

## Equivalent Knee Injury and Osteoarthritis Outcome Score after 12 and 24 Months Following Anterior Cruciate Ligament Reconstruction – Results from the Swedish National Knee Ligament Register

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### Summary:

One year follow-up KOOS score predicts and is equivalent to two year follow-up KOOS score after Anterior Cruciate Ligament Reconstruction

### Abstract:

#### Background

It is not clear if there is an additional value to assess the Knee injury and Osteoarthritis Outcome Score (KOOS) at both 1 and 2-years after primary Anterior Cruciate Ligament (ACL) reconstruction.

#### Purpose

To investigate within individual patient if there is an equivalence between KOOS at 1 and 2-years after primary ACL reconstruction in The Swedish National Knee Ligament Register.

#### Study Design

Prospective Observational Cohort Study; Level of evidence, 2.

#### Methods

This cohort study was based on data from the Swedish National Knee Ligament Register during the period of January 1, 2005, through December 31, 2013. The longitudinal KOOS scores for each individual at 1-year and 2-year follow-up were assessed through the Two One-Sided Test procedure with an acceptance criterion of 4. Subset analysis was also performed with patients classified by sex, age, graft type and by patients with meniscus and/or cartilage injury.

#### Results

A total of 23 952 patients were eligible for analysis after applied exclusion criteria's (women, n=10,116; 42.2% and men, n=13,836; 57.8%). The largest age group was between 16 and 20 years of age (n=6,599; 27.6%). The most common ACL graft was hamstring tendon (n=22,504; 94.0%) of which the combination semitendinosus and gracilis was the most common. A total of 7,119 patients reported on the KOOS Pain domain at both 1 and 2-year follow-up with a mean difference of 0.21 (13.1 SD, 0.16 SE, [90% CI, -0.05 – 0.46], p<0.001). The same results were found for the other KOOS subscales: symptoms (mean difference -0.54, 14.1 SD, 0. SE, [90% CI, -1.05 – -0.39], p<0.001), ADL (mean difference 0.45, 10.8 SD, 0.13 SE, [90% CI, 0.24 – 0.66], p<0.001), sports and recreation (mean difference -0.35, 22.7 SD, 0.27 SE, [90% CI, -0.79 – -0.09], p<0.001), quality of life (mean difference -0.92, 20.0 SD, 0.24 SE, [90% CI, -1.31 – -0.44], p<0.001) and in the combined KOOS-4 score (mean difference -0.41, 14.5 SD, 0.17 SE, [90% CI, -0.70

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– -0.13],  $p < 0.001$ ). Analysis with specific subsets of patients all showed equivalent results between the two follow-ups.

### Conclusion

Equivalent results within a patient can be found in KOOS in 1-year and 2-year follow-up after ACL reconstruction. The finding is consistent across all KOOS subscales and for all evaluated subsets of patients.

### Clinical relevance

The implication of this research is that there is no additional value to capture both 1 and 2-year KOOS outcomes following ACL reconstruction.