

# Cracking the Egg-Cholesterol Myth

## More than 30 Years of Research Supports the Role of Eggs in a Healthy Diet

### The Good Egg

Many Americans have shied away from eggs – despite their taste, value, convenience, and nutrition – for fear of dietary cholesterol. However, more than 30 years of research has shown that healthy adults can eat eggs without significantly affecting their risk of heart disease or stroke.

In fact, several international health promotion organizations – including Health Canada, the Canadian Heart and Stroke Foundation, the Australian Heart Foundation and the Irish Heart Foundation – now promote eggs as part of a heart-healthy diet, recognizing that they make important nutritional contributions.<sup>1</sup>

### Research Snapshot

**An Egg a Day?** Yes – in fact, studies demonstrate that healthy adults can enjoy one or two eggs a day without any affect on their risk for heart disease:

- A 2007 study of 9,500 people reported in **Medical Science Monitor** showed that eating one or two eggs a day did not increase the risk of heart disease or stroke among healthy adults. The study noted that eating eggs may actually be associated with a decrease in blood pressure.<sup>2</sup>
- A review of more than 25 studies that appeared in the **Journal of the American College of Nutrition** in 2000 showed that eating an egg a day isn't associated with increased risk of heart disease in healthy men and women, even after taking into account other aspects of their diet that may increase the risk for heart disease.<sup>3</sup>
- A six-week study conducted by researchers at the **Yale Prevention Research Center** in 2005 showed that adding two eggs a day to a healthful diet did not significantly increase blood cholesterol levels in young or middle-aged men and women with normal or even moderately elevated blood cholesterol levels.<sup>4</sup>
- A 1999 **Harvard University** study that collected data from more than 100,000 men and women found no significant difference in heart disease risk between healthy adults who ate less than one egg a week and those who ate more than one egg a day, and that eating up to one egg a day is unlikely to have a significant overall impact on the risk of heart disease or stroke.<sup>5</sup>
- A study presented at the **Experimental Biology** conference in 2007 showed that egg consumption contributed less than 1 percent of the risk for heart disease when other adjustable risk factors were taken into account. The researchers concluded that wide-sweeping recommendations to limit egg consumption may be misguided, particularly when eggs' nutritional contributions are considered.<sup>6</sup>
- In 2006, **Nutrition Bulletin** published a review of scientific studies from the past 30 years showing that eating eggs daily does not have a significant impact on blood cholesterol or heart disease risk. The authors noted several benefits of egg consumption—including the high-quality protein eggs provide—and argued that consumption of one to two eggs a day should be *actively* encouraged as part of a calorie-restricted weight-loss plan.<sup>7</sup>



**What the Numbers Reveal:** Studies have looked at the effect of egg consumption on blood cholesterol levels and have found a surprisingly small effect. This is important because newer research has identified the LDL:HDL ratio (“good” cholesterol to “bad” cholesterol) and the Total:HDL ratio (the sum of all cholesterol components to “good” cholesterol) to be better indicators of heart disease risk than either indicator alone.

- A review of over 30 studies published in the **Journal of the American College of Nutrition** in 2008 argues that the LDL:HDL ratio is a much better indicator of heart disease risk than either indicator alone because the ratio reflects the “two-way traffic” of cholesterol entering and leaving the blood system.<sup>8</sup>
- A research review, published in 2000 in the **Journal of the American College of Nutrition**, concluded that healthy adults can enjoy eggs without significantly impacting their heart disease risk. The author, who reviewed 30 years of cholesterol research, found that that dietary cholesterol has a relatively small effect on plasma total cholesterol and that egg consumption, specifically, has little relationship to high blood cholesterol or incidence of heart disease.<sup>9</sup>
- In 2005 researchers at the **University of Connecticut** found that healthy elderly adults who ate three eggs a day for one month did not experience an increase to their LDL:HDL ratio or to their Total:HDL ratio, which are two major indicators for heart disease risk.<sup>10</sup>
- The **Journal of Nutrition** published a study in 2008 that found overweight men who eat eggs while on a carbohydrate-restricted diet have a significant increase in their HDL levels (the “good” cholesterol) compared to men who don’t eat eggs.<sup>11</sup>

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<sup>1</sup> Klein CJ. The scientific evidence and approach taken to establish guidelines for cholesterol intake in Australia, Canada, The United Kingdom, and The United States. LSRO. 2006 [www.lsro.org](http://www.lsro.org). Accessed November 2006.

<sup>2</sup> Qureshi A, et al. Regular egg consumption does not increase the risk of stroke or cardiovascular diseases. *Medical Science Monitor*. 2007; 13(1): CR1-8.

<sup>3</sup> Kritchevsky S and Kritchevsky D. Egg consumption and coronary heart disease: an epidemiological overview. *J Am Coll Nutr*. 2000; 19(5): 549S-555S.

<sup>4</sup> Katz DL, et al. Egg consumption and endothelial function: a randomized controlled crossover trial. *Int J Cardiol*. 2005; 99:65-70.

<sup>5</sup> Hu FB, et al. A prospective study of egg consumption and risk of cardiovascular disease in men and women. *JAMA*. 1999; 281:1387-94.

<sup>6</sup> Tran NL, et al. Balancing and communicating risks and benefits associated with egg consumption – a relative risk study. Presented at Experimental Biology 2007, Washington, D.C.

<sup>7</sup> Lee A and Griffin B. Dietary cholesterol, eggs and coronary heart disease risk in perspective. *Nutrition Bulletin* (British Nutrition Foundation). 2006; 31:21-27.

<sup>8</sup> Fernandez ML and Webb D. The LDL to HDL Cholesterol Ratio as a Valuable Tool to Evaluate Coronary Heart Disease Risk. *JACN* (in press).

<sup>9</sup> McNamara DJ. The impact of egg limitations on coronary heart disease risk: do the numbers add up? *J Am Coll Nutr*. 2000;19(5): 540S-548S.

<sup>10</sup> Greene CM, et al. Maintenance of the LDL cholesterol: HDL cholesterol ratio in an elderly population given a dietary cholesterol challenge. *J Nutr*. 2005; 135:2799-2804.

<sup>11</sup> Mutungi G, et al. Dietary cholesterol from eggs increases plasma HDL cholesterol in overweight men consuming a carbohydrate restricted diet. *J Nutr*. 2008;138:272-276.