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**Title**

EVALUATING THE POTENTIAL SYNERGISTIC BENEFIT OF A DYNAMIC REALIGNMENT BRACE ON PATIENTS RECEIVING EXERCISE THERAPY FOR PATELLOFEMORAL PAIN SYNDROME

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**Summary**

During the study effect of a dynamic patellar brace in combination with exercise was evaluated with regards to the patellofemoral pain syndrome (PFPS) that caused increased pain during physical activity.

**Introduction/Basis**

Several studies suggest that patella maltracking probably plays a role in the pathogenesis of patellofemoral pain syndrome (PFPS). Exercises can be a causal therapeutic approach for PFPS because dynamic valgus probably plays a key role for the pathogenesis of PFPS. It has been previously shown that exercise programs PFPS can be supported by medially directed taping. Evidence supporting the use of patellar braces is limited because previous studies have been of low quality. The aim of this study therefore is to evaluate the effect of a new realignment brace on patients with PFPS who were treated with physiotherapy.

**Scientific Method**

This study is a randomized multicenter clinical trial examining the effectiveness of a dynamic patellar brace in combination with exercise on short and long term PFPS outcomes compared with exercise alone. Inclusion criteria consisted of a patient age between 18 and 50 years and the presence of PFPS symptoms lasting longer than 2 months but not longer than 2 years. Outcome measures for this study were Kujala score, KOOS, and pain on VAS measured at 6, 12, and 54 weeks following the start of therapy.

## Implementation

For the primary outcome measure (recovery) no significant group difference could be detected at any time point.

However, significant lower limb pain was assessed while climbing stairs or playing sports for the brace group compared to the non-brace group after 6 and 12 weeks. Significantly higher scores in the brace group could be detected for the KOOS pain, symptoms, activities of daily living (ADL) and quality of life (QoL) sub-scores at the 6- and 12-week time points. For the sports/recreational activities (Sport/Rec) sub-score, a significantly higher score could only be found after 12 weeks. After 54 weeks, significant group differences could only be found in the ADL sub-score. For the Kujala score between-group differences could be detected at 6 and 12 weeks.

## Conclusion

The clinical results of this RCT are in accordance with a recent biomechanical study which has shown that the Patella Pro Brace improves lateral patella maltracking in patients with PFPS [1]. A limitation of the present RCT is that the study was not double-blinded. However, blinding to treatment was not possible.

Despite this limitation, the results of this study allow us to make the conclusion that there is a synergistic effect of a patellar realignment brace and exercise for patients with PFPS.

## References

1. Becher C et al. (2015) J Orthop Surg Res 19;10:126

**Image:** Figure 1. KOOS ADL at 6, 12, and 54 weeks after begin of treatment.\_2123.png

