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# EGGUCATION

How to select the right eggs, whether you're interested in nutrition, animal welfare or price.

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**Egg fact: Brown eggs are more expensive because they come from slightly larger birds that cost more to feed.**

For years I've purchased brown eggs.

Specifically, Trader Joe's Brown Organic Free Range Eggs.

I bypassed the cheaper options because it seemed like the healthy thing to do. I had the vague sense the brown color meant they were healthier, more natural, but I couldn't tell you what any of the claims on the carton actually meant.

Then I stumbled across a fact that blew my mind:

The color of the eggs has nothing to do with how the chickens are raised. Chickens with white feathers and white earlobes lay white eggs. Dark-feathered chickens with red earlobes lay brown eggs. That's it. The reason brown eggs cost more is the brown-egg-laying chickens eat more than the white-egg-laying chickens, so they're more expensive to raise.

Once I discovered the secret of brown eggs, I wondered what else I didn't know. What's the difference between free range and cage-free, and why are pastured eggs so expensive?

### The Labels

Shopping for eggs comes with three primary considerations, the importance of which varies from person to person: the well-being of the chicken, the nutritional value of the eggs and the cost of the eggs. The environmental impact of the egg producer is another important question, but that's a bigger issue I'm not going to address here.

Worrying about the lives of egg-laying chickens is a relatively **new phenomenon**. In the early 2000s, activist Paul Shapiro realized he could affect the largest number of animals by focusing on farms instead of circuses, research labs and the fur industry. He set his sights on chickens, and thanks to the efforts of Shapiro and animal-welfare groups, soon nearly every egg sold will be cage-free.


Any egg not marked "cage-free" most likely comes from a chicken kept in a battery cage. Each chicken in such a cage gets only about 67 square inches of space, **less than a sheet of letter-sized paper**. The chickens spend their two-year lifespan in this cage, never going outside to spread their wings or peck at the dirt.

Eggs sold in California are the exception. As of 2015, all shell eggs sold in California must be cage-free, but not all California eggs are labeled "cage-free." Instead they are stamped with "CA SEFS Compliant"—California Shell Egg Food Safety Compliant.

This law does not mean California chickens are free to roam the farm at will. As with many egg designations, the term "cage-free" is somewhat misleading.

Here are the actual meanings of common terms on packages of eggs sold in the United States:

- **Cage-free**—Although these hens are not confined to battery cages, they are still kept inside. Cage-free chickens can walk, spread their wings and lay eggs in nests. No law governs how much space each chicken gets, but industry groups have voluntary certifications requiring each hen to have least 1 square foot of space—about twice as much space as battery-cage hens are allowed.
- **Free range**—This designation means the birds have access to the outside, but there is no stipulation on how much time the chickens get outside or what the conditions are like outside. Some free-range chickens only have access to a cement porch with a small amount of grass, but in some cases industrial fans for ammonia removal can create winds that **discourage them from going outside**. When buying free-range eggs, do some research on the farm to find out what the term means to its owner.
- **Free range and certified humane**—If an egg carton is labeled "free range" and "certified humane," the chicken must have access to at least 2 square feet of outdoor space for **up to six hours each day**.
- **Organic**—If an egg is labeled "organic," the United States Department of Agriculture (USDA) has certified the chicken is free range, eats only organic feed and **has not been given any hormones or antibiotics**. However, as discussed above, "free range" does not mean the chicken spends the day happily pecking in the dirt. Further, hormones cannot legally be given to U.S. chickens, and antibiotics are seldom used in egg-producing chickens. This **scorecard** rates organic egg farms.
- **Pastured or pasture raised**—The terms "pastured" and "pasture raised" are not associated with any federal regulation, but pastured eggs come from chickens that roam in fields and forage on plants and insects. (For this reason, eggs from pasture-raised chickens will not be labeled "vegetarian.") Two of the biggest producers of pastured eggs in the United States, **Vital Farms** and **The Happy Egg Co.**, allow their birds to wander and forage all day every day, although The Happy Egg Co. eggs are labeled "free range on pasture"—its own phrase not tied to any official category. As with free-range eggs, it's worthwhile to research the farm to find out exactly what "pastured" means to its owner.



A 2015 Penn State study found pastured eggs have more vitamin E and omega-3 fatty acids.

## Health Benefits and Proper Storage

The distinctions above are all related to the experience of the chicken. If you don't care about how the chicken is treated, what type of eggs should you buy? Are there health benefits to eggs from pastured chickens?

A **2010 USDA study** using the Haugh unit, a measure of egg protein quality, found no discernible difference between factory and pastured eggs. However, the Haugh unit only evaluates the egg's protein content and freshness. That same year, a **study** conducted by Pennsylvania State University's College of Agricultural Sciences found pastured eggs had twice as much vitamin E and long-chain omega-3 fats. They also had more than double the total omega-3 fatty acids. Both vitamin E and omega-3 fats play an important role in maintaining good health. As an antioxidant, vitamin E helps strengthen the immune system and assists in the formation of red blood cells. Omega-3 fats have been shown to help prevent heart disease and stroke, and they might protect against cancer and depression.

One study showed that organic-farmed eggs contained higher levels of polychlorinated biphenyls (PCBs) due to an environmental contaminant. The **2015 study** found dioxin-like PCBs in the eggs, which was traced to corrugated asbestos-cement cover plates on the roof and sidewalls of the stable. It's uncertain what type of egg farms use these cover plates, but because the materials are likely very common, the authors suggest "high probability" that this was not an isolated incident.

Salmonella rates are **generally lower** in eggs from cage-free chickens because it's easier to maintain sanitary conditions with fewer chickens, and organic feed does not have toxic herbicides and fungicides. Factory chickens are generally fed a chicken mash based on corn and soy that can also include **slaughter-house waste**; using such a feed can be risky, as it might contain any germs or diseases that infected the animal or animals the chickens are consuming.

In the 1970s, the fear of salmonella led the United States to require all egg producers to wash eggs after they are hatched. Washing the eggs cleans off bacteria, but it also removes the eggs' natural protective coating that keeps water and oxygen in and bad bacteria out. Once the egg is washed, it's more vulnerable to bacterial invasion, **hence the need for refrigeration**. In countries that don't require egg washing—most of the rest of the world—eggs do not need to be refrigerated. Once an egg has been refrigerated, even if it hasn't been washed, you should maintain that refrigeration, because the condensation that occurs when moving an egg from the chill of the refrigerator to room temperature **facilitates the growth of bacteria**.

## Cost

The final consideration when buying eggs is cost. A dozen factory eggs cost about US\$2.50 per dozen, sometimes as low as \$1.50. Free-range, organic eggs are about \$5.50, and organic, pastured eggs can cost anywhere from \$8.50 to \$9.50 per dozen. That's a significant difference, especially if you're feeding a big, egg-loving family.

The cost differential is starting to shrink as some farms selling pastured eggs grow in size and achieve economies of scale. An example of this is The Happy Egg Co., whose fare costs about \$5 a dozen at my local grocery store. (The Happy Egg Co. eggs are also available at Walmart for that price.) The company is notable for being the first commercial egg producer in the United States to be granted humane certification from the American Humane Association.

If I can't find pastured eggs, I buy the cheapest option, knowing all eggs sold in California are cage-free. And I never bother with brown eggs if a cheaper white equivalent is available.

We all make decisions when grocery shopping, weighing cost, health, taste and convenience. Now that I've figured out what all these egg labels mean, I can focus on what's important to me.

Pastured eggs are healthier and more humane, and for those reasons I've decided I want to support the kind of farms that allow the chickens to roam free.

I'd rather pay more and eat less. ■

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