


EGGS:

A Natural Choice For
Foodservice Operations



American Egg Board

IncredibleEgg.org



**There has never been a more critical time
for foodservice operators to keep on top
of trend information. Evolving food trends,
emerging consumer needs and changing
competitive landscapes – means you can't
afford to be caught off-guard when
your bottom line is at stake.**

Can you think of a more popular item on any foodservice menu today than the Incredible Edible Egg? Way beyond breakfast, eggs are found throughout the menu from topping a burger to crowning a salad.

Foodservice professionals view eggs as a quick and easy way to improve their operations through a more varied, creative and on-trend menu. Even operations that aren't set up to operate at a profit can increase sales with eggs.

The average consumer is also turning to egg dishes. That's because egg dishes are not only delicious and economical, but also in tune with the consumer trend toward increased protein and nutrient dense foods.

This resource will help you to better understand how to use eggs in the back of your house and leverage your *eggceptional* menu to drive profits.

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THE REAL BEAUTY OF EGGS

Take a look at the benefits of featuring eggs on your menu:

FAMILIARITY

The majority of people in your operation, from kitchen help to managers, are familiar with eggs and know how to use them.

VERSATILITY

At every daypart and in nearly every segment of the foodservice industry, consumers want eggs. As a center of the plate item, ingredient or garnish, eggs have tremendous versatility and can be featured in many different cuisines.

NUTRITION

Eggs are all-natural and packed with a number of nutrients. One large egg has varying amounts of 13 essential vitamins and minerals, plus high-quality protein and the antioxidants lutein and zeaxanthin, all for 70 calories. The nutrients found in eggs can play a role in weight management, muscle strength, healthy pregnancy, brain function, eye health and more.

LOW FOOD COST

Eggs are truly economical when compared with other sources of protein. If you're a commercial operator, eggs can be a new source of profits. Or, if you're a non-commercial operator, they can be a way to cut costs.

MENUABILITY

The merchandising potential of eggs is almost endless. For example, capitalize on the popularity of all-day breakfast by offering an egg on sandwiches and burgers throughout the day. Top salads with poached eggs in place of dressing for an elegant touch, and update your menu with high-protein vegetarian dishes.

EGG COMPOSITION AND COLOR

Naturally, eggs are so popular because eggs are 100% natural. Take a look:

EGG COMPOSITION

Shell

- Outer covering of egg, composed largely of calcium carbonate
- May be white or brown depending on breed of hen
- Color does not effect egg quality, cooking characteristics, nutritive value or shell thickness

Yolk

- Yellow portion of egg
- Color varies with feed of the hen, but does not indicate nutritive content
- Major source of egg vitamins, minerals and fat
- Germinal Disc

Vitelline (Yolk) Membrane

- Holds egg yolk contents

Chalazae

- Twisted, cordlike strands of egg white
- Anchor yolk in center of egg
- Prominent chalazae indicate freshness

Air Cell

- Pocket of air formed at large end of egg
- Caused by contraction of the contents during cooling after laying
- Increases in size as egg ages

Shell Membranes

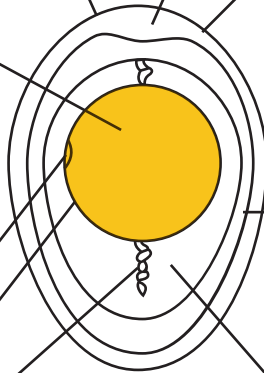
- Two membranes—inner and outer shell membranes—surround the albumen
- Provide protective barrier against bacterial penetration
- Air cell forms between these two membranes

Thin Albumen (White)

- Nearest to the shell
- Spreads around thick white of high-quality egg

Thick Albumen (White)

- Major source of egg riboflavin and protein
- Stands higher and spreads less in higher-grade eggs
- Thins and becomes indistinguishable from thin white in lower-grade eggs



EGG COLOR

Shell Color can be either white or brown and is determined by the breed of the hen. It has no effect on quality, cooking properties or nutritive value.

Yolk Color is determined by the feed of the hen.

NUTRIENT CONTENT OF ONE LARGE EGG*

1 large (50 g)

1 large (33 g)

1 large (17 g)

Nutrient	Unit	Whole Egg	Egg White	Egg Yolk
Energy	calories	70	15	50
Total Fat	g	5	0	4.5
Saturated Fat	g	1.5	0	1.5
Trans Fat	g	0	0	0
Polyunsaturated Fat	g	1	0	0.5
Monounsaturated Fat	g	2	0	2
Cholesterol	mg	185	0	185
Sodium	mg	70	55	10
Carbohydrate	g	0	0	0
Dietary Fiber	g	0	0	0
Total Sugars	g	0	0	0
Added Sugars	g	0	0	0
Protein	g	6	4	3
Vitamin D	mcg	1	0	0.9
Calcium	mg	30	0	20
Iron	mg	0.9	0	0.5
Potassium	mg	70	50	20
Vitamin A	mcg	80	0	60
Vitamin E	mg	0.5	0	0.4
Riboflavin	mg	0.2	0.1	0.1
Niacin	mg	1.4	0.7	0.5
Vitamin B6	mg	0.1	0	0.1
Folate	mcg DFE	25	1	25
Vitamin B12	mcg	0.5	0	0.3
Biotin	mcg	11	2	5
Pantothenic Acid	mg	0.8	0.1	0.5
Phosphorus	mg	100	0	70
Iodine	mcg	28	n/a	n/a
Zinc	mg	0.7	0	0.4
Selenium	mcg	15	7	10
Choline	mg	150	0	140
Lutein + Zeaxanthin	mcg	252	0	186

* Egg White + Egg Yolk may not add up to the amount in the Whole Egg. Each product (Whole Egg, Egg White, Egg Yolk) is a different sample and is associated with different errors. All values have been rounded.

U.S. Department of Agriculture, Agricultural Research Service. FoodData Central, 2019. Database #01123 (Egg, whole, raw, fresh, SR Legacy)
U.S. Department of Agriculture, Agricultural Research Service. FoodData Central, 2019. Database #01124 (Egg, white, raw, fresh, SR Legacy)
U.S. Department of Agriculture, Agricultural Research Service. FoodData Central, 2019. Database #01125 (Egg, yolk, raw, fresh, SR Legacy)
21 CFR 101.9 Nutrition labeling of food
Staggs, CG et al. J Food Compos Anal 2004;17(6):767-776
U.S. Department of Health and Human Services. Food and Drug Administration. Guidance for Industry: Nutrition and Supplement Facts Labels Questions and Answers Related to the compliance Date, Added Sugars, and Declaration of Quantitative Amounts of Vitamins and Minerals. December 2019.
U.S. Food and Drug Administration Total Diet Study. April 2014 revised April 2017.

The 2020-2025 Dietary Guidelines for Americans (DGA) recommends eggs as part of healthy eating patterns throughout the lifespan: from a first food for infants to a nutrient-dense protein source for older adults [1]. The DGA advises there are a variety of dietary patterns that can be healthy based on budget, cultural, and personal preferences. Whether you follow a Mediterranean, Flexitarian, lacto-ovo vegetarian, or plant-based diet, eggs are the perfect complement as they provide both high-quality protein and unique nutrients such as choline that most Americans don't get enough of [2].

Eggs are a naturally nutrient-rich food, providing an excellent source of vitamin B12, biotin (B7), iodine, selenium, and choline; a good source of high-quality protein, riboflavin (B2) and pantothenic acid (B5); as well as the carotenoids lutein and zeaxanthin (252 mcg), all for only 70 calories [3]. While egg whites contain some of an egg's high-quality protein, riboflavin and selenium, the majority of an egg's nutrient package is found in the yolk, including vitamin D, choline, lutein and zeaxanthin and many others [4].

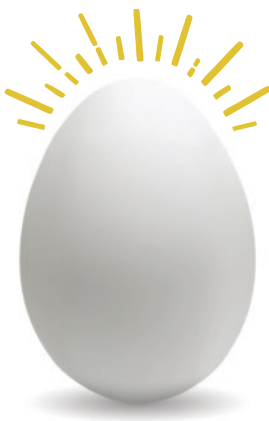
- Eggs are a nutritional powerhouse that contributes to health and well-being at every age and life stage, including: **Excellent source of choline:** Eggs are one of the most concentrated sources of choline in the American diet [5], providing 150 milligrams per large egg [3].
- **Important nutrients for adolescents:** Children aged 14 through 18 are at greater risk of dietary inadequacy than any other age group. Adolescent females do not get enough protein, choline, and vitamin B12, among other nutrients [1]. Eating eggs can help fill these nutrient gaps.
- **Muscle repair and bone health:** The high-quality protein in eggs help maintain and repair muscle while supporting bone health.
- **B₁₂ for older adults:** Older adults are at nutritional risk for not getting enough protein and vitamin B12 [1], which eggs provide as an excellent source.
- **Natural food source of vitamin D:** Eggs are one of the only foods that naturally have vitamin D (6% DV in a large egg), a nutrient most Americans do not get enough of.
- **Lutein and Zeaxanthin:** These carotenoids are found in a wide variety of fruits and vegetables, especially green leafy vegetables, as well as in eggs (252 mcg) [4]. Lutein and zeaxanthin are strongly associated with a reduced risk of age-related macular degeneration [6, 7].

EGGS AND CHOLESTEROL

While it's true that eggs have cholesterol, the 2020-2025 Dietary Guidelines for Americans reinforced that dietary cholesterol is not a nutrient of concern.

In fact, leading health authorities – such as the American Heart Association – include eggs in heart-healthy diets [8]. And importantly, the Dietary Guidelines include eggs in all dietary patterns and they report that eggs can improve the diets of babies, toddlers and pregnant women.

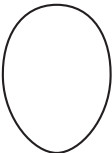
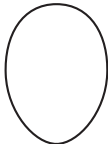
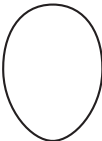
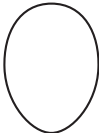
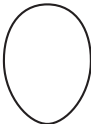

The science around eggs and cholesterol has been steadfast. In fact, a recent Harvard University research study that evaluated more than 20 years of data reinforced that eating eggs is not associated with cardiovascular disease [9]. Leading health authorities, including the American Heart Association, include eggs as part of heart-healthy diet recommendations.






1. U.S. Department of Health and Human Services and U.S. Department of Agriculture. *2020-2025 Dietary Guidelines for Americans*. 2020; Available from: https://www.dietaryguidelines.gov/sites/default/files/2020-12/Dietary_Guidelines_for_Americans_2020-2025.pdf.
2. Wallace, T.C. and V.L. Fulgoni, 3rd, *Assessment of Total Choline Intakes in the United States*. *J Am Coll Nutr*, 2016. 35(2): p. 108-12.
3. U.S. Department of Agriculture. *FoodData Central SR Legacy -- Egg, whole, raw, fresh*. 2019 April 1, 2019; Available from: <https://fdc.nal.usda.gov/fdc-app.html#food-details/171287/nutrients>.
4. U.S. Department of Agriculture and Agricultural Research Service. *FoodData Central*. 2019; Available from: <https://fdc.nal.usda.gov/index.html>.
5. Patterson, K.Y., et al. *USDA Database for the Choline Content of Common Foods Release Two*. 2008; Available from: <https://www.ars.usda.gov/ARSEUserFiles/80400525/Data/Choline/Choln02.pdf>.
6. Mares, J., *Lutein and Zeaxanthin Isomers in Eye Health and Disease*. *Annu Rev Nutr*, 2016. 36: p. 571-602.
7. Seddon, J.M., et al., *Dietary carotenoids, vitamins A, C, and E, and advanced age-related macular degeneration. Eye Disease Case-Control Study Group*. *Jama*, 1994. 272(18): p. 1413-20.
8. Carson, J.A.S., et al., *Dietary Cholesterol and Cardiovascular Risk: A Science Advisory From the American Heart Association*. *Circulation*, 2019: p. Cir0000000000000743.
9. Drouin-Chartier, J.P., et al., *Egg consumption and risk of cardiovascular disease: three large prospective US cohort studies, systematic review, and updated meta-analysis*. *Bmj*, 2020. 368: p. m513.

A FOODSERVICE GUIDE TO SHELL EGGS

EGG SIZE

JUMBO	EXTRA LARGE	LARGE	MEDIUM	SMALL	PEE WEE
					
Minimum wt. per dozen					
30 oz.	27 oz.	24 oz.	21 oz.	18 oz.	15 oz.
Minimum wt. per 30 dozen case					
56 lbs.	50.5 lbs.	45 lbs.	39.5 lbs.	34 lbs.	28 lbs.

EGG QUALITY

	 Grade AA	 Grade A	 Grade B
Break Out Appearance	Small area	Moderate area	Wide area
Albumen Appearance	White is thick and stands high, chalazae prominent	White is reasonably thick, stands fairly high, chalazae prominent	Small amount of thick white, chalazae small or absent, appears weak and watery
Yolk Appearance	Firm, round and high	Firm and stands fairly high	Yolk is somewhat flattened and enlarged
Shell Appearance	Approximates usual shape; generally clean,* unbroken; ridges/rough spots that do not affect the shell strength permitted		Abnormal shape; some slight stained areas permitted; unbroken; pronounced ridges/thin spots permitted
Usage	Ideal for any use, but are especially desirable for poaching, frying and cooking in shell		Good for scrambling, baking and use as an ingredient in other foods

*An egg may be considered clean if it has only very small specks, stains or cage marks. Source: USDA

EGG SIZE SUBSTITUTIONS

Most recipes are based on the use of large eggs. To substitute a different size, use the chart below.

Large	Jumbo	X-Large	Medium	Small
1	1	1	1	1
2	2	2	2	3
6	5	5	7	8
12	9	10	13	15
24	18	21	27	28
50	37	44	56	62

A FOODSERVICE GUIDE TO SHELL EGGS

GRADING

The quality of an egg is determined by the grade of the egg and is not related to size. All eggs are classified according to the U.S. Standards for interior and exterior quality factors. This determines the grade of the egg as AA, A, or B. Only eggs packed in official USDA plants and sampled by official USDA graders can be packed in cartons bearing the USDA grademark. USDA grading is a voluntary service funded by processing plants that meet minimum USDA equipment, facility, sanitary and processing requirements.

SPECIFICATIONS

Shell egg specifications can be tailored to meet specific needs of buyers and can vary in complexity and detail. At a minimum, specifications should include grade, size, type of packing and packaging, and number of purchase units.

An example might be:

Fresh shell protected eggs, U.S. Consumer Grade AA Large, 30 dozen per shipping case, 15 cases. Cartons labeled with an expiration date not to exceed 28 days from date of packaging. Deliveries are to be made within 5 days of official grading.

PURCHASING

When purchasing shell eggs, follow these guidelines:

1. Accept only clean, sound and odor-free eggs.
2. Purchase eggs according to grade and size desired and only in the quantity needed for one to two weeks.
3. Accept only eggs delivered under refrigeration at a temperature of 45°F or below. Transfer to refrigerated storage promptly.
4. Accept only eggs packed in snug-fitting fiberboard boxes to reduce breakage. Eggs are generally packed and purchased in 30 dozen cases or half cases of 15 dozen.
5. Consider size and grade in relation to use and price. Also, compare the price of different sized eggs of the same grade.
6. Check the grade of eggs delivered to you. Inspect the shells and then randomly break a few. These eggs should meet the guidelines for their given grades. (Refer to Egg Quality Chart, page 7.)

STORAGE, HANDLING AND REFRIGERATION

Shell eggs must be transported and stored at a temperature of 45°F or below at all times. Proper storage and handling are important in maintaining quality. If not refrigerated properly, Grade AA eggs can rapidly degrade to Grade B eggs. Eggs kept at room temperature (or above 68°F) may lose more quality in one day than in one week under refrigeration.

EGG HANDLING AND SAFETY

Kept under proper refrigeration at 45°F or below (do not freeze), eggs will retain their quality for several weeks. Cool temperatures slow or stop the growth of most bacteria. Eggs should be stored in their original packaging materials to prevent the loss of moisture. Store eggs away from foods such as fish, onions, apples and cabbage as eggs can absorb strong odors.

Eggs identified with USDA grademark will have either a 30-day “Best Buy” date or a 45-day “Use By” date. For eggs without USDA grademark, follow the recommended usage guidelines from your supplier.

ASSURING FOOD SAFETY

Any food, particularly protein-rich animal foods, can carry microorganisms that cause disease or spoil the food. The microorganism of particular importance to eggs and egg products is a bacterium called *Salmonella* Enteritidis (SE). This bacterium is typically found in the gastrointestinal tract of warm-blooded animals. Although the carrier animal might not become ill, if *Salmonella* gets in the human food supply people may become ill.

The safety of shell eggs is first addressed by diverting any eggs with cracks, chips or breaks (which encourage bacteria to pass through the shell) away from the human food supply. Shell eggs without cracks have chemical and physical properties that help to deter bacterial growth. Additionally, intact eggs are washed and sanitized shortly after they are laid to remove any microorganisms that might be present on the surface of the shell. A continuation of sanitary practice (with particular emphasis on hand-washing during food preparation) is necessary to ensure that food is not re-contaminated with bacteria, viruses or parasites.

Since SE can survive in the reproductive tract of the hen, in rare instances, the bacteria can be deposited in the egg white. Although the number of bacteria per egg is likely to be low (because the egg white discourages bacterial growth), once the shell is cracked and the iron-rich yolk mixed with the white, bacteria grow with great ease. Likewise, if the yolk membrane deteriorates, which it will in several weeks or at temperatures above 60°F, bacteria can grow inside the intact shell egg. Even though SE in eggs is rare, eggs must be handled in a way to block the transmission of disease.

EGG HANDLING AND SAFETY

Food safety control measures include keeping eggs cool and using eggs less than 28 days old. Since bacteria can grow readily once the shell is broken, the practice of pooling eggs is discouraged. Menu items made with shell eggs and cooked in response to a consumer's order should be prepared for immediate service. For the preparation of large quantities of eggs, pasteurized egg products are recommended. The use of a thermometer when preparing sauces and casseroles will ensure the food has reached appropriate temperatures. Reaching a temperature of 160°F or holding food at 145°F for 3.5 minutes will destroy SE, if present. Additionally, containers and utensils that have contact with raw egg must be washed and sanitized before being used again, even for the same recipe. Vulnerable populations, such as the very young or the elderly, can be protected by using pasteurized egg products.



The egg safety cycle

One memorable way to think about egg safety is an ongoing cycle consisting of **4 key parts**:

STEP 1



INSPECT

The **INSPECT** phase starts whenever you receive eggs and egg products into your kitchen.

- Eggs should be delivered at a temperature of 45°F or below.
- Store in cooler immediately upon receipt. Refrigerate at 40°F or below but do not freeze.
- Store shell eggs in their case.
- Store away from foods with strong odors (such as fish, apples, cabbage or onions).
- Rotate - First in/First out.
- Follow manufacturer's recommendations for storage of processed egg products.

EGG HANDLING AND SAFETY

STEP 2



CLEAN

The best way to avoid many food safety problems can be summed up in one word: **CLEAN**.

- Always wash hands with soap and hot water.
- Before and after contact with eggs and egg products, wash utensils, equipment and work areas with hot, soapy water.
- Do not reuse a container after it has had raw egg mixture in it. Clean and sanitize the container thoroughly before using again.
- Use only clean, uncracked eggs.
- Eggs should not be washed before using; they are washed and sanitized before they are packed.
- Break each egg individually into a small container.
- Minimize contact between the shell and internal contents of the egg, and never mix the two together. Remove any shell fragments that may have fallen into the container with a clean utensil.
- Avoid pooling eggs together for later use. The practice of breaking large quantities of eggs together and holding before or after cooking, greatly increases the risk of bacterial growth and contamination.

STEP 3



TEST

Frequently **TEST** temperature to ensure prepared foods have reached the appropriate temperature.

To ensure food safety, whole eggs should be cooked until the white and yolk are firm. Egg-containing dishes, including quiches and casseroles, should be cooked to an internal temperature of 160°F. Scrambled eggs need to be cooked until firm throughout with no visible liquid egg remaining. Egg white coagulates between 144°F and 149°F and the yolk between 149°F and 158°F. Therefore, it is not necessary to cook eggs until rubbery in order to kill any bacteria that may be present.

- Heat all egg dishes to a minimum of 160°F; monitoring the temperature of egg dishes is a must to ensure food safety.
- A good rule of thumb is that whole eggs should be cooked until the white and yolk are completely coagulated (set).
- Hold cold egg dishes below 40°F, internal temperature.
- Hold hot egg dishes above 140°F, internal temperature.
- Cook scrambled eggs in small batches no larger than 3 quarts according to rate of service, until firm throughout and there is no visible liquid egg remaining.
- Egg dishes for those who are pregnant, elderly, very young or ill should be thoroughly cooked. These groups at highest risk should avoid consuming raw or undercooked eggs. Pasteurized egg products are a low-risk alternative for these groups.

EGG HANDLING AND SAFETY

STEP 4 TIME



The final phase in the Egg Safety Cycle is **TIME**. Why? Because time works hand-in-hand with temperature to affect the safety, quality and taste of every egg dish.

- Take out only as many eggs as needed for immediate use. Do not stack egg flats (trays) near the grill or stove.
- Do not keep shell eggs or liquid eggs unrefrigerated for more than 2 hours.
- Shell eggs must be used at the location where they were broken, per USDA regulations; never transport.
- Break eggs daily, only enough to accommodate the needs for that day.
- Refrigerate liquid eggs in a covered, food-safe container for no more than one day; at the end of the day, discard any leftover broken liquid eggs.
- Do not add eggs to containers of eggs that were broken the day before.
- Never leave egg or egg-containing dishes unrefrigerated for more than one hour (including preparation and service time).
- Always cook eggs and egg dishes before placing on steam table.
- Do not combine eggs that have been held in a steam table pan with a fresh batch of eggs. Always use a fresh steam table pan.
- Do not add raw egg mixture to a batch of cooked scrambled eggs held on a steam table.
- When refrigerating a large quantity of a hot egg-rich dish or leftovers, divide into several shallow containers so it will cool quickly.

To learn more about The Egg Safety Cycle, visit IncredibleEgg.org/EggHandling.

A FOODSERVICE GUIDE TO EGG PRODUCTS

The term “Egg Products” refers to processed or convenience forms of eggs obtained by breaking and processing shell eggs. Egg products include whole eggs, egg whites and egg yolks in frozen, refrigerated liquid and dried forms available in a number of different product formulations, as well as specialty egg products. Specialty egg products include: pre-peeled hard-cooked eggs, egg rolls or “long eggs,” omelets, egg patties, quiches, quiche mixes, scrambled eggs, fried eggs and others.

Egg products are becoming increasingly popular in foodservice operations. That’s because they are convenient to use and also provide a cost savings with regards to labor, storage and portion control.

Frozen, refrigerated liquid and dried egg products are similar to shell eggs in nutritional value and most functional properties.

To locate a U.S. supplier of egg products, visit [IncredibleEgg.org/BuyersGuide](https://www.incredibleegg.org/BuyersGuide).

FOOD SAFETY

By law, all egg products are processed in sanitary facilities under supervision of the USDA and bear the USDA inspection mark. They must be pasteurized (which removes all harmful bacteria) and are routinely sampled and analyzed for *Salmonella*. If contaminated, the egg product would be barred from consumer channels. Keep in mind that even though egg products are pasteurized, proper handling and storage is still vital.

Pasteurized egg products are being used more often to help ensure food safety. They may be used to protect high-risk populations or when preparing lightly cooked foods (such as sauces, salad dressing, French toast or Monte Cristo Sandwiches).



A FOODSERVICE GUIDE TO EGG PRODUCTS

PURCHASING

Follow these basic guidelines when purchasing egg products:

1. Purchase only pasteurized egg products.
2. Specify egg products bearing the USDA inspection mark.
3. Specify exact type of egg products desired: frozen salted whole eggs, refrigerated egg whites, dried scrambled egg mix, etc.
4. Accept only egg products in tightly sealed containers. Frozen products must show no signs of thawing.

SPECIFICATIONS

For egg products, specifications may include:

1. Type of product
2. Packaging
3. Various lab analyses for physical, nutritional chemical information, etc.
4. Bacterial specifications (i.e., coliforms, total plate count)

STORAGE AND HANDLING

Frozen Egg Products should be transferred to the freezer immediately upon delivery. Store frozen eggs at 0°F or below.

Containers should remain tightly sealed during storage.

To defrost, leave container in refrigerator or set in cold running water. The container should remain tightly sealed.

Never thaw at room temperature. Thaw only the amount of product needed for required use. Use defrosted eggs promptly.

Cover and refrigerate any leftover thawed portions and use within one to three days.

Refrigerated Liquid Egg Products should be transferred to refrigerators immediately upon delivery. Always store in refrigerator, keeping seal intact. Check the label of the liquid egg product you are using as shelf-life may vary. Once opened, use immediately.

Dried Egg Products should be stored in a cool, dry place away from light, and preferably in the refrigerator. (Never above 70°F.)

After opening, seal tightly for re-storage and refrigerate.

If combined with dry ingredients and held for storage, seal tightly in a closed container and store in the refrigerator.

Reconstitute only the amount of dried eggs that will be used immediately.

Specialty Egg Products should be kept refrigerated or frozen according to their requirements.

CONVERTING SHELL EGGS TO EGG PRODUCTS

Converting from shell eggs to pasteurized liquid, frozen and dried egg products in your operation is really quite easy. It's simply a weight for weight substitution.

Some of the many benefits to switch from shell eggs to pasteurized egg products can include:

- Save time/labor
- Save storage space
- More accurate measurements
- Potential food safety improvements
- Decrease waste



LARGE SHELL EGG EQUIVALENCY

Frozen or Refrigerated Liquid

Whole Eggs (Large)	Weights	Measures
1	1¾ oz.	3 tbsp.
10	1 lb. 1¾ oz.	2 cups
12	1 lb. 5½ oz.	2½ cups
25	2 lbs. 13 oz.	1 qt. 1¼ cups
50	5 lbs. 8 oz.	2 qts. 2½ cups
Yolks:		
10	7¼ oz.	¾ cup
12	8½ oz.	¾ cup 2 tbsp.
22	1 lb.	2 cups less 2 tbsp.
Whites:		
10	11½ oz.	1¼ cups 2 tbsp.
12	14 oz.	1½ cups 2 tbsp.
14	1 lb.	2 cups less 2 tbsp.

Dried Whole Eggs

Shell Egg (Large)	Dried Whole Sifted	Water
6	3 oz. (1 cup)	1 cup
12	6 oz. (2 cups)	2 cups
24	12 oz. (1 qt.)	1 qt.
50	1 lb. 9 oz. (2 qt. + ⅓ cup)	2 qt. + ⅓ cup
100	3 lb. 2 oz. (1 gal. + ⅔ cup)	1 gal. + ⅔ cup
150	4 lb. 11 oz. (6 qt. + 1 cup)	6 qt. + 1 cup
200	6 lb. 4 oz. (2 gal. + 1⅓ cups)	2 gal. + 1⅓ cups

Video links and download printable conversion worksheets in English and Spanish help make conversion easy to implement, visit IncredibleEgg.org/Conversion.

THE SOLUTION IS SIMPLE

Practically any problem you have with eggs can be solved quickly and easily. Here are a few examples:

Problem:

Greening

Cooked eggs may turn green (a natural chemical reaction) if held over heat for an extended period of time. Here's how to avoid it:

Solutions:

Omelets and Scrambled Eggs

- Use fresh eggs (Grade AA or A). Greening is more likely in older eggs.
- Cook eggs in small batches, no larger than three quarts.
- Substitute a medium white sauce for the liquid in the egg mixture. (One part white sauce to five parts egg.)
- Use temperatures of 140°F and above for steamtable holding.
- Do not hold hot foods on buffet line for longer than one hour.
- Use only stainless steel equipment and utensils.
- Try a liquid egg product if greening is frequent. (Many of these contain citric acid which retards greening.)
- Beat in 1/4 teaspoon lemon juice for every 18 large eggs, or 1/4 teaspoon citric acid crystals for every dozen large eggs to prevent greening.

Hard-Cooked Eggs

- Simmer eggs (185-190°F) in water. Don't boil.
- Cool immediately in cold water. Peel when cool.

HOW TO PEEL HARD-BOILED EGGS:



To peel a hard-boiled egg, begin by gently tapping egg on countertop until shell is finely crackled all over. Roll egg between hands to loosen shell. Start peeling at large end of egg, occasionally hold egg under cold running water or dip egg in bowl of cold water to help ease the shell off.

Problem:

Weeping

Water separating from cooked eggs is caused by over-cooking or by cooking and holding at high heat or from the addition of watery ingredients. Here's how to avoid it:

Solutions:

Scrambled Eggs

- Prepare eggs in small batches, no larger than three quarts.
- Substitute a medium white sauce for the liquid in the egg mixture. (One part white sauce to five parts egg.)
- Use temperatures 140°F and above for steamtable holding.
- Use egg products with stabilizers (i.e., gums) added.
- Limit the amount of added ingredients and make sure they are well-drained.

Meringues (Due to under-coagulation of the foam during beating or cooking)

- Beat whites until frothy before adding sugar.
- Add sugar slowly.
- Stop frequently and lift whites from bottom of bowl to ensure thorough and even beating.
- Use clean metal or glass (not plastic) bowl.
- Beat until sugar is dissolved, the peaks barely fold over, and whites do not slip from sides when bowl is tilted.
- If the meringue is to be used on a pie, place it on a hot 160°F or above filling, and brown immediately at 350°F, for approximately 15 minutes (3 egg white meringue).

For pie meringues containing a larger number of egg whites, reduce baking temperature and increase baking time to achieve temperature of 160°F in center of meringue.

Baked Custards (Includes quiches, custard pies, timbales)

- Blend egg and milk mixture thoroughly so that no strands of white remain.
- Cook only until custard tests done.
- Use a water bath for even cooking. Place baking pan in large container and fill larger container with hot water to within one inch of top of custard.
- Baked custards, quiches, custard pies, and timbales should be baked to an internal temperature of 160°F and mixture tests done (knife inserted near center removes cleanly).

THE SOLUTION IS SIMPLE

Problem:

Rubbery and Dry

The problem is the result of overcooking and high heat and generally follows weeping. Here's how to avoid it:

Solutions:

Omelets and Scrambled Eggs

- Cook at medium heat until no visible liquid egg remains.
- Cook in small batches, no larger than three quarts.
- Use a medium white sauce as liquid in egg mixture (one part white sauce to five parts egg).
- Use temperatures of 140°F and above for steamtable holding.

Fried

- Cook over medium heat on preheated grill or in preheated pan.
- Use the right amount of fat to avoid toughening, about one teaspoon per egg.
- Baste with fat or steam-baste by adding small amounts of water and covering.

EGGS TURN ON A MENU, INSTANTLY

LIGHTER, BRIGHTER IDEAS



It's incredible what eggs can do for any menu — including yours! Soufflés, Frittatas, Omelets, Quiches, Sandwiches, Egg Salads, the options are endless...every one is a dramatic and delicious dish that will give your menu a new and elegant look for breakfast, lunch, brunch or dinner.

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