

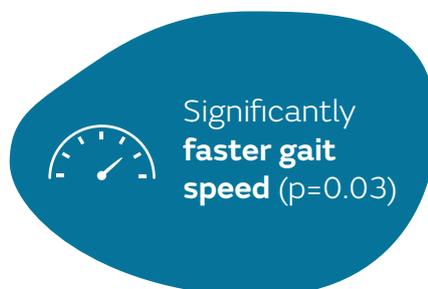
+ Evidence in focus

Publication summary: Hyodo K, et al. *Arthroplast Today* (2020)*

JOURNEY[◇] II BCS patients demonstrate a more normal-like gait pattern compared to conventional posterior stabilised (PS) total knee arthroplasty (TKA)

+ Plus points

Compared to conventional PS TKA, JOURNEY II BCS demonstrated:



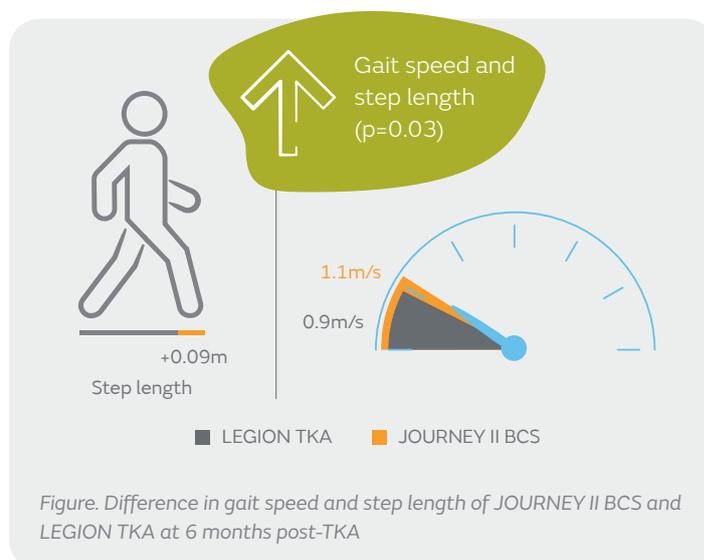
Overview

- Gait analysis study comparing JOURNEY II BCS and a conventional PS TKA (LEGION[◇] PS TKA)
 - JOURNEY II BCS group: n=12 patients (mean age, 69.4 years; percentage of males, 16.7%; mean BMI, 23.5kg/m²)
 - LEGION TKA group: n=12 patients (mean age, 70.0 years; percentage of males, 33.3%; mean BMI, 26.5kg/m²)
- Motion capture analysis with a force plate and electromyogram of the lower limb muscles were conducted at 6 months post-TKA

Results

Compared to LEGION PS TKA, JOURNEY II BCS resulted in:

- Significantly faster gait speed (1.1 vs 0.9m/s; p=0.03; Figure)
- Significantly longer step length (0.54 vs 0.45m; p=0.03; Figure)
- Significantly greater maximum knee flexion angle during initial stance phase (10.9 vs 8.0°; p=0.04)
- Significantly greater maximum knee extension moment (0.55 vs 0.34Nm/kg; p=0.04)
- No significant difference in quadriceps, hamstring or gluteus medius activity
 - Less quadriceps muscle activity in both stance and swing phases (p=ns)
 - Less hamstring muscle activity in the swing phase (p=ns)



Conclusions

JOURNEY II BCS patients demonstrate a faster gait speed, longer step length and greater knee extension moment, compared to conventional PS TKA. This suggests that the quadriceps muscles are more effectively activated and that anterior stability function of the anterior cruciate ligament can be achieved with JOURNEY II BCS TKA compared to conventional PS TKA.

Citation

*Hyodo K, Kanamori A, Kadone H, Takahashi T, Kajiwara M, Yamazaki M. Gait analysis comparing kinematic, kinetic, and muscle activation data of modern and conventional total knee arthroplasty. *Arthroplast Today*. 2020;6:338-342. Available at: [Arthroplast Today](https://doi.org/10.1016/j.artpl.2020.08.001)