• 系統編號	RC9001-0098
• 計畫中文名稱	不同運動型態、強度、時間對第二型糖尿病患者血糖立即反應影響之探討與模式建立
• 計畫英文名稱	Model Establishment and Exploration of the Influence of Different Exercise Mode, Intensity, and Duration on Immediate Serum Glucose Responses among Type 2 DM Patients
• 主管機關	行政院國家科學委員會
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• 中文關鍵字	糖尿病；運動；血糖；劑量反應關係
• 英文關鍵字	Diabetes mellitus (DM)；Exercise；Blood glucose；Dose response relationship
• 中文摘要	規律運動是糖尿病患者控制血糖的重要方式之一,然而運動量與血糖變化間之關係並未被建立,因此本研究目的在探討不同運動模式、時間、強度,對 type 2 DM 患者血糖反應之影響,並建立運動強度、時間、運動前血糖值,對血糖變化量之預測模式。 本研究爲一探測性研究,以 37 位個案爲對象,每位個案先經運動測試後,再分別進行不同強度(40%、60%、80% METmax)和時間(10、20、30、40 分鐘)的手部和腿部運動訓練,並於運動前後測試血糖之變化。 資料以 SPSS/PC+軟體進行建檔及分析,研究結果顯示,雖然腿部運動較手部運動能有效降低血糖,但二者皆有助於血糖的下降。運動時間及運動前血糖值能預測手部運動時之血糖下降量,而運動強度、時間及運動前血糖值能預測腿部運動時之血糖下降量。 本研究結果建立運動劑量與血糖變化(Dose response relationship)之關連,可提供臨床上配合運動量而調整藥物之參考,以達到運動控制血糖的目的。
• 英文摘要	Regular exercise is one of the most important treatments in glycemic control among patient with 2 DM. However, a dose response relationship between exercise and glycemic control has not been established. The purpose of this study was to examine the impacts of exercise mode, intensity and duration on changes of serum glucose level after exercise and to establish a predictive model of serum glucose level under different exercise conditions. This is an exploratory study. Thirty-seven subjects were recruited based on the same selection criteria. All 37 subjects completed 24 sessions of exercise with different exercise mode (upper vs. lower extremity), intensity (40, 60, 80% METmax), and duration (10, 20, 30, 40 minutes). Serum glucose levels were measured before and after each exercise

session by means of mini Accutrend. The PSS/PC+ statistical software package was used for data analysis. The results of this study revealed that both upper and lower extremity exercises decreased serum glucose levels although upper extremity exercises are more effective than lower extremity exercises. Exercise duration and serum glucose level before exercise are significant predictors in determining the decrement of serum glucose after upper extremity exercises. Exercise duration, exercise intensity, and serum glucose level before exercise are significant predictors in determining the decrement of serum glucose after lower extremity exercises. The findings of this study provided important information related to the dose response relationship between exercise and changes of serum glucose.