



Position Statement for Healthcare Professionals

How Many Eggs?

Updated July 2012

Eggs are a highly nutritious food that can make an important contribution to a healthy, well balanced diet. As eggs contain dietary cholesterol, it has long been assumed they should be limited in the diet to reduce the risk of coronary heart disease (CHD) [1, 2]. However recent scientific evidence indicates little to no association between egg intake and the risk of CHD and stroke in most people [3]. Many people believe a certain number of eggs to be healthy to include in the diet and as a result, a question often fielded by health professionals is 'how many eggs can be included each week as part of a healthy eating pattern?'

Australian healthy eating guideline recommendations

The Australian Guide to Healthy Eating (AGHE) [4] includes eggs in the meat, fish, poultry, eggs, nuts and legumes group, with 1-2 serves from this group recommended daily for adults. There are no specific recommendations on the frequency of egg intake within the AGHE.

The Australian Dietary Guidelines for children and adolescents [5], and adults [6], recommend individuals '*Include lean meat, fish, poultry and/or alternatives*' and eggs are listed as a valuable alternative. There are no recommendations in this guide specifying or restricting the number of eggs to consume weekly.

National Heart Foundation recommendations

The National Heart Foundation of Australia's (NHF) 2001 Lipid Management Guidelines set no specific recommendations regarding the number of eggs to consume weekly [2]. The guidelines stated "limit cholesterol-rich foods such as egg yolk and offal" for the management of abnormal plasma lipid levels and cardiovascular disease risk. However their 2005 Position Statement update on Lipid Management [7] removed this recommendation and makes no reference to dietary cholesterol, instead recommending a low saturated fat eating plan incorporating moderate amounts of polyunsaturated and monounsaturated fats and oils, marine omega-3s via two to three fish meals per week and at least 2g of plant omega-3s (Alpha Linolenic Acid) per day, and a wide variety of fruits, vegetables and wholegrain cereal products.

The NHF 2009 Position Statement on Dietary Fats and Dietary Sterols for Cardiovascular Health [8] states saturated fatty acid intake is associated with CHD, and that dietary cholesterol increases total cholesterol and LDL-C but substantially less so than saturated and trans fatty acids. It is recommended that all Australians may consume six eggs per week within a cardio-protective, reduced saturated fat eating pattern without increasing their risk of CVD.

In 2004, the NHF announced that whole fresh eggs were eligible to carry the Tick, recognising eggs as an affordable, nutritious and readily available food and a healthy inclusion in a balanced diet. In making the announcement in Australia in 2005, the NHF recommended people with heart concerns seek advice from their doctor or an Accredited Practising Dietitian regarding their intake of egg yolks.



International recommendations

International healthy eating guidelines such as Canada's Food Guide to Healthy Eating [9] and the UK Food Standards Agency's Balance of Good Health [10] do not impose a restriction on the intake of eggs. The Dietary Guidelines for Americans have recently been revised [11]. In the updated guidelines it is stated that the: *"evidence suggests that one egg per day does not result in increased blood cholesterol levels, nor does it increase the risk of cardiovascular disease in healthy people"*.

The American Heart Association (AHA) [12] recommends limiting dietary cholesterol intake, particularly for people with elevated blood cholesterol levels. The AHA recommends a cholesterol intake of less than 300mg per day for healthy individuals, and 200mg in people with elevated cholesterol levels or CVD (this allows for 7 eggs a week if no other dietary cholesterol is consumed). The AHA state that "an egg a day could fit within an individual's dietary budget only if dietary cholesterol from other sources, such as meats, poultry and dairy products were limited" [13].

The British Heart Foundation once recommended a limit of 3-4 eggs per week for people with elevated cholesterol levels, however they no longer recommend a certain number of eggs per week. Their current recommendations are that people needing to reduce their blood cholesterol levels should instead cut down on the amount of saturated fat in their diets from foods like fatty meat, full fat dairy products and cakes, biscuits and pastries [14].

The World Health Organization's (WHO) report on Diet, Nutrition and the Prevention of Chronic Diseases [15] states that "egg yolk is particularly rich in cholesterol but unlike dairy products and meat does not provide saturated fatty acids. If intake of dairy fat and meat are controlled, there is no need to severely restrict egg yolk intake, although some limitation remains prudent".

Summary of scientific literature

Seventeen epidemiological and case-control studies have assessed egg intake and subsequent development of CVD or all-cause mortality. Of these studies, twelve showed no association between egg intake and CVD risk [16-26]. One study was conducted only in people with diabetes and showed an increased risk of cardiovascular mortality with consumption of one or more eggs a day (hazard ratio for increases of daily egg intake by one standard deviation = 1.31) [27]. Similarly, a 2011 study found an association between egg intake (greater than 3 per week) and CVD risk only in people with type 2 diabetes [28]. The remaining three studies indicated an increased risk of CVD or heart failure from consumption of greater than 6-7 eggs per week (RR = 1.23-1.28) [29-32]. Studies involving subgroups of people with diabetes have shown a possible increase in risk at the same level of consumption (6-7 eggs per week) [16, 19].

The nutritional contribution of eggs

Eggs are a nutrient rich food being a natural source of at least 11 different vitamins and minerals, plus the antioxidants lutein and zeaxanthin, and long chain omega-3 fatty acids. Eggs provide 59% of the RDI for selenium, 49% RDI for folate, 42% RDI for pantothenic acid, 40% RDI for vitamin B12, 32% RDI for vitamin A, 29% RDI for iodine and riboflavin, 24% RDI for vitamin E and 21% RDI for phosphorus. Other nutrients for which eggs contribute more than 10% of the RDI include iron (14%) and thiamin (11%). Eggs are also rich in long-chain omega-3 fatty acids, providing 71% of the adequate intake (AI) for men and 127% AI for women. The protein found in eggs is also considered to be of the highest quality. Eggs are particularly important for people following a restricted diet or for those who have increased nutrient requirements, such as ovo-vegetarians, pregnant women, children, adolescents and the elderly.



Overall, there is a lack of scientific data suggesting egg consumption needs to be restricted in a healthy diet. The Egg Nutrition Council supports the inclusion of six eggs per week as part of a healthy diet. Eggs are a highly nutritious food that can play an important role in a healthy diet and are recommended as part of a healthy eating pattern that also includes wholegrain breads and cereals, fruits, vegetables, low fat dairy foods, lean meat, fish and poultry and unsaturated fats.

This statement is for healthcare professionals only.

**One serve = 2x60g eggs (104g edible portion)*

Disclaimer regarding epidemiological studies:

The position of the Egg Nutrition Council is that epidemiological studies provide useful data for further research however do not prove cause and effect. The limitations of epidemiological studies include the potential for confounding and the inability to apply findings to individual dietary patterns.

Useful links:

National Heart Foundation of Australia

<http://www.heartfoundation.org.au/Pages/default.aspx>



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