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## **Utilization of calcium from eggshells to target bone diseases**

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**U**ndernutrition affects the health and survival of mothers and their children due to a lack of availability to high-quality, nutritional meals. Inadequate dietary intake causes nutritional deficiencies, particularly calcium, which is necessary for growth and physiological function. The possibility of boosting dietary calcium intake by adding heat treated crushed eggshell to locally made cuisine was studied in this study. The hard, outer coating of an egg is called an eggshell. Calcium carbonate, a common type of calcium, makes up the majority of it. Protein and other minerals make up the remaining. Calcium is an important mineral found in a variety of meals, including dairy products. Many leafy and root vegetables have lower concentrations.

Eggshell powder made from hen eggs has been used as a natural calcium supplement for decades. Eggshells contain about 40% calcium, with each gram containing 381–401 mg.

Chicken eggshell has a high calcium concentration (380 mg calcium per gram) and a bioavailability of 39%, which is comparable to calcium carbonate. The most likely harm to human health from eggshell ingestion was identified as Salmonella. Experts concluded that boiling eggshells for 10 minutes while making hardboiled eggs and cooking crushed eggshell in staple dishes for another 20 minutes will kill the germs found in eggs. Ground eggshell could be a cost-effective way to boost calcium consumption.

Osteoporosis is a disease that causes weak bones and a

higher risk of fractures. In 2010, it afflicted an estimated 54 million senior citizens in the United States. Although ageing is a substantial risk factor for osteoporosis, a lack of calcium in the diet can also contribute to bone loss and osteoporosis over time. If you don't get enough calcium in your diet, supplements might help you meet your daily needs. Eggshell powder is a low-cost alternative.

Eggshell powder, coupled with vitamin D3 and magnesium, dramatically improved postmenopausal women with osteoporosis' bones by boosting bone mineral density. Purified calcium carbonate may not be as efficient as eggshell powder in lowering osteoporosis risk.

Collagen is the most abundant protein in the eggshell membrane. It also contains chondroitin, sulphate, glucosamine, and other minerals in modest doses. The trace levels of these health-promoting chemicals found in eggshell membrane are unlikely to have a major impact on your health.

### **Speaker Biography**

Fiza Asad has completed her MPhil in Food Science and Technology and she has done BS (Hons) in Human Nutrition and Dietetics. During her degree, she worked in hospitals as an interne dietitian where she used to deal patients with different diseases. In one of her internship, she has also worked as a food analyst. Other than this, she has given lectures on different topics of nutrition on social media and she is also working as a dietitian through her Instagram.

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