

THE EFFECT OF AGE AND FASTING ON SERUM CHOLESTEROL LEVELS AND  
CHOLESTEROL ESTERIFICATION IN THE RAT

A.G. LACKO, K.G. VARMA, T.S.K. DAVID and L.A. SOLOFF

From the Lipid Research Laboratory, Dept. of Medicine  
Temple University Health Sciences Center  
Philadelphia, Pennsylvania 19140

Free and total serum cholesterol levels and the in vitro rate of cholesterol esterification were measured in rats of age 2, 12 and 24 months. Free and total cholesterol increased with age in animals fed ad Libitum and decreased as the result of a one day fast in the two older groups. Prolonged fastings (up to six days) resulted in further decreases of serum cholesterol levels particularly in the 24 month-old-group.

The rate of cholesterol esterification did not change substantially between ages of 2 months and 12 months, but decreased significantly by 24 months. If the esterification is expressed as the fractional rate (% esterification per time) and thus corrected for the individual variation in serum free cholesterol then the differences become much more pronounced.

These findings will be discussed and compared to the known changes in cholesterol metabolism with age in man.