

## Dietary Cholesterol: Should We Worry About It?

**Maria Luz Fernandez\***

*Department of Nutritional Sciences, University of Connecticut, USA*

**\*Corresponding Author:** Maria Luz Fernandez, Department of Nutritional Sciences, University of Connecticut, Storrs, CT 06269, USA.

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### Editorial

The recommendations/restrictions for dietary cholesterol have been a matter of debate for many years. In the United States (US), the first recommendations from the American Heart Association (AHA) emphasized no more than 300 mg/day of dietary cholesterol for healthy populations and < 200 mg/day for individuals with heart disease or heart-related complications. However, significant changes in the dietary guidelines have occurred in the last 10 years going from a very strong message against dietary cholesterol in 2006 [1] to the statement released by Eckel, *et al.* [2] in 2014 indicating that there is no substantial evidence that lowering dietary cholesterol lowers LDL-cholesterol (LDL-C).

It is important to note that numerous countries currently do not have an upper limit for dietary cholesterol in their dietary guidelines [3]. The United States Department of Agriculture (USDA) most recent recommendation, released in November of 2015 was to eliminate an upper limit for dietary cholesterol in agreement with dietary guidelines from other countries [3]. This latest recommendation from USDA is expected to create controversy among those organizations that are still cautious regarding dietary cholesterol effects on plasma cholesterol. This caution exists in spite of the reported evidence on the lack of effect of dietary cholesterol on coronary heart disease risk supported both by epidemiological studies and clinical interventions in healthy and non-healthy populations who have been challenged with diverse concentrations of dietary cholesterol for extended periods of time.

There are key epidemiological studies, which clearly support that dietary cholesterol does not play a major role in increasing the risk for heart disease in healthy populations [4]; although the data related to individuals with diabetes is controversial [4]. Clinical studies on the other hand, present clear evidence that challenges of dietary cholesterol ranging from additional 300-600 mg of dietary cholesterol per day for long periods of time do not increase the risk for heart disease in diverse populations including children, adults, the elderly, overweight individuals [5], those with metabolic syndrome [6] or patients with diabetes [7]. Dietary cholesterol has been consistently demonstrated to increase HDL cholesterol (HDL-C) under all circumstances. In those cases where LDL-C is also increased, HDL-C raises concomitantly to maintain the LDL-C/HDL-C ratio, a well-established marker for coronary heart disease risk. Further, cholesterol intake results in the formation of large LDL, the least atherogenic of the LDL subfractions and large HDL, the particle associated with increased reverse cholesterol transport. Thus most of the published reports on dietary cholesterol and plasma lipid profiles or atherogenicity of lipoproteins supports the fact that dietary cholesterol does not increase the risk for heart disease. We should stop worrying about dietary cholesterol and not eliminate cholesterol-containing foods (i.e. eggs), which contribute to the nutritional quality of our diets. The perspective of the organizations responsible for releasing dietary recommendations has changed in the last decade in regards to dietary cholesterol and may result in the elimination of dietary cholesterol restrictions in dietary guidelines all over the world.

### Bibliography

1. Lichtenstein AH, *et al.* "Diet and Lifestyle recommendations revision 2006. A scientific statement from the American Heart Association Scientific Committee". *Circulation* 114.1 (2006): 82-96.
2. Eckel RH. "2013 AHA/ACC Guideline on Lifestyle Management to Reduce Cardiovascular Risk: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines". *Journal of the American College of Cardiology* 129.25 Suppl2 (2014): 76-79.
3. Fernandez and ML Calle MC. "Revisiting dietary cholesterol recommendations: does the evidence support a 300 mg/d limit?" *Current Atherosclerosis Reports* 12.6 (2010): 377-383.
4. Fernandez ML and Andersen CJ. "Effects of dietary cholesterol in diabetes and cardiovascular disease". *Clinical Lipidology* 9.6 (2014): 607-616.
5. Fernandez ML, *et al.* "Rethinking dietary cholesterol". *Current Opinions Medical Nutrition Metabolic Care* 15.2 (2012): 117-121.
6. Blesso CN, *et al.* "Effects of carbohydrate restriction and dietary cholesterol provided by eggs on clinical risk factors of metabolic syndrome". *Journal of Clinical Lipidology* 7.5 (2013): 463-471.
7. Ballesteros MN, *et al.* "One egg per day improves inflammation when compared to an oatmeal-based breakfast without increasing other cardiometabolic risk factors in diabetic patients". *Nutrients* 7.5 (2015): 3449-3463.

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