



British



Lion Eggs

# EGGS

## A LECTURE PLAN FOR STUDENTS OF FOOD



Westminster Kingsway  
central London's College

developed in conjunction with  
**Jose Souto, Chef Lecturer,**  
**Westminster Kingsway College**

# CONTENTS

---

---

**WHAT'S IN AN EGG?**

---

**EGG QUALITY AND PRODUCTION**

---

**FOOD SAFETY AND THE LION**

---

**CULINARY PROPERTIES**

---

**EGGS AND HEALTH**

---

**SIMPLE DISHES WITH EGGS**

---

# WHAT'S IN AN EGG?

---

# WHAT'S IN AN EGG?

Eggs are an extremely versatile food, either as a meal in themselves or in countless savoury and sweet dishes. They are simple to cook and combine well with other ingredients.

With their high nutritional value, eggs can make a significant contribution to a healthy diet.

Eggs are a natural source of many nutrients including high quality protein, vitamins and minerals.

A medium egg contains fewer than 70 calories.



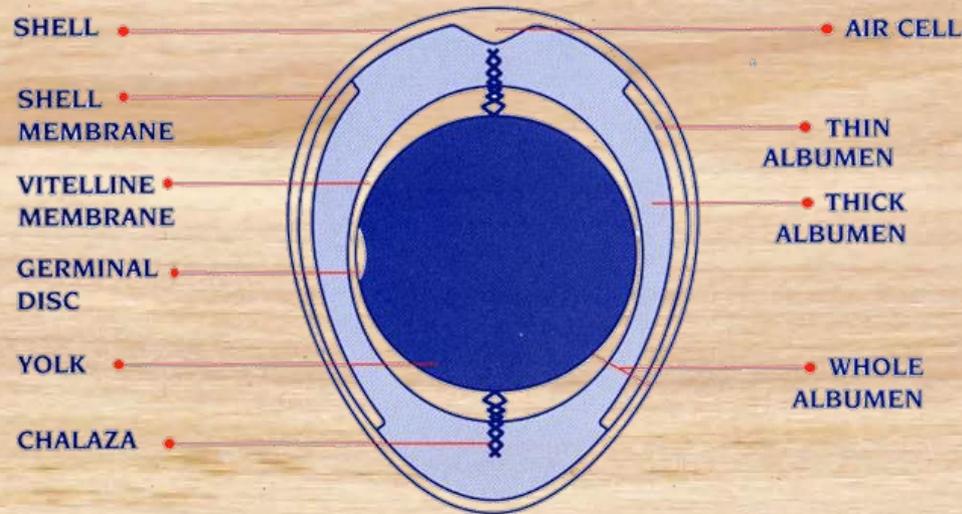
# EGG STRUCTURE

## SHELL

A shield to prevent damage and to protect the egg contents from bacteria/dirt.

## MEMBRANES AND AIR CELL

A second barrier protecting the egg contents.



## EGG WHITE OR ALBUMEN

The layers of albumen form 58% of the entire egg, made up of protein, carbohydrates, minerals, B vitamins and water.

## EGG YOLK

Comprises 31% of the egg, consisting mainly of protein and fat. The yolk also contains smaller traces of carbohydrates, minerals and vitamins.

# EGG QUALITY AND PRODUCTION

---

# EGG PRODUCTION

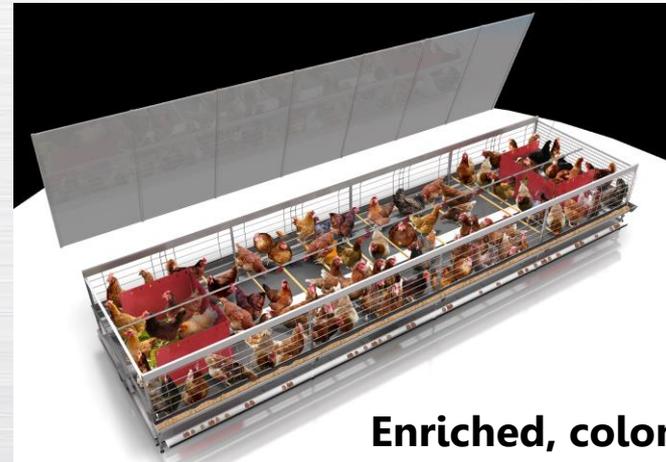
---

## LAYING CAGE EGG PRODUCTION

Conventional 'battery' cages have been banned in the EU and have been replaced by larger, 'enriched' colony cages. Most of the new colony cages in the UK are designed to contain between 40 and 80 birds, enabling better use of the space and giving them more room to move around.

## BARN EGG PRODUCTION

In the barn system hens are able to move freely around the large inside of a barn or house, but do not have access to the outside



**Enriched, colony cage**

# EGG PRODUCTION

---

## **FREE RANGE EGG PRODUCTION**

For eggs to be termed 'free range', hens must have continuous daytime access to runs which are mainly covered with vegetation, and include outdoor shading and litter for hens to use for scratching and dust bathing.

## **ORGANIC EGG PRODUCTION**

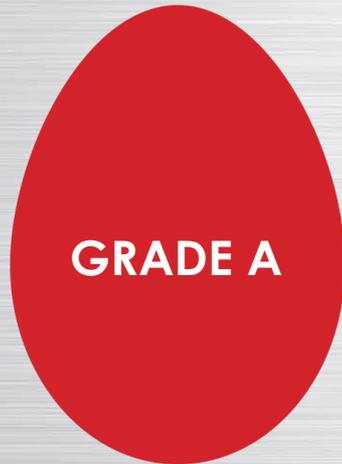
Hens producing organic eggs are always free range. In addition, hens must be fed an organically produced diet and ranged on organic land.



# EGG QUALITY

---

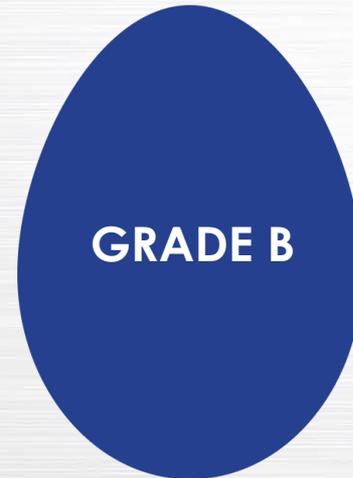
**UNDER EUROPEAN LAW THERE ARE TWO CLASSES OF EGG QUALITY: A & B.**



**GRADE A**

---

This is the highest grade. They are naturally clean, fresh eggs, internally perfect with shells intact and the air sac not exceeding 6mm in depth. The yolk must not move away from the centre of the egg on rotation. Grade A eggs are sold as shell eggs.



**GRADE B**

---

These eggs are broken out and pasteurised. They can then be used in other food products such as ready-made quiches or sold as liquid egg, which caterers use for convenience.

# FOOD SAFETY AND THE LION

---

# FOOD SAFETY AND THE LION

The British Lion is the UK's most successful food safety mark. Eggs produced under the British Lion scheme have been produced to the highest standards of food safety. More than 90% of UK eggs are produced within the Lion scheme.

The British Lion Code of Practice was launched in 1998 and includes compulsory vaccination against Salmonella and complete traceability of hens, eggs and feed.

## Method of production

- 0 = Organic
- 1 = Free Range
- 2 = Barn
- 3 = Caged

## British Lion Quality mark

Only found on eggs that have been produced in accordance with UK and EU law and the British Lion Quality Code of Practice.

## Producer identity

A unique code denoting where the egg was produced.  
e.g. UK54321, UK987SCO or UK9-987.

## Best-before date

All British Lion Quality eggs must include a 'best-before' date printed on the shell of the egg.





# BRITISH LION MARK

Action to halt the decline in sales and restore confidence was initiated by the British Egg Industry Council, leading to the establishment of the British Lion Mark. Within two years of the **Lion Code of Practice** launching in 1998, human cases of Salmonella had reduced dramatically.

**The Lion Code of Practice** covers the entire production chain, incorporating food safety controls above those required by UK and EU legislation, including:

- Hens and eggs guaranteed British
- Hens vaccinated against Salmonella
- Full traceability of hens, eggs and feed
- Stringent feed controls
- Increased hygiene controls and Salmonella testing
- Cool chain starting on the farm
- Freshness guarantee – best before date stamped on the shell
- Independent auditing to the ISO 17065 standard



# EGGS BACK ON THE MENU FOR ALL

In October 2017, the Food Standards Agency (FSA) announced a change to its advice about eating eggs - infants, children, pregnant women and elderly people can now safely eat raw or lightly cooked eggs **if they are produced under the British Lion Code of Practice.**

The revised advice, based on the latest scientific evidence, means that people vulnerable to infection or who are likely to suffer serious symptoms from food poisoning (such as infants, children, pregnant women and elderly people) can now safely eat raw or lightly cooked hen eggs or foods containing them, as long as they are produced to Lion standards.

The existing advice on UK non-Lion eggs, non-hen eggs and eggs from outside the UK, is that they should always be cooked thoroughly for vulnerable groups.



# CULINARY PROPERTIES

---

# COOKING PROPERTIES

Eggs are an essential ingredient for every chef, whatever the size or scale of their operation. When chefs say they are using eggs as ingredients in 'cooked or baked dishes' this draws on **coagulation, aeration/foaming** and **emulsification**.

## COAGULATION

Coagulation has a wide variety of applications in cooking. Apart from the basic techniques of cooking eggs - baking, boiling, frying, omelettes, poaching and scrambling – coagulation of egg proteins with other proteins such as milk and flour sets the structure of custards, cakes, batters and pastries.

Through coagulation, eggs can help bind together wet and dry ingredients, for example to create home-made burgers or fishcakes.

# COOKING PROPERTIES

## AERATION/FOAMING

A foam is created when bubbles of gas are coated and trapped in a mass. An example of this is when whisking and whipping eggs incorporate air. A good foam is judged on volume combined with stability; a maximum volume foam is not the most stable.

Egg whites have good foaming properties because they contain a number of different proteins which perform different functions in the foaming process.

Egg yolks do not foam so readily due to the presence of fat which interferes with the with foam formation, decreasing volume and stability.

- **Stage 1:** The air bubbles are large and not closely packed together
- **Stage 2:** After about 40 seconds, the bubbles are smaller, angular and more dense.
- **Stage 3:** After about 55 seconds, the bubbles are smaller and closer together, but still separate.
- **Stage 4:** Further whisking disperses the air into smaller, more numerous, bubbles whose total internal surface is larger.

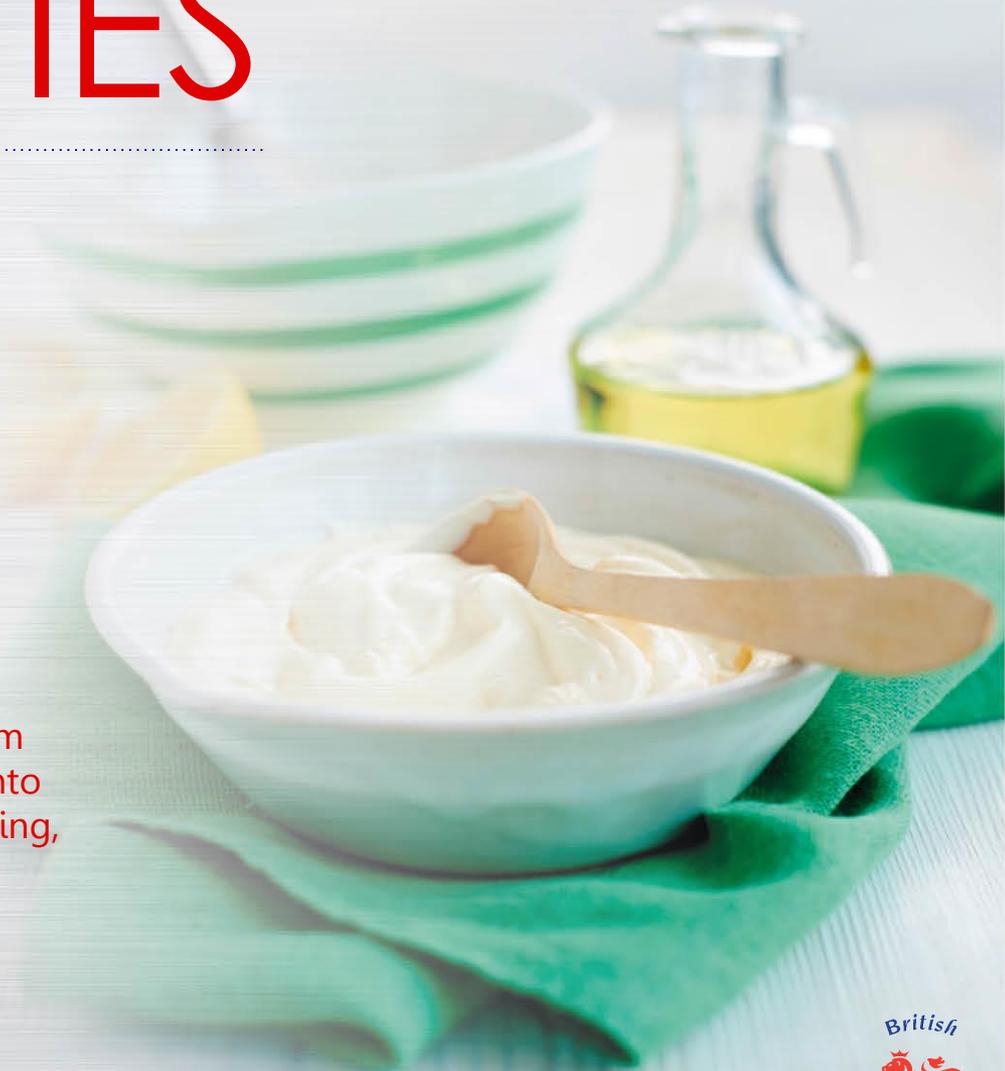
# COOKING PROPERTIES

---

## EMULSIFICATION

An emulsion is formed when one liquid is dispersed in small droplets into a second liquid with which it will not mix. Many emulsions form only if they contain an emulsifying agent, the essential characteristics of which are that two component parts are attracted to oil and water respectively.

An example of this is oil and vinegar. Oil and vinegar shaken together as a salad dressing form an unstable emulsion which quickly separates into two layers. When an egg yolk is used in the mixing, a stable emulsion is formed as the oil is held dispersed by the lecithin, making mayonnaise.



# STORAGE

## STORING AND HANDLING EGGS IN FOODSERVICE

- For optimum quality and safety, eggs should be kept at a constant temperature below 20°C
- Caterers should ideally store eggs in a refrigerator. If this is not possible they should be stored in the coolest storage area available and orders kept to a minimum volume and regularly delivered
- Eggs should be stored separately from other foods
- Eggs should be brought to room temperature before cooking
- Cracked or dirty eggs should not be used
- Cooked egg dishes should be eaten as soon as possible after cooking and, if not for immediate use, should be stored in the refrigerator
- Hands should always be washed before and after handling shell eggs



# EGGS AND HEALTH

---

# NUTRITION

---

## PROTEIN IN EGGS

Eggs are an excellent source of natural protein. On average, a medium-size egg contains around 6.4 grams of protein which makes up around 12.6% of the overall edible portion. This means eggs are an ideal dietary component when eating for exercise.

## VITAMINS

Eggs contain many of the recognised vitamins with the exception of vitamin C (ascorbic acid). Eggs are naturally rich in vitamin B2 (riboflavin), vitamin B12, plus vitamin D. They also contain useful amounts of vitamin A, as well as some vitamin E and other B vitamins – thiamine (vitamin B1), vitamin B6, folate, biotin, pantothenic acid, choline and phosphorus.

## MINERALS

Eggs contain most of the minerals that the human body require for health. Eggs are an excellent source of iodine and provide significant amounts of iron, calcium and zinc.

# NUTRITION

## EGGS AND CHOLESTEROL

In the past it was thought that people should limit the number of eggs they eat because they contain cholesterol, but current evidence suggests that dietary cholesterol does not increase the risk of heart disease in most healthy people. Recommendations on egg consumption have now been relaxed – there are now no set limits.



Nutrition information	Per medium size egg	Per 100g
<b>Typical values</b>		
Energy	277kJ 66kcal	547kJ 131kcal
Fat	4.6g	9.0g
of which saturates	1.3g	2.5g
monounsaturates	1.7g	3.4g
polyunsaturates	0.7g	1.4g
Carbohydrate of which sugars	trace	trace
Protein	6.4g	12.6g
Salt	0.2g	0.4g

# ALLERGY AND INTOLERANCE

In 2014, new laws changed the way allergen information appears on labels and on food that is pre packed, sold loose or serviced out of home. Eggs are one of the 14 allergens identified in the law. Caterers need to be able to answer any queries about allergen foods they serve.

## WHAT IS A FOOD ALLERGY?

A food allergy is an adverse response or over-reaction of the body's immune system to a food. A food allergy occurs when the body's immune system mistakenly attacks a food protein. Allergic reactions to food vary in severity and can be potentially fatal.

## WHAT IS A FOOD INTOLERANCE?

A food intolerance is the body's inability to digest a particular food. It is important to be aware of common types of food intolerance, such as lactose intolerance.

1. Cereals containing gluten



2. Celery



3. Eggs



4. Fish



5. Lupin



6. Milk



7. Molluscs



8. Mustard



9. Nuts



10. Peanuts



11. Sesame



12. Shellfish



13. Soya



14. Sulphur dioxide



# **SIMPLE DISHES WITH EGGS**

---

# SIMPLE DISHES WITH EGGS

There are many recipes for cooking eggs, all of which fall into one of the following basic cooking methods:

## BOILING



## POACHING



## FRIED



## SCRAMBLED



## OMELETTE



## EN COCOTTE



# SIMPLE DISHES WITH EGGS

Eggs are a great ingredient and incredibly adaptable to a variety of meals, not just for breakfast.



# SIMPLE DISHES WITH EGGS

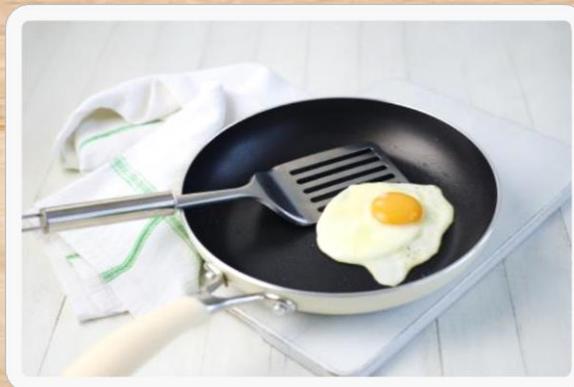
Want to know more? Watch these helpful how to videos to develop your skills.

**How to boil an egg:** <https://www.youtube.com/watch?v=D7GLmcOsRtk>

**How to poach an egg:** <https://www.youtube.com/watch?v=CZb7SmOdcZo>

**How to fry an egg:** <https://www.youtube.com/watch?v=SA5kkyCkY3U>

**How to scramble an egg:** [https://www.youtube.com/watch?v=ySeZeM69\\_U8](https://www.youtube.com/watch?v=ySeZeM69_U8)



# EGG PRODUCTS

**Egg products are eggs that have been processed and are used by food manufacturers, bakers and caterers to save time, money and hassle, without neglecting quality or food safety responsibilities.**

**Egg products are available in many different formats, including liquid, frozen and dried.**

## **LIQUID EGG**

Liquid egg is particularly useful for caterers, providing the same taste and nutrition as whole shell eggs, but in a form that saves time and is easy to store in a busy kitchen.





**QUESTIONS?**

# LEVEL 3 EXTENSIONS

---



**PREPARING**

**RECIPES**

# WRITING RECIPES

As you create your own recipes you need to be aware of what's required front of house should a customer ask for information.

You should consider the **ingredient statement** and the **allergen statement**.

## INGREDIENT STATEMENT

1. List the ingredients you use in your dish in their raw states in the order of their quality – from the highest to the lowest
2. Copy the ingredient list of every processed food that they are including
3. Write the ingredient statement of your dish in the order of the ingredients listed in step 1 (high quantity to the lowest)

## ALLERGEN STATEMENT

You need to list, in order, the 14 allergens if present in the dish at the bottom in a separate section. You do not need to give quantities, just the fact that there may be a trace is important enough to be mentioned

## LOOK FOR THE LION

The Lion stamp on eggs is your assurance that you are receiving eggs produced to the highest standards of food safety. To ensure that you are getting the safest eggs, make sure you specify Lion eggs.



# FURTHER READING

---

<https://www.egginfo.co.uk/egg-nutrition>

<https://www.egginfo.co.uk/egg-facts-and-figures>

<https://www.egginfo.co.uk/british-lion-eggs/eggs-in-foodservice>

<https://www.egginfo.co.uk/egg-safety>

<https://www.eggrecipes.co.uk/kids/cooking-tips>