

A photograph showing a man with a prosthetic knee in a clinical setting. He is wearing a blue t-shirt and shorts, and is holding onto a wooden handrail. Two healthcare professionals, a man and a woman, are assisting him. The man on the left is holding a tablet, and the woman on the right is supporting the man's arm. The background is a bright, modern clinical environment with large windows and a potted plant.

ottobock.





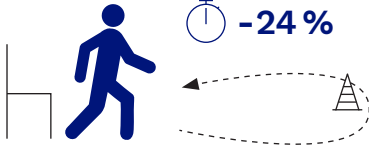


# **Kenevo.** Main clinical takeaways.

**Kenevo was engineered specifically for lower-mobility users and is clinically proven to benefit this population.**

More than 140 patients were included in clinical studies investigating the **Kenevo** microprocessor controlled prosthetic knee. Compared with non-microprocessor controlled knee joints (NMPKs), faster and easier walking and improvements in safety were shown. The following paragraphs outline the clinically proven outcomes for **Kenevo** use compared to NMPKs.

## Safety.

Safety among **Kenevo** users is significantly improved, with fewer falls, stumbles as well as less risk and fear of falling compared to NMPKs.

Mobility needs of the patient	Evidence for benefits of the <b>Kenevo</b> compared to NMPKs
Patient stumbles repeatedly	<ul style="list-style-type: none"> <li>● <b>Reduced frequency of stumbles</b> <sup>(2)</sup></li> </ul>  <p>Frequency of stumbles:  <b>Up to 50 % of subjects never stumble with Kenevo</b> (improvement by 42 % from 8% to 50% from previous prosthesis)</p>
Patient falls repeatedly	<ul style="list-style-type: none"> <li>● <b>Reduction in falls</b> <sup>(2-4)</sup></li> </ul>  <p>Number of falls:  <b>Up to 80 % reduction in falls with MPKs</b> (including <b>Kenevo</b>) <sup>(2-4)</sup></p>
	<ul style="list-style-type: none"> <li>● <b>Reduced falls after one year of usage</b> <sup>(1)</sup></li> </ul>  <p>Falls in one year use:  <b>Up to 52 % fewer falls in 12-month use</b> <sup>(1)</sup></p>
	<ul style="list-style-type: none"> <li>● <b>Higher percentage of subjects who never fall</b> <sup>(2)</sup></li> </ul>  <p>Frequency of falls:  <b>Up to 72 % never fall with Kenevo</b> (improvement by 27 % from previous prosthesis)</p>
Patients stumbles and falls repeatedly and has fear of falling	<ul style="list-style-type: none"> <li>● <b>Significant reduction in risk of falling</b> <sup>(3)</sup> presented by improvements in Timed for Up and Go Test (TUG) <sup>(1, 4)</sup> and the Activity Balance Scale (ABC) <sup>(3, 5)</sup>.</li> </ul>  <p>Risk of falls:  <b>Up to 24 % reduction in completion time for the TUG</b></p>
	<ul style="list-style-type: none"> <li>● <b>Significant reduction in fear of falling</b> <sup>(1)</sup></li> </ul>  <p>Fear of falling:  <b>Up to 21 % reduction in Fear of Falling Related Avoidance Behaviour (FFABQ)</b></p>
	<ul style="list-style-type: none"> <li>● <b>Increased patient-perceived safety</b> <sup>(3)</sup></li> </ul>  <p>Patient-perceived safety:  <b>Up to 83 % of subjects reported increased perceived safety with MPKs (including Kenevo)</b></p>

## Functions and activities – level walking, stairs and ramps.

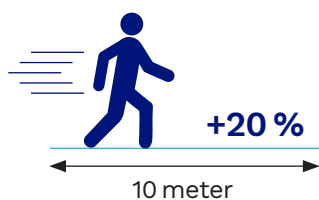
**Kenevo** users walk up to 20 % faster in the 10 m walking test than their NMPK counterparts after one year of use. Most users (64 %) also report better walking quality on uneven surfaces as well as a better quality in ascending and descending stairs and ramps.

### Level walking

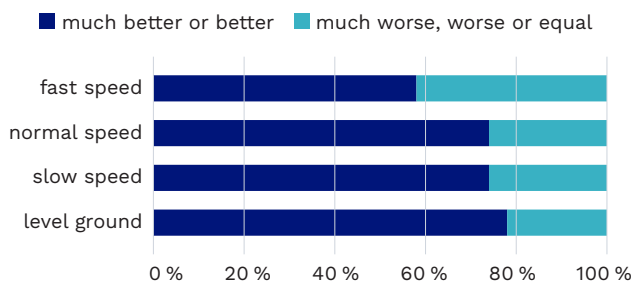
Mobility needs of the patient	Evidence for benefits of the <i>Kenevo</i> compared to NMPKs
Patient has limited mobility	<ul style="list-style-type: none"> <li>● Improved walking speed <sup>(1)</sup></li> <li>● Higher quality of walking on level ground, walking with slow, normal, and fast speed <sup>(2)</sup></li> </ul>
Patient has difficulties negotiating obstacles	<ul style="list-style-type: none"> <li>● Higher quality of walking on uneven ground in <b>64 %</b> of subjects <sup>(2)</sup></li> </ul>

Walking speed: <sup>(1)</sup>

**Up to 20 % improved walking speed in 10 meter walking test**



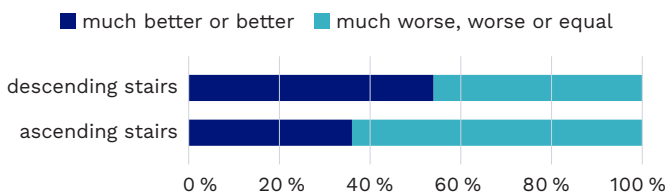
percentage of subjects reporting much better and better quality of walking on / with



### Stairs

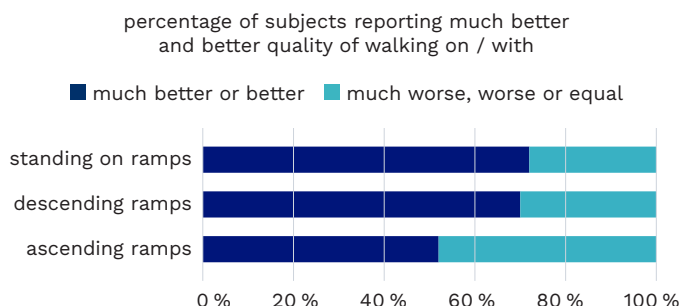
Mobility needs of the patient	Evidence for benefits of the <i>Kenevo</i> compared to NMPKs
Patient has difficulties negotiating stairs	<ul style="list-style-type: none"> <li>● Higher quality walking on stairs (ascending and descending) <sup>(2, 3)</sup></li> </ul>

percentage of subjects reporting much better and better quality of walking on / with



## Ramps

Mobility needs of the patient	Evidence for benefits of the <i>Kenevo</i> compared to NMPKs
Patient has difficulties negotiating slopes/hills	● <b>Higher quality of walking on ramps</b> (ascending, descending and standing) <sup>(2)</sup>



## Functions and activities – cognitive demand and energy.

With *Kenevo* most users (79 %) experience reduced concentration needed and 84 % of users experience less exertion during walking.

### Cognitive demand


Mobility needs of the patient	Evidence for benefits of the <i>Kenevo</i> compared to NMPKs
Patient has difficulties to concentrate during walking	<p>● <b>Lower level of concentration during walking</b> <sup>(2)</sup></p> <p>Concentration during walking: <b>Up to 79 % of subjects experience less/much less concentration during walking</b></p>

### Energy

Mobility needs of the patient	Evidence for benefits of the <i>Kenevo</i> compared to NMPKs
Patient has limitations at work	<p>● <b>Less exertion during walking</b> <sup>(2)</sup></p> <p>Exertion during walking: <b>Up to 84 % of subjects experience less/much less exertion during walking</b></p>


## Functions and activities – activity, mobility and ADLs.

50 % of MPK users have the chance to improve their mobility grade from MG2 to MG3, and up to 50 % of **Kenevo** users reported a reduced dependency on a wheelchair. Users also demonstrated an improved ability to manage everyday challenges – like opening heavy doors, walking backwards or on uneven ground.

Mobility needs of the patient	Evidence for benefits of the <b>Kenevo</b> compared to NMPKs
Patient has limited mobility	<ul style="list-style-type: none"> <li>● <b>Mobility increased</b> presented by significant in-creased LCI global mean <sup>(2, 4)</sup> and significant increases PLUS-M and ABC scale in early rehabilitation <sup>(5)</sup></li> <li>● <b>Improved mobility grade (MG)</b> <sup>(3)</sup></li> </ul> <div style="text-align: center;">  <p>Mobility grade: <b>50 % improved to MG 3 from MG2 with MPKs</b></p> </div>
Uses wheelchair and walking aids	<ul style="list-style-type: none"> <li>● Wheelchair dependency decreased by up to <b>50 %</b> of subjects <sup>(2)</sup></li> </ul>
Difficulties with performing activities of daily living	<ul style="list-style-type: none"> <li>● <b>Improved ability to perform complex movements</b> (opening heavy door, walking backwards, walking on uneven terrain) <sup>(3, 4)</sup></li> </ul>

## Preference and satisfaction.

Nearly 90 % of patients prefer **Kenevo** over their previous NMPK. Further users report a significant increase in satisfaction and quality of life.

Mobility needs of the patient	Evidence for benefits of the <b>Kenevo</b> compared to NMPKs
Patient has limitations at work	<ul style="list-style-type: none"> <li>● <b>Preference for <b>Kenevo</b></b> <sup>(2)</sup></li> </ul> <div style="text-align: center;">  <p>Preference: <b>Up to 89 % of subjects prefer <b>Kenevo</b> over previous NMPKs</b></p> </div> <ul style="list-style-type: none"> <li>● <b>Satisfaction and domains of QoL significantly increased</b> presented by improvements in SF-36 and QUEST 2.0 scores <sup>(4)</sup></li> </ul>

## References

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More details can be found  
in the study summaries

