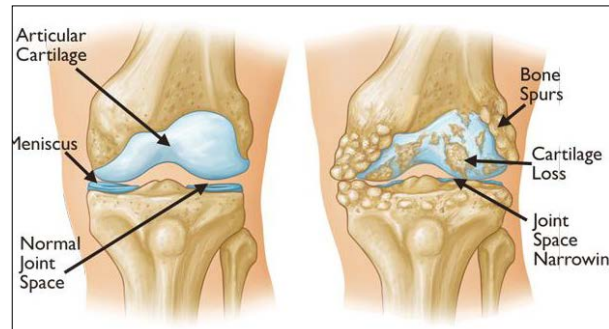


Benefits of *Emblica officinalis* and *Cissus quadrangularis* in Bone Degenerative Disorder Treatment

Osteoporosis is a bone degenerating disorder marked by decreased bone strength. While hormone replacement therapy is often resorted to for the treatment of osteoporosis, it is associated with serious side effects.

As a result there has been increasing interest in searching for some natural remedy for this commonly seen ailment. A study published in the *International Journal of Pharmacy and Pharmaceutical Sciences* looked into the efficacy of aqueous extract of *Emblica officinalis* (EO) alone or in combination with the petroleum ether extract of *Cissus quadrangularis* (CQ) for their anti-osteoporotic activity in ovariectomized experimental model.

Following the onset of osteoporosis in bilaterally ovariectomized models, they were administered reference doses of raloxifene, EO, CQ singly and/or in combination for a period of 6 weeks. Serum alkaline phosphatase (ALP), tartrate-resistant acid phosphatase (TRAP) and hydroxyproline levels were shown to increase significantly in ovariectomized models. Treatment with EO and CQ led to



significant elevation in serum ALP levels, while the serum TRAP and hydroxyproline levels showed restoration towards normal levels. Loss of bone mass and strength caused by osteoporosis was improved with EO and CQ treatments.

The individual effects of EO and CQ were found to be comparable with that of raloxifene.

EO and CQ were thus shown to effectively decrease bone loss and enhance bone strength. The use of these herbs can therefore be beneficial in the treatment of bone degenerative disorders.

Cardiovascular Health Benefits from Aged Black Garlic Extract

Aged black garlic, which is a whole raw garlic bulb fermented under controlled temperatures and humidity for approximately one month. Its unique aging process helps to increase the number of antioxidant compounds inside each bulb, including polyphenols, flavonoids, and melanoidins, and it has a lengthy history of use in traditional medicine in Asian countries for a number of uses.

Pharmactive Biotech recently released its aged black garlic extract, ABG10+, which has now undergone a clinical trial at the Autonomous University of Madrid led by Sara Amor, PhD, and published in the journal *Nutrients*.



In a 16-week study, groups of rats were either fed standard chow, or chow that contained high amounts of fat and sucrose. From week 8 on, half of the high-fat diet rats were treated with Pharmactive's aged black garlic extract, which resulted in a lower mean caloric intake, body weight, triglycerides, LDL cholesterol, insulin, and leptin serum concentrations and a higher HDL cholesterol than non-treated rats. Additionally, the aged black garlic extract decreased adipose weight, and caused re-

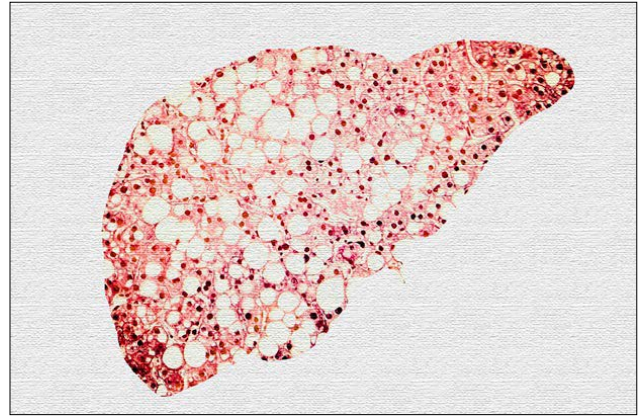
ductions in the obesity-induced vasoconstriction of rats on the high-fat diet. Researchers said that further studies are needed in order to assess the differences in supplement bioavailability between rats and humans.

ABG10+ is the first black garlic extract to be standardized to a higher concentration of SAC, via high performance liquid chromatography-based technology, and is produced using the company's proprietary aging process.

"As ABG10+ treatment significantly reduced body weight gain in HFD-fed rats, the improved metabolic and vascular profiles of these animals may be the result of the decrease in body weight," the authors said.

Dietary SCFA Intake Improves Hepatic Metabolic Condition via FFAR3

Fermented foods represent a significant portion of human diets with several beneficial effects. Foods produced by bacterial fermentation are enriched in short-chain fatty acids (SCFAs), which are functional products of dietary fibers via gut microbial fermentation. In addition to energy sources, SCFAs also act as signaling molecules via G-protein coupled receptors such as FFAR2 and FFAR3. Hence, dietary SCFAs in fermented foods may have a direct influence on metabolic functions. However, the detailed mechanism by dietary SCFAs remains unclear. Here, we show that dietary SCFAs protected against high-fat diet-induced obesity in mice in parallel with increased plasma SCFAs without changing cecal SCFA or gut microbial composition. Dietary SCFAs suppressed hepatic weight and lipid synthesis. These effects were abolished in FFAR3-deficient mice but not FFAR2-deficient.



Thus, SCFAs supplementation improved hepatic metabolic functions via FFAR3 without influencing intestinal environment. These findings help to promote the development of functional foods using SCFAs.

Importance of Vitamin D Levels Post Hip Fractures in Elderly Patients

Older people presenting with hip fractures requiring surgery have a high prevalence of hypovitaminosis D, which is an important modifiable risk factor for falls and fractures. Inadequate sun exposure is the main reason for vitamin D deficiency in older people. Vitamin D supplements, with or without calcium, have been shown to reduce falls and fracture risk in this population. A small number of randomised controlled trials (RCTs) have shown that increased 25-OHD levels with a loading dose of vitamin D may improve falls and fractures. It is not previously known whether oral vitamin D replenishment using a loading dose is effective, and if it is, what is its interplay with characteristics of patient?— particularly with



lower limb mobility and 25-OHD levels. The results of a recent multisite randomised controlled trial (REVITAHIP) provide early evidence of the benefits of an early loading-dose oral vitamin D replenishment on functional mobility, falls, fractures, grip strength, health-related quality of life and mortality.

This study provides an overall positive view on vitamin D

replacement (which is deemed necessary) and showed that treatment with 250,000 IU cholecalciferol after hip fracture surgery in older patients (followed by regular daily maintenance vitamin D) is associated with higher percentage of replete 25-OHD and reduced rate of falls in the short term. Recognition of these factors may also improve the delivery of post-hip fracture surgical and rehabilitation care in this often vulnerable population. The author recommends further confirmation of the results of this latest research using a larger number of participants (with a higher diversity in ethnic populations who may be likely to have higher prevalence of hypovitaminosis D) in future studies.

Omega-3 Fish Oil Supplements for Managing Cardiac Disease

Omega-3 fish oil contains both docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA). Omega-3 fatty acids are essential nutrients that are important in preventing and managing heart dis-

ease.

Findings show omega-3 fatty acids help to:

- Lower blood pressure

- Reduce triglycerides
- Slow the development of plaque in the arteries
- Reduce the chance of abnormal heart rhythm
- Reduce the likelihood of heart attack and stroke
- Lessen the chance of sudden cardiac death in people with heart disease

The American Heart Association (AHA) recommends that everyone eats fish (particularly fatty, coldwater fish) at least twice a week. Salmon, mackerel, herring, sardines, lake trout, and tuna are especially high in omega-3 fatty acids. While fish are the best bet for getting omega-3s in diet, fish oil supplements are also available for those who do not like fish.

The AHA says taking up to 3 grams of fish oil



daily in supplement form is considered safe.

Side effects from omega-3 fish oil include- a fishy taste in your mouth, fishy breath, stomach upset, loose stools, and nausea.

Taking more than 3 grams of fish oil daily may increase the risk of bleeding.

Multiple-Faceted Benefits of Glucosamine Sulfate Supplements

Glucosamine sulfate is a naturally occurring chemical found in the human body. It is in the fluid that is around joints.



Dietary supplements that contain glucosamine often contain additional ingredients. These additional ingredients are frequently chondroitin sulfate, MSM, or shark cartilage. Some people think these combinations work better than taking just glucosamine sulfate alone. So far, researchers have found no proof that combining the additional in-

gredients with glucosamine adds any benefit.

Glucosamine sulfate is taken by mouth for osteoarthritis, glaucoma, weight loss, joint pain caused by drugs, a bladder condition called interstitial cystitis, jaw pain, joint pain including knee pain, back pain, multiple sclerosis, and HIV/AIDS.

Glucosamine is also in some skin creams used to control arthritis pain. These creams usually contain camphor and other ingredients in addition to glucosamine.

Glucosamine sulfate is used parenterally for osteoarthritis. Glucosamine sulfate can improve pain and movement in knees affected by osteoarthritis. It seems to work about as well as some non-prescription pain medications.

In addition to relieving pain, glucosamine sulfate might also slow the breakdown of joints and prevent the condition from getting worse if it is taken for several years. Some research shows that people who take glucosamine sulfate might be less likely to need total knee replacement surgery.