

系所組別： 職能治療學系

考試科目： 臨床生理職能治療學

考試日期：0220，節次：1

※ 考生請注意：本試題 可 不可 使用計算機

一、解釋名詞 (30%)

1. universal design
2. tenolysis
3. constructional apraxia
4. meta-analysis
5. graphesthesia
6. cogwheel rigidity

二、問答題 (50%)

1. 某君經診斷並無中樞神經系統疾病之問題，但在拿取如塑膠杯、薄餅乾等時，若無視覺協助，往往會過度施力將這些物品壓扁或壓碎，試問此君出現之現象可能為何種問題或疾病所致?(5%) 依目前的評估方法，試問是否可將此問題依客觀之方式測量出來呢?為什麼?(10%)
2. 試問何為動作學習?(5%) 以臨床上常見之“伸手抓握動作(reaching and grasping)”為例子，如何以一個研究人員的觀點去定義出個案“伸手抓握動作”之正常或失調呢?又如何以一個臨床實行者的角色去進行介入呢?(10%)
3. 由於 Nintendo™ Wii 遊戲機的盛行，也連帶影響到其在醫療復健領域的運用，許多職能治療單位紛紛引進該系統做為介入工具，請就 play and leisure as means 的觀點來探討 Wii 在職能治療上之應用及所面臨的優劣勢。(10%)
4. 請從研究目的、研究受試者、研究工具、研究取得之資料及結果呈現等面向上，解釋 Quantitative 及 Qualitative research 間之差異。(10%)

(背面仍有題目,請繼續作答)

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三、研究文獻問答 (20%)

Bilateral and Unilateral Arm Training Improve Motor Function Through Differing Neuroplastic Mechanisms: A Single-Blinded Randomized Controlled Trial

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Abstract

Background and Purpose. This randomized controlled trial tests the efficacy of bilateral arm training with rhythmic auditory cueing (BATRAC) versus dose-matched therapeutic exercises (DMTEs) on upper-extremity (UE) function in stroke survivors and uses functional magnetic resonance imaging (fMRI) to examine effects on cortical reorganization. **Methods.** A total of 111 adults with chronic UE paresis were randomized to 6 weeks (3x/week) of BATRAC or DMTE. Primary end points of UE assessments of Fugl-Meyer UE Test (FM) and modified Wolf Motor Function Test Time (WT) were performed 6 weeks prior to and at baseline, after training, and 4 months later. Pretraining and posttraining, fMRI for UE movement was evaluated in 17 BATRAC and 21 DMTE participants. **Results.** The improvements in UE function (BATRAC: FM $\Delta = 1.1 \pm 0.5$, $P = .03$; WT $\Delta = -2.6 \pm 0.8$, $P < .00$; DMTE: FM $\Delta = 1.9 \pm 0.4$, $P < .00$; WT $\Delta = -1.6 \pm 0.7$; $P = .04$) were comparable between groups and retained after 4 months. Satisfaction was higher after BATRAC than DMTE ($P = .003$). BATRAC led to significantly higher increase in activation in ipsilesional precentral, anterior cingulate and postcentral gyri, and supplementary motor area and contralesional superior frontal gyrus ($P < .05$). Activation change in the latter was correlated with improvement in the WMFT ($P = .01$). **Conclusions.** BATRAC is not superior to DMTE, but both rehabilitation programs durably improve motor function for individuals with chronic UE hemiparesis and with varied deficit severity. Adaptations in brain activation are greater after BATRAC than DMTE, suggesting that given similar benefits to motor function, these therapies operate through different mechanisms.

1. 請闡述此研究之動機、主旨及實驗設計之規劃為何。(5%)
2. (1) 試問此研究是否屬於依受測者特性做配對之 cross-sectional study design?(2%)
 - (2) 試問此研究中所指的 single-blinded 為何呢?其用意為何?(3%)
 - (3) 試問 fMRI 在此研究中所扮演的重要性為何?(5%)
3. 試問此研究的實驗結果為何?具有哪些臨床關連性呢?(5%)