

rheumatoid ARTHRITIS

The Role of Supplements in Joint Health

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Joint pain can be caused by certain injuries or conditions, resulting in inflammation which can be debilitating. Sports injuries may cause joint pain and affect sporting performance or regular daily activity. Arthritic conditions, such as rheumatoid arthritis (RA) and osteoarthritis (OA), are also associated with joint pain and other symptoms include swollen joints, stiffness of joints and loss of function. Inflammation is the predominant cause of pain and may be attributable to stress in the joints seen in OA, or an autoimmune response seen in RA.

Managing inflammation remains the corner-

stone of treatment for patients who have joint pain. Lifestyle modification through a nutritious balanced diet which provides anti-inflammatory molecules such as omega-3 fatty acids ($\Omega 3$ FAs) from fatty fish and other phytochemicals and antioxidants found in plant fibres, fruit, vegetables and whole grains. The diet should be low in inflammation-inducing molecules from saturated and trans fatty acids, sugar and refined carbohydrates, and should be eucaloric.

Patients should aim to reach a normal body weight since carrying extra weight places more stress on joints and obesity is also associated with increased inflammation. Regular physical

activity has been proven to reduce the symptoms of joint pain and improve mobility; however, exercise should take place under professional supervision so as to not cause further damage or exacerbate an existing problem. Other lifestyle modification factors include abstaining from smoking and consuming alcohol in moderation. Pharmacological therapy to control pain and inflammation is also often an important part of treatment for patients with joint pain.

A number of supplements can be used as an adjunct to lifestyle modification and pharmacological therapy. Commonly used ingredients in joint formula supplements include the following:

Glucosamine and chondroitin: Glucosamine and chondroitin are essential components of the proteoglycan in normal cartilage, which is the main reason for their use as supplements in the management of OA, due to cartilage degradation in the disease and joint pain in general. Glucosamine may stimulate proteoglycan synthesis by chondrocytes, thus repairing cartilage. Glucosamine is used as an agent to help relieve the symptoms and delay the progression of OA, and may reduce the need for pain medication.

Chondroitin is an important component of the structural and functional integrity of joints as it constitutes the majority of glycosaminoglycans in articular cartilage. Chondroitin helps maintain the viscosity in joints, stimulates cartilage repair and inhibits enzymes that degrade cartilage. These properties may result in pain relief and improved joint mobility.

Glucosamine and chondroitin should be used together as the combination bridges the symptomatic and preventative approach since they may have the ability to maintain and rebuild cartilage, reduce joint pain and reduce the progression of joint degeneration.

$\Omega 3$ FAs: $\Omega 3$ FAs, particularly docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA), are found in fatty fish (e.g. mackerel, herring, sardines and pilchards) and have been proven to reduce inflammation. Patients are encouraged to include fatty fish in their diets at least twice a week or to take it as supplement (EPA 50mg/kg/day; DHA 30mg/kg/day) to reap the anti-inflammatory benefits of $\Omega 3$ FAs.

Galactolipid: Galactolipid (GOPO) is a phytochemical with antioxidant properties, found in rose hip. GOPO has anti-inflammatory properties and has been shown to reduce pain and feelings of discomfort in patients with OA and RA. Rose hip powder has been shown to inhibit chemotaxis of neutrophils and lower C-reactive protein in patients with OA and RA, proving its anti-inflammatory properties.

Methylsulfonylmethane: Methylsulfonylmethane (MSM, or dimethylsulfone) is an organic sulphur compound belonging to a class of chemicals known as sulphones. MSM provides sulphur, which behaves like an antioxidant in the body and is also a component of chondroitin sulphate in cartilage. The effects of supplemental MSM are poorly understood. Several researchers have suggested that MSM has anti-inflammatory effects. Clinical evidence from pilot studies of MSM has suggested some benefits, particularly for the treatment of OA. Further studies are needed to test the usefulness of MSM.

Other ingredients for managing joint pain: Some ingredients (herbal or other substances), which behave like medications, are used for joint pain. These remedies are often not regulated and should be used with caution. Examples include Thunder god vine, feverfew, yucco root, willow bark, S-adenosylmethionine (SAME).

Conclusion: Lifestyle modification remains important in patients with joint pain. Medication may be necessary for certain conditions, but these patients must still improve their lifestyles in order to prevent further oxidative stress from contributing towards inflammation. Certain supplements may be considered as an adjunct to lifestyle modification, but they cannot be used as treatment, and further studies are required to prove the clinical effectiveness of some supplements.

References available on request.

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NATURAL JOINT HEALTH

"Herbal anti-inflammatory medicines have been researched as an alternative treatment for joint relief. *Rosa Canina* (or dog rose) has attracted particular interest for its possible pain alleviating properties.

SCIENTIFICALLY TESTED

In two medical literature reviews in 2006⁽⁶⁾ and 2008⁽⁷⁾ it was concluded that there is a *proven overall antioxidative, anti-inflammatory effect and pain relieving potential of powder from Rosa Canina*.

EFFECTIVE IN 3 WEEKS

In a clinical trial published by a Danish doctor in 2005⁽⁵⁾, it was found that joint pain and stiffness was significantly reduced in 4 out of 5 people, within 3 weeks of consuming a patented supplement from this rose. During the 3-month treatment period, there was a significant reduction in the consumption of traditional painkillers".

Content provided by Registered Dietitians.

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