Perhaps the best example of the ever-evolving and sometimes contradictory world of culinary nutrition is the egg. Many of you may recall the controversy that surrounded the incredible edible egg’s reputation over the decades. In the ’60s and ’70s, the egg got a bad rap for being high in cholesterol, making it a contributing factor to heart disease. Subsequent research over the past decade has mostly removed these negative connotations. Yes, the reputation around the egg has gone from good to bad to good, and now the most recent headlines have it revisiting the negative side. A study published in the journal *Atherosclerosis* suggests that egg consumption increases the risk of heart disease and may be as detrimental as smoking cigarettes. However, many nutrition professionals and everyday consumers are leery of these suggestions in light of the seemingly constant flip-flopping of critical judgment placed on the nutrition adequacy of the egg. We are, after all, talking about the egg—a food that has been part of the human diet since long before the dawn of domesticated chickens.

Regardless of the egg’s shifting reputation within the realm of nutrition, as chefs, we don’t have to tell you the vital role played by eggs in the kitchen. They can show up in any meal and every course. Delicious on their own or as a garnish in a variety of dishes, the multifaceted egg has numerous uses from a leavener in soufflés and a base for mayonnaise and dressings to a thickener in sauces and custard and a coating for breaded or battered foods. Eggs run the gamut of culinary applications while also being high in protein content, low in cost and readily available. Furthermore, many consider the mark of a good chef to be in the ability to cook an egg. With all the types, varieties, preparations and even controversies, it seems all the more appropriate to devote an entire article to this versatile ingredient. Good or bad reputation aside, there’s no denying eggs are here to stay.

**History and Production**

While the age-old question, “Which came first—the chicken or the egg?” may remain unanswered, there is no denying eggs have long been an important food source in many cultures. Egyptian and Chinese records show that domesticated fowl were laying eggs for man in 1400 B.C., and Europe has had domesticated hens since 600 B.C. There is some evidence of native fowl in the Americas prior to Columbus’ arrival, yet it is believed that on his second trip to the New World in 1493, Columbus’ ships carried the first chickens related to those now in egg production. These strains originated in Asia.

Chicken eggs are the most widely consumed eggs of any bird worldwide, although those from other fowl—including duck, goose and quail—are also available. Nearly 200 breeds and varieties of chickens have been established worldwide, but only a few breeds are used as egg producers for economic purposes. Most laying hens in the United States are Single-Comb White Leghorns. In 2011, the average number of egg-type laying hens in the U.S. was 281 million. The U.S. produces about 75 billion eggs a year, which is about 10 percent of the world supply.

**Cholesterol, Vitamin D and Heart Disease**

It is true that eggs, specifically their yolks, have a lot of cholesterol with an amount rivaled only by liver, shrimp and duck meat. However, they do not contain as much cholesterol as they did a decade ago. The United States Department of Agriculture (USDA) reviewed the nutrient composition of standard large eggs and discovered the average amount of cholesterol in one large egg to be 185 milligrams, a 14% decrease from previous estimates. The U.S. government study also found that modern eggs contain 64% more vitamin D compared with 10 years ago. Today’s eggs are loaded with vitamins and minerals and are even more nutritious.
thought to be more nutritious than in previous decades. Why? Following the mad cow disease scare in the ’90s, hens are no longer fed bone meal and instead are given a mixture of wheat, corn and high-protein formulated feed, which makes for more wholesome eggs.

This brings us to the next question or concern: Is eating eggs bad for your heart? Aside from the most recent study involving their comparison with smoking cigarettes, other research has shown moderate egg consumption—up to one a day—does not increase heart disease in healthy individuals. However, for people with diabetes or heart disease, or who struggle with controlling cholesterol levels, research suggests limiting egg consumption to no more than three yolks per week.

**Nutrient Composition**

In general, egg yolks contain the fat and cholesterol of an egg while also being a good source of protein, iron, vitamins A and D, choline and phosphorus. The egg white is an excellent source of protein and riboflavin.

**Antioxidants**: Egg yolks contain lutein and zeaxanthin, carotenoid compounds that help prevent macular degeneration, a leading cause of age-related blindness. Though eggs contain a small amount of these two nutrients, research shows that lutein from eggs may be more bioavailable than lutein from other food sources.

**Choline**: Eggs are also an excellent source of choline, a nutrient important in fetal brain development. Choline also helps with brain function of adults by maintaining the brain cell membrane structure.

**Phosphorus**: As an essential or major mineral, phosphorus is needed for growth and development, bone health and cellular metabolism in our bodies. One egg provides 10 percent of the recommended daily value.

**Protein**: Each egg only has about 70 calories and 6.3 grams of protein, 12 percent of the recommended daily value. Eggs provide the highest-quality protein found in any food because they contain every essential amino acid we need, in the best pattern possible for our bodies. The high-quality protein in eggs helps you feel fuller longer and stay energized, which contributes to maintaining a healthy weight.

**Riboflavin**: Riboflavin, also known as vitamin B2, is a coenzyme for carbohydrate and fat metabolism, which helps convert food into energy. Eggs provide 10 percent of the recommended daily value for riboflavin.

**Vitamin D**: Eggs are one of the few foods that are a naturally good source of vitamin D, meaning that one egg provides at least 10 percent of the recommended daily value. Vitamin D plays an important role in calcium absorption, helping to form and maintain strong bones.

**Unscrambling Egg Terminology**

With so many types, varieties and grades, an egg is no longer an egg. In descending order, egg grades are AA, A and B, the classification being determined by exterior and interior quality:

- **Grade AA**—eggs have whites that are thick and firm; yolks that are high, round and practically free from defects; and clean, unbroken shells.
- **Grade A**—eggs have characteristics of Grade AA eggs except that the whites are "reasonably" firm.
- **Grade B**—eggs have whites that may be thinner and yolks that may be wider and flatter than eggs of higher grades. The shells must be unbroken, but may show slight stains. This grade is usually used to make liquid, frozen and dried egg products.

Size does not refer to the dimensions of an egg or how big it looks, but tells you the minimum required net weight per dozen eggs. While some eggs in the carton may look slightly larger or smaller than the rest, it is the total weight of the dozen eggs that puts them in one of the following classes: jumbo (30 oz. per dozen), extra large (27 oz.), large (24 oz.), medium (21 oz.), small (18 oz.) and peewee (15 oz.).

An eggshell’s color—white or brown—is determined by the breed of hen that laid it and has no influence on taste or nutritive value. Furthermore, hens fed on alfalfa, grass and yellow corn lay eggs with lighter yolks than wheat-fed hens. There are also varying terms used on labels to describe eggs, which have been broken down and explained below:

**Antibiotic free**: No hens in the U.S.A. are given antibiotics while laying eggs. A hen would only be given antibiotics if it were ill and had stopped laying eggs.

**Brown**: Brown eggs are produced by brown-feathered hens. There is no nutrient difference between brown and white hens fed identical diets.

**Cage free**: Hens live on the floor of a barn rather than in cages.

**Conventional**: Hens live in stacked "battery" cages, usually, six chickens to a cage with up to 67 square inches of floor space per chicken.

**Free range**: Hens either live outdoors or have some access to the outdoors.
Hormone free: No egg-laying hens in the U.S.A. are given hormones.

Natural: Just a cosmetic term. No regulated meaning.

Omega 3: Hens are fed a diet containing 10%-20% ground flaxseed, which produces eggs with slightly higher amounts of polyunsaturated fatty acids (also found in fish and fish oils).

Organic: Hens are fed a vegetarian diet that was grown without any herbicides, commercial fertilizers or fungicides.

Varieties

Bantam: As the egg from a breed of small chicken, it is about half the size of a regular chicken egg and has the same characteristics.

Century: Also known as a thousand-year egg, it’s made by coating duck eggs in a quicklime paste and storing for three months. These eggs have gray-green yolks, amber-colored whites and a distinctive, salty flavor. They can be cleaned, peeled and sliced into congee.

Duck: Larger than hen eggs and thicker-shelled, these eggs contain large yolks and watery whites, giving them a richer flavor and higher fat content than a chicken’s egg. When it is boiled, the white turns bluish and the yolk turns red-orange. Use in baking, such as sponge cake, or for Chinese tea eggs.

Goose: A seasonal delicacy of late spring to summer, this egg is four to five times larger than a chicken egg and has a strong flavor. It can be cooked like a hen egg and can also be used to make an intensely rich sponge cake.

Guinea fowl: This egg has an ivory shell flecked with brown, and its flavor is more delicate than that of a chicken egg.

Gull: The egg of the black-headed gull is a rare British spring delicacy and harvested by licensed collectors. Its shell is covered with light to dark brown splotches, and it comes in various small sizes and has a slightly fishy flavor.

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Hen: As the most widely consumed and versatile egg used in food today, it has a delicate flavor. Poach, boil, fry or scramble, use in egg drop soup, meringues, soufflés and custards.

Ostrich: An average egg weighs around 3 lbs., 3 oz. (1.5 kg), equivalent to 24 hen eggs, and has a thick, ivory-colored shell and delicate flavor. It can be cooked like a hen egg: boil, fry, poach, scramble. However, bear in mind the larger size means longer cooking times.

Quail: The tiny, fragile and delicately flavored egg has a speckled brown shell and is often served in canapes, hard-boiled or as miniature Scotch eggs.

Salted: As a Chinese preserved food made by soaking duck eggs in brine or coating them in a salted charcoal paste, these eggs have a rich, salty flavor. They can be cleaned, peeled and used in congee, soups, dumplings and mooncakes, a Chinese pastry.

Turkey: This large egg has a brown shell and delicate flavor.

Turtle: As a reptile’s egg, it has a soft shell that is buff or speckled and a mild, rich flavor.

NUTRITIONAL VALUE OF EGGS

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<th>Duck</th>
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*Source: USDA Nutrient Database
**Amounts based on 100-gram servings.
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REFERENCES: