

CHAPTER 1

INTRODUCTION

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Manipulation has been used as a therapy for neuromusculoskeletal disorders for centuries. [1] The chiropractic profession considers manipulation to be its primary therapeutic intervention. Recently, the research investigating the effects of manipulation has been expanding [2]. However, due to the large economic impact of back and neck pain, most of this research has been confined to the effects of manipulation on the spine. There are only a few studies of extremity manipulation and these have been primarily of a basic, not applied nature.[3-9]

Chiropractors have long claimed that the chiropractic adjustment, also called a manipulation, has an ergogenic effect. Likewise, athletes have claimed that chiropractic treatment has improved their athletic performance or has accelerated their recovery from athletic injuries.[10-16] Therefore, chiropractors have been included on the sports medicine team of many amateur, professional, national and international competitions, including membership in the United States Olympic Sports Medicine Team.[17] Despite a growing acceptance of chiropractic as part of a sports medicine team, there is skepticism of the performance enhancing qualities of chiropractic treatment.[18] The chiropractic profession generally accepts that manipulation relaxes tight muscles, increases muscle strength, improves coordination and/or proprioception and normalizes joint mechanics. [19, 20] To date, only two published studies have investigated the ergogenic effects of chiropractic treatment. [13, 21] Although both studies found that

chiropractic manipulation resulted in a significant improvement in athletic performance they both had substantial errors in their statistical analysis and only involved the manipulation of the spine.

This present study will investigate the effects of chiropractic manipulation of the tibiotalar joint on the following human performance outcome measures: isokinetic measures of muscle function during plantar-flexion and dorsiflexion, and smoothness of movement and range of motion of the ankle assessed by computerized motion analysis during walking.

REVIEW OF LITERATURE

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