

# CALL ABOUT Eggs

**Nutrition Facts**  
Serving Size: 1 Egg (50g)

Amount Per Serving

**Calories 70**      Calories from Fat 45

% Daily Value\*

|                              |     |
|------------------------------|-----|
| <b>Total Fat</b> 5g          | 8%  |
| Saturated Fat 1.5g           | 8%  |
| Trans Fat 0g                 |     |
| Polyunsaturated Fat 0.5g     |     |
| Monounsaturated Fat 2.0g     |     |
| <b>Cholesterol</b> 185mg     | 62% |
| <b>Sodium</b> 70mg           | 3%  |
| <b>Total Carbohydrate</b> 0g | 0%  |
| <b>Protein</b> 6g            |     |

Vitamin A 6%      • Vitamin C 0%  
Calcium 2%      • Iron 4%

\* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

|                    | Calories  | 2,000   | 2,500   |
|--------------------|-----------|---------|---------|
| Total Fat          | Less Than | 65g     | 80g     |
| Saturated Fat      | Less Than | 20g     | 25g     |
| Cholesterol        | Less Than | 300mg   | 300mg   |
| Sodium             | Less Than | 2,400mg | 2,400mg |
| Total Carbohydrate |           | 300mg   | 375mg   |
| Dietary Fiber      |           | 25g     | 30g     |
| Protein            |           | 50g     | 65g     |

Calories per gram:  
Fat 9 • Carbohydrate 4 • Protein 4



# ALL ABOUT Eggs

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# ALL ABOUT EGGS

Eggs have been touted as “nature’s perfect food,” “one of the healthiest foods on the planet,” “nature’s multivitamin,” and most simply, “incredible!” After all, eggs are a good source of high-quality protein, they’re rich in healthy fats, they provide an array of essential vitamins and minerals, and they contain important carotenoids and antioxidants.

Yet, despite the cornucopia of nutrients and evidence-based health benefits, eggs remain demonized by some. When it comes to eggs, there seems to be a fair amount of confusion when it comes to topics like cholesterol, traditional versus pasture-raised, shell color, preparation methods, egg whites versus egg yolks, and more. With that in mind, our goal is to help set the record straight on all topics pertaining to the “incredible edible” egg.

## Eggs & Nutrition

According to the United States Department of Agriculture (USDA) National Nutrient Database, one large egg contains:

- Calories: 72
- Fat: 4.8g
- Carbohydrate: 0.4g
  - Sugar: 0.2g
  - Fiber: 0g
- Protein: 6.3g

## Minerals and Vitamins

- Calcium: 28mg (3%)
- Iron: 0.88mg (5%)
- Magnesium: 6mg (2%)
- Phosphorus: 99mg (10%)
- Potassium: 69mg (2%)

- Sodium: 71mg (3%)
- Zinc: 0.65mg (4%)
- Selenium: 15.4µg (23%)
- Biotin: 8µg (27%)
- Riboflavin: 0.26mg (20%)
- Folate: 24µg (6%)
- Vitamin B12: 0.55µg (23%)
- Vitamin A: 270IU (5%)
- Vitamin E: 0.53mg (2%)
- Vitamin D: 41IU (10%)

## **Eggs & Hen Nutrition**

Surely you've heard the saying "you are what you eat." That also applies to the animal products we eat, and the nutrition profile of foods such as beef, chicken, dairy, and eggs can be influenced by the type of food on which the animal was raised.

Several studies have examined the nutritional content of eggs from pasture-raised hens compared to eggs from commercial caged chickens. In a study conducted by researchers in Penn State's College of Agricultural Sciences, eggs from pasture-raised hens were shown to be higher in several beneficial nutrients:<sup>1</sup>

- 2 times more vitamin E
- 2 ½ times more omega-3 fats
- less than half the ratio of omega-6 to omega-3 fats
- 38% higher levels of vitamin A

Because the lines are somewhat blurry on the definitions of cage-free and pasture-raised, it may be beneficial to do some additional research on the eggs available to you. The moral of the story: when shopping for eggs, it's a good idea to look for eggs from pasture-raised hens. Better yet, you may consider going to a local farmer's market and purchase certified organic eggs from pasture-raised hens.

## Eggs & Shell Color

When it comes to buying eggs, you typically have two options in terms of shell color: white and brown. Generally speaking, brown-shelled eggs are viewed as:<sup>2</sup>

- Being more nutritious
- Having more flavor
- Having higher omega-3 content

Despite the conception that brown-shelled eggs are healthier than white-shelled eggs, the notion has been disputed by research.<sup>2</sup> That is, most contend that the color of the shell of eggs is not an indication of the nutritional value. However, at least one study published in the journal *Poultry Science* provides evidence to the contrary.

Specifically, research conducted at North Carolina State University showed that white eggs had a higher percentage of yolk than brown eggs. As you might imagine, this also meant that white eggs had a slightly higher percentage of total fat, including more saturated and polyunsaturated fats. Meanwhile, the brown eggs had a slightly higher concentration of albumen (i.e., egg white), which means a slightly higher protein content. Also of note, the white eggs had a significantly higher vitamin A content whereas the brown eggs were significantly higher in vitamin E.<sup>3</sup>

According to the University of Illinois Extension Incubation and Embryology, however, other than appearance, there are no major differences between eggs from different breeds of chickens. In other words, if the hens have been fed the same type of feed, their eggs will be nutritionally equivalent, regardless of shell color.

What influences the shell color? The genetics of the hen.

According to researchers at Michigan State University, the breed of the hen will indicate what color eggs she will produce. For example, Leghorn chickens lay white eggs while Orpington's lay brown eggs and Ameraucana produce blue eggs. An Olive Egger, a chicken that lays olive green eggs, is the product of a cross between a hen and rooster that are from a brown egg and blue egg laying breed.

By looking at the color of the chicken's ear lobes, you can tell what color the eggs will be. For instance, those with white ear lobes produce white eggs. Believe it or not, all eggs start out white in color. Those that are laid in color other than white have their pigments deposited on them as the eggs travel through the hen's oviduct. While the journey through a chicken's oviduct takes about 26 hours, even more fascinating is that the shell takes about 20 hours to be complete.

## **Eggs & Preparation Methods**

Any time you crack an egg and expose it to air (i.e., oxygen) and light, the cholesterol in eggs can be oxidized. When you cook eggs (in any way), there will be some oxidation of the cholesterol, as heat is also a catalyst for oxidation. These are called cholesterol oxidation products (COP), which may have harmful effects on human health.

Among the different preparations of eggs, poached and boiled eggs are thought to have the lowest COP. Along those lines, eating eggs raw (immediately after they're cracked open) would involve the least COP, and some studies have shown that raw eggs have no COP. Whether or not eating eggs raw is safe is somewhat of a separate discussion.

Along those lines, however, there are benefits to cooking/heating eggs. For instance, heat can kill off any "bad" microbes. Also, heating can destroy the "anti-nutrient" avidin, which can bind to and inhibit the absorption of certain B vitamins. Cooking/heating also significantly improves the digestibility of proteins in eggs (77% greater digestibility).<sup>4</sup>

Overall, there may be potential benefit to cooking eggs at lower temperatures for shorter periods of time to limit the production of COP while still reaping the advantages of heating. Having said that, the largest concern is likely with egg-based products (e.g., egg powder), which tend to undergo exposure to high heat (e.g., 100° C) for longer periods of time (e.g., 2+ hours).

## **Eggs or Egg Whites**

For starters, nearly half (43%) of the protein in a whole egg is found in the yolk. And while many people shy away from egg yolks because of their fat content, the fatty acid profile is relatively balanced, with the greatest contribution coming from "heart healthy"

monounsaturated fats. Even more, egg yolks contain the essential omega-3 fatty acid DHA, which is critical for eye, brain, and heart health.

What about saturated fat? Great question. Despite what we've all heard for years, it is now widely accepted in the scientific community that the notion that saturated fats are to blame for cardiovascular disease are ill-conceived and unfounded. In other words, as reported by Dr. Glen Lawrence in the journal *Advances in Nutrition*, saturated fat intake is not associated with an increased risk for heart disease.<sup>5</sup>

On top of that, ALL the fat-soluble vitamins (vitamins A, D, E, and K) are found in the yolk, and so too are potent antioxidants, including lutein and zeaxanthin, which play a crucial role in eye health and vision (protecting our eyes from dangerous high-energy blue light) and cognitive function.

There's more...virtually all the following vitamins and minerals packaged in the incredible edible egg are in the yolk:

- Calcium
- Iron
- Phosphorus
- Zinc
- Thiamin (B1)
- Panthothenic acid (B5)
- B6
- Folate
- B12

Okay, okay...what about the big ol' elephant in the room? What about cholesterol? We've long been advised to limit our dietary cholesterol intake, and of course, eggs contain cholesterol so they've become a "probable suspect."

### **Eggs & Cholesterol: The Elephant in the Room**

Perhaps you're concerned about the cholesterol content of eggs. Let's talk about that for a moment. First off, the hormones often referred to as "sex hormones," including

testosterone, estrogen, and progesterone, technically are classified as “steroid hormones” due to their chemical structure.

Cholesterol—yes, that supposedly nasty “C-word”—is THE fundamental “building block” for the steroid hormones. The process of “steroidogenesis” (i.e., creation of steroid hormones) literally means the conversion of cholesterol to biologically active steroid hormones.<sup>6</sup> Thus, without adequate cholesterol, levels of sex hormones plummet.

With that in mind, it may not come as too much of a surprise to learn that statins, drugs designed to reduce **the body’s production of** cholesterol, have been shown to consistently and significantly lower levels of sex hormones (including testosterone) in both men and women.<sup>7–9</sup> Although there is some inconsistency among the evidence, some studies have associated statins with sexual dysfunction, including erectile dysfunction and decreased libido in men.<sup>10,11</sup>

Beyond that, there’s the concern that dietary cholesterol leads to increased levels of blood cholesterol (more appropriately, the lipoproteins LDL and HDL that *carry* cholesterol) and an increased risk of heart disease. This is more commonly referred to as the “lipid hypothesis,” which has been called into question, picked apart, and largely discredited in recent years.<sup>12,13</sup>

In a cross-over study published in the *International Journal of Cardiology*, researchers from Yale Prevention Research Center assessed the effects of egg consumption on endothelial function (FMD), a reliable index of cardiovascular risk. 49 healthy men and women consumed two eggs per day for 6 weeks. At the end of the study, the researchers found that daily egg consumption did not affect total cholesterol, LDL, or FMD, providing clear evidence “that **dietary cholesterol may be less detrimental to cardiovascular health than previously thought.**”<sup>14</sup>

In one study published in the journal *Nutrients*, researchers from Wayne State University found that **students who ate eggs for breakfast (providing 400mg of cholesterol) 5 days per week for 14 weeks experienced no negative impact on blood lipids (e.g., total cholesterol, LDL).**<sup>15</sup>



In general, observational studies have not found a connection between egg consumption and risk of cardiovascular disease in otherwise healthy individuals. In a study published in the *Journal of the American Medical Association*, researchers from Harvard University's Department of Nutrition assessed whether there was any connection between egg consumption and coronary heart disease (CHD) among over 117,000 otherwise healthy men and women over the course of 14 – 18 years. The researchers found **“no evidence of an overall significant association between egg consumption and risk of CHD or stroke in either men or women.”**<sup>16</sup>

In a study published in the journal *Medical Science Monitor*, researchers assessed the dietary patterns of nearly 10,000 adults (aged 25 – 74) to examine the association between egg consumption and risk of cardiovascular disease. They found that folks who consumed greater than 6 eggs per week do not increase the risk of cardiovascular disease compared to people who eat none.<sup>17</sup>

In a recent study published in the *European Journal of Clinical Nutrition*, researchers from Spain set out to assess whether there was any connection between egg consumption and the risk of cardiovascular disease (CVD) among over 14,000 men and women (ages 20 – 90) who followed a Mediterranean-style diet. Once again, the researchers found **no association between egg consumption and CVD risk** when comparing folks with the highest to lowest egg consumption.<sup>18</sup>

Perhaps most interesting are the results from a study recently published in the journal *Metabolism* where researchers from the University of Connecticut compared the effects of eating 3 whole eggs per day versus an equivalent amount of yolk-free egg substitutes on blood lipids and insulin sensitivity. After 12 weeks, the researchers found that the participants who ate the whole eggs experienced significantly greater increases in HDL cholesterol and large HDL particles (i.e., the “good” forms of cholesterol), as well as reductions in total VLDL and medium VLDL particles. What's more, the egg eaters also experienced significant improvements in insulin sensitivity and increases in HDL and LDL particle size (i.e., more large, fluffy particles).<sup>19</sup> Particle size is noteworthy because small, dense particles are considered more detrimental than large, fluffy particles.<sup>20</sup>

Taken together, egg consumption does not seem to be a concern for otherwise healthy individuals, although this may be an issue for “hyper-responders” and diseased populations.<sup>21,22</sup>

Still not convinced?

Perhaps the most striking evidence on the topic came in 2015 when America’s top nutrition advisory panel, the Dietary Guidelines Advisory Committee (DGAC), which is responsible for publishing the *Dietary Guidelines for Americans* based on the body of scientific and medical evidence, stated that the “available evidence shows **no appreciable relationship** between consumption of dietary cholesterol and [blood] cholesterol.”<sup>23</sup>

That is, the cholesterol in food (such as eggs) has little effect on the amount of cholesterol in the bloodstream. The DGAC’s findings are consistent with the conclusions of the very conservative American College of Cardiology and American Heart Association.<sup>24</sup>

The DGAC went on to **retract** its previous recommendation to limit cholesterol to no more than 300mg/day and concluded, “**Cholesterol is not considered a nutrient of concern for overconsumption.**” In other words, you don’t need to worry about the cholesterol in your food.

## **Eggs & Brain Health**

Eggs are a very good source of vitamin B12, which energizes the brain and provides crucial neuroprotection by eliminating potentially neurotoxic compounds (i.e., homocysteine) and supporting long-term nerve health and function.<sup>25</sup> Research suggests that deficiencies in this vitamin may impair cognitive performance and lead to difficulty maintaining balance, depression, confusion, dementia, and poor memory.<sup>26</sup>

In one study published in the *American Journal of Clinical Nutrition*, researchers from Tufts University found an association between low concentrations of vitamin B12 and poor cognitive performance on spatial tasks in folks aged 54 – 81.<sup>27</sup> In an epidemiological study published in the journal *Neurology*, researchers from Stockholm found a clear association between B12 deficiencies and Alzheimer’s disease among a group of 370 participants over the age of 75.<sup>28</sup>

Eggs are also one of the few excellent sources of choline—nearly all of which is in the yolk. A lesser-known nutrient that supports brain health and nervous system function, choline is the main building block of the neurotransmitter acetylcholine, and its significance in nervous system function cannot be overstated.

When researchers from the University of North Carolina supplemented the diets of rat pups with choline, they found that their brain function changed for the better, resulting in life-long memory enhancement.<sup>29</sup>

In a study published in the *American Journal of Clinical Nutrition*, researchers from the Boston University School of Medicine set out to determine the relationship between dietary choline intake and cognitive function among nearly 1,400 men and women with an average age of 61. Not surprisingly, the researchers found that higher choline intake was associated with better cognitive performance.<sup>30</sup>

In addition to their B vitamin and choline content, eggs are also rich in protein and the potent antioxidants lutein and zeaxanthin, which fight oxidative stress and free radical damage. In one study, a research team from the Human Nutrition Center on Aging at Tufts University found that lutein and zeaxanthin can improve cognitive function in the elderly.<sup>31</sup>

These findings prompted the research team to conduct a study on the effects of daily egg consumption on cognitive function in the elderly. Although the study is currently ongoing, the researchers hypothesize that “there will be a significant increase in cognitive function measures in older adults provided with meals containing 2 eggs per day at the end of 6 months.”

## **Eggs & Eye Health**

In addition to providing the all-important omega-3 fatty acids EPA and DHA (all in the yolk), which are regarded for numerous health benefits including eye health and vision support,<sup>32-34</sup> eggs from pasture-raised hens contain the carotenoids lutein and zeaxanthin (all in the yolk), which are located in the eye, specifically the macula.

In fact, lutein and zeaxanthin are referred to as “macular carotenoids” (also, “xanthophyll carotenoids”), and they make up the macular pigment (MP). What’s more, their deposition in the macula is highly specific: lutein is preferentially deposited in the peripheral macula, RR-zeaxanthin in the mid-peripheral macula, and RS-zeaxanthin at the center of the macula—the region most susceptible to photo-oxidative damage.

Acting as primary filters of high-energy blue light, lutein and zeaxanthin support visual health and acuity by protecting against oxidative stress and inflammation. Specifically, lutein and zeaxanthin isomers act as a “protective shield” against damaging UV rays and harmful free radicals. More simply put, lutein and zeaxanthin isomers act as “natural sunglasses.”

Unfortunately, the human body does not produce the lutein and zeaxanthin that it needs, and their specialized locations and functions emphasize the need to consume these macular carotenoids through diet or supplementation. Lutein and zeaxanthin are found in dark green leafy vegetables, egg yolks, corn, citrus, and other yellow and orange fruits and vegetables, while meso-zeaxanthin is found in fish, such as salmon, sardines, and trout.<sup>35,36</sup>

Although there is currently no recommended daily intake for lutein and zeaxanthin, the average dietary intake of lutein and zeaxanthin (i.e., less than 2 mg lutein and 0.5 mg zeaxanthin) is far below levels shown in research to be beneficial.<sup>37</sup> For instance, most recent studies show health benefits in taking up to 10 mg/day of a lutein and 1 – 2 mg/day of a zeaxanthin (in supplement form).<sup>38–40</sup>

The great news is that research has shown that eating eggs daily can have a significant effect on lutein and zeaxanthin levels. In a study published in *The Journal of Nutrition*, researchers at the University of Massachusetts found that consumption of 1 egg per day for 5 weeks resulted in a 26% increase in lutein concentrations and a 38% increase in levels of zeaxanthin all without negatively impacting blood lipids and cholesterol.<sup>41</sup>

One study published in the *Journal of Food Composition and Analysis* found that levels of lutein and zeaxanthin ranged from 1.0 – 1.6mg per 100g of yolk.<sup>36</sup> As a point of reference, the yolk from a large egg is about 17g. Having said that, the lipid matrix of the yolk of chicken eggs (which also contain cholesterol, triglycerides, and

phospholipids) provides a readily available source of lutein and zeaxanthin that has been shown to be more bioavailable than lutein supplements and dark green leafy vegetables (e.g., spinach).<sup>42</sup>

Observational studies have reported that increased dietary intake and higher levels of lutein and zeaxanthin are associated with lower risk of age-related macular degeneration (AMD). Randomized, placebo-controlled clinical trials have demonstrated that supplementation with lutein and zeaxanthin increases macular pigment levels, improves visual function and performance, reduces glare sensitivity, and decreases the risk of progression to late AMD.<sup>43,44</sup> With that in mind, supplementation seems to be a more viable approach to maintain optimal levels of all three macular carotenoids to support visual health.

## **Eggs & Heart Health**

Not to beat a dead horse, but despite common misconception, “egg consumption is not associated with the risk of CVD [cardiovascular disease] and cardiac mortality in the general population,” as researchers from the University of North Carolina at Chapel Hill concluded in a recent systematic review and meta-analysis summarizing the literature on egg consumption and heart health.<sup>45</sup>

And if you don’t believe that, this next bit may be even more shocking. According to the most recent research, regular egg consumption is heart healthy. In a 14-week crossover study published in the *Journal of Nutrition*, researchers from the University of Connecticut showed that healthy adults eating 1 – 3 eggs per day for 4 weeks experienced a significant improvement in their blood lipid profile, potentially reducing the risk of heart disease, compared to eating no eggs.<sup>46</sup>

When the participants ate eggs daily, they showed an increase in HDL (the so-called “good”) cholesterol function, which may be more important than HDL concentration in determining risk for cardiovascular disease. HDL is a carrier of carotenoids and antioxidant enzymes, which protect HDL and LDL particles against oxidation. Along those lines, eating eggs also resulted in a 20 – 31% increase in levels of lutein and zeaxanthin, which are carotenoid antioxidants that support eye health, vision, cognitive function, and cardiovascular health.

What's more, when the participants ate eggs daily, they experienced an increase in the concentration of large, fluffy LDL cholesterol. This is important because small, dense particles are considered more detrimental than large, fluffy particles.<sup>20</sup> That's right, size does matter.

Overall, eggs from pasture-raised hens provide a variety of nutrients that support cardiovascular health including B vitamins (e.g., B12, folate), omega-3 fatty acids (e.g., EPA, DHA), and carotenoids (e.g., lutein, zeaxanthin). For instance, EPA and DHA are well-known for their beneficial effects on heart health, as research has shown that they may lower triglycerides by up to 50% and result in a 45% reduction in cardiovascular events.<sup>47-49</sup>

## **Eggs & Weight Management**

When it comes to the battle of the bulge, appetite and satiety (feelings of fullness and satisfaction) are two critical factors that influence food intake. There are various hormones that influence appetite and satiety. For instance, ghrelin is commonly referred to as a "hunger hormone" that stimulates appetite and food intake, and it plays an important role in energy balance and weight management. Meanwhile, decreased levels of ghrelin result in reduced appetite and increased weight loss.<sup>50</sup>

In a recent crossover study published in the journal *Nutrients*, researchers from the University of Connecticut found that, compared to eating oatmeal, when healthy participants ate two eggs for breakfast daily for four weeks, they reported significant improvements in satiety, which correlated with lower levels of ghrelin.<sup>51</sup> Thus, compared to oatmeal, eating two eggs per day resulted in significant improvements in appetite control without any adverse effects on biomarkers of cardiovascular risk.

In another crossover study, researchers from the University of Connecticut compared the effects of eating eggs for breakfast versus a bagel on calorie intake and satiety. They found that after eating the bagel breakfast, the participants were hungrier and less satisfied, and they consumed more calories over a 24-hour period. Conversely, after eating eggs for breakfast, the participants experienced greater satiety and lower levels of insulin and ghrelin, and they consumed fewer calories the rest of the day.<sup>52</sup>

Additional research has shown that consumption of eggs for breakfast increases levels of additional satiety hormones including PYY, CCK, and GIP, which decrease food intake and promote glycemic control.<sup>53,54</sup> Eggs are a good source of protein, and studies have shown that protein-rich meals boost satiety.<sup>55</sup> Even more, diets rich in protein have rather consistently been shown to be a useful strategy to improve appetite control, reduce snacking, improve diet quality, reduce food motivation and reward, and support healthy weight management.<sup>56–60</sup>

In addition, eggs are also rich in healthy fats, which also help increase feelings of fullness and satisfaction, as they appear to regulate appetite through a number of mechanisms, including the release of appetite hormones.<sup>61</sup> What's more, combining fat with fiber has been shown to further increase the satiating potential of fat.<sup>62</sup> The satiating power of fats is often one explanation offered to describe why some weight loss trials have shown that low-carbohydrate (and higher-fat) diets tend to lead to greater weight loss than low-fat diets.<sup>63</sup>

Taken together, by supporting appetite control and increasing satiety, daily consumption of eggs combined with an overall healthy diet may promote weight management. Indeed, research has shown that eating eggs daily for breakfast is an effective strategy to help control body weight.<sup>15,51,52</sup> In fact, one study showed that eating two eggs for breakfast helped overweight dieters lose 65% more weight and feel more energetic than those who ate a bagel breakfast of equal calories and volume.<sup>64</sup>

## **Eggs & Sports Nutrition**

Speaking of protein, eggs are one of the highest quality sources of any whole food available. In fact, eggs are considered the “gold standard” for measuring protein quality. That is, researchers frequently use the eggs as the standard in measuring the quality of protein from other foods.

Protein quality refers to how well the body is able to use the protein from food. Protein quality also takes into consideration how closely the essential amino acid content of a food matches the body's requirements, how well the body is able to digest the protein, and the bioavailability of the amino acids.

When it comes to the protein digestibility corrected amino acid score (PDCAAs), which has previously been regarded as the internationally approved method for protein quality assessment, eggs rank similar to cow's milk. Alongside beef, eggs are graded highest for protein digestibility. Using the biological value, net protein utilization, and the protein efficiency ratio, eggs rank highest for protein quality among cow's milk, beef, and soy. While there are limitations to each of these methods of protein quality, it is worth noting that eggs consistently rank at the top across all measures.

In a recent review published in *Nutrition Today*, researchers analyzed more than 25 protein studies and concluded that the natural, high-quality protein in eggs contributes to strength, power, and energy in several ways:<sup>65</sup>

- **Sustained energy.** The protein in eggs helps promote steady, sustained energy because it helps support healthy carbohydrate metabolism and glycemic control. As a result, eggs help prevent a rebound effect or energy crash that is common with poor carbohydrate management and glycemic control. Further, eggs provide several B vitamins (e.g., thiamin, riboflavin, folate, B6, and B12), which are required for energy production.
- **Muscle Strength.** Dietary protein directly influences muscle mass, strength, and function in people of all ages. Eggs are a good source of protein, with a single egg providing six grams of high-quality protein, which can help individuals build and preserve muscle mass and promote healthy aging (i.e., prevent muscle loss). Eggs are also rich in the amino acid leucine, which is a “trigger” for building muscle, promotes recovery, contributes to the body's ability to use energy.
- **Gold-Standard Protein.** The high-quality protein in eggs provides all the essential amino acids our bodies need to build and maintain muscle mass. In fact, the quality of egg protein is so high that scientists often use eggs as the standard for evaluating the protein quality of other foods.

Study co-author and esteemed protein researcher Donald Layman said, “Americans need to focus on consuming sources of higher-quality protein. Our review of the science suggests that eggs are an ideal protein choice, plus, they are very affordable. In addition, individuals should focus on when they consume high-quality protein. Most protein consumption occurs in the evening, even though there are significant benefits to consuming more protein at breakfast, such as stimulation of muscle protein synthesis and long-lasting satiety.”



## **Nature's Perfect Food**

While there's no single "best" or "perfect" food, eggs are indeed a nutritious, healthful food, and when combined with an overall healthy diet and lifestyle, regular consumption of eggs (as many as 3 per day) may contribute to numerous health benefits. On the contrary, despite an undeserved bad rap, there is no consistent evidence that regular consumption of eggs is associated with negative effects on cholesterol levels or cardiovascular health in otherwise healthy folks. In fact, the evidence is quite to the contrary.

While there is often discussion about brown eggs being healthier than white, the few differences (while statistically significant) are minor practically speaking. What does seem to be important is what the chickens are fed, and along those lines, eggs from pasture-raised hens seem to be more nutritious than conventional commercial eggs.

While not necessarily a myth, the effects of cooking/heating eggs appear to be overstated and exaggerated in some circles. The multitude of studies that have shown no harm (and in many cases, significant benefits) with regular egg consumption typically do not place any restriction or specification on how the eggs are prepared. Thus, cholesterol oxidation products may be minimized with short cooking methods using low temperatures; however, practically speaking, whether this has any significance remains to be seen.

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