Epirus

Epirus incorporates an elastic Multiflex style ankle joint with an energy-storing-and-return prosthetic foot, which uses e-carbon foot springs to efficiently absorb energy during weight bearing and return it during off-loading, in order to aid propulsion. The elastic ankle joint provides a greater range-of-motion for improved adaptability. By providing plantarflexion motion at heel strike, cushioning/comfort improves compared to a fixed ankle ESR foot. The split-toe design permits further medial-lateral slope compliance.

Clinical Outcomes using e-carbon feet

Much research confirms the substantial equivalency of all energy-storing and return feet, including Blatchford e-carbon feet.

With respect to SAFETY
- High mean radius of curvature for Esprit-style e-carbon feet: “The larger the radius of curvature, the more stable is the foot”

With respect to MOBILITY
- Allow variable running speeds
- Increased self-selected walking speed
- Elite-style e-carbon feet (L code VL5987) or VT units demonstrate the second highest mobility levels, behind only microprocessor feet

With respect to LOADING SYMMETRY
- Users demonstrate confidence in prosthetic loading during high activity
- Improved prosthetic push-off work compared to SACH feet
- Increased prosthetic positive work done

With respect to USER SATISFACTION
- High degree of user satisfaction, particularly with high activity users

Clinical Outcomes using Multiflex-style ankles

Multiflex was the “habitual” foot for all or majority of participants in 13 different studies.

With respect to SAFETY
- Low stiffness at weight acceptance leads to early foot-flat and greater stability for lower mobility patients
- No loss of stability during standing with Multiflex than fixed ankle/foot
- Easier to walk on uneven ground with Multiflex than fixed ankle/foot
- Easier to walk up a slope with Multiflex than fixed ankle/foot

With respect to MOBILITY
• Little to no difference in gait mechanics compared to flexible, “energy storing” prosthetic feet\textsuperscript{25}
• Increased prosthetic ankle range-of-motion with Multiflex compared to fixed ankle/foot\textsuperscript{23,24,26-28}
• Increased prosthetic ankle power with Multiflex compared to fixed ankle/foot\textsuperscript{24}
• Prosthetic rollover shape closer to natural biomechanics than fixed ankle/foot\textsuperscript{26}
• Users can walk longer distances and report “smoother” gait with Multiflex compared to fixed ankle/foot\textsuperscript{24}
• Benefits in mobility for bilateral users\textsuperscript{23,24,26,27}
• Mixed objective results when user group was more active than is recommended for Multiflex\textsuperscript{29,30} so may benefit more from a similar but higher activity foot like Epirus.

With respect to \textbf{RESIDUAL LIMB HEALTH}
• Equivalent socket comfort to higher technology, energy-storing feet\textsuperscript{29}

With respect to \textbf{LOADING SYMMETRY}
• Improved stance phase timing symmetry with Multiflex compared to fixed ankle/foot\textsuperscript{28}
• Reduced sound limb loading with Multiflex compared to fixed ankle/foot\textsuperscript{28}

With respect to \textbf{USER SATISFACTION}
• Mixed subjective feedback around preferences when user group was more active than is recommended for Multiflex\textsuperscript{25} so may benefit more from a similar but higher activity foot like Epirus.
• Majority of users rate Multiflex as either “good” or “acceptable”\textsuperscript{31} and prefer Multiflex to fixed ankle/foot\textsuperscript{24}

\textbf{References}


27. Major MJ, Stine RL, Gard SA. The effects of walking speed and prosthetic ankle adapters on upper extremity dynamics and stability-related parameters in bilateral transtibial


