

Egg Nutrition Council

Eggs: unscramble the medical facts

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Eggs for Health Consulting



What is the ENC?



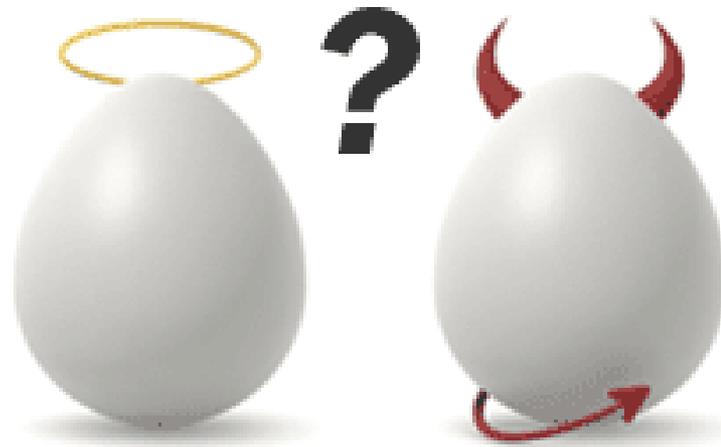
- A select group of highly qualified professionals with enormous expertise in nutrition, diet and healthcare
- Provides unbiased, independent advice to the Australian egg industry on national and international scientific research and findings on the nutritional qualities of eggs

Members of the ENC

- **Associate Professor Karam Kostner**
Cardiologist, University of Queensland
- **Dr Manny Noakes**
Senior Research Dietitian, CSIRO Health Sciences and Nutrition, Adelaide
- **Dr Tania Markovic**
Endocrinologist, Royal Prince Alfred Hospital, Sydney
- **Dr John Barlow**
General Practitioner, Bankstown
- **Dr Cameron Grant**
Associate Professor in Paediatrics, University of Auckland
- **Ms Sharon Natoli**
Accredited Practising Dietitian, Food Nutrition Australia, Sydney
- **Dr Donald McNamara**
Former Executive Director of the Egg Nutrition Centre, Washington, DC USA

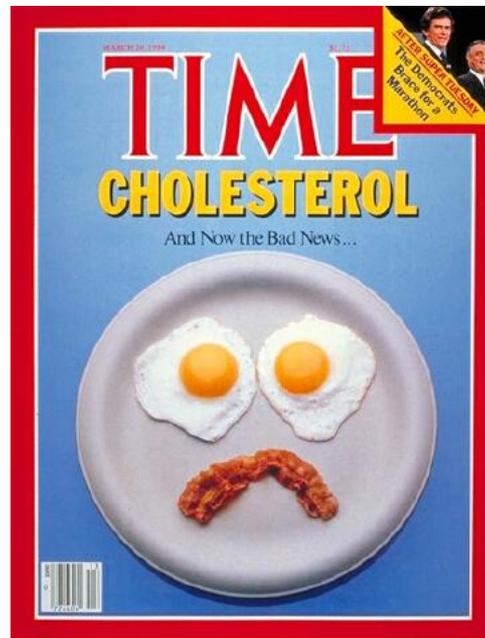


Eggs: Good or bad?



Cholesterol and CHD

Eggs were the icon for dietary excesses, high plasma cholesterol and CHD risk



1984



What doctors believe?



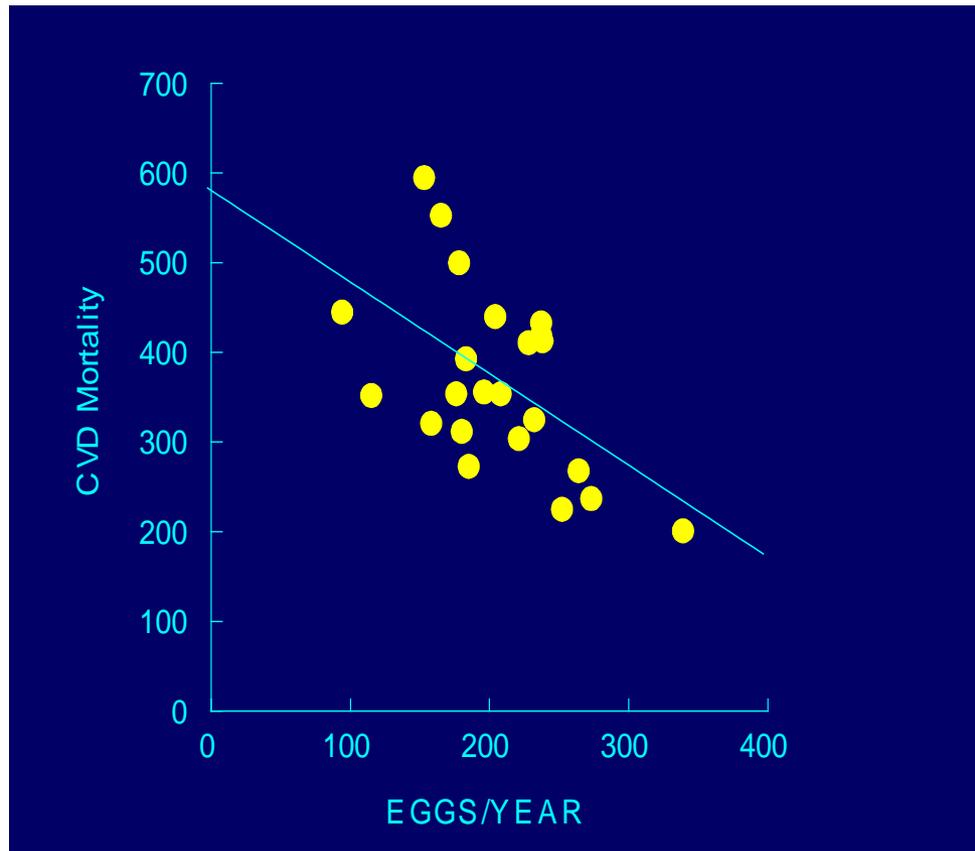
- Almost 80% believe that four or less eggs a week is a healthy level for the majority of people
- Almost half believe that the potential increase in serum cholesterol outweighs any dietary benefits of eggs
- Almost 75% believe that dietary cholesterol has a moderate or significant effect on increasing serum cholesterol levels

What doctors believe?

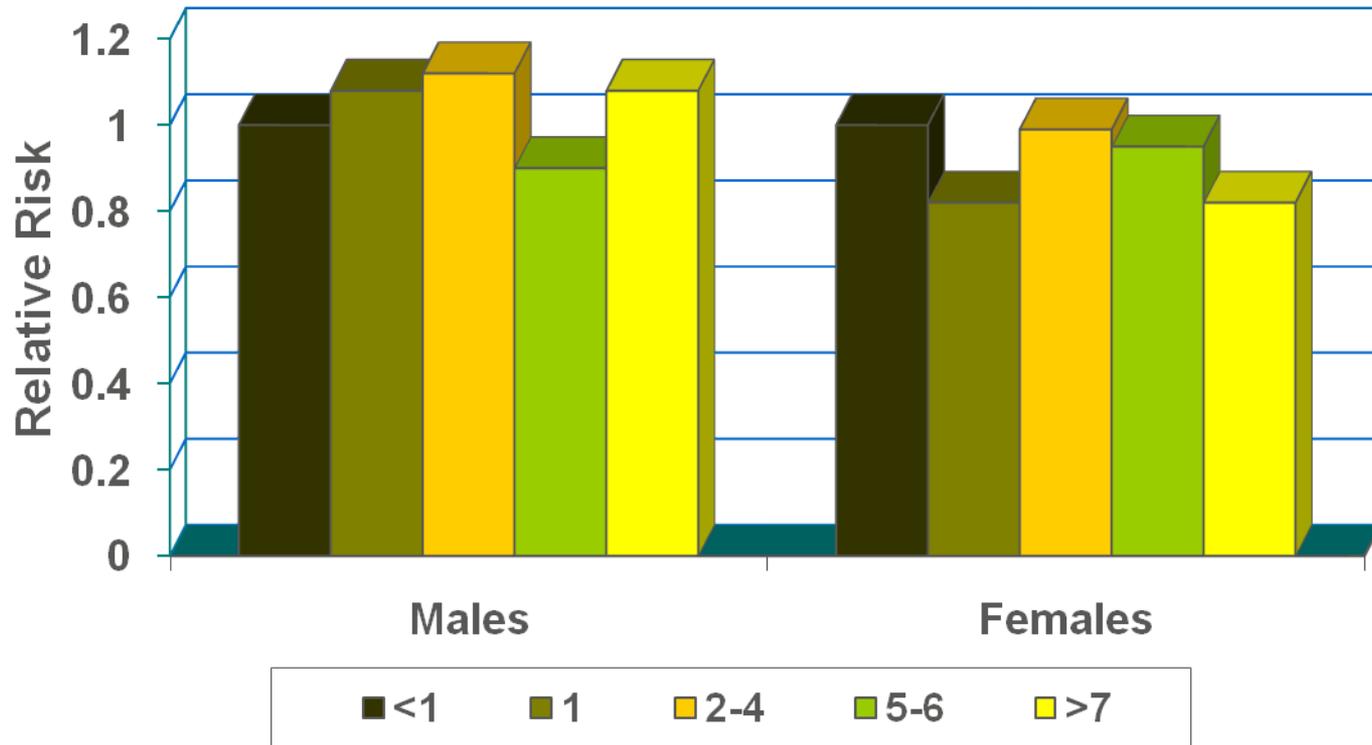
More than half would recommend patients restrict egg consumption if they are trying to lose weight, lessen CVD risk, reduce hypercholesterolaemia, improve diet and nutrition, or have diabetes.



Eggs and CVD



Eggs / WK and CHD risk



Japan Public Health Study



Epidemiological studies

Major trials:

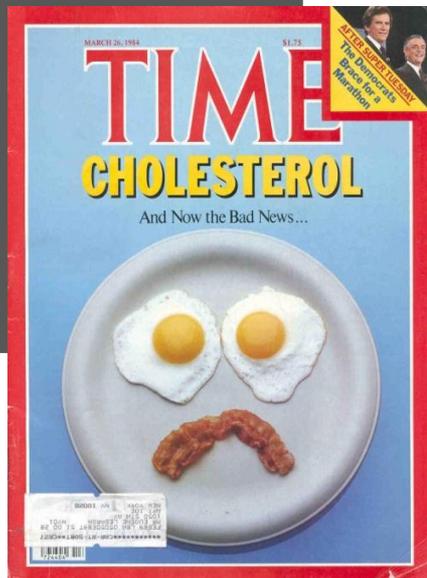
- Health Professionals Follow-up [n>43,000]
- Nurses' Health Study [n=80,082]
- ATBC Cancer Prevention Study [n=21,930]
- Lipid Research Clinics
- Framingham Heart Study

Conclusion: Dietary cholesterol is unrelated to CHD

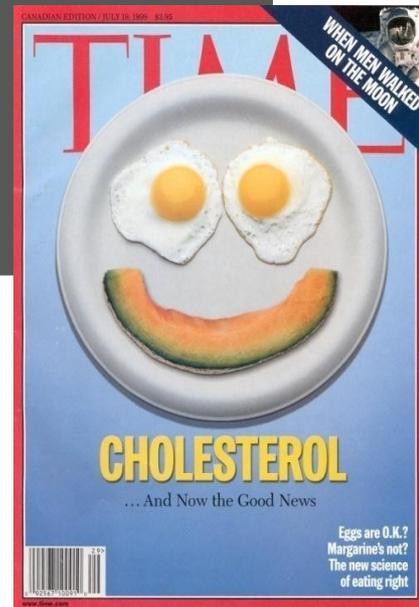


Changing perceptions

1984



1999



Eggs: the real story

How many eggs can we have each week?



What the world thinks

- World Health Organization
- British Heart Foundation/UK Food Standards Agency,
- Canadian Heart and Stroke Foundation (Heart Check)
- Health Canada's Food Guide to Healthy Eating
- Irish Heart Foundation
- National Heart Foundation of New Zealand
- American Heart Association

No limit on number of eggs consumed or recommend consumption of 6 or 7 eggs a week



The National Heart Foundation on Australia

*All Australians, including people with diabetes or metabolic syndrome, who follow a healthy balanced diet low in saturated fat can **eat up to six eggs each week** without increasing their risk of cardiovascular*



EGGS HAVE THE TICK
BECAUSE THEY ARE
A NUTRITIOUS FOOD

CERT TM



Myth busting: Eggs and serum cholesterol

The myth:

- Eggs are bad for your serum cholesterol and therefore bad for your heart

The reality:

- The effects of foods that contain dietary cholesterol – including eggs – on serum cholesterol are small in the context of a low saturated fat diet



Myth busting: Eggs and coronary heart disease

The myth:

- Due to the cholesterol in eggs they can increase the risk of people developing CHD



The reality:

- There is no consistent evidence that reducing egg consumption reduces the risk of CHD and stroke in most people

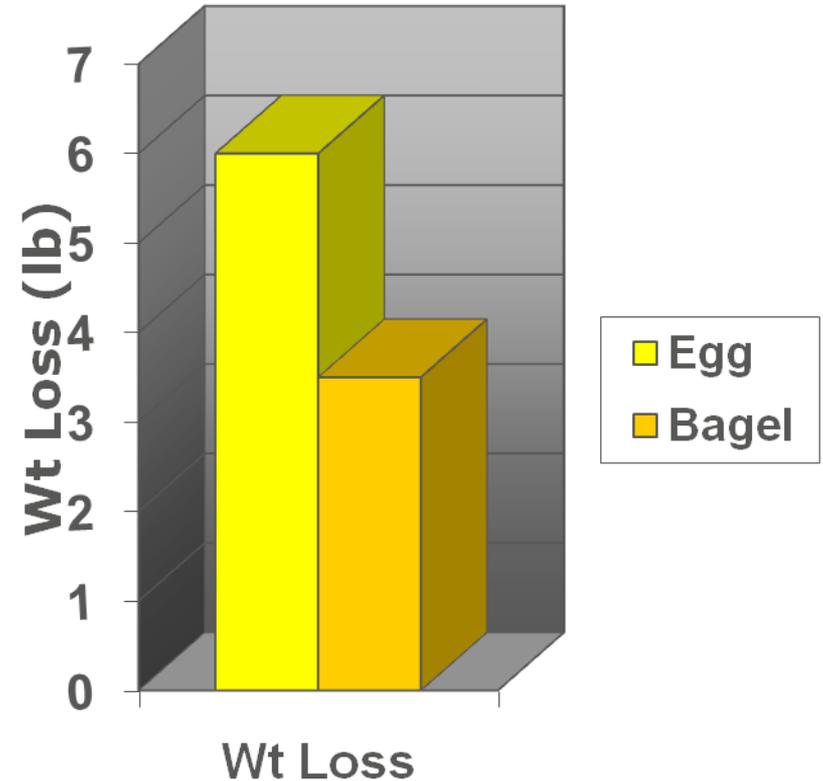
Eggs: A great food source



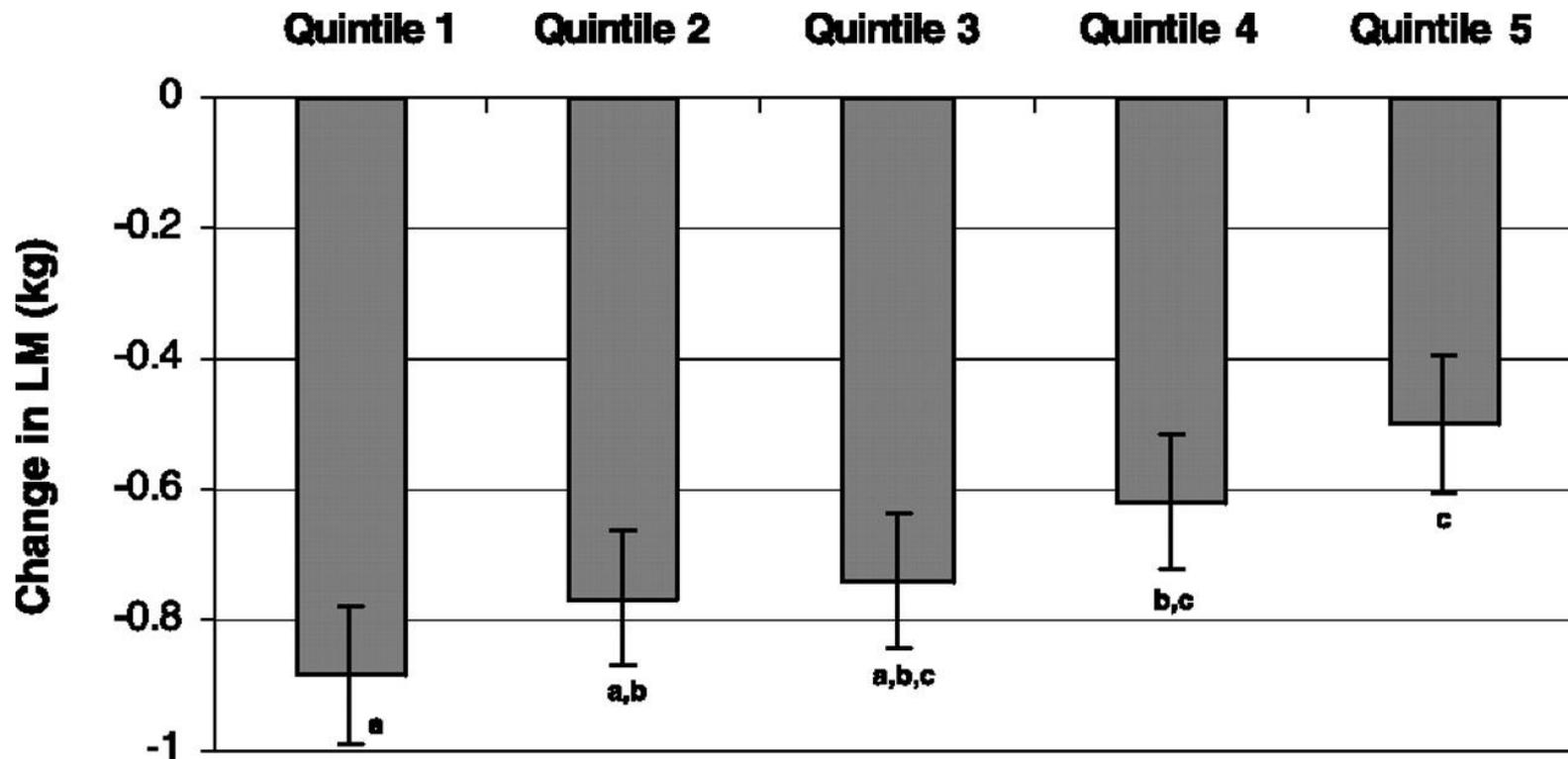
- Are there any risks associated with egg restrictions? ***“Eggs do no harm.”***
- Eggs:
 - Help maintain a healthy weight
 - Help maintain healthy muscles
 - Help maintain healthy eyes
 - Address nutrient inadequacy

Eggs and satiety

- 8 wk diet study (n=80)
- > 5d/wk 340 kcal egg vs. bagel breakfast
- Decrease diet by 1,000 kcal/d

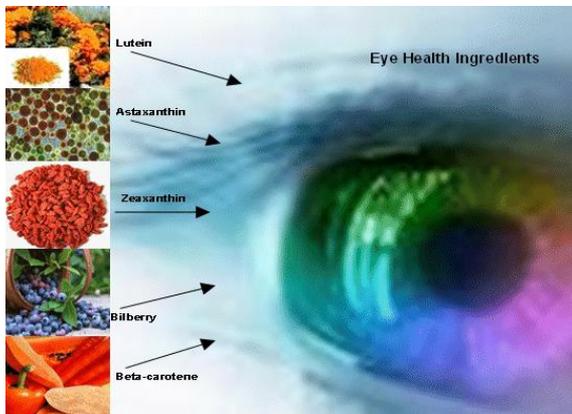


Protein and lean mass loss



Eggs and eye health

- **Antioxidants** play a role in **protecting** against the development of eye diseases
- The two primary **carotenoids** found in the macular region of the retina are **lutein** and **zeaxanthin**
- Eggs **contain both of these antioxidants**, with one serve of eggs providing 530µg. Lower than in some plant sources, it is **more bioavailable** due to the fat in eggs, which **increases antioxidant absorption**.



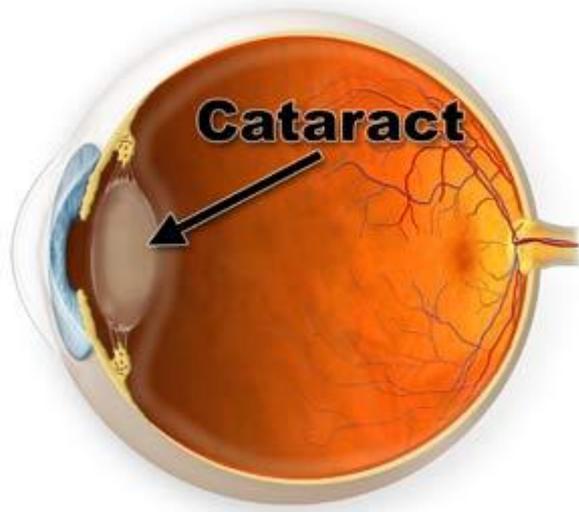
Eggs and MPOD

| | Controls (8) | 6 Eggs/wk for 3 months (9) |
|---------------|--------------|----------------------------|
| Baseline MPOD | 0.173 | 0.181 |
| Final MPOD | 0.195 | 0.300* |

While the average level of lutein and zeaxanthin in one egg is modest (L=250 mcg and Z=200 mcg, for the eggs used in these studies) the bioavailability appears high. Consuming 6 eggs/week resulted in a significant increase in MPOD without increasing cholesterol risk.



Eggs and cataracts



- Data from the Beaver Dam Eye Study indicated that egg consumption was **inversely associated with cataract risk**
- The relative **risk of cataracts was 0.4** for people with the highest egg consumption versus a risk of 1.0 for those with the lowest intake
- **60% reduction in cataract risk**

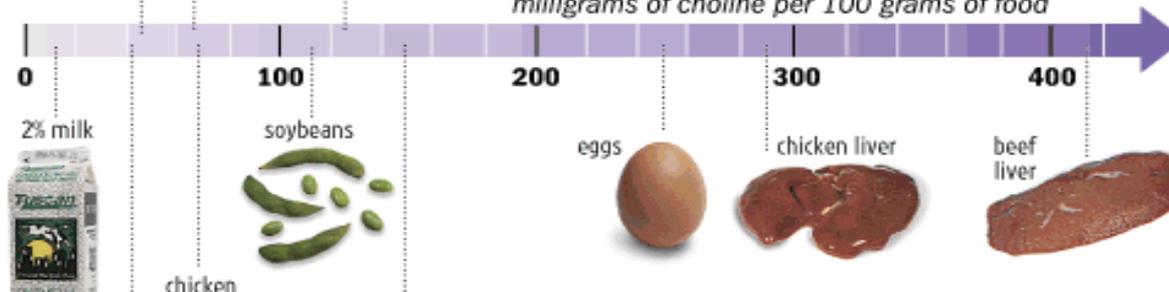
Eggs and Choline



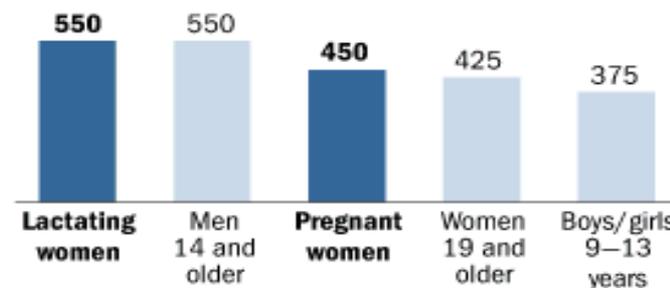
Baby Builder

Everyone needs to get enough choline in their diets to stay healthy. The nutrient is especially critical during pregnancy and breastfeeding, scientists are finding.

Choline content in some common foods,
milligrams of choline per 100 grams of food

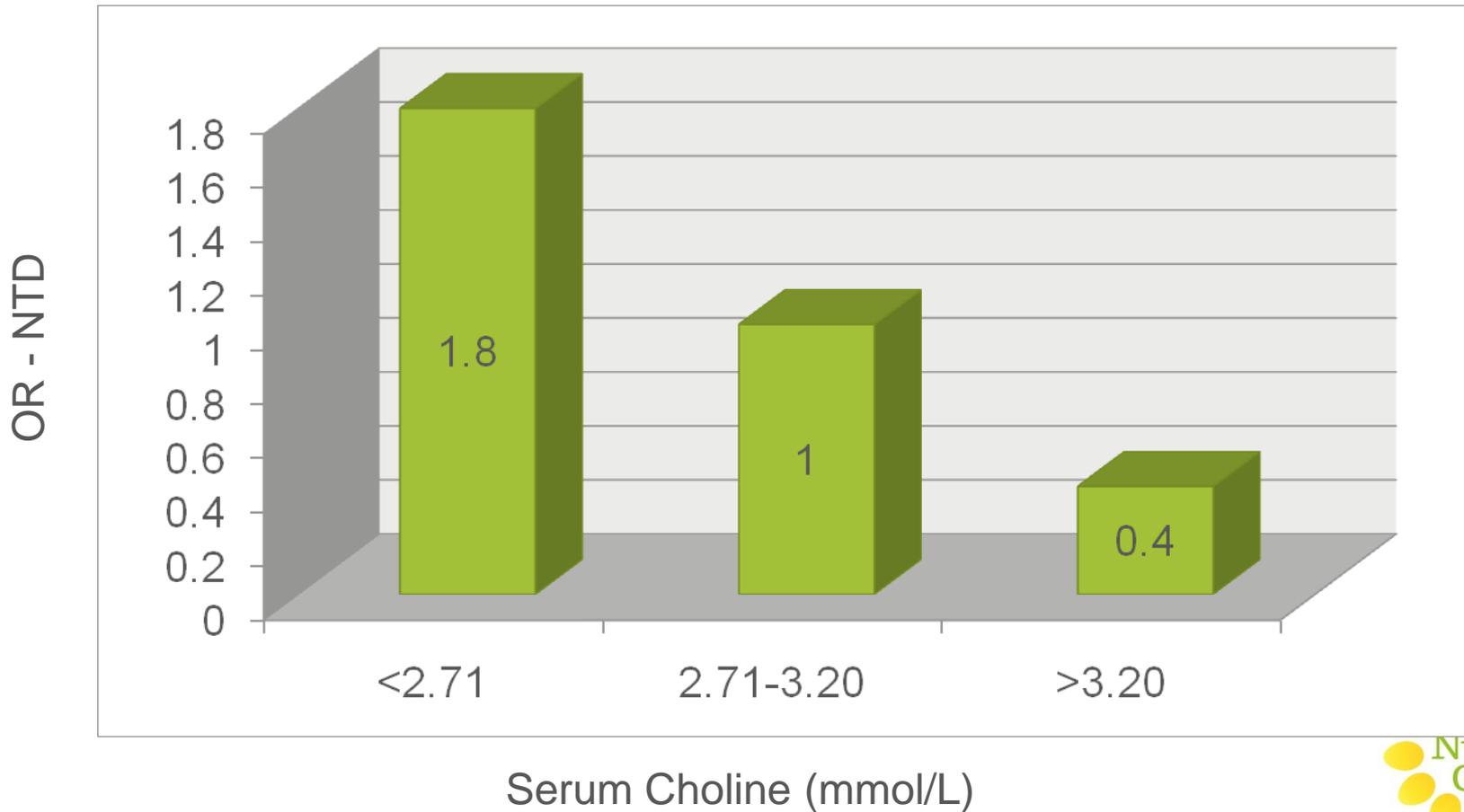


Adequate intake levels of choline, in milligrams a day



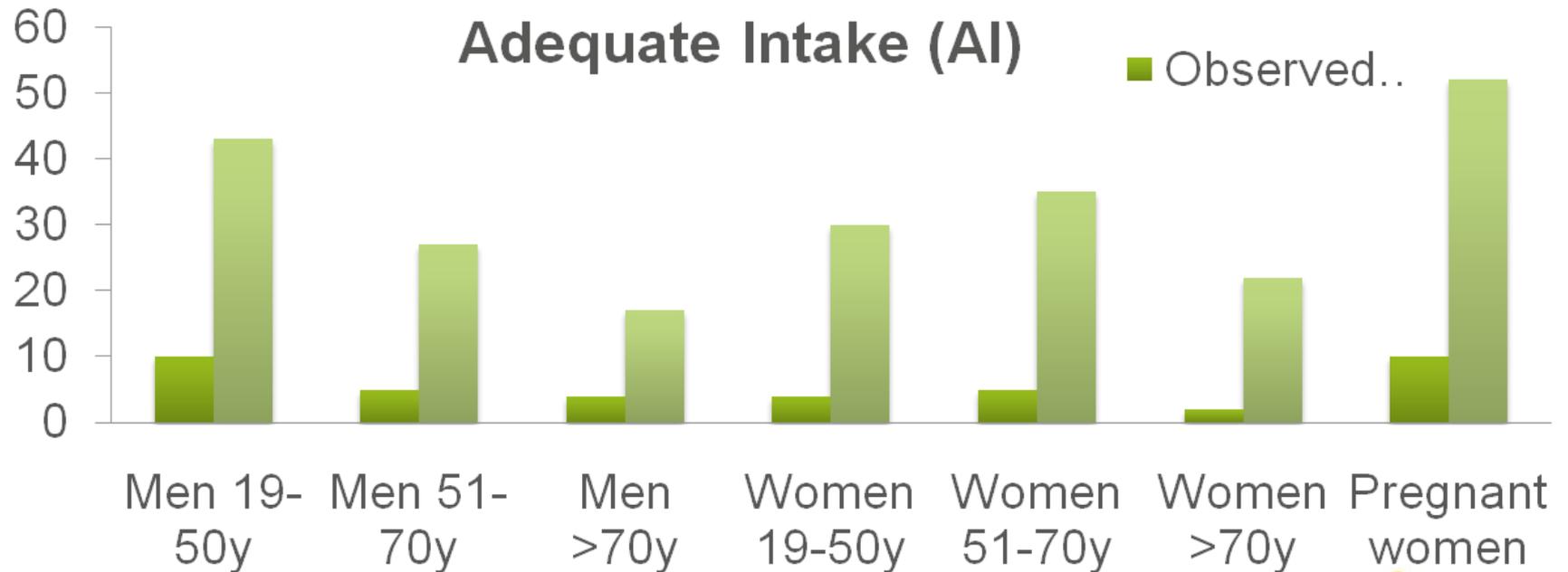
Sources: National Academies of Science;
U.S. Department of Agriculture

Choline levels and NTD



NHANES analysis: Choline

Percent of Adult with Estimated Usual Intake of Total Choline Greater Than Adequate Intake (AI)

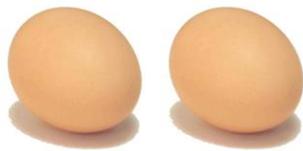


Eggs: The good news



Did you know?

Two (60g) eggs provide fewer kilojoules than two medium apples



=581 kj

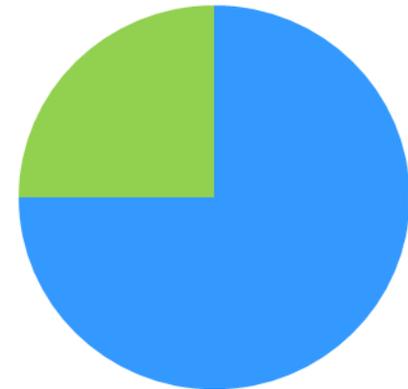


610 kj

One (60g) egg provides 1 tsp fat (5.1g) and 70% of this is unsaturated (3.5g)



Two (60g) eggs provide 12.7g high quality protein (25% RDI)



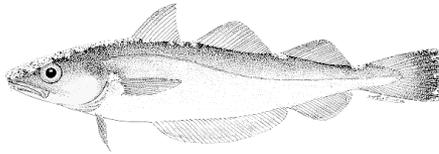
11 Vitamins and minerals >10%RDI

| Nutrient | Amount per serve* | %RDI |
|----------------------|-------------------|--------------|
| Phosphorus | 208mg | 21% |
| Selenium | 41mcg | 59% |
| Iron | 1.7mg | 14% |
| Iodine | 43mcg | 29% |
| Vitamin A | 239mcg | 32% |
| Folate | 97mcg | 24% |
| Thiamin | 0.12mg | 11% |
| Riboflavin | 0.5mg | 29% |
| Vitamin B12 | 0.8mcg | 40% |
| Pantothenic acid | 2.1mg | 42% |
| Vitamin E | 2.4mg | 24% |
| Omega-3 – long chain | 114mg | 71-127% (AI) |



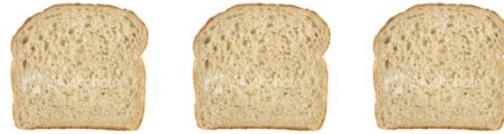
Just two eggs provides...

Omega 3s



= 95g whiting

Selenium



> three slices wholemeal bread

Vitamin A



= two glasses of milk

Iodine



= 50g marine fish

Plus...

Folate



= $\frac{1}{2}$ cup of cooked spinach

Vitamin E



= one tablespoon of canola oil

Lutein and Zeaxanthin



= $\frac{3}{4}$ cup of broccoli

Nutrient density

Eggs are one of the few naturally nutrient dense foods.



Nutrient dense foods are particularly useful for:

- Pregnant women
- Kids
- Seniors
- Vegetarians

Conclusion



- No evidence that dietary cholesterol is related to CVD risk
- Restriction of eggs can have negative consequences on health

Six Good Reasons...

1. Low in fat and kilojoules

- One serve of eggs (2x60g eggs) provides just 15% of a person's fat and 14% of saturated fat intake

2. Nutrient Rich

- Contain at least 11 vitamins and minerals and are a good source of high quality protein

3. A Good source of long chain Omega-3

- One serve provides 180mg of omega-3, 12% of the daily Adequate Intake (AI) recommendation for men and 20% for women.

4. Antioxidants

- Eggs contain the antioxidants lutein and zeaxanthin, which play a protective role in the prevention of eye disease.

5. Protein

- Highly digestible source of protein has benefits for people throughout life's journey.

6. Affordable and easy to prepare and consume

- Eggs are a nutritious food source that is self-contained, affordable and easy to cook.
- Eggs are classified as a highly digestible protein source, with 95% of egg protein being digestible.



Questions