not used for case-control studies.)

1. A clearly stated aim: the question addressed should be precise and relevant in the light of the available literature.
Item 1
0: Aim not reported
1: Aim reported but not precise
2: Aim is precise (if the primary aim includes an analysis of risk factors in general, this is fulfilled, GJH does not have to be specifically mentioned).

2. Inclusion of consecutive patients: all patients potentially fit for inclusion (satisfying the criteria for inclusion) have been included in the study during the study period (no exclusion or details about the reasons for exclusion).
Item 2
0: Inclusion not reported
1: Inclusion reported but not consecutive
2: Inclusion of consecutive patients, or reasons for exclusion were reported

3. Prospective collection of data: data were collected according to a protocol established before the beginning of the study.
Item 3
0: Timing of the writing of the protocol in relation to the collection of data not reported
1: Timing of the writing of the protocol in relation to the collection of data was reported but not prospective
2: Prospective collection of data

4. Endpoints appropriate to the aim of the study: unambiguous explanation of the criteria used to evaluate the main outcome, which should be in accordance with the question addressed by the study. Moreover, the endpoints should be assessed on an intention-to-treat basis.
Item 4 [P]
0: Endpoints not reported
1: Clinical endpoints but not ACL rupture, graft rupture, or clinical outcome variables deemed irrelevant or not sufficiently specified by the first author
2: The endpoints used are ACL rupture, graft rupture, or clinical outcome variables deemed relevant by the first author. In case-control studies, investigating the incidence of ACL rupture, the implemented hypermobility score had to be reported.

5. Unbiased assessment of the study endpoint: blind evaluation of objective endpoints and double-blind evaluation of subjective endpoints. Otherwise, the reasons for not blinding should be stated.
Item 5 [Q]
0: Evaluation of endpoints not blinded or not reported
1: Blind evaluations of objective endpoints and double-blind evaluation of subjective endpoints, but inadequate blinding or reasons for not blinding were reported.
2: Blind evaluations of objective endpoints and double-blind evaluation of subjective endpoints

6. Follow-up period appropriate to the aim of the study: the follow-up should be sufficiently long to allow the assessment of the main endpoint and possible adverse events.
Item 6 [R]
0: Follow-up period not reported
1: Follow-up period reported but less than mean two years
2: Follow up period mean two years or longer

7. Loss to follow-up less than 5%: all patients should be included in the follow-up. Otherwise, the proportion lost to follow-up should not exceed the proportion experiencing the major endpoint.

Item 7 [S]
0: Loss to follow-up not reported
1: Loss to follow-up 5% or more
2: Loss to follow-up less than 5%. Or, the number of patients lost to follow-up should not exceed the proportion experiencing the major endpoint[i].

8. Prospective calculation of the study size: information on the size of the detectable difference of interest with a calculation of 95% confidence interval, according to the expected incidence of the outcome event, and information about the level for statistical significance and estimates of power when comparing the outcomes.
Item 8 [T]
0: Study size was not calculated or not reported.
1: Study size was calculated, but the actual study size was smaller than the calculated size.
2: Study size was calculated and the actual study size was equal to or larger than the calculated size.

9. An adequate control group: having a gold standard diagnostic test or therapeutic intervention as the optimal intervention according to the available published data.
Item 9
0: Characteristics of control group not reported
1: Control group assessed as inadequate by the authors
2: Control group assessed as adequate by the authors

10. Contemporary groups: control and study group should be managed during the same time period (no historical comparison).
Item 10
0: Not reported if groups were contemporary or not
1: Reported but not contemporary groups
2: Contemporary groups

11. Baseline equivalence of groups: the groups should be similar regarding the criteria other than the studied endpoints. Absence of confounding factors that could bias the interpretation of the results
Item 11
0: Baseline equivalence of groups not reported
1: Baseline equivalence of groups was not met, but demographic variables were reported.
2: Baseline equivalence of groups was observed. If the sex and age of the groups were reported and were statistically equal among the groups, they were deemed as adequate. Alternatively, if statistical methods were employed to adjust for sex and age, this would award two points.

12. Adequate statistical analyses: whether the statistics were in accordance with the type of study with calculation of confidence intervals or relative risk.
Item 12
0: No statistical analyses were performed.
1: Statistical analyses were performed, but no p-value was presented or statistics did not adjust for the relevant potential confounders (including sex and age) in the event of unequal baseline characteristics.
2: Relevant statistical analyses were performed and a p-value was presented. If baseline equivalence was not met between the groups, the statistical analysis had to consider relevant potential confounders (including sex and age).

ACL, anterior cruciate ligament, GJH, generalised joint hypermobility

[P] The intention-to-treat aspect was deemed irrelevant for the majority of the included studies and was therefore not considered in order to avoid bias.
[Q] A study was considered to be blinded as long as some part of the treatment was blinded; the surgery per se did not need to be blinded.
[R] If the mean follow-up is not reported, the minimum follow-up is used instead.

[S] Only used when a major endpoint was clearly stated
[T] Any calculation of study size was accepted. The calculation of study size had to be performed for at least one of the outcomes, but it was not necessary for all outcomes.