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Pain relief in an eggshell?

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The egg, both its yolk and white, is well known to be a nutritional powerhouse of protein, vitamins and minerals. But an almost invisible part of the egg - the membrane, the protective layer lining the inside of the shell - has lately attracted attention for its strength and durability.

Scientists have found that the eggshell membrane is a completely natural source of many nutrients, such as hyaluronic acid, glucosamine, chondroitin, collagen and amino acids that play a vital role in providing relief from joint pain, stiffness and connective tissue disorders.

Extracts from the membrane may also lessen the symptoms of osteoarthritis. It reportedly encapsulates a concentrated source of calcium that is more readily absorbed by the body compared with standard sources of calcium, and provides relief from joint pain.

Raymond Chung,
Nutritionist

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The benefits of these ingredients are lost once the egg is cooked. But a proprietary process carefully extracts the delicate membrane within minutes of cracking, so it can be purified into nutraceuticals.

According to results of a trial conducted by the National Osteoporosis Foundation, a daily supplement of 500 milligrams of eggshell membrane taken over 10 days was found to not only reduce joint pain, but also stiffness.



[1]In another study published in the *Clinical Interventions in Aging* journal, patients who took 500mg of natural eggshell membrane for 30 days were completely free of pain at the end of trial.

US-based supplier of commercialised eggshells ESM Technologies has developed a method to separate eggshell membrane from eggshells to produce 100 per cent pure natural eggshell membrane powder.

A pilot study done in 2009 showed that the powder is a possible new effective and safe therapeutic option for the treatment of pain and inflexibility associated with joint and connective tissue disorders.

[Eggshell membrane offers joint pain relief](#)

It also showed that significant proportions of treated patients might be helped considerably by the supplement. Another preliminary study in 2009 showed the powder significantly reduced

both joint pain and stiffness, compared with a placebo, in osteoarthritis of the knee.

However, more intensive and long-term studies need to be carried out before the benefits of eggshell membrane can be confirmed, says Dr Kong Siu-wah, specialist in orthopaedics and traumatology at Matilda International Hospital.

"Natural eggshell membrane is still not a popular supplement for osteoarthritis treatment in Hong Kong. So I can't make a conclusion on whether it is really beneficial," says Kong.

Raymond Chung Tsz-man, nutritionist at Albert Place Practice and Mineralysis, agrees.

"Although eggshell membrane naturally contains hyaluronic acid, glucosamine, chondroitin and collagen, which are important nutrients for cartilage health and recovery, there has been no research conducted by third-party medical centres or universities to prove that it's more effective than conventional drugs or food supplements in easing joint problems," he says. "The therapeutic concentration has to be identified by clinical trial."

Eggshell membrane may be a rich and cheap source of these nutrients and readily available from eggshell waste products, but one should bear in mind that it is not the only natural source of nutrients for joints.

Chung cites the example of traditional Chinese medicine food therapy that advocates chicken feet, pig knuckle, sea cucumber, cow's tendon and fish maw as joint protection foods. All these foods naturally contain hyaluronic acid, glucosamine, chondroitin, collagen and amino acids as building blocks for connective tissues and cartilage.

Also, these nutrients are not necessarily absorbed intact and, depending on the individual, the body may not fully utilise these nutrients as cartilage building blocks for joint recovery. Supplementation is to ensure sufficient levels of nutrients for joint recovery.

"Also, due to the recent avian flu issue, if the extraction method cannot ensure the extract is free from avian flu virus contamination, it can be a potential route for infection," says Chung.

Degenerative joint disease is extremely common, with the knee and hip frequently affected. People have a number of options in treating this problem, with evidence supporting strengthening of the muscles around the affected joint and weight loss for those individuals who are overweight.

Can nutritional supplements, such as glucosamine and eggshell membrane, help?

"While many people take glucosamine [and] chondroitin, there is poor evidence that these supplements improve patient symptoms greater than a placebo," says Dr Bradley Graw, orthopaedic surgeon at Sports, Orthopedic And Rehabilitation Medicine Associates Clinic in the San Francisco Bay Area.

"There is a low incidence of side effects, however, so if my patients do not have kidney problems, I do not dissuade them from taking these supplements."

Graw reminds his patients that not all supplements are made in the same way and that regulations do mandate the assessment of the quality or concentration of active ingredients - eggshell membrane included.

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[1] <https://www.scmp.com/sites/default/files/2013/08/05/cf16ceaea2dbb7af7aeed0c6170e0b7a.jpg>