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Microprocessor Controlled Prosthetic Knees (MPK's)



What is an MPK?

MPK's are a group of prosthetic knee joints that includes a battery-powered computer providing continuous control of the resistance of the knee.

The computer is linked to gait analysis sensors allowing responsiveness to different variables such as different walking speeds, inclines, uneven surfaces and stairs.

Main Advantages to Prosthetic Users

Recent published research evidence demonstrated that MPK's improve safety and stability when walking on uneven terrains in addition to reducing energy requirements of walking.

This results in a reduced risk of falls, improved confidence of walking, increased level of activity and possibly reduced reliance on walking aids.

Most MPK users report improved levels of satisfaction of gait and demonstrate an improvement in gait symmetry. In addition, there might be some long-term advantages in terms of reducing the risk of osteoarthritis in the remaining limb and lower back.

Main Disadvantages of MPK's

MPK's are complex medical appliances that need regular maintenance and strict adherence to the manufacturer's recommendations for use.

They include a rechargeable battery and when the charge runs out, they convert into a safety mode that varies depending on the model.

Users require a period of physiotherapy for gait training in order to fully utilise the benefits and functionalities of their MPK, and need to commit to the manufacturer's maintenance recommendations.

MPK's are not waterproof and will be severely damaged through contact with water unless the manufacturer specifically states that the component is water resistant.

All MPK's have a recommended upper limit for the user's weight and therefore it is clinically contraindicated to use an MPK when the user is above the weight limit.

MPK's are generally more costly compared to mechanical knees (four to ten times the cost of a high spec mechanical knee). Most MPK's are covered by a manufacturer's warranty for a variable period depending on the manufacturer (usually from 2 to 5 years). Faults that are a result of misuse or lack of adherence to the manufacturer's recommendations might risk voiding the warranty.

There is no need to replace the knee once the warranty runs out as long as it is operating as intended. The National MPK Policy states that it is contraindicated to provide an MPK for users who are unable to commit to regular maintenance and adhere to the manufacturer's recommendations.

The whole prosthesis including the MPK remains the property of the NHS at all times and no modifications or repairs are allowed outside the NHS.

Provision

Prescribing an MPK is done through a defined pathway as per the National MPK Policy. This follows a strict selection criteria and indications, and is done in a multidisciplinary setting.

Due to practical limitations related to staffing and equipment infrastructure, the high cost of the MPK's and the need to undergo a trial period with the MPK prior to provision,

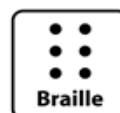
NHS Centres have a limited capacity to upgrade users and need to prioritise provision according to clinical need. If the trial is successful then a funding request is

sent to NHS England and must be approved.

You can discuss your suitability for an MPK with your treating rehabilitation medicine consultant.

During the trial you will require numerous appointments that will need to be attended. If this schedule is not adhered to and appointments are not attended you will be removed from the trial and returned to waiting list.

Users who start an MPK trial will be requested not to transfer to an alternative centre during this period. If so the trial will be suspended immediately.



If you require a special edition of this leaflet

This leaflet is available in large print, Braille, on audio tape or disk and in other languages on request. Please contact:

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Email: interpretationandtranslation@liverpoolft.nhs.uk