

Is Eating Eggshells Beneficial?

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STORY AT-A-GLANCE

- › Eggshells contain protein, magnesium, selenium and numerous other trace compounds to help augment your bones and joints, negating the need to take a calcium supplement
- › In spite of the calcium sources that are readily available, calcium deficiency is quite common, causing a condition known as hypocalcemia, evidenced by low levels of the mineral in your blood
- › Symptoms of a calcium deficiency include fatigue, mood changes, muscle stiffness, spasms and lapses in memory
- › Ground eggshells can be placed in several types of foods to give your calcium levels a quick boost without altering the taste, but preparing them correctly to eradicate bacteria is crucial

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As you've cracked eggs over a skillet or mixing bowl over the years, it may never have occurred to you that the eggshell, and not just the egg, may offer considerable nutritional benefits. A study entitled "Eggshell Membrane: A Possible New Natural Therapeutic for Joint and Connective Tissue Disorders," published in *Clinical Interventions in Aging*, supported this hypothesis. Researchers tested the concept of using natural eggshell membranes in supplement form, or NEM, as a:

"Novel dietary supplement as it contains naturally occurring glycosaminoglycans and proteins essential for maintaining healthy joint and

*connective tissues ... 500 mg taken once daily, significantly reduced pain, both rapidly (seven days) and continuously (30 days)."*¹

It may interest you to know that the researchers involved in the study concluded that none of the participants exhibited any adverse effects in the course of the study. A significant percentage of the participants experienced considerable improvements, and the authors deemed the crushed eggshell treatment to be "well tolerated."²

Learning that not only were eggshells from hens "suitable for human consumption" but even nutritious, the blogger behind Healthy Food Tribe notes that for others interested in the science behind it, it's important to understand a few things, namely:³

- Crushed, powdered eggshells may be a good addition to your diet
- How to prepare them
- How to use and store them

Studies Analyze the Benefits of Eggshell Consumption

According to the International Journal of Food Sciences and Nutrition,⁴ the ingredient that makes eating eggshells beneficial is calcium, or more specifically, calcium carbonate. Perhaps not surprisingly, that's what 95% of the total makeup of eggshells consist of,⁵ which is similar to your own bones and teeth.

Researchers noted that consuming just half an eggshell can supply you with the recommended reference daily intake (RDI)⁶ of calcium, an amount the U.S. Food and Drug Administration (FDA) has determined fulfills the nutrient needs by infants, children and adults.

In spite of the calcium sources that are readily available, calcium deficiency is quite common,⁷ causing a condition known as hypocalcemia. It's evidenced by low levels of the mineral in your blood serum or plasma. Interestingly, anxiety and stress can contribute to this condition. Common symptoms of a calcium deficiency include:⁸

- Overall fatigue
- Muscle stiffness
- Muscle spasms
- Mood changes
- Memory lapses

How Low Calcium Levels Can Bring About Osteoporosis

Around 1 in 3 women and 1 in 5 men worldwide over the age of 50 experience an osteoporosis-related fracture. In fact, in 2000, 9 million such breaks were recorded, 1.6 million of them were [hip fractures](#), which can be life-threatening, as 20% of the individuals who've had a hip fracture die within a year.⁹

One of the most sobering statistics about this condition, though, is that the remedy most people gravitate toward (because it's the go-to remedy doctors recommend) is toxic drugs, the side effects of which can range from serious to devastating, including doubling your risk of esophageal cancer.¹⁰

While a number of studies stress how important it is for people suffering from osteoporosis to keep moving to maintain muscle strength and build bone density, drugs prescribed to remedy the problem may thicken bones to make them bulkier but more porous in the process, and therefore more prone to breakage. People also often take calcium tablets in an effort to strengthen their bones and teeth and help prevent fractures.

A report from The Institute of Medicine, now known as The National Academy of Medicine, noted that calcium may be one of the most abundant minerals in your body, accounting around 1% to 2% of your total body weight. According to the report, calcium has more uses other than just for your bones:

"Over 99 percent of total body calcium is found in teeth and bones. The remainder is present in blood, extracellular fluid, muscle, and other tissues,

*where it plays a role in mediating vascular contraction and vasodilation, muscle contraction, nerve transmission, and glandular secretion."*¹¹

It's important to understand, however, that if your calcium levels are not low, taking in too much will not only not help you, it may, in fact, do more harm than good. Further, poor-quality **calcium supplements** may contain toxic metals in harmful amounts, including lead, cadmium, aluminum and **mercury**, according to a Canadian study,¹² even though they may be labeled as being naturally sourced.

How Eating Eggshells Can Lower Your Osteoporosis Odds

For all of these reasons, ground eggshells can be an excellent stand-in for calcium supplements, which many people, both men and women, are directed by their doctors to take when aging begins the natural but preventable process of leaching calcium from bones, making bones thinner and weaker – a condition known as **osteoporosis**. The study added:

"In vitro eggshell powder stimulates chondrocyte differentiation and cartilage growth. Clinical studies in postmenopausal women and women with senile osteoporosis showed that eggshell powder reduces pain and osteoresorption and increases mobility and bone density or arrests its loss.

*The bioavailability of calcium from this source, as tested in piglets, was similar or better than that of food grade purified calcium carbonate. Clinical and experimental studies showed that eggshell powder has positive effects on bone and cartilage and that it is suitable in the prevention and treatment of osteoporosis."*¹³

Many foods contain calcium, the healthiest dairy options being hormone-free, grass fed raw milk, butter, yogurt and cheese, as well as green vegetables such as **broccoli**, cabbage, **collard greens**, spinach and kale, as well as canned sardines and salmon with bones intact, almonds and **sesame seeds**.

However, powdered eggshells add to your calcium intake dramatically. In addition, they contain magnesium and selenium, as well as trace amounts of potassium, zinc, manganese, iron and copper.¹⁴ The featured video notes that they also contain glucosamine, chondroitin and hyaluronic acid. The video also lists other compounds in the shell membrane, such as type I collagen.

"Eggshell membrane is primarily composed of fibrous proteins such as collagen type I ... (as well as) glycosaminoglycans, such as dermatan sulfate and chondroitin sulfate and sulfated glycoproteins including hexosamines, such as glucosamine. Other components identified in eggshell membranes are hyaluronic acid, sialic acid, desmosine and isodesmosine, ovotransferrin, lysyl oxidase, lysozyme, and β -N-acetylglucosaminidase."¹⁵

Best Procedure for Eggshell Consumption

The 2003 study explains that the best way to consume and digest eggshells is in powdered form, but first, they must be cleaned properly to get rid of any bacteria that may be hanging around. To say that eating eggshells right after peeling them is not recommended is a gross – in every sense of the word – understatement. Also keep in mind that organic, pastured eggs are not only recommended but crucial.

The best way to prepare eggshells is to powder them in a grinder, such as a coffee grinder or food processor, but again, make sure they're organic, pastured and dried properly before you grind or eat them. Also, it's important to remember NOT to remove the membrane, the ultrathin "skin" between the shell and the outer shell, as this is where the nutrition comes from. Luckily, preparing your eggshells is an easy process:

1. Once you've used one or more organic eggs, save the shells, drop them into boiling water for about five minutes to clean them and remove bacteria.
2. Spread the shells on a paper towel placed on a baking sheet to dry. Meanwhile, preheat your oven to 180 degrees Fahrenheit.

3. Remove the paper towel, spread the shells out on the baking sheet and bake for around 10 minutes to further eradicate harmful bacteria. This step also serves to further dry them, which makes them easier to grind.
4. Grind the dried, baked eggshells in a coffee grinder (or a good-quality blender that grinds them very finely) until they attain a powdery substance.
5. Store the powder in an airtight container to keep out moisture.

Ways to Use Your Powdered Eggshells

I personally take one teaspoon of ground eggshells twice a day. They easily mix in water and have virtually no flavor. I love them because the extra calcium helps lower phosphate in my diet which is particularly challenging for kidney health. However, it is important to make sure you also add magnesium to balance the calcium otherwise you can develop a mineral imbalance that can lead to cramps.

According to one study,¹⁶ an eggshell contains around 2.07 grams of calcium. Therefore, adding half an eggshell to a smoothie can already get you close to the recommended reference daily intake of calcium (1,300 mg).¹⁷ This amount may be enough, since you'll have to consider the calcium you get from your other meals, too.

Other ways to get the benefits of powdered eggshells, without affecting the flavor of the foods, include:¹⁸

- In homemade pasta sauce or salad
- In juice or even water; stir it in and drink it down quickly before it settles to the bottom of the glass
- Coffee, as powdered eggshells are said to reduce or even eliminate bitterness when it's added to the grounds before brewing

Besides taking calcium through food or supplements, and aside from cleaning and crushing eggshells for consumption with food, you can also take the NEM supplements with the membrane intact to benefit your joints, although scientists say more studies are

needed. Besides the dietary intake of eggshells, you may find it interesting to learn that animal husbandry and [gardening gurus](#) alike have taken advantage of the benefits obtained through eggshells, including:

- Composting
- Chicken feed
- Pest control in gardens
- Healthier tomatoes
- Bird feed

One of the most amazing things about this way of supplementing your diet is that it's not just inexpensive, but it's almost free. However, another caution is for moderation. More is not better in this regard, but if your calcium level isn't where it should be, augmenting your intake with powdered eggshells is a viable option.

Sources and References

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