

GRADE Judgement rational for certainty of evidence

Grading of evidence:

For evaluating a risk or prognosis, prospective longitudinal studies (observational studies) provide the highest level of evidence¹. However, the majority of included studies (67%) in this systematic review were retrospective case series. Therefore, we found it reasonable to downgrade one level to moderate certainty. (The GRADE evidence profile is displayed in table 2)

In our risk of bias assessment, we found that 68-84% of studies had high risk of bias regarding the following domains: selection of cohort, demonstrating that the outcome was not present at the start of the study and assessment of the outcome. These aspects may directly under- or over-estimate the new meniscal injury rate, and therefore, indicate downgrading the certainty one level to low (table 2).

There were not consistent findings in the included studies. The I^2 statistic was very high > 93%, but we have to be aware of the limitations in using the I^2 statistic when there are large sample sizes and narrow overall confidence interval². However, the individual study confidence intervals did not overlap and suggest high inconsistency and warrant downgrading the certainty one level to very low (table 2).

The confidence interval of the overall point estimate is narrow (0.05 to 0.10). It is not likely that the treatment would change for the patient if either the lower or the upper limit represented the true estimate. The GRADE rule is to downgrade the certainty if patient treatment is altered by choosing the lower or upper limit of the confidence interval¹. As a result, we did not find reasons to downgrade the certainty based on imprecision.

There are few studies published on active rehabilitation and also relatively few studies with long follow-up time. Furthermore, the outcome of interest in this systematic review, is not a common primary outcome. Assessment of the outcome is not appropriate in most studies. Thus, the rate of new meniscal injuries in the included studies is not likely to adequately reflect the total picture of new meniscal injury rates after ACL injury. This indirectness, indicates downgrading the certainty one level, but our certainty is already downgraded to very low and further downgrading is not possible.

In conclusion, the certainty of the body of evidence regarding risk of new meniscal tears after ACL injury treatment is very low due to the GRADE assessment discussed above.

1. Iorio A, Spencer FA, Falavigna M, et al. Use of GRADE for assessment of evidence about prognosis: rating confidence in estimates of event rates in broad categories of patients. *BMJ* 2015;350:h870. doi: 10.1136/bmj.h870 [published Online First: 2015/03/18]
2. Ferretti A, Monaco E, Ponzio A, et al. Combined Intra-articular and Extra-articular Reconstruction in Anterior Cruciate Ligament-Deficient Knee: 25 Years Later. *Arthroscopy - Journal of Arthroscopic and Related Surgery* 2016;32(10):2039-47. doi: <http://dx.doi.org/10.1016/j.arthro.2016.02.006>