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**題目 (Title):**

腦性麻痺兒童使用兩種矯具之比較

(Comparison of 2 Orthotic Approaches in Children With Cerebral Palsy)

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**目的 (Purpose):**

比較腦性麻痺兒童使用動態踝足副木(DAFOs)及可調式動態反應踝足副木(ADR-AFOs)之結果

(To compare dynamic ankle-foot orthoses (DAFOs) and adjustable dynamic response (ADR) ankle-foot orthoses (AFOs) in children with cerebral palsy.)

**方法 (Methods):**

10 位有屈膝/馬蹄步態的腦性麻痺兒童(4-12 歲; 在 GMFCS 分級中 6 位為第一級, 4 位為第三級), 以隨機順序穿戴動態踝足副木(DAFOs)及可調式動態反應踝足副木(ADR-AFOs)各 4 週。比較穿戴時及裸足情況下的實驗室步態分析、行走活動監測、及家長問卷結果。

(A total of 10 children with cerebral palsy (4-12 years; 6 at Gross Motor Function Classification System level I, 4 at Gross Motor Function Classification System level III) and crouch and/or equinus gait wore DAFOs and ADR-AFOs, each for 4 weeks, in randomized order. Laboratory-based gait analysis, walking activity monitor, and parent-reported questionnaire outcomes were compared among braces and barefoot

conditions.)

### **結果 (Results):**

相較於裸足狀態，孩童在穿戴二種副木的情況下表現出較佳的步長(11-12 公分)、髖關節伸展(2°-4°)和擺盪期的踝背曲角度(9°-17°)。可調式動態反應踝足副木(ADR-AFOs) 於推進力量(0.3 W/kg) 及膝伸展(5°)皆較優於動態踝足副木(DAFOs)。於穿戴動態踝足副木(DAFOs)時，家長的滿意度及兒童行走活動表現(每天 742 步，每天 43 分鐘)較佳。

(Children demonstrated better stride length (11-12 cm), hip extension (2°-4°), and swing-phase dorsiflexion (9°-17°) in both braces versus barefoot. Push-off power (0.3 W/kg) and knee extension (5°) were better in ADR-AFOs than in DAFOs. Parent satisfaction and walking activity (742 steps per day, 43 minutes per day) were higher for DAFOs.)

### **結論 (Conclusions):**

兒童穿戴可調式動態反應踝足副木(ADR-AFOs)產生較佳的膝伸展及推進力量；穿戴動態踝足副木(DAFOs)時表現較趨近正常的踝關節動作，具有較佳的家長滿意度和兒童行走活動。與裸足相較，兩種副木都有成效。

(ADR-AFOs produce better knee extension and push-off power; DAFOs produce more normal ankle motion, greater parent satisfaction, and walking activity. Both braces provide improvements over barefoot.)

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