



ISAKOS
CONGRESS
2023



Boston
Massachusetts
June 18–June 21

Welcome

isakos.com/2023 • [#ISAKOS2023](https://twitter.com/ISAKOS2023)





ISAKOS
CONGRESS
2023



Boston
Massachusetts
June 18–June 21

Title: No Significant Difference in Signs of Osteoarthritis after Anterior Cruciate Ligament Injuries comparing Surgical and Conservative Treatment a Systematic review and Meta-Analysis

Author/s: *Miklós Máté, Robert de Jonge, Norbert Kovács, Szilárd Váncsa, Imre Szerv, György Szőke, Gergely Agócs, Péter Hegyi, Gergely Pánics*





ISAKOS
CONGRESS
2023



Boston
Massachusetts
June 18–June 21

Disclosures:

Miklós Máté MD: I have no financial conflicts to disclose.

Robert de Jonge MD: I have no financial conflicts to disclose.

Norbert Kovács MD: I have no financial conflicts to disclose.

Imre Szerb MD: I have no financial conflicts to disclose.

György Szőke MD, PhD: I have no financial conflicts to disclose.

Gergely Agócs PhD: I have no financial conflicts to disclose.

Szilárd Váncsa MD: I have no financial conflicts to disclose.

Péter Hegyi MD, Prof., PhD: I have no financial conflicts to disclose.

Gergely Pánics MD, PhD: I have no financial conflicts to disclose.



Summary:

- The purpose of our study was to analyze the best available evidence, including only studies directly comparing surgical treatment versus conservative management of an ACL tear on short-term follow-up.



ISAKOS
CONGRESS
2023



Boston
Massachusetts
June 18–June 21

Background:

- Anterior cruciate ligament (ACL) tear is one of the most common knee injuries. Regarding the treatment, evidence-based recommendations for the optimal selection of non-operative or surgical management strategies for the acute ACL-injured patient have not been established. Systematic reviews have found similar long-term outcomes (physical activity levels, pain, symptoms, knee osteoarthritis, and quality of life - QOL) following ACL reconstruction and non-operative management of ACL rupture. Although most studies have been found of poor methodological quality, very few randomised controlled trials (RCTs) exist. The clinical benefit of surgery versus conservative treatment is still debated, the possibility of limiting joint degeneration by reconstructing the ACL is even more controversial, with conflicting results regarding the most effective approach to prevent knee osteoarthritis (OA). In this systematic review and meta-analysis we would like to analyze whether there were signs of OA in short term after the injury.



Materials And Methods:

- This review was registered on PROSPERO (CRD42021287545). We systematically searched four databases until 2 October, 2021, for comparing ACL reconstruction with conservative treatment. Main outcomes were patient-reported outcomes. Meta-analytical calculations for mean differences (MDs) and odds ratios (ORs) were performed with the common-effects model and interpreted with 95% confidence intervals (CIs).



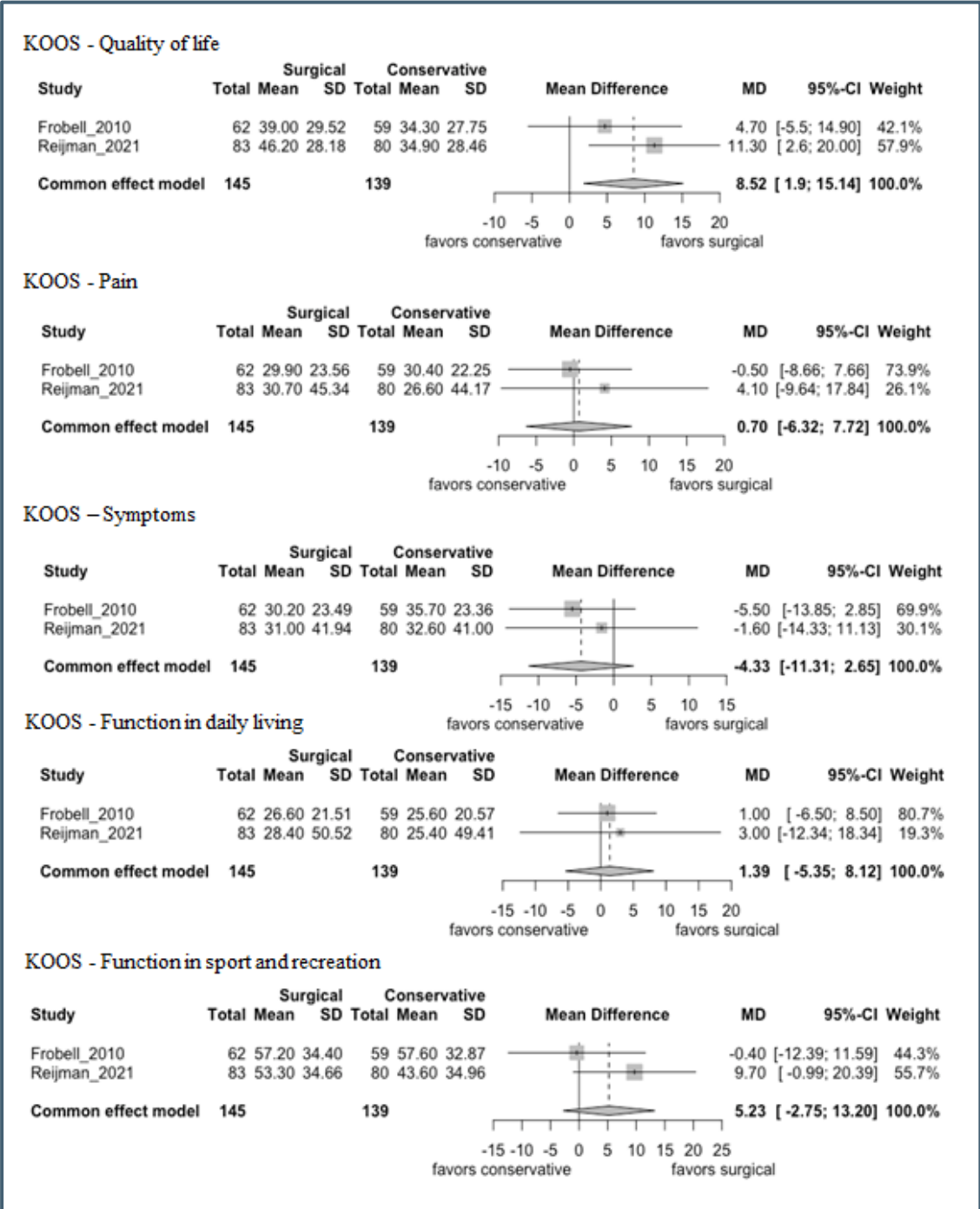
Results:

- 2 studies were included in the quantitative synthesis. In patient reported outcomes only in quality of life has significant difference between the two groups ((MD=8.52, CI: 1.9; 15.14) which favored reconstruction. In terms of pain, symptoms, function in daily living and function in sport and recreation showed that there is no significant difference between the two interventions. In the qualitative synthesis, we pointed early change in cartilage after the joint injury. Which could reflect adverse long-term outcomes after ACL rupture, and the results support the importance of trauma-related factors for the knee's longer-term structural change.



Forrest-plots of results

Summary of forest plots, including differend domains of KOOS



ISAKOS
CONGRESS
2023



Boston
Massachusetts
June 18 - June 21

Conclusions:

- We can conclude that regardless of the therapy that a clinician will choose, surgical or non-surgical, they should advise the patient that the risk of future knee lesions and OA remains relevant, especially when the patient returns to high-risk pivoting activity. According to the studies reviewed in this article, surgically treated individuals had a higher rate of cartilage changes. In addition, patients in both treatment choices improved knee function significantly.



References

1. Frobell RB, Roos HP, Roos EM, Roemer FW, Ranstam J, Lohmander LS. Treatment for acute anterior cruciate ligament tear: five year outcome of randomised trial. *BMJ*. 2013;346:f232.
2. Frobell RB, Roos EM, Roos HP, Ranstam J, Lohmander LS. A randomized trial of treatment for acute anterior cruciate ligament tears. *N Engl J Med*. 2010;363(4):331-42.
3. Development of MRI-defined structural tissue damage after anterior cruciate ligament injury over 5 Years: the KANON Study. *Radiology*. 2021;299(2):383-93.
4. Daniel DM, Stone ML, Dobson BE, Fithian DC, Rossman DJ, Kaufman KR. Fate of the ACL-injured patient. A prospective outcome study. *Am J Sports Med*. 1994;22(5):632-44.
5. Allen CR, Livesay GA, Wong EK, Woo SL. Injury and reconstruction of the anterior cruciate ligament and knee osteoarthritis. *Osteoarthritis Cartilage*. 1999;7(1):110-21.
6. von Porat A, Roos EM, Roos H. High prevalence of osteoarthritis 14 years after an anterior cruciate ligament tear in male soccer players: a study of radiographic and patient relevant outcomes. *Ann Rheum Dis*. 2004;63(3):269-73.
7. Moher D, Liberati A, Tetzlaff J, Altman DG. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *BMJ*. 2009;339:b2535.
8. Sterne JAC, Savović J, Page MJ, Elbers RG, Blencowe NS, Boutron I, et al. RoB 2: a revised tool for assessing risk of bias in randomised trials. *Bmj*. 2019;366:l4898.
9. Sterne JA, Hernán MA, Reeves BC, Savović J, Berkman ND, Viswanathan M, et al. ROBINS-I: a tool for assessing risk of bias in non-randomised studies of interventions. *BMJ*. 2016;355:i4919.
10. Reijman M, Eggerding V, van Es E, van Arkel E, van den Brand I, van Linge J, et al. Early surgical reconstruction versus rehabilitation with elective delayed reconstruction for patients with anterior cruciate ligament rupture: COMPARE randomised controlled trial. *BMJ*. 2021;372:n375.
11. Bowes MA, Lohmander LS, Wolstenholme CBH, Vincent GR, Conaghan PG, Frobell RB. Marked and rapid change of bone shape in acutely ACL injured knees - an exploratory analysis of the Kanon trial. *Osteoarthritis Cartilage*. 2019;27(4):638-45.
12. Hunter DJ, Lohmander L, Makovey J, Tamez-Pena J, Totterman S, Schreyer EH, et al. The effect of anterior cruciate ligament injury on bone curvature over 5 years: the kanon trial. *Osteoarthritis and cartilage*. 2013;21:S138-S9.
13. Culvenor AG, Eckstein F, Wirth W, Lohmander LS, Frobell R. Loss of patellofemoral cartilage thickness over 5 years following ACL injury depends on the initial treatment strategy: results from the KANON trial. *Br J Sports Med*. 2019;53(18):1168-73.
14. Roemer FW, Lohmander LS, Englund M, Guermazi A, Åkesson A, Frobell R. Development of MRI-defined Structural Tissue Damage after Anterior Cruciate Ligament Injury over 5 Years: The KANON Study. *Radiology*. 2021;299(2):383-93.
15. Meuffels DE, Favejee MM, Vissers MM, Heijboer MP, Reijman M, Verhaar JA. Ten year follow-up study comparing conservative versus operative treatment of anterior cruciate ligament ruptures. A matched-pair analysis of high level athletes. *Br J Sports Med*. 2009;43(5):347-51.
16. van Yperen DT, Reijman M, van Es EM, Bierma-Zeinstra SMA, Meuffels DE. Twenty-Year Follow-up Study Comparing Operative Versus Nonoperative Treatment of Anterior Cruciate Ligament Ruptures in High-Level Athletes. *Am J Sports Med*. 2018;46(5):1129-36.
17. Streich NA, Zimmermann D, Bode G, Schmitt H. Reconstructive versus non-reconstructive treatment of anterior cruciate ligament insufficiency. A retrospective matched-pair long-term follow-up. *Int Orthop*. 2011;35(4):607-13.
18. Fink C, Hoser C, Benedetto KP, Hackl W, Gabl M. [Long-term outcome of conservative or surgical therapy of anterior cruciate ligament rupture]. *Unfallchirurg*. 1996;99(12):964-9.
19. Mihelic R, Jurdana H, Jotanovic Z, Madjarevic T, Tudor A. Long-term results of anterior cruciate ligament reconstruction: a comparison with non-operative treatment with a follow-up of 17-20 years. *Int Orthop*. 2011;35(7):1093-7.
20. Clancy WG, Jr. Knee ligamentous injury in sports: the past, present, and future. *Med Sci Sports Exerc*. 1983;15(1):9-14.
21. Li Q, Amano K, Link TM, Ma CB. Advanced Imaging in Osteoarthritis. *Sports Health*. 2016;8(5):418-28.
22. Hegyi P, Petersen OH, Holgate S, Eross B, Garami A, Szakacs Z, et al. Academia Europaea Position Paper on Translational Medicine: The Cycle Model for Translating Scientific Results into Community Benefits. *J Clin Med*. 2020;9(5).



ISAKOS
CONGRESS
2023



Boston
Massachusetts
June 18–June 21