

## AvalonK2

Avalon incorporates Blatchford's hydraulic ankle technology with a keel designed specifically for the biomechanics of K2 users. The combination of the keel shape (similar to that of Navigator) and the hydraulic damping of the ankle unit allows shock absorption at initial contact and a smooth rollover. The keel length is designed for those with a shorter step length, to allow the progression of the body centre-of-mass over the end of the toe.

### Improvements in Clinical Outcomes using Avalon compared to non-hydraulic feet

#### Improvement in **MOBILITY**

- Improved gait performance
  - Faster self-selected walking speed<sup>1</sup>
  - Smoother centre-of-pressure progression<sup>1</sup>
- Keel and ankle designed for Activities of Daily Living
  - Easier sit-to-stand<sup>2</sup>

#### Improvement in **LOADING SYMMETRY**

- Mean 34% reduction in stance phase timing asymmetry<sup>3</sup>
- Maximum 86% reduction in stance phase timing asymmetry<sup>3</sup>
- More symmetrical inter-limb loading<sup>1</sup>

#### Improvement in **USER SATISFACTION**

- Patient reported outcome measures indicate improvements
  - Mean improvement across all Prosthesis Evaluation Questionnaire domains<sup>4</sup>

### Clinical Outcomes using the Avalon/Navigator keel design

#### With respect to **MOBILITY**

- Shorter keel allows for more consistent rollover radius of curvature, regardless of changing footwear<sup>5</sup>
- The most energy efficient radius of curvature for a rollover shape has been identified as 30% of the walker's leg length. For a person of a typical adult height between 1.5m and 1.8m, this equates to approximately 245-290mm. The Avalon keel design has a rollover shape of ~250mm<sup>5</sup>.

### References

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3. Moore R. Effect on Stance Phase Timing Asymmetry in Individuals with Amputation Using

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