

THE EFFECT OF EGG CONSUMPTION ON THE LIPID PROFILE OF SELECTED 30-60 YEAR-OLD FILIPINO ADULTS

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Background: Egg is a cheap source of protein, however, egg is also high in cholesterol. Clinicians thus recommend that egg consumption be limited to 2-3 pieces per week to lower serum cholesterol. On the validity of this recommendation, studies on egg consumption and cholesterol levels showed conflicting results. Due to unavailability of local studies, there is a need to validate these results among Filipinos. **Objectives:** To determine the effect of daily consumption of egg on serum cholesterol, triglycerides, LDL-cholesterol, and HDL-cholesterol among selected 30-60 year-old healthy free-living Filipino adults; to determine the effect of dietary factors (total energy, total fat, dietary cholesterol and fiber) on blood lipid profile before and after daily egg consumption, controlling for the effect of gender, age and body mass index (BMI); to assess the relationship between egg intake and blood lipid levels controlling for the effect of all other factors (diet, age, BMI, treatment, sequence, time). **Methods:** A total of 115 participants (58 males and 57 females) with normal cholesterol levels were randomly assigned to either an egg-eating or no egg-eating regimen for three months. After a two-week wash period, one regimen was exchanged for the other, for another three months in the same individuals. Weight and height were collected to determine BMI, food frequency questionnaire were administered to determine dietary intake, and lifestyle information such as smoking and exercise were taken. Fasting venous blood samples were drawn for the analysis of blood lipids. Univariate analysis and General Linear Model (GLM) procedure for cross-over design were generated using Statistical Packages for the Social Sciences (SPSS) and Statistical Analysis System (SAS) software, respectively. **Results:** Majority of the participants in the study were in the age group 41-50 years. Most of them were non-smokers and without regular exercise. Half of them reported taking alcoholic beverages. Dietary data showed that the intake for macronutrients were within the recommended calorie intake of 50-60% from carbohydrates, 10-15% from protein and 20-30% from fat. The marginal means of serum cholesterol plotted by period showed a decrement after the stabilization phase and an increment after the initial phase of intervention for both treatment groups with cholesterol values higher for those who started with egg. The marginal means by BMI also showed that those with normal weight who started with an eggless diet exhibited higher serum cholesterol except in the final period, compared to those who started with egg. The univariate analysis showed that total energy, total fat, dietary cholesterol and fiber did not affect the serum cholesterol level before and after egg consumption among participants who were first subjected to egg diet. Age, however, was a significant factor that influenced total cholesterol in the two regimens. Among those who took the no egg-eating phase first, none of the dietary factors were found to have affected total cholesterol levels. To control for individual variation, the differences between the initial and final serum lipids in the egg and no-egg diets were used in the cross-over analysis. In both regimens, total cholesterol and LDL-cholesterol slightly increased, but HDL-cholesterol and triglycerides decreased. The GLM procedure revealed that the blood

lipid levels were not significantly affected by the treatment (egg or no egg), sequence (egg first or no egg first) and time (egg eating or no egg-eating) factors. **Conclusion and Recommendations:** The results of the study suggest that consumption of one (1) egg per day is unlikely to have substantial increase in blood lipid levels. Hence, daily egg intake can be encouraged in normal individuals. It is recommended that studies of this kind be replicated in other population groups to validate these results.