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Title: Gait biomechanics following lower extremity trauma:
amputation vs. reconstruction

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<AT>**Title:** Gait biomechanics following lower extremity trauma: amputation vs. reconstruction*

<!--<RunningTitle>Gait after amputation or reconstruction</RunningTitle>-->

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<ABS-HEAD>Highlights► Gait biomechanics after lower limb amputation and reconstruction were compared ► Patients with lower limb reconstruction wore custom ankle-foot orthoses ► There was a general similarity in gait mechanics between patient groups ► Differences from normative data manifested at the ankle following reconstruction ► Differences following lower limb amputation were primarily at the knee

<ABS-HEAD>Abstract

<ABS-P><ST>Background</ST> Surgical advances have substantially improved outcomes for individuals sustaining traumatic lower extremity injury. Injuries once requiring lower limb amputation are now routinely managed with limb reconstruction surgery. However, comparisons of functional outcomes between the procedures are inconclusive.

<ABS-P><ST>Purpose</ST> To compare gait biomechanics after lower limb reconstruction and transtibial amputation.

<ABS-P><ST>Methods</ST> Twenty-four individuals with unilateral lower limb reconstruction wearing a custom ankle-foot orthosis (Intrepid Dynamic Exoskeletal Orthosis), 24 with unilateral, transtibial amputation, and 24 able-bodied control subjects underwent gait analysis at a standardized Froude speed based on leg length. Lower extremity joint angles, moments, and powers, and ground reaction forces were analyzed on the affected limb of patients and right limb of able-

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