

DESIGNED FOR  
*Bone Health Solutions*

# ARTHRO-E PLUS

4 Ingredients to  
maximised your needs

- ✓ Hydrolysed Chicken Sternal Cartilage
- ✓ Tumeric Rhizome Extract
- ✓ Black Pepper Fruit Extract
- ✓ Vitamin E

VEGETABLES CAPSULES \* 2 CAPSULES A DAY  
**60**



## Product Ingredients

<i>Hydrolysed Chicken Sternal Cartilage</i>	<b>250mg</b>
<i>Providing:</i>	
<i>Hydrolysed Collagen Type-II</i>	<b>150mg</b>
<i>Chondroitin Sulfate</i>	<b>50mg</b>
<i>Hyaluronic Acid</i>	<b>25mg</b>
<i>Tumeric (Curcuma Longo) Rhizome Extract</i>	<b>150mg</b>
<i>Black Pepper (Piper nigrum) Fruit Extract</i>	<b>5mg</b>
<i>Vitamin E</i>	<b>5 IU</b>

Patented Ingredients:



  
**MEDICWAVE**

# ARTHRO-E PLUS

EVERY 2 CAPSULES CONTAIN:

<b>1</b> <b>TUMERIC</b> 300MG		<b>4</b> <b>TYPE II COLLAGEN</b> 300MG <small>BioCell Collagen</small>
<b>2</b> <small>BIOPERINE</small> <b>BLACK PEPPER</b> 10MG		<b>CHONDROITIN SULFATE</b> 100MG <small>BioCell Collagen</small>
<b>INCREASE BIOAVAILABILITY OF CURCUMIN</b> <b>2000X</b>		<b>HYALURONIC ACID</b> 50MG <small>BioCell Collagen</small>
<b>PAIN RELIEF</b>	<b>3</b> <b>VITAMIN E</b> 10 IU	<b>PROMOTE JOINT COMFORT</b>

—● 2 CAPSULES A DAY



## Awarded "Best Health Ingredient 2011"

In 2011, BioCell Technology was also awarded Frost & Sullivan's Customer Value Enhancement of the Year Award in Bone and Joint Health Ingredients for its flagship dietary ingredient, BioCell Collagen®.

# BIOCELL

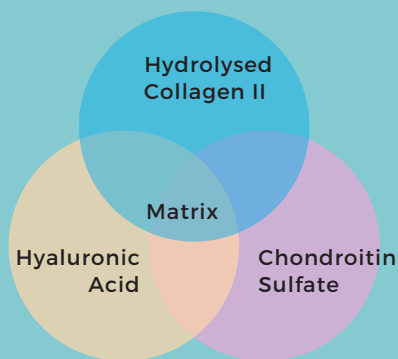


## NATURE'S PREMIER COLLAGEN & HYALURONIC ACID

### ABOUT BIOCELL

BioCell Collagen® is a clinically studied dietary ingredient composed of naturally-occurring hydrolyzed collagen type II peptides, chondroitin sulfate, hyaluronic acid. BioCell's unique composition is patented and has undergone human clinical trials proving its efficacy. BioCell Collagen® utilizes a patented Bio-Optimization™ process, which ensures remarkable bioavailability as well as rapid absorption into the body.

### Unique Synergistic Ingredients



The synergy of biomolecules found in BioCell Collagen®'s unique matrix offers multi-dimensional nutritional support for the health of connective tissues of the skin, joint, tendon, and ligament.\* BioCell Collagen® has a comprehensive approach to joint health, one that not only targets cartilage, but the related tendons, ligaments, and synovial fluid. Glucosamine and chondroitin formulations were the standard of care in joint health for more than two decades with limited success.

### JOINT HEALTH BENEFIT

BioCell Collagen® is clinically shown to

- Promote joint comfort & mobility\*
- Enhance post-exercise recovery\*
- Support skin & joint collagens (type I, II & III)\*
- Help stimulate cartilage renewal\*
- Promote tendon and ligament connective tissue recovery following intense exercise\*

# AN INNOVATIVE, COMPREHENSIVE SOLUTION FOR JOINT HEALTH



## 1. Clinically proven

Multiple human clinical trials over the decade demonstrated the safety and efficacy of BioCell Collagen in significantly improving joint comfort and mobility.

## 2. Patented hydrolysis process for efficient absorption

BioCell Collagen is produced by using a patented hydrolysis process which optimises the molecular size of collagen, HA and chondroitin sulphate for fast and effective absorption. For example, a study showed that consumption of BioCell Collagen led to an increase in blood HA levels by sixty times.

## 3. Replenishing structural components essential for healthy joints

BioCell Collagen provides the building blocks of macromolecular collagen, HA, and chondroitin sulphate essential for the healthy structure and function of cartilage and synovial fluid.

## 4. Stimulation of cartilage chondrocytes by hydrolysed collagen type II

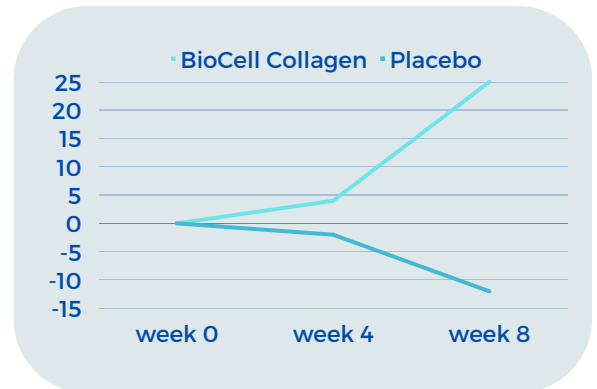
BioCell Collagen is not only bioavailable, it's also biologically active. Chondrocytes, residing exclusively in the cartilage, are responsible for the biosynthesis of collagen type II, HA, and chondroitin sulphate. Hydrolyzed collagen type II contained in BioCell Collagen was shown to stimulate these cells to produce collagen type II, suggesting that BioCell Collagen may help regenerate degraded cartilage.

## Safe:

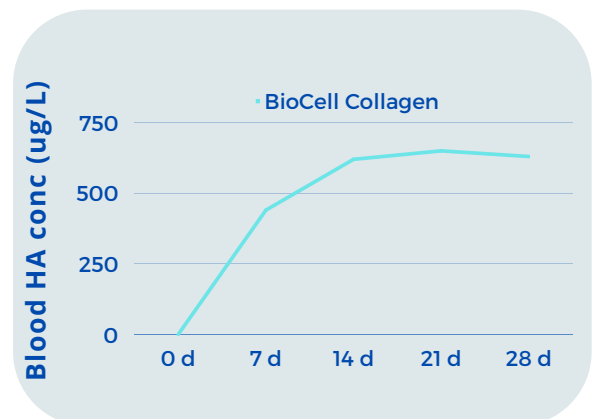
No adverse events associated with BioCell Collagen are reported during all clinical studies. BioCell Collagen is considered to be GRAS (generally recognised as safe) as well.

BioCell Collagen offers a patented, comprehensive solution for healthy joints through multiple mechanisms of action.

## Improving Joint Conditions



## HA Bioavailability



## 5. Provision of highly bioavailable HA essential for joint lubrication

HA, found in virtually all tissues, plays two important roles in the joint. First it acts as a ket structural molecule to make a healthy cartilage. Second, HA serves as a major lubricating molecule of the synovial fluid. BioCell Collagen is a nature's premier source of this versatile molecule as well as collagen type II.



# TUMERIC

## CURCUMIN EXTRACT



### ABOUT TURMERIC ANTI-INFLAMMATORY PROPERTIES

Turmeric is a widely used nutraceutical for various ailments due to its anti-inflammatory properties.

In-vitro studies have shown turmeric modulates the NF kappa Beta immune response in a similar way to non-steroidal anti-inflammatory drugs (NSAIDs).

THERAPEUTIC EFFECTS OF TURMERIC OR CURCUMIN EXTRACT ON PAIN AND FUNCTION FOR INDIVIDUALS WITH KNEE OSTEOARTHRITIS: A SYSTEMATIC REVIEW

### FINDINGS

- BASED ON EVIDENCE FROM RANDOMISED CONTROLLED TRIALS, THERE IS DATA SUPPORTING THE USE OF TURMERIC THERAPY ON PATIENTS WITH KNEE OSTEOARTHRITIS TO IMPROVE PAIN AND PHYSICAL FUNCTION. THOUGH FINDINGS DO NOT SUGGEST IMPROVEMENT IN PERFORMANCE-BASED OUTCOMES.
- TURMERIC APPEARS TO BE SAFE AND WITHOUT SEVERE SIDE EFFECTS.

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PUBLISHED ONLINE 2021 JAN 13. DOI: 10.1136/BMJSEM-2020-000935

## CURCUMIN: ANTIOXIDANT AND ANTI-INFLAMMATION PROPERTIES



### ANTIOXIDANT

Researchers suspect that some or all painful arthritis inflammation may be caused by free radicals in the body. Many researchers believe that turmeric and its essential components, curcuminoids, have antioxidant properties and can be part of a diet that reduces the risk of disease and its effects



### TNF INHIBITOR

Evidence suggests curcumin may suppress the body's response to tumor necrosis factor (TNF), a chemical produced by the immune system that causes inflammation related to rheumatoid arthritis, psoriatic arthritis, ankylosing spondylitis and other arthritic conditions. Curcumin's role in inhibiting TNF not yet well understood and research is underway.



### COX INHIBITOR

Typical non-steroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen and naproxen, work by blocking both COX-1 and COX-2 enzymes. Researchers have found that curcumin has the chemical properties of a COX inhibitor and can provide modest pain relief.



Analysts estimate curcumin accounts for only about 3 to 5% of turmeric. Arthritis pain relief may require ingesting more curcumin than a person eats in a typical diet, so advocates often recommend a dietary supplement.

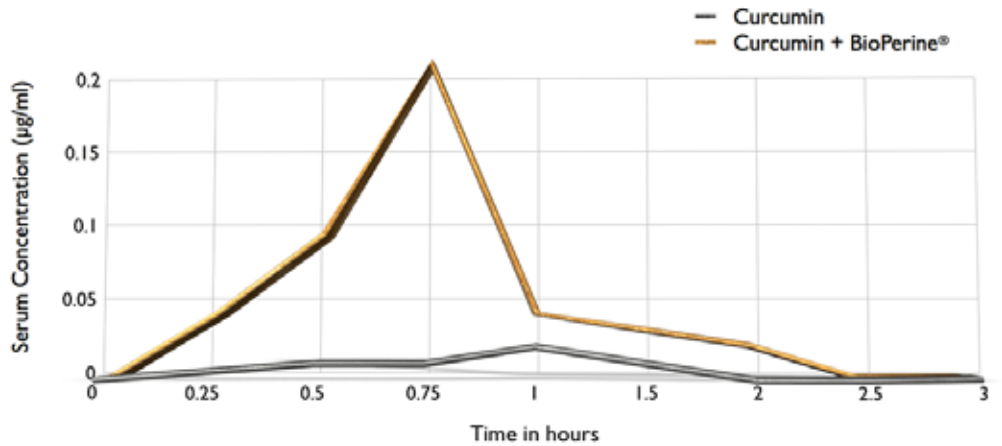
# BLACK PEPPER EXTRACT

## A NATURAL BIOAVAILABILITY ENHANCER

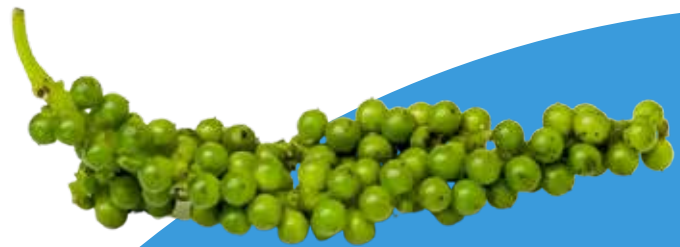
A clinical study done at St. John's Medical College, Bangalore, India and published in *Planta Medica* journal in 1997 provided clinical evidence of piperine's role in increasing the bioavailability of Curcumin, and has become one of the most downloaded papers of that journal.

BioPerine® significantly improved the uptake of Curcumin—the healthful extract from turmeric roots with clinically validated efficacy in a wide range of health conditions ranging from inflammation to cancer.

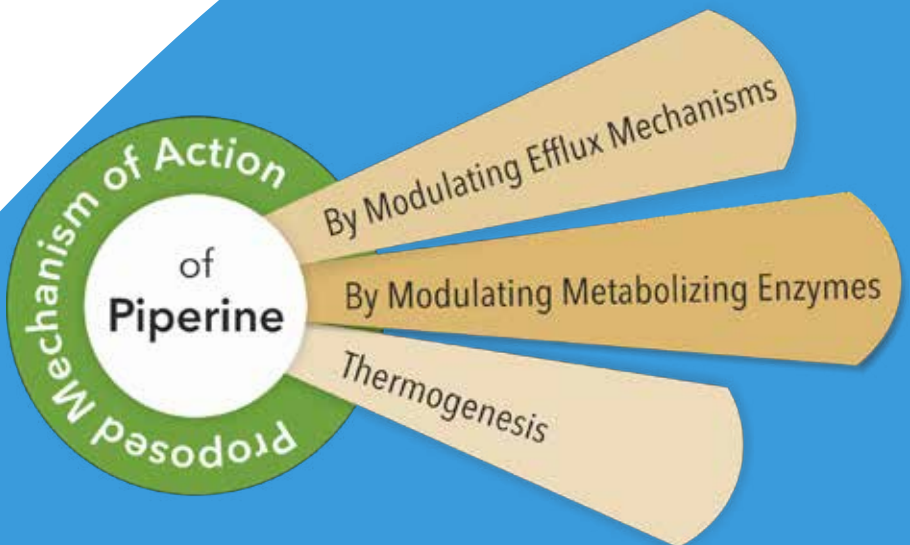
Bioavailability of Curcumin (2000 mg) when co-administered with BioPerine® (20 mg) was enhanced by 20-fold or 2000% compared to bioavailability of Curcumin alone at doses that were devoid of adverse side effects.



A NATURAL BIOAVAILABILITY ENHANCER  
 RECOGNIZED AS SAFE (GRAS)  
 ACT AS ANTIOXIDANT, ANTI-INFLAMMATION, PAIN RELIEF



## MODE OF ACTION



Various key mechanisms have been proposed for the bioavailability enhancing ability of the black pepper extract. Important mechanisms include inhibition of P-glycoprotein, inhibition of enzymes involved in glucuronidation, and thermogenesis.

# VITAMIN E

## SLOW DOWN THE PROGRESSION OF OSTEOARTHRITIS

Vitamin E is a potential agent to prevent or treat osteoarthritis due to its antioxidant and anti-inflammatory effects.

Current treatment of OA focus on symptomatic relief, however, they lack efficacy in controlling the progression of this disease, Vitamin E is safe to use and may delay the progression of OA by acting on several aspects



### Act as Antioxidant

**+** Vitamin E is essential for the structural and functional maintenance of skeletal muscle. Vitamin E supplementation has been shown to up regulate the activity of antioxidant in the musculoskeletal system..

### Anti-inflammatory

**+** Vitamin E can inhibit NKf B pathway and inflammation cycle of joint destruction in osteoarthritis.

### Delayed the progression of OA

**+** Vitamin E can inhibit NKf B pathway and inflammation cycle of joint destruction in osteoarthritis.



#### Cellular studies

*Vitamin E mitigated oxidative stress in cartilage explants or chondrocyte culture invoked by mechanical stress or free radicals.*



#### Animal Studies

*Vitamin E treatment prevented cartilage degeneration and improve oxidative status in animal models of osteoarthritis.*



#### Observation Studies

*Low circulating or synovial Vitamin E was observed in human osteoarthritic patients compared to healthy controls. Vitamin E was related to induction or progression of osteoarthritis in general population.*



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