

A Comparative Analysis between Articulated and Conventional Stubby Prostheses

September 27, 2016

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Study Protocol

A 10 meter walk test will be administered on a level sound surface and a gravel surface. The test will take place under four different conditions; 1) stubby prosthesis on level surface 2) stubby prosthesis on gravel surface 3) sidekick prosthesis on level surface 4) sidekick prosthesis on gravel surface. Each trial will be performed 3 times and the completion times will be averaged. There will be a 2-minute break between each 10-meter test and a 30-minute break when changing the feet style. During the 30-minute break the participant will change from the conventional stubbies to the sidekicks and the proper resistance will be set. The participant will be given about 20 minutes to rest and 10 minutes to walk around with the new feet style. The participant will walk a total of 10 meters. The intermediate 6 meters will be measured to allow for acceleration and deceleration. The participant will be instructed to walk at a comfortable, leisure speed.

A gravel surface will be constructed using a tarp and gravel. This surface will be used as an uneven surface in comparison to a level ground surface for the 10 meter walk test.

The TUG test will be performed on just the level surface using a standard chair with arm rests. The participant will begin seated in a chair. A piece of tape is placed 3 meters away, clear for the participant to see seated in the chair. On the word "GO" the participant will stand up, walk to the line on the floor, turn around and sit back in the chair. Time will be recorded from the word "GO" until the participant are seated, with the participant's back firmly against the chair. The participant will be wearing the G-Walk technology to analyse the movement at the pelvis. Three trials will be performed using each foot type and the participant will receive a 5 minute rest between the individual trials and a 10 minute rest between the foot change.

The G-walk technology is a Bluetooth wireless system that is worn around the waist with an ergonomic belt allowing the participant to move freely without any restrictions.