

不同運動情境對第 2 型糖尿病患者飲食攝取型態影響之探討

The Impacts of Different Exercise Situations on Food Intake Patterns Among Type 2 DM Patients

中文摘要

藥物、運動及飲食一直被認為是控制血糖的三大要素。根據國內的研究報告顯示：運動對於降低血糖的確有立即性的效果，但長期成效並不顯著。對於服用固定劑量降血糖藥物的第 2 型糖尿病患者而言，運動是否會改變飲食型態，進而影響長期血糖控制，尚未有研究報告。因此，本研究的目的有三：(一) 探討第 2 型糖尿病患者一般的飲食型態。(二) 探討第 2 型糖尿病患者在參與運動情境下，飲食攝取型態的改變。(三) 探討在運動情境下，飲食攝取型態的變化與血糖變化的相關性。

以立意取樣法(purposive sampling)選取台北市某兩家區域教學級以上醫院符合選樣的 16 位第 2 型糖尿病患者為對象。每一位患者均接受 12 次不同運動強度(40%、60%、80% maximal workload)、(10 分鐘、20 分鐘、30 分鐘、40 分鐘)時間的跑步機運動，以二十四小時飲食回憶記錄法收集其中 6 次(80 % maximal workload、40 分鐘)運動日與非運動日的飲食記錄；並以血糖機測試指端血糖值等方式進行資料收集。資料分析採用百分比、平均值、標準差、t test、paired t test、one-way ANOVA、Pearson correlation coefficient 等。

研究結果發現：(一) 第 2 型糖尿病患者一般的飲食型態，總熱量攝取平均為 1998 kcal /day，蛋白質佔總熱量的 16.0%，脂肪佔總熱量的 34.1%，醣類佔總熱量的 49.9%，而纖維素只有 6.77 公克。(二) 在運動情境中，第 2 型糖尿病患者運動當天及運動前一天的總熱量攝取並無顯著差異；但在三大營養素的分配上，傾向降低醣類的攝取百分比，而以增加脂肪攝取百分比來代替，這種傾向以原本的攝食型態為高醣類攝食者和低脂肪攝食者最為明顯，達到顯著差異；另外纖維素攝取量則是顯著下降。(三) 運動情境下，血糖下降量與總熱量差異之間並無統計上顯著相關。

依研究結果建議護理人員在衛教時，對第 2 型糖尿病患者在運動下應特別強調，適當的醣類攝取、減少脂肪攝取及增加纖維素攝取的重要性。

英文摘要

The purpose of this study was to (1) understand the food intake patterns of type 2 DM patients. (2) investigate the change of food intake patterns under different exercise intensity(40%, 60% and 80% maximal workload) and exercise duration (10,20,30 and 40 minutes). (3) examine the correlation among serum glucose response, energy expenditure, and energy intake. Sixteen subjects who had type 2 DM and met the selection criteria were selected from two medium size hospitals by purposive sampling.

The data was collected by means of questionnaires, 24 hours diet recall and serum glucose response. Further, data was analyzed by percentage, mean, standard deviation, t-test, paired t-test, one-way ANOVA, and Pearson's correlation coefficient.

The major findings of this study were as following: (1) The average intake of the type 2 DM subjects was 1998 kcal/day; distributed as follows: 49.8% from carbohydrate, 16.0% from protein, and 34.2% from fat; the average fiber intake was 6.77 g/day. (2) There was no significant difference in calorie intake between the exercise day and the day before exercise performed. However, we found that carbohydrate intake was decreased and substituted by fat intake, specially for those people who had low-fat and high-carbohydrate eating habits. Further, the fiber intake was significantly decreased. (3) There were no significant correlation between serum glucose response and energy intake, energy intake and exercise-induced energy expenditure, exercise-induced energy expenditure and serum glucose response under various exercise situations.

Therefore, it is suggested that proper carbohydrate intake, decreasing fat intake, and increasing fiber intake is very important for the type 2 DM patients in participating physical exercises.