

- (1) 請閱讀以下摘錄自: Rose J, Butler EE, Lamont LE, Barnes PD. Neonatal brain structure on MRI and diffusion tensor imaging, sex, and neurodevelopment in very-low-birth-weight preterm children. *Developmental Medicine & Child Neurology*. 2009, 51: 526–535. 的文章摘要，並回答下列問題【本題佔40%】：
- (a) 請將本英文摘要整理後，書寫成 300 字以內的中文摘要（非直接原文翻譯）。(15%)
- (b) 請針對本論文中所使用到的評估工具，逐一簡述其評估內容，並分別列出替代之評估方法。(25%)

**ABSTRACT** The neurological basis of an increased incidence of cerebral palsy (CP) in preterm males is unknown. This study examined neonatal brain structure on magnetic resonance imaging (MRI) and diffusion tensor imaging (DTI) at term equivalent age, sex, and neurodevelopment at 1 year 6 months on the basis of the Amiel Tison neurological examination, Gross Motor Function Classification System, and Bayley Scales of Infant Development in 78 very-low-birth-weight preterm children (41 males, 37 females; mean gestational age 27.6 wks, SD 2.5; mean birth weight 1021 g, SD 339). Brain abnormalities on MRI and DTI were not different between males and females except in the splenium of the corpus callosum, where males had lower DTI fractional anisotropy ( $p=0.025$ ) and a higher apparent diffusion coefficient ( $p=0.013$ ), indicating delayed splenium development. In the 26 infants who were at higher risk on the basis of DTI, males had more abnormalities on MRI ( $p=0.034$ ) and had lower fractional anisotropy and a higher apparent diffusion coefficient in the splenium ( $p=0.049$ ;  $p=0.025$ ) and right posterior limb of the internal capsule (PLIC;  $p=0.003$ ;  $p=0.033$ ). Abnormal neurodevelopment was more common in males ( $n=9$ ) than in females ( $n=2$ ;  $p=0.036$ ). Children with abnormal neurodevelopment had more abnormalities on MRI ( $p=0.014$ ) and reduced splenium and right PLIC fractional anisotropy ( $p=0.001$ ;  $p=0.035$ ). In children with abnormal neurodevelopment, right PLIC fractional anisotropy was lower than left ( $p=0.035$ ), whereas in those with normal neurodevelopment right PLIC fractional anisotropy was higher than left ( $p=0.001$ ). Right PLIC fractional anisotropy correlated to neurodevelopment ( $\rho=0.371$ ,  $p=0.002$ ). Logistic regression predicted neurodevelopment with 94% accuracy; only right PLIC fractional anisotropy was a significant logistic coefficient. Results indicate that the higher incidence of abnormal neurodevelopment in preterm males relates to greater incidence and severity of brain abnormalities, including reduced PLIC and splenium development.

- (2) 一位已會行走之5歲大痲痺型雙邊痲痺腦性痲痺兒童，其粗大動作功能之嚴重度為粗大動作功能分類系統第二級(GMFCS II)，若您發現其行走有明顯屈膝步態 (crouch gait)，請問物理治療師如何測量屈膝步態之嚴重度？(3%) 請你根據國際功能分類系統(ICF)架構列出屈膝步態之主要原因(10%)與針對每個可能原因之處置方法(10%)？若該個案屈膝步態一直未改善，其長大後最可能行走預後如何？(3%) 為了解屈膝步態之有效處置方法以改善其屈膝步態，您想上實證醫學資料庫去查詢，您提出之臨床問題為何？(4%)【本題佔30%】

見背面

- (3) 以下論文摘要是來自 Peens A, Pienaar AE, Nienaber AW. The effect of different intervention programmes on the self-concept and motor proficiency of 7- to 9-year-old children with DCD. Child Care Health Dev. 2008;34(3):316-28. 請閱讀後回答下列問題。【本題佔 30%】
- (a) 請將本文重新整理，書寫 300 字以內的中文摘要（非直接原文翻譯）（10%）
  - (b) 請提出你對此研究的評論。（10%）
  - (c) 你是否會依據此研究為一位 8 歲的發展性協調障礙患童設計治療內容？若是，請說明設計的內容與依據。若否，請說明為什麼，並敘述你設計的治療內容。（10%）

**BACKGROUND:**

The self-concept of children is influenced by developmental co-ordination disorder (DCD). The aim was to determine the most effective method in enhancing motor proficiency and self-concept of.

**METHODS:**

Teachers at nine different schools identified 201 possible DCD candidates. The Movement Assessment Battery for Children identified fifty-eight 7- to 9-year-old children with DCD (36 boys and 22 girls). Self-concept and anxiety were determined by the Tennessee Self-Concept Scale (Child Form) and Child Anxiety Scale respectively. The children were randomly grouped into four experimental groups [motor intervention (MI), self-concept (SC) enhancing intervention, psycho-motor intervention (P-MI) and a control group (CG)]. The MI programme involved the integration of the task specific, kinesthetic and sensory integration treatment methods (30 min twice a week). The SC programme involved enhancing and enriching of the self-concept, interpersonal relations, handling anxiety, and parenting skills (45 min once a week). Children in the P-MI programme followed both the motor and psychological intervention programmes and therefore had three contact sessions a week. All children were tested before and after the 8-week intervention period. The lasting effects of the programmes were retested after a lapse of 2 months without any intervention. A two-way analysis of variance with a group factor and a repeated measures over time followed by a Bonferroni post hoc analysis and separate one-way anovas followed by a Tukey post hoc analysis were conducted to determine between-group and within-group differences at the pre-, post- and re-tests. Effect sizes were calculated to determine the practical significance of statistical differences ( $P < 0.05$ ).

**RESULTS:**

After completion of the intervention programmes, no significant improvement in motor proficiency was found in the SC group, while the MI, P-MI and CG groups improved significantly ( $P < 0.01$ ). No further improvements were found after the retention period in all the groups. From the pre-test to retest 2, the MI, P-MI and CG improved ( $P < 0.01$ ), while the SC showed lower ( $P > 0.05$ ) motor proficiency. A tendency of lower anxiety ( $P > 0.05$ ) was found in the SC, while the total self-concept of the P-MI showed the biggest improvement ( $P < 0.05$ ).

**CONCLUSION:**

Motor proficiency and self-concept of children with DCD benefit from intervention, but both should be addressed for optimal benefits.