

Walk This Way: The Effects of Wearing A Knee Brace on Gait

Arnold L, Helbig C, Newberry J, and Kent T

Kieffer Laboratory; Kinesiology Exercise Science; Texas Lutheran University; Seguin, TX

Category: Undergraduate

Advisor / Mentor: Helbig, Casi (chelbig@tlu.edu)

ABSTRACT

Gait is defined as the way a person walks; the manner of his or her steps taken. Walking is a simple concept that can be taken for granted until it is lost. When a movement in the gait cycle is limited due to injury, changes in biomechanical and neurological factors occur. The purpose of this study was to measure and evaluate gait patterns of subjects walking with and without a Breg T Scope Premier Post-Op Knee Brace. Twenty-two Texas Lutheran University students were tested using the Dartfish Software program in the Kieffer Laboratory. Seven females and fifteen males, ranging in ages 18 to 28 years, completed two five meter walks. The first recording was of the subjects walking without the Post-Op Knee Brace and the second recording was of the subjects walking with the Post-Op knee brace. The knee brace was set to limit the subject twenty degrees of full knee extension, not allowing full range of motion. Each subject was recorded from the front view and from the side view; the videos were then analyzed through Dartfish Software. Eight reflective markers were applied to the subject prior to walking to distinguish boney landmarks for angle measurement. Using a Paired Two Sample t-Test, a significant difference was found for hip flexion and extension, hip abduction, dorsiflexion, and plantar flexion. Hip Flexion, hip extension, plantar flexion, and dorsiflexion decreased with the addition on the Post-Op Knee Brace and hip abduction increased, resulting in gait abnormalities.