

Position Statement for Healthcare Professionals

Eggs and Fat

Updated May 2017

Research undertaken by the Australian Egg Corporation shows around one third of consumers cite fat content as a barrier to egg consumption^{1,2}.

Fat composition of eggs

Eggs contain an average of 10.3 grams of total fat per serve of eggs* making them a moderate source of dietary fat. The majority of the fat in eggs is unsaturated with 3.4 grams being saturated fat. Results from the 2011-12 National Nutrition and Physical Activity Survey³ (NNPAS) show egg products and dishes contribute just 2.3% of the average total fat intake, 1.8% of the average total saturated fat intake, 2.2% of the average total polyunsaturated fat intake and 2.4% of the average total monounsaturated fat intake in the Australian diet. Egg products and dishes therefore contribute more to unsaturated fat intakes in the average Australian diet and contribute relatively little to saturated and trans fat intakes.

Eggs provide omega-3 fatty acids, contributing an average of 180mg per serve. Of this, 114mg is long chain omega-3 fatty acids, which represents 71-127% of the adequate intake (AI) for adults⁴. Eggs enriched with omega-3 fatty acids provide even more of these fatty acids, with total amounts varying between brands. The NNPAS reported egg products and dishes contributed 1.6% of the average omega-3 ALA intake and 3.8% of the average omega-3 long chain intake of Australians. Table 1 outlines the fatty acid composition of Australian eggs.

Table 1: Fatty acid composition of Australian eggs

Fatty acid	Fatty acid profile (% total)	Fatty acid content (g/100g)
Total fat	100	9.9
Total monounsaturated	50.9	5.1
Oleic acid	44	4.37
Total saturated	33.3	3.3
Total polyunsaturated	15.6	1.6
Total omega-3	1.7	0.17
DHA	1.0	0.1
DPA	0.1	0.01
EPA	0	0
Alpha linolenic acid	0.6	0.06
Total omega-6	13.8	1.37
Linoleic acid	11.4	1.1
Arachidonic acid	1.8	0.18



Egg fatty acids and nutrient absorption

Research has demonstrated that one of the beneficial effects of the fat in eggs is that it increases the bioavailability of the carotenoids lutein and zeaxanthin which are found in the egg yolk^{5,6}. In addition, research has shown that when eggs are consumed with raw salad vegetables, the bioavailability of carotenoids from the salad are also increased as well as those from the eggs⁷. Lutein and zeaxanthin are found in the macular region of the retina^{8,9} and play an important role in eye health¹⁰. *For further information on eggs and eye health, refer to the ENC position statement on this topic.*

Omega-3 fatty acids and health benefits

An increased intake of omega-3 fats is known to protect against heart disease^{11,12}, some inflammatory diseases and autoimmune disorders including rheumatoid arthritis¹³ as well as promoting eye health¹⁴. Omega-3 fats also play a major role in infant growth and development, as well as behaviour, attention and learning in children¹⁵. Omega-3 fats are also important in maintaining good mental health with some research suggesting possible benefits of omega-3 intake for depression^{16,17} as well as protection against cognitive decline and incidence of dementia in older adults¹⁸.

The Heart Foundation and the National Health and Medical Research Council (NHMRC) recommend increased consumption of omega-3 fats, namely alpha-linolenic (ALA) and its long chain metabolites eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). ALA is a plant-based fatty acid, found in foods such as walnuts, canola oil and soybeans, whereas EPA and DHA are mainly present in marine sources (fish, shellfish, marine algae), along with eggs and meat.

The Heart Foundation's most recent recommendations^{19,20} for the primary prevention of heart disease are that all Australians, including those with existing heart disease:

- Aim for 2-3 serves of fish (150-200g), including oily fish per week, to achieve about 250-500mg per day of combined EPA/DHA.
- Aim for 1g of short chain omega-3 (ALA) per day.

Results from the latest National Nutrition and Physical Activity Survey show that a small number of Australians are consuming high amounts of omega-3 fats but that the vast majority of Australians are consuming much lower amounts. Only 20% of the population meet the recommended long-chain omega-3 intakes and only 10% of women meet the recommended DHA intake²¹. These data indicate that there is a need for Australians to increase their daily intake of omega-3-containing foods to meet current recommendations for optimal health.

Omega-3 enriched eggs

Eggs can be enriched through the provision of omega-3 food sources (such as linseed, chia seeds or fish oil) in the diets of laying hens^{22,23} with a recent Australian study indicating the addition of omega-3 via chia seeds produced eggs with the most acceptable sensory profile²³.



Studies specifically conducted with omega-3 enriched eggs have shown their consumption can infer health benefits, particularly for improving blood lipid profiles²⁴⁻²⁸ and in specific population groups such as infants^{29,30} and lacto-ovo vegetarians^{31,32}.

Due to their contribution of a wide range of nutrients to the diet, eggs can be a valuable inclusion in a healthy eating pattern and contribute only moderate amounts of total fat, the majority of which is beneficial unsaturated fat, including useful amounts of omega-3 fats. Given many Australians fall short of the omega-3 recommendations for chronic disease prevention, including eggs regularly can make a useful contribution to daily intakes. In particular, eggs provide a source of omega-3 fats for lacto-ovo vegetarians and individuals who do not consume fish regularly.

This statement is for healthcare professionals only.

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

Useful links:

Omega-3 Centre

www.omega-3centre.com

Heart Foundation Position Statements

<https://www.heartfoundation.org.au/for-professionals/food-and-nutrition/position-statements>

References:

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