Evidence Essentials
Empower Powered Ankle-Foot

	Mobility need or deficit of the patient	Evidence for benefits of the Empower vs. passive ESAR feet in transtibial amputees
Mobility	Patient walks a little slower than and has difficulty keeping up with able-bodied individuals Patient has to walk a lot and wants to complete his/her daily routine faster	- **Significant increase in walking speed to the level of able-bodied subjects, especially if patient walks faster than 1.25 m/s with a passive prosthetic foot** (Ferris et al., 2012; Gardinier et al., 2018; Herr et al., 2012; Müller et al., 2019) - **Significant improvement in gait stability (whole body angular momentum) during level and slope ambulation** (D´Andrea et al., 2014; Kannenberg et al., 2014) - **Patients may be able to significantly reduce metabolic energy consumption for over-ground walking** (Herr et al., 2012; Russell Esposito et al., 2016)
Mobility	Patient has difficulty negotiating uneven/rocky terrain	- **Significant improvement in walking speed on uneven/rocky terrain** (Gates et al., 2012)
Mobility	Patient has difficulty negotiating slopes/hill	- **Significant increase gait stability (whole body angular momentum) during slope ascent** (Pickle et al., 2016, 2017a, 2017b, 2019) - **Significant increase in ankle push-off power that was no longer different from that of able-bodied individuals** (Rabago et al., 2016; Russell Esposito et al., 2016) - **Significant reduction in demand on the sound limb** (Rabago et al., 2016) - **Patients may significantly reduce metabolic energy consumption during slope ascent** (Montgomery et al., 2018)
Mobility	Patient has difficulty ascending stairs with reciprocal (step-over-step) gait	- **Significant increase in ankle push-off power that was no longer different from that of able-bodied individuals**

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		(Aldridge et al., 2012) - **Reduced asymmetry during stair ascent** (Aldridge et al., 2012)
Mobility	Metabolic energy consumption	- **Patients may be able to significantly reduce metabolic energy consumption during treadmill walking** (Herr et al., 2012) - **Patients may be able to significantly reduce metabolic energy consumption during over-ground walking** (Au et al., 2007 and 2009; Gardinier et al., 2018; Russell Esposito et al., 2016) - **Patients may be able to significantly reduce metabolic energy consumption during slope ascent** (Montgomery et al., 2018)
Mobility	Patient is limited in his/her capability to perform activities of daily living (ADL)	- **Significant and clinically meaningful improvement in ADL performance measured by KOOS-ADL and Oswestry Disability Index** (Kannenberg et al., 2020)
Musculo-skeletal pain	Patient suffers from sound knee, amputated side knee and low-back pain while using a passive prosthetic foot	- **Significant and clinically meaningful reduction in sound knee pain, amputated side knee pain, and low-back pain** (Kannenberg et al, 2020) - **Significant sound knee unloading during level walking at higher walking speeds of 1.5 and 1.75 m/s** (Grabowski et al., 2013; Hill et al., ; Russell Esposito et al., 2014)

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