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Electromyographic Examination of How Using a Cane Affects Kyphotic Gait

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Abstract

The purpose of this study was to investigate how the use of a cane affects an artificially created kyphotic gait induced with a brace. Five normal adult males were examined. The electromyographic amplitudes of the rectus abdominis, oblique abdominis, erector spinae, biceps femoris, gluteus maximus, gluteus medius and quadriceps femoris muscles during gait were recorded with and without the brace, and with the brace and a T-cane used with the left hand. It was expected that the electromyographic amplitudes of all muscles would decrease during gait with a cane, but no significant changes were noted, except in the gluteus medius muscle. These results suggest that the manner in which a cane is commonly used does not provide proper support for the erector spinae, biceps femoris and the gluteus maximus muscles in patients with kyphosis. Patients need to be taught how to use a cane properly or maybe a different way of using a cane.