

Appraisal

Critically appraised paper: Early surgery is not superior to exercise and education with the option of later surgery for meniscal tears in young adults

Synopsis

Summary of: Skou ST, Hölmich P, Lind M, Jensen HP, Jensen C, Garval M, et al. Early surgery or exercise and education for meniscal tears in young adults. *NEJM Evidence*. 2022;1:EVIDo2100038.

Question: Is early meniscal surgery superior to a strategy of exercise and education with the option of later surgery for young adults with magnetic resonance imaging-verified meniscal tears? **Design:** Multicentre, pragmatic, superiority, parallel-group randomised controlled trial and concealed allocation. **Setting:** Seven Danish hospitals. **Participants:** Young adults aged 18 to 40 years with magnetic resonance imaging-verified meniscal tears eligible for meniscal surgery. Main exclusion criteria were: prior surgery or fracture in the past 12 months in the affected knee, bucket handle meniscal tear, knee ligament rupture or participation in supervised exercise therapy during the past 3 months. Randomisation (1 to 1) of 121 participants allocated 60 to early surgery and 61 to exercise and education. **Interventions:** The early surgery group underwent arthroscopic partial meniscectomy or meniscal repair followed by postoperative rehabilitation for those undergoing meniscal repair. The other group received a 12-week individualised and supervised exercise therapy and patient education program. The exercise therapy group sessions took place twice weekly with 60 to 90 minutes of neuromuscular and strengthening and 30 to 45 minutes of patient education by trained physiotherapists at 19 clinics. **Outcome measures:** The primary outcome was between-group difference in change in Knee Injury and Osteoarthritis Outcome Score (KOOS4) from

baseline to 12 months (score range 0 to 100, 100 = best score). Secondary outcomes included KOOS subscales, Western Ontario Meniscal Evaluation Tool, isometric leg press muscle strength using FysioMeter, maximum number of knee bends in 30 seconds, one-leg hop for distance, and the 6-m timed hop. **Results:** During follow-up, 16 participants (26%) from the exercise group crossed over to surgery, while eight (13%) from the surgery group did not undergo surgery; 107 (88%) completed the 12-month follow-up. The intention-to-treat analysis did not demonstrate any clear between-group difference in change from baseline to 12 months in KOOS4 (adjusted mean difference 5.4 (95% CI -0.7 to 11.4)). Both groups improved in all secondary outcomes. Per-protocol and as-treated analyses yielded similar results with no clear between-group differences in the primary outcome and most of the secondary outcomes. **Conclusion:** A strategy of early meniscal surgery is not superior to a strategy of exercise and education with the option of later surgery among young, active adults with meniscal tears.

Provenance: Invited. Not peer reviewed.

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Commentary

The evidence refuting arthroscopic partial meniscectomy to treat meniscal tears and degeneration in older adults is well-established. At least 10 randomised controlled trials have similar conclusions: knee arthroscopy confers no additional benefit to exercise therapy or placebo surgery.¹ However, the question has always remained for younger populations: *Is arthroscopic meniscal surgery effective for meniscal tears in young adults?* Little evidence was available to answer this question – until now. The DREAM trial by Skou et al² provides evidence that what we have known for many years in older adults also appears to ring true in young adults with meniscal tears mostly due to trauma.

The finding of no clinically important between-group difference provides evidence that a progressive exercise program targeting lower-limb strength and neuromuscular control should be exploited before considering surgery, similar to other traumatic knee injuries (ie, anterior cruciate ligament rupture).³ Although one in four patients receiving exercise and education underwent surgery within the 12-month follow-up, 74% avoided surgery, with similar clinical outcomes. Importantly, despite significant clinical improvements in both groups, most were not recovered – it is good to feel better, but better to feel good.⁴ Mean scores reported at final follow-up suggest that many patients likely remain unsatisfied with their current state.⁴ Approaches to promote further recovery following meniscal tear are required.

Given the potential for healthcare cost savings with non-surgical interventions, future cost-effectiveness analysis will be important to direct healthcare resources for young people with meniscal tears. Long-term follow-up will also elucidate any potential benefit or harm of meniscal surgery on knee osteoarthritis development – a key concern for patients and practitioners.

Provenance: Invited. Not peer reviewed.

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References

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4. Roos EM, et al. *Br J Sports Med*. 2019;53:1474–1478.