

New Research From UCONN Shows 3 Eggs a Day Okay for Healthy Elderly People

Researchers at the University of Connecticut have shown that eating three eggs a day does not raise heart disease risk factors in healthy elderly people, according to research published in the December 2005 edition of the Journal of Nutrition.

The findings are important because eggs can provide older people with an affordable, highly nutritious food that is an excellent source of protein, as well as a variety of vitamins and minerals, yet many older people have eliminated eggs from their diets for fear that they may increase their heart disease risk. Food intake surveys conducted by the government showed that men over age 65 cut egg consumption by 46% and women by 29% between 1977 and 1996.

"Many older individuals lack the nutritional balance that is required for optimal health because they are following inappropriate risk reduction interventions," explained Maria Luz Fernandez, PhD, the study's principal investigator. "Previous studies have not supported a need to restrict dietary cholesterol in healthy individuals aged 65 and over. Instead, such restrictions may cause nutritional shortfalls."

"We conducted this study to determine whether or not a dietary cholesterol challenge would affect any of three important measures of cardiovascular disease risk in healthy older people," said Dr. Fernandez. Three eggs a day provide more than twice the amount of dietary cholesterol recommended by the American Heart Association.

LDL:HDL Ratio Remains Constant

The ratio between LDL and HDL is a more precise and important predictor of heart disease risk than total blood cholesterol or even LDL alone. HDL, the so-called "good cholesterol," clears excess cholesterol from the blood. Thus, if HDL increases in proportion to LDL, there is no net increase in risk.

In this study, 42 subjects aged 60 or more ate three eggs a day for one month versus no eggs for a month to determine the effects on this ratio. Although both LDL and HDL rose slightly, the ratio between the two did not change. "This shows that the body's compensatory system for controlling serum cholesterol was operating normally in these healthy older people," Dr. Fernandez said.

LDL Particle Size: Bigger Is Better

The size of LDL particles is another critical aspect of heart disease risk. LDL particles are graded from one to seven according to their size -- the higher the number, the smaller the size. Small, dense LDL particles are a greater heart disease risk than larger LDL particles, in part because they are more susceptible to damage.

Dr. Fernandez and her colleagues found that the total LDL cholesterol level was higher because the size of the LDL particles was increased, but not their number. This may mean that the plasma response to the dietary cholesterol challenge was to create a larger, more benign LDL particle. The increase in LDL size provides further evidence that the egg diet did not increase heart disease risk.

No Increase in LDL Oxidation

A final risk predictor tested in this study was the susceptibility of LDL to oxidative damage. Many studies have demonstrated that oxidation of LDL is one of the initial steps in the development of artery disease.

In this study, several parameters of LDL oxidation were measured, and there was no difference in LDL particles during the egg diet as compared to the non-egg diet.

Conclusions

The results of this study show that older men and women with healthy lipoprotein profiles may consume eggs as part of their regular diet. A slight rise in LDL cholesterol experienced by some study participants was counterbalanced by a proportionate increase in HDL cholesterol, netting out at zero increase in risk for heart disease, and by increases in the size of LDL particles which actually makes them less likely to contribute to disease risk.

These findings build upon a growing body of evidence supporting the safety and desirability of egg intake in normal healthy populations. Previous work by the same researchers has found similar results in children, premenopausal women and men aged 20-50 years. People with preexisting heart disease or diabetes were not included in the study and may respond differently to dietary cholesterol intake.