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**題目 (Title):**

中重度動作損傷兒童接受馬術治療時的生理耗能：探索性研究

(Physiological Demands of Therapeutic Horseback Riding in Children with Moderate to Severe Motor Impairments: An Exploratory Study)

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**目的 (Purpose):**

了解中重度動作損傷兒童分別於休息與單次馬術治療期間的能量消耗情況。

(To examine energy expenditure at rest and during a single therapeutic horseback riding (THR) session in children with moderate to severe motor impairments.)

**方法 (Methods):**

受試者分別於 10 分鐘休息期間與單次馬術治療期間持續接受心率(HR)、攝氧量 (VO<sub>2</sub>)、與每分鐘通氣量(VE)的量測。

(Heart rate (HR), oxygen uptake (VO<sub>2</sub>), and minute ventilation (VE) were measured continuously during a 10-minute rest period and during a typical THR session.)

### **結果 (Results):**

七位兒童（四位男童，平均年齡  $12.3 \pm 3.5$  歲）完成上述測量。馬術治療期間之平均心率、攝氧量、每分鐘通氣量與能量消耗皆有明顯增加。根據攝氧量的多寡，單次馬術治療中有  $43.3 \pm 24.3\%$  時間之活動強度為靜態， $44.4 \pm 13.4\%$  時間為輕度， $12.3 \pm 21.8\%$  時間為中度－激烈，個別差異大。

(Seven children (4 males, mean age  $12.3 \pm 3.5$  years) completed the protocol. Significant increases from rest were seen for mean HR, VO<sub>2</sub>, VE, and energy expenditure. Based on VO<sub>2</sub>,  $43.3 \pm 24.3\%$  of the THR session consisted of sedentary,  $44.4 \pm 13.4\%$  of light, and  $12.3 \pm 21.8\%$  of moderate to vigorous activity intensity, with large interindividual differences.)

### **結論 (Conclusions):**

中重度動作損傷兒童接受馬術治療時之生理耗能情況為中度。然而，考量馬術治療期間中度－激烈活動強度時間短且訓練頻率少，整組結果顯示馬術治療似乎無法增加中重度動作損傷兒童之心肺適能。

(The physiological demands of THR in children with moderate to severe motor impairments are moderate. However, considering the short duration of maintaining moderate to vigorous exercise activity during THR in combination with the low training frequency, group data indicate that it is unlikely that THR will improve cardiopulmonary fitness in these children.)