降低年輕人飲食脂質的攝取改變血脂質及脂肪酸組成
Lowering Dietary Fat Changes Plasma Lipids and the Fatty Acid Composition in Young Adults

褚得敏(Te-Mien Chu);鄭心嫻(Hsing-Hsien Cheng);林育如(Yu-Ju Lin);楊淑惠(Chun-Kuang Shih);施純光(Shwu-Huey Yang);周璨薇(Tsui-Wei Chou);鄭海倫(Hellen Jeng)

Chu TM;Cheng HH;Lin YJ;Shih CK;Yang SH;Chou TW; Jeng H

摘要

本研究目的爲降低年輕人飲食脂質佔熱量比例，對血脂質及血漿脂肪酸組成的影響。16 位男性、18 位女性（20~30 歲）的健康受試者，攝取由營養師設計符合男性 2200 大卡、女性 1800 大卡，碳水化合物、蛋白質、脂質佔熱量比例分別爲 58~68%、10~14%、20~30%提供午餐及晚餐共 4 週（假日不供餐）。在飲食介入期間，男性受試者飲食脂質佔熱量比例 35.0%降 28.7%，女性受試者則是從 37.9%降至 32.3%。血脂質方面，飲食介入 4 週後，可顯著降低女性血清總膽固醇、低密度脂蛋白膽固醇及高密度脂蛋白膽固醇。血漿脂肪酸組成方面，在介入 4 週後，女性顯著增加 18:3 n-3 脂肪酸含量，顯著降低 20:4 含量、18:2/18:1 比例，而男性較介入前，18:2、總 n-6 多元不飽和脂肪酸含量顯著降低。降低年輕人飲食脂質佔熱量比例約 5~7%，4 週後顯著降低女性血脂質的濃度，並改變男女之血漿脂肪酸組成。

Abstract

The aim of this study was to investigate the effects of reducing the amount of dietary total fat on serum lipids and the plasma fatty acid composition in young adults. Sixteen male and 18 female subjects (aged 20~30 years) were given experimental meals including lunch and dinner for a 4-week period, but on weekends and holidays, no meals were provided. The experimental meals were designed to provide 2200 kcal/d for each male subject and 1800 kcal/d for each female subject, including 58%~68% of energy from carbohydrates, 10%~14% of energy from protein, and 20%~30% of energy from fat. During the dietary intervention period, the energy intake of dietary fat significantly decreased from 35.0% to 28.7% in males and from 37.9% to 32.3% in females. In female subjects, serum total cholesterol, LDL-cholesterol, and HDL-cholesterol significantly decreased in a 4-week period of diet. The experimental meal intervention was associated with a significantly higher 18:3 n-3 level as the percentage of total plasma fatty acids and with a significantly lower 20:4 level and 18: 2/18:1 ratio as the percentage of total plasma fatty acids in females. In male subjects, the 18:2 and total n-6 polyunsaturated fatty acid levels as percentages of total plasma fatty acids significantly decreased compared with corresponding values at week 0. Thus, the benefits of lowering dietary fat intake to 5%~7% of energy intake may favor

changes in serum lipids in females and plasma fatty acid composition in both males and females.