

Smarticol®

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With the ageing population and increasing welfare across the world, we face new health challenges. Joint problems due to arthritis is the major concern. More than 350 million people have arthritis globally (Global RA Network, 2021). Rheumatoid Arthritis is a disease which is not uncommon and estimated to have a prevalence of about 1% of the population in India. It is an autoimmune disease, meaning the body's immune system attacks its own healthy tissues.

Worldwide, an estimated 500 million people have osteoarthritis . Osteoarthritis has been affecting more than 15 million adults annually, with India contributing 22% to 39% share to the global numbers.



The solution is SMARTICOL®. This undenatured collagen type II food supplement helps prevent collagen degradation in the joints, which is the cause of cartilage damage, leading to joint stiffness and pain. Hence, prevention of collagen degradation means prevention of arthritis- related pain and immobility. SMARTICOL® as a food supplement prevents arthritis-related stiffness and pain, improving mobility.

Select the superior collagen that can strategically help with both types of arthritis



**RHEUMATOID
ARTHRITIS**

OSTEOARTHRITIS



A CHAMPION IN BOTH FORMS OF ARTHRITIS

Rheumatoid Arthritis	Osteoarthritis
Differentiates T cells to Treg cells ¹	Helps in natural synthesis of collagen
Inhibits the release of pro-inflammatory cytokines ¹	Helps reduce arthritic pain ²
Initiates the release of anti-inflammatory cytokines ¹	Supports joint function and joint flexibility
Decreases/prevents collagen destruction	Improves overall quality of life



WHY SMARTICOL[®]

Undenatured type II collagen: an effective arthritis remedy

- Unique ingredient derived from chicken sternum and thus contains naturally occurring type-II collagen.
- Unlike other joint health ingredients, it's small 40mg^{4,5} dose makes daily pill compliance easy.

8 out of 10 consumers say easy-to-swallow³

is important when making supplement purchasing decisions



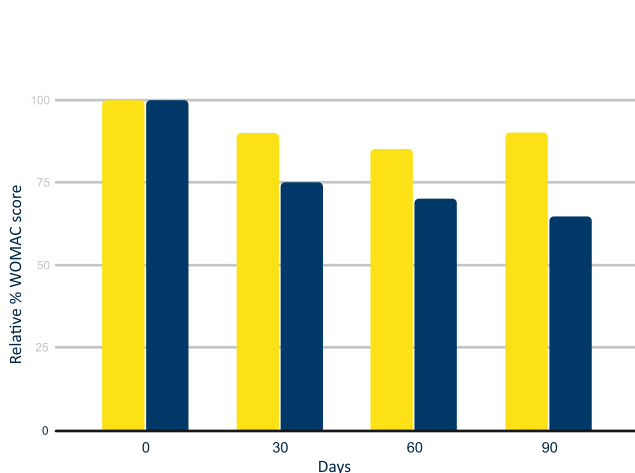
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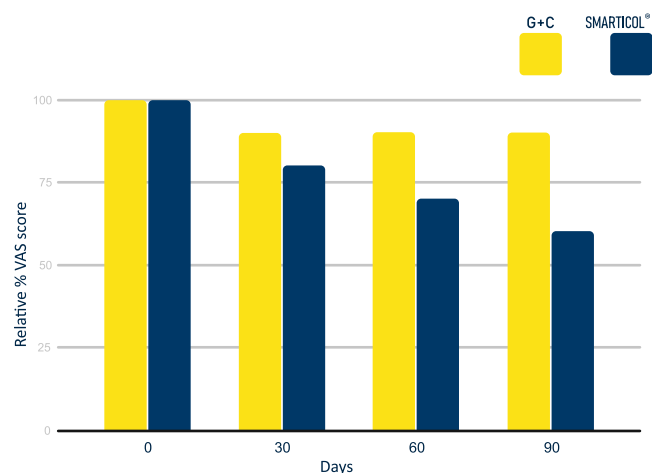


WHY SMARTICOL[®] is better than glucosamine + chondroitin (G+C) Combinations

A clinical study of undenatured collagen type II indicates a significantly higher effectiveness in 90 days, in terms of pain and stiffness reduction (WOMAC- score/VAS method), than a dosage of chondroitin + glucosamine (see references).



Treatment with SMARTICOL-II* was most effective and reduced WOMAC scores by 33%¹



Treatment with SMARTICOL-II* was most effective and reduced VAS scores by 40%¹

The Smartness of **S**marticol[®] KEEPS YOU MOVING

SMARTICOL[®] helps suppress and prevent inflammatory reactions, and stimulates regeneration of cartilage and it reduces joint stiffness and pain.

The dose of Hydrolyzed collagen taken depends on whether it is denatured (hydrolyzed) or undenatured. For skin and joint health, the daily dose of “DENATURED OR HYDROLYSED” collagen is around 10 grams per day.

For treatment of osteoarthritis and rheumatoid arthritis, “UNDENATURED” collagen is taken at a much lower daily dose (often around 40 milligrams), and while it doesn't need to be taken at any particular time of the day, it may be ideal to take it on an empty stomach before breakfast.

whereas hydrolyzed collagen is made up of many fragments some of them are important for the synthesis of cartilage while most of them are unused. This is why hydrolyzed collagen is used in higher dose approx 10 grams to meet the fragments of interest for the biosynthesis of cartilage.

Amino acid content of Hydrolyzed collagen is as same as UNDENATURED-II but enzymes can easily use required part of UNDENATURED-II for cartilage synthesis so it is used in lower dose with high efficiency.

By and large, HYDROLYSED collagen seems fairly safe. One potential concern is that collagen (in dosages of around 10 grams per day) has been shown to increase oxalate levels in urine, likely because collagen consists of approximately 10% hydroxyproline, and a major metabolite of hydroxyproline is oxalate. As a result, higher doses of HYDROLYSED collagen could increase the risk of oxalate-based kidney stones in susceptible individuals.

SMARTICOL[®] contains approximately 40% undenatured collagen type II, that is 100% intact. This means that the body will hydrolyse the collagen to functional peptides, inducing oral tolerance.

SMARTICOL[®] also contains >10% chondroitin, needed for flexibility of the cartilage.. The safety of undenatured collagen type II has been extensively examined and demonstrated in various studies.

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Fulfills demand of consumer for an easy to swallow, Effective joint health supplement

- Supported by clinical studies⁵
- Clinically proven better at reducing joint discomfort than most preferred therapies^{5,6}
- Natural way of action that signals the immune system to build new joint cartilage
- More patient compliance with only one small dose per day³
- Works on root cause and across wide range of applications⁷

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1. Gencoglu H,Orhan C,Sahin K, of Undenatured Type II Collagen in Joint Health & Disease :A Review on the Current knowledge of Companion Animals,Animals (Basel).2020;10(4): 697
2. Crowley Dc,Lau Fc Sharma P et al.Safety & efficacy of Undenatured Type II Collagen in the treatment of Osteoarthritis of the knee: a clinical trial, Int J Med Sci,2009;6(6).312-321
3. Natural Marketing Institute .(2020),supplements/OTC/Rx Trends . US and Global Databases-U.S. & European data averages.
4. Lugo et al (2013).Undenatured type II collagen for joint support:a randomized double-blind,placebo-controlled study in healthy volunteers.J int Soc Sport Nutr,10(1) 48.doi:10.1186/1550-2783-10-48
5. Crowley et al.(2016).Safety and efficacy of Undenatured Type II Collagen in the treatment of osteoarthritis of the knee: a clinical trial.Int j Med Sci,6(6),312-321. doi:10.7150/ijms.6.312
- 6 Lugo et al (2016).Efficacy & tolerability of Undenatured Type II Collagen supplement in modulating knee osteoarthritis symptoms:a multicenter randomized,double blind,placebo-controlled study.Nutr j,15(14).doi:10.1186/s12937-016-0130-8.
- 7 Juturu.el al.(2021).Recovery of Undenatured Collagen Type II from Different Prototypes of Food and Beverages,Using Enzyme-Linked,Immunesorbent Assay (ELISA).Current Developments in Nutrition,5(2),327.doi:10.1093/cdn/nzab037_037

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