# 母子世代血液中四種脂質、尿酸及白蛋白之相關性研究

# Correlations of Serum Lipids, Uric Acid, and Albumin Among Mothers, Offspring, and Siblings in Taipei, Taiwan

鄭心嫻(Hsing-Hsien Cheng);楊淑惠(Shwu-Huey Yang);陳成(Cheng Chen);江明樹(Ming-Shu Chiang)

**Cheng HH;Yang SH;Chen C and Chiang MS**

## 摘要

本研究目的主要探討 3 至 7 歲 208 位受試幼童(Y)與 111 位母親(X)及 57 位同胞(Z)血液中三酸甘油酯(triglyceride)、總膽固醇(total cholesterol)、高密度脂蛋白膽固醇(HDL-cholesterol)、低密度脂蛋白膽固醇(LDL-cholesterol)、尿酸(uric adid)、白蛋白(albumin)、等六項。分別進行相關顯著性測驗、新裔回歸分析及顯著性測驗、駢對-t 值(paired-comparison)、回歸係數、(regression coeff, bop)、遺傳率(heritability, h^2)測驗。結果顯示幼童與母親之六個性狀回歸係數(b(下標 yx))中除三酸甘油酯為顯著($p<0.05$)外，其餘均為極顯著($p<0.01$)。而同胞與母親之回歸係數(b(下標 (zx))極顯著者($p<0.01$)分別為總膽固醇、低密度脂蛋白膽固醇及白蛋白，而尿酸為顯著($p<0.05$)。在受測幼童及其同胞除總膽固醇為顯著($p<0.05$)，其餘均為極顯著($p<0.01$)，此結果顯示可能是由遺傳因子所控制。因遺傳率(h^2)分別高達 0.75-1.0、0.77-1.0、0.96-1.0 及 0.48-0.82。本次研究發現，臺北幼童血脂質與其母親血指質顯著相關，可能是由遺傳因子所控制。

## Abstract

The purpose of this study was to investigate the correlations of serum lipids, uric acid, and albumin, among mothers (n=111), offspring (n=208), and siblings (n=57) in Taipei, Taiwan. Analytical items included serum triglyceride, serum total cholesterol, high-density lipoprotein cholesterol, low-density lipoprotein cholesterol, uric acid, and albumin. Statistical analysis was performed according to the SAS UNIVARIATE procedure; while regression coefficient, parent-offspring regressions, paired-comparison and heritability were estimated. These results show higher heritabilities of four types of serum lipids, uric acid and albumin between mothers and testers (b(subscript YX))or siblings (b(subscript ZX)) by parent-offspring regression analysis. Regression coefficients (b(subscript YX)) of six characters were significantly different ($p<0.05$-$0.01$). Regression coefficients (b(subscript ZX)) for total cholesterol, low-density lipoprotein cholesterol, uric acid, and albumin were significantly different ($p<0.05$-$0.01$), showing the result of genetic control, because

their heritabilities were very high at 0.75~1.0, 0.77~1.0, 0.96~1.0, and 0.48~0.82, respectively. This study disclosed that the serum lipids of children in Taipei, Taiwan were significantly correlated with that of parents, which may be attributed to the result of genetic control.