中山醫學大學 103 學年度碩士班入學招生考試試題

物理治療學系碩士班（甲組）

考試科目：物理治療總論 **時間：80 分鐘**

※請注意本試題共（ 2 ）張，如發現頁數不足，應當場請求補齊，否則缺頁部份概以零分計算。 第（ 1 ）頁

本試題共 四 大題，總分 100 分。

一、 請閱讀下列英文摘要後，將其翻譯成中文摘要 (30%) 。

Exercise intensity progression for exercises performed on unstable and stable platforms based on ankle muscle activation.

Abstract: Ankle sprains are a common sports injury. The literature focuses on the application of neuromuscular training for the improvement of balance, injury prevention and rehabilitation. However, there is a dearth of knowledge about the appropriate prescription of exercises using unstable platforms and surfaces. The purpose of this study was to devise an ankle rehabilitation or training program with exercise progression based on the extent of muscle activation, employing platforms with different levels of stability and additional resistance. A descriptive study of electromyography (EMG) during ankle exercises was performed with a convenience sample of healthy subjects. Forty-four subjects completed 12 exercises performed in a random order. Exercises were performed unipedally or bipedally with or without elastic tubing as resistance on various unstable (uncontrolled multiaxial and uniaxial movement) and stable surfaces. Surface EMG from the tibialis anterior (TA), peroneus longus (PL) and soleus (SOL) were collected to quantify the amount of muscle activity. Significant differences were found between exercise conditions for PL ($p<.001$), TA ($p=.011$), and SOL ($p<.001$). The greatest EMG activity for all muscles occurred with an upright unipedal stance on a soft stability surface with resistance. The least EMG activity for the TA and SOL were in a seated position and for the PL in an erect bipedal position without resistance. Based on the level of ankle muscle activation, exercises for the ankle should progress from bilateral exercises on exercise balls (lowest intensity), to a unipedal position on a soft surface in combination with elastic tubing (highest intensity) in order to achieve progressively greater ankle muscle activation.

二、 請為一位第二型糖尿病患者設計一個適當的運動處方(20%)。

三、 請說明 size principle of motor unit recruitment 與肌肉力量大小的關係 (30%)。

中山醫學大學 103 學年度碩士班入學招生考試試題

物理治療學系碩士班（甲組）

考試科目：物理治療總論 **時間：80 分鐘**

※請注意本試題共（ 2 ）張，如發現頁數不足，應當場請求補齊，否則缺頁部份概以零分計算。 第（ 2 ）頁

四、

J Orthop Sports Phys Ther. 2009 October ; 39(10): 709–723. doi:10.2519/jospt.2009.3117.

A Randomized Sham-Controlled Trial of a Neurodynamic Technique in the Treatment of Carpal Tunnel Syndrome

Joel E. Bialosky, PT, PhD[1], Mark D. Bishop, PT, PhD[2], Don D. Price, PhD[3], Michael E. Robinson, PhD[4], Kevin R. Vincent, MD, PhD[5], and Steven Z. George, PT, PhD[6]

1. 請將上述文章以參考資料方式書寫出來(10%)。

2. 試說明上述研究的研究設計為何(10%)。