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THE RELATIONSHIP BETWEEN DYNAMIC KNEE VALGUS AND LOWER EXTREMITY MUSCLE ACTIVITY IN PATIENTS WITH CHRONIC ANKLE INSTABILITY

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The Relationship between Dynamic Knee Valgus and Lower Extremity Muscle Activity in Patients with Chronic Ankle Instability

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ABSTRACT

Ankle sprains are one of the most common orthopedic injuries. Chronic ankle instability (CAI) develops when an individual has experienced at least one significant ankle sprain and has ongoing symptoms. Symptoms include pain, weakness, reduced function, and ankle giving way. CAI affects ankle stability and potentially other joints in the lower extremity. Muscle activity and joint movement at the hip and knee may be abnormal in individuals with CAI. Dynamic knee valgus (DV) is an abnormal movement pattern of excessive medial movement of the knee that may be present in individuals with CAI. Muscles of the lower extremity including the tibialis anterior, peroneus longus, gluteus medium, and gluteus maximus may also be affected by CAI. The purpose of this study was to assess and compare dynamic knee valgus and muscle activity in the leg with CAI and the leg without CAI, before and after completion of a home exercise program developed for individuals with CAI. To measure DV and muscle activity Simi motion analysis and Delsys electromyography systems were used. A case series was conducted using data from 3 participants to describe the effects of a home exercise program on people with CAI. Our results are pending further analysis.

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