

The nutritional benefits of eggs is highlighted in the Australian Eggs' *OK Everyday campaign*. Just how accurate is the assertion that “eggs aren't just delicious, they're incredibly nutritious. There's a good reason eggs are often referred to as nature's multivitamin - they're one of the healthiest foods you can eat”.

Let's examine some of the claims that are being made.

Should you be worried about cholesterol when eating eggs? The short answer is no, absolutely not. Eggs are an extremely nutritious part of a healthy diet and experts agree they are OK every day! ¹

In Australia, 51% of adults have high blood cholesterol levels. But when it comes to addressing and managing it, the amount of cholesterol in food is less important than saturated and trans fats. ²

Unfortunately, the webpage did not define what the high level of blood cholesterol is. According to the *Estimate of 10-Year Risk for Coronary Heart Disease Framingham Point Score* ³, points for increased risk start to accumulate at 4.1 mmol/L (160 mg/dL).

William Roberts is a leading cardiovascular pathologist. He is the current editor (at 2016) of the *American Journal of Cardiology*— a position he has held since 1982. He has published over 1,500 articles. Roberts served as the first head of the pathology service at the National Heart, Lung, and Blood Institute at the National Institutes of Health from 1964 to 1993. He has been located at Baylor Heart and Vascular Institute and Baylor University Medical Center in Dallas, Texas since 1993.

Dr Roberts has also suggested cholesterol goals should be less than 150 mg/dL (3.9 mmol/L) for total cholesterol and less than 60 mg/ dL (1.5 mmol/L) for LDL cholesterol. He also contends there is only one risk factor for heart disease — that is, “It's the cholesterol”, and that the HDL-cholesterol is largely irrelevant. ⁴

Australian Eggs also state:

Dietary cholesterol increases the size of LDL and HDL particles, making LDL cholesterol less like to build up in arteries. This also makes HDL particles more effective in removing cholesterol from the arteries. ⁵

Even if eggs do increase the size of LDL and HDL particles, increasing their size does not improve atherosclerotic outcomes. It is a popular myth that the larger LDL particles are not associated with an increase in heart disease. Below are two papers that state this is simply not true.

Both LDL subclasses were significantly associated with subclinical atherosclerosis, with small LDL confounding the association of large LDL with atherosclerosis. ⁶

Subclass studies (of LDL) have proliferated over the last few years, but many of these studies were funded or subsidized either by suppliers of the assays as a method to expand their use and move them into mainstream practice, or by pharmaceutical companies in an attempt to claim some advantage over other therapeutic agents, especially when the LDL-C or Apo B reducing ability of their drug was less competitive. Although these studies have created more heat, they provide little additional light. ⁷

Another claim is that:

Eggs are high in several natural antioxidants including lutein and zeaxanthin, which protect your eyes and maintain their health. They are thought to slow the progression of age-related macular degeneration, the leading cause of legal blindness in Australia. Egg whites also contain selenium, which protects your immune system. ⁸

One 50 g egg contains 252 µg of lutein and zeaxanthin. One cup (250 ml) of cooked kale contains 24 times more. Lutein and zeaxanthin are much more effective when consumed with vitamin C. ^{9 10}

One 5 g Brazil nut kernel contains 6 times the amount of selenium than one large egg which contains 15 µg of selenium.

According to the Australian Egg website, “eggs are an easy way to help hit your recommended iron intake levels”. One large egg (50 g) contain 0.88 g of iron. One cup (250 ml) of steamed kale contains 50% more iron. It also contains vitamin C which can increase the effectiveness of iron absorption by 2-3 times. Eggs do not contain vitamin C. ¹¹

Claiming that eggs are a great source of lutein and zeaxanthin and can protect our eyes from macular damage or that selenium in eggs is protective of the immune system is extremely misleading.

Even claiming that eggs is a great source of iron is being somewhat over enthusiastic.

The claim that eggs are one of the healthiest foods you can eat is rather over optimistic.

Footnotes

1. Australian Eggs (2017.) Cholestrol In Eggs Myth - Should you be worried? [online]. Available from: <https://www.australianeggs.org.au/nutrition/cholesterol/>(Accessed 24 November 2017).

2. Australian Eggs (2017.) Cholestrol In Eggs Myth – Should you be worried? [online]. Available from: <https://www.australianeggs.org.au/nutrition/cholesterol/> (Accessed 24 November 2017).
3. National Heart Blood and Lung Institute (n.d.) Estimate of 10-Year Risk for Coronary Heart Disease Framingham Point Scores [online]. Available from: <https://www.nhlbi.nih.gov/health-pro/guidelines/current/cholesterol-guidelines/quick-desk-reference-html/10-year-risk-framingham-table>.
4. Roberts, W. C. (2010) It's the cholesterol, stupid! *American Journal of Cardiology*. 106 (9), 57-73.
5. Australian Eggs (2017.) Cholestrol In Eggs Myth – Should you be worried? [online]. Available from: <https://www.australianeggs.org.au/nutrition/cholesterol/> (Accessed 24 November 2017).
6. Mora, S. et al. (2007) LDL particle subclasses, LDL particle size, and carotid atherosclerosis in the Multi-Ethnic Study of Atherosclerosis (MESA). *Atherosclerosis*. 192 (1), 211-217.
7. Stein, E. A. (2006) Are measurements of LDL particles ready for prime time? *Clinical Chemistry*.
8. Australian Eggs (2017) Egg Nutrition: What's In An Egg? [online]. Available from: <https://www.australianeggs.org.au/nutrition/> (Accessed 24 November 2017).
9. Johnson & Rasmussen, H. (2013) Nutrients for the aging eye. *Clinical Interventions in Aging*. 741.
10. Song, M.-H. et al. (2015) Effects of lutein or lutein in combination with vitamin C on mRNA expression and activity of antioxidant enzymes and status of the antioxidant system in SD rats. *Laboratory Animal Research*. 31 (3), 117.
11. Cook, J. D. & Monsen, E. R. (1977) Vitamin C, the common cold, and iron absorption. *American Journal of Clinical Nutrition*. 30 (2), 235-241.