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# Eggs: Not as Bad as They're Cracked Up to Be

*By ACSH Staff — July 1, 1996*

**"Do I Dare to Eat an Egg?"**

That question was the title of a recent health newsletter article and reflects the public's profound "ovophobia."

Egg use in the U.S. has fallen dramatically over the last 50 years, from 400 eggs per person per year in the 1940's to 235 in 1992, the last year for which statistics are available. The main reason for the decline: fear that eggs, which are high in cholesterol, will increase the risk of heart disease.

But recent research shows that eggs have gotten a bum rap. The real cholesterol villain in that all-but-extinct fried egg and bacon breakfast is not the cholesterol in the egg but the saturated fat in the bacon (and the bacon grease or butter that the eggs are fried in). Indeed, an egg's impact on the average person's serum cholesterol level is trivial, while its contribution to good nutrition can be significant.

Eggs are much more than cholesterol in a shell. One large egg provides about six grams of protein, about half of which is in the egg white. The white of an egg is considered an ideal protein the one by which all others are measured because it contains all the amino acids needed for human nutrition and offers them in the proper balance. As for other nutritional benefits:

- Eggs are significant source of iron, riboflavin, folate, and vitamins B12, D, and E. (Just about the only nutrient *not* found in an egg is vitamin C.) An egg's contribution of vitamin D is noteworthy because eggs are one of the very few foods that supply this nutrient.
- Eggs are easily digested, making them valuable dietary components for people who are ill or convalescing.
- Of the five grams of fat in a large egg, more than half is unsaturated the kind of fat that doesn't raise blood cholesterol levels.

While eggs don't provide an abundance of any one nutrient, they offer substantial amounts of a wide variety, as shown in Table 1. That quality elevates eggs into the ranks of "nutrient-dense foods," which means they provide a relatively high proportion of essential nutrients while supplying only a relatively small number of calories (about 70 calories for a large egg).

**Table 1. Amounts of Various Nutrients Provided by One Large Egg**

| Calories | 70 |
|---|---|
| **Other Nutrients** | **Percentage of Daily Value** |
| Total fat | 7% |

| | |
|---|---|
| Saturated fat | 3 |
| Cholesterol | 71 |
| Sodium | 3 |
| Potassium | 2 |
| Protein | 10 |
| Vitamin A | 6 |
| Vitamin C | 0 |
| Calcium | 2 |
| Iron | 4 |
| Thiamin | 2 |
| Riboflavin | 15 |
| Vitamin B6 | 4 |
| Folate | 6 |
| Vitamin B12 | 8 |
| Phosphorous | 8 |
| Zinc | 4 |
| Vitamin D | 6 |
| Vitamin E | 3 |

*Source: Data supplied by the Egg Nutrition Center, 1819 H Street, NW, Suite 520, Washington, DC 2006*

There's no denying that eggs are rich in cholesterol. In fact, they're the single largest source of cholesterol among foods commonly eaten in the U.S. A large egg contains about 215 mg of cholesterol more than two-thirds of the recommended maximum intake of 300 mg of cholesterol per day. The cholesterol is confined entirely to the yolk of egg, with none of it in the white. As shown in Table 2, the only other foods that approach eggs in cholesterol content are organ meats and certain shellfish, which are consumed less frequently.

**Table 2.**
**Cholesterol, Saturated Fat, and Calories in Various Animal Foods**

| | **Cholesterol (mg)** | **Saturated Fat (g)** | **Calories** |
|---|---|---|---|
| Beef liver, braised, 3.5 oz | 389 | 1.9 | 161 |
| Egg, 1 large | 215 | 1.5 | 70 |
| Beef heart, simmered, 3.5 oz | 193 | 1.7 | 175 |
| Shrimp, 3 oz (12 large) | 130 | 0.3 | 90 |

| | | | | |
|---|---|---|---|---|
| Pork loin, lean only, roasted, 3.5 oz | 4.8 | 240 | | |
| | Chicken, roasted, skin removed, light and dark meat, 3.5 oz | 89 | 2.0 | 190 |
| | Ground beef, lean, broiled, 3.5 oz | 87 | 7.3 | 272 |
| | Turkey, roasted, skin removed, light and dark meat, 3.5 oz | 76 | 1.6 | 170 |
| | Salmon, pink, 3 oz | 44 | 0.5 | 99 |
| | Lamb, loin chop, lean only, broiled (1 chop) | 39 | 2.1 | 92 |
| | Cod, 3 oz | 37 | 0.1 | 70 |
| | Cheese, Cheddar, 1 oz | 30 | 6.0 | 114 |
| | Frankfurter, all-beef, (1 frank) | 27 | 5.4 | 142 |
| | Tuna, light, water-pack, 2 oz | 20 | 0.2 | 60 |
| | Milk, 2% low fat, 1 cup | 18 | 2.9 | 121 |

*Sources: Updated data for eggs supplied by the Egg Nutrition Center, 1819 H Street, NW, Suite 520, Washington, DC 20006. All other values from Pennington JAT.*Food Values of Portions Commonly Used.*15th ed. New York, NY: Harper Collins;1989.*

Cholesterol is found in all foods of animal origin eggs as well as chicken, red meat, fish and dairy products. When we eat foods containing cholesterol, some of that cholesterol gets absorbed into the bloodstream and used by the body. Indeed, we *need* cholesterol in order to survive. Cholesterol helps build membranes for new cells in the body and is an especially important constituent of nerve cells. Some cholesterol is converted to bile acids, which help fats and fat-soluble vitamins get absorbed from the digestive tract into the bloodstream. Cholesterol also provides the building blocks for vital hormones such as estrogen, testosterone and cortisol as well as for vitamin D.

But unlike vitamins, minerals and other essential substances, cholesterol doesn't have to come from the diet. The body actually makes most of the cholesterol it requires. Although all cells make some cholesterol, he liver is the body's main cholesterol "factory," churning out between 800 and 1,500 mg of cholesterol each day and sending it into the bloodstream. The liver packages most of this cholesterol into particles known as low-density lipoproteins, or LDL's. Health problems occur when the supply of cholesterol in the blood exceeds the body's demands for it.

A high level of cholesterol in the blood is one of several risk factors for heart disease along with high blood pressure, cigarette smoking and lack of exercise. When the blood's serum contains

elevated levels of cholesterol especially the "bad" LDL variety the cholesterol tends to migrate from the bloodstream and into artery walls, narrowing the arteries and resulting in heart attack when coronary arteries are affected and blood flow to the heart is cut off.

Some 30 years ago, when experts found the link between high serum choleseterol and heart disease, they branded dietary cholesterol and hence eggs a health risk and came up with the Recommended Daily Value of no more than 300 mg. While dietary cholesterol can certainly influence serum cholesterol levels, recent studies suggest that the chief villain in raising serum cholesterol is not the cholesterol in our diets but rather the saturated fats.

Saturated fats are found mainly in animal fats such as lard and butter and also in palm and coconut oils. They appear to raise blood cholesterol by interfering with an important function of the liver filtering LDL particles from the blood. When we eat foods high in saturated fats, LDL particles aren't removed and blood cholesterol levels rise.

As research was fingering saturated fats as the chief culprit in raising serum cholesterol, it was also showing that dietary cholesterol has less of an effect on serum cholesterol than had been assumed. Recent studies have found that two-thirds of the population experiences only a small increase in blood cholesterol after consuming high levels of dietary cholesterol. When these cholesterol "nonresponders" eat an egg with its 215 mg of cholesterol, they experience a temporary rise in serum cholesterol of only about three mg. Limiting these people to 300 mg of dietary cholesterol daily appears to be unnecessarily restrictive.

In nonresponders, the liver compensates for increases in dietary cholesterol by cutting back on its own cholesterol production. As a result, the total amount of cholesterol reaching the bloodstream remains about the same regardless of the amount of cholesterol in the diet.

The remaining one-third of people are the not-so-lucky cholesterol "responders", whose blood cholesterol levels are strongly influenced by the cholesterol in their diets. For the most sensitive of these responders, eating a single egg can raise serum cholesterol by as much as TK mg of cholesterol.

Learning if you're a cholesterol nonresponder or a less-fortunate responder isn't easy and requires a doctor's assistance. It means going on a high-cholesterol diet, having your serum cholesterol level checked, then going on a low-cholesterol diet and having your levels checked again. You can consider yourself a nonresponder if both serum cholesterol measurements are similar.

Whether you're a responder or a nonresponder, the impact on your serum cholesterol from cutting back on eggs will depend largely on the types of foods you eat *in place of* eggs. Someone who replaces eggs with a low-fat, low-cholesterol breakfast such as cereal with skim milk may experience a decrease in blood cholesterol. But a person who eats a hamburger (rich in both cholesterol and saturated fat) instead of eggs may see little or no change, or even an increase, in blood cholesterol level.

Since moderation is the key to good nutrition, eating great quantities of eggs or any other food isn't a good idea. On the other hand, abstaining from eggs is also undesirable, since it means missing out on the positive aspects of eggs the variety they add to the diet, their high nutrient density, low

cost, convenience, and usefulness in recipes.

Those people with high serum cholesterol levels who are sensitive to dietary cholesterol may need to strictly limit their egg yolk consumption so they don't exceed the current Recommended Daily Value of 300 mg. But most other people can eat an egg or two a day without worrying about inflating their serum cholesterol levels. Just go easy on the bacon grease and butter.

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