



## Critically appraised paper

### Arthroscopic hip surgery was superior to physiotherapy and activity modification in patients with femoroacetabular impingement [commentary]

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## Appraisal

## Critically appraised paper: Arthroscopic hip surgery was superior to physiotherapy and activity modification in patients with femoroacetabular impingement

## Synopsis

Summary of: Palmer AJR, Gupta VA, Fernquest S, Rombach I, Dutton SJ, Mansour R, et al. Arthroscopic hip surgery compared with physiotherapy and activity modification for the treatment of symptomatic femoroacetabular impingement: multicentre randomised controlled trial. *BMJ* 2019;354:l185.

**Question:** Is arthroscopic hip surgery more effective than physiotherapy and activity modification in patients with symptomatic femoroacetabular impingement? **Design:** Two-group parallel, pragmatic, randomised controlled trial with an automated computer-generated telephone randomisation system operated by research nurses. **Setting:** Seven secondary and tertiary care centres (performing high volumes of arthroscopic hip procedures and able to deliver the physiotherapy program) across seven National Health Service sites in England. **Participants:** Patients were included if they were referred to secondary or tertiary care with symptomatic femoroacetabular impingement (confirmed clinically and with imaging) and aged between 18 and 60 years. Surgeons qualitatively assessed hip morphology to diagnose femoroacetabular impingement. Participants were excluded if they had completed physiotherapy targeting femoroacetabular impingement symptoms in the preceding 12 months or received previous hip surgery, had hip osteoarthritis or dysplasia. Randomisation of 222 participants allocated 112 to arthroscopic surgery and 110 to physiotherapy and activity modification. **Interventions:** In the arthroscopic surgery group, femoral and acetabular bone seen to impinge intraoperatively were excised to eliminate impingement on dynamic hip flexion and internal rotation. Labral tears were repaired, if possible, or debrided. Articular cartilage lesions were debrided and microfracture of the subchondral bone was performed for full-thickness cartilage loss. Postoperative physiotherapy was provided as routine care. A specialist

physiotherapist or advanced physiotherapy practitioner delivered the physiotherapy and activity modification intervention. Eight sessions (maximum) were provided over 5 months and focused on a goal-based tailored program emphasising strength training to improve core stability and movement control. Participants were told to avoid extreme hip flexion, abduction and internal rotation. **Outcome measures:** The primary outcome was the Hip Outcome Score Activities of Daily Living (HOS ADL, 0 to 100 where 100 is normal function) at 8 months after randomisation. Secondary outcomes included HOS sport, non-arthritic hip score, Copenhagen hip and groin outcome score, Oxford hip score, international hip outcome tool, quality of life, location of pain, hospital anxiety and depression score, and clinical tests (range of motion and impingement tests). **Results:** 188 participants (100 arthroscopic surgery and 88 physiotherapy) completed the 8-month follow-up. Mean HOS ADL was 10.0 points higher (95% CI 6.4 to 13.6) in the arthroscopic surgery group compared with the physiotherapy group at 8 months. The arthroscopic surgery group achieved significantly higher values than the physiotherapy group on most secondary outcomes. **Conclusion:** Patients with symptomatic femoroacetabular impingement treated with arthroscopic surgery showed greater improvement in function compared with physiotherapy and activity modification at 8 months after randomisation.

**Provenance:** Invited. Not peer reviewed.

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## Commentary

This large-scale randomised controlled trial aimed to compare (using a pragmatic design) arthroscopic hip surgery with physiotherapy and activity modification in patients with femoroacetabular impingement.<sup>1</sup> More precisely, the study compared routine arthroscopic care and postoperative physiotherapy, as provided in England, to a goal-based physiotherapy and activity modification program developed for conducting this specific randomised controlled trial.<sup>1</sup> Thus, only the surgical arm was pragmatic (reflecting current care). Interestingly, only eight of 31 patients in a feasibility study leading up to this trial found it appropriate to be randomised to non-operative treatment for  $\geq 12$  months.<sup>2</sup> This suggests that an inherent bias against non-operative treatment may exist in patients opting care for femoroacetabular impingement, which may induce associated nocebo effects.

At 8 months, the patients who underwent routine arthroscopic care and postoperative physiotherapy had improved more (10 out of 100 points in activities of daily living on the Hip Outcome Score questionnaire) than the goal-based physiotherapy and activity modification program. It seems, however, that this between-group change was primarily driven by the change in the arthroscopic care group, as the non-operative group did not seem to significantly change. This contrasts with other similar studies where both clinically relevant and statistically significant changes have been associated with non-surgical interventions<sup>3-5</sup> and thus raises questions about the appropriateness of the non-surgical intervention developed by Palmer et al, including a maximum of eight sessions during 5 months of rehabilitation.<sup>1</sup>

Unfortunately, the study provides more questions than answers. It is unknown whether the non-operative comparator was an inferior treatment due to physiotherapy/activity modification being ineffective or due to poor quality/delivery of the program, or due to possible nocebo effects among allocated patients.

To move forward from this trial, future comparative trials should consider using sham arthroscopy for efficacy questions, and different pragmatic approaches reflecting current care for effectiveness questions. This is critical if we are to understand whether arthroscopic hip care is the superior treatment for patients with femoroacetabular impingement.

**Provenance:** Invited. Not peer reviewed.

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