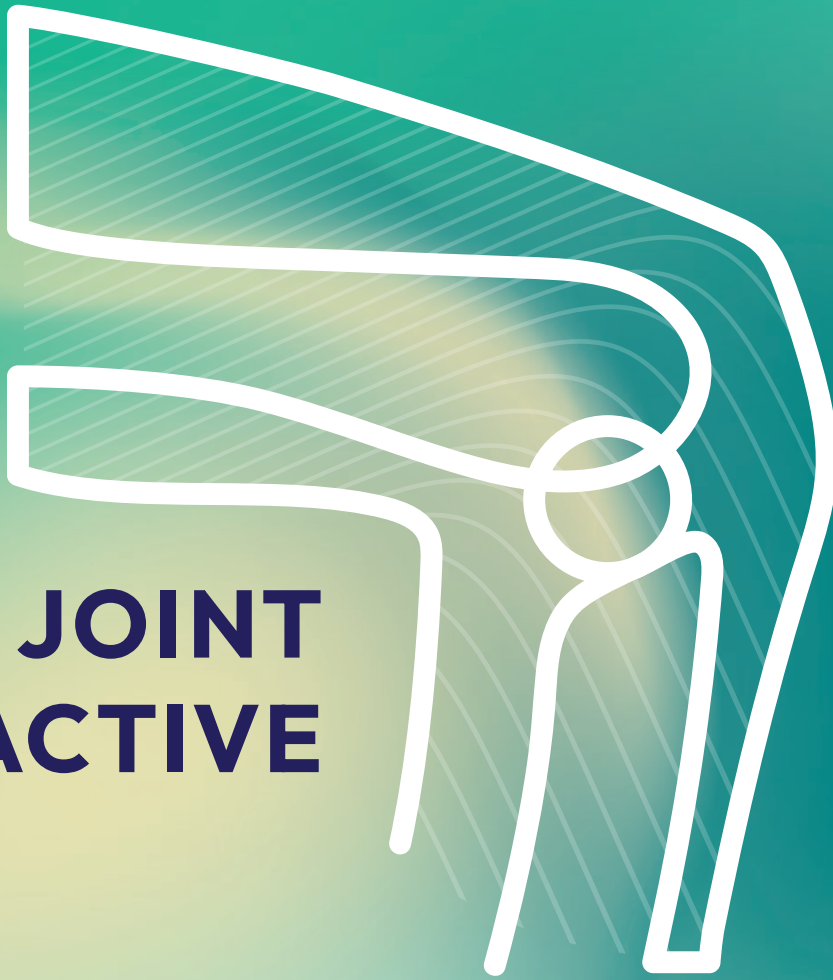


# Evera<sup>®</sup>

NUTRITION

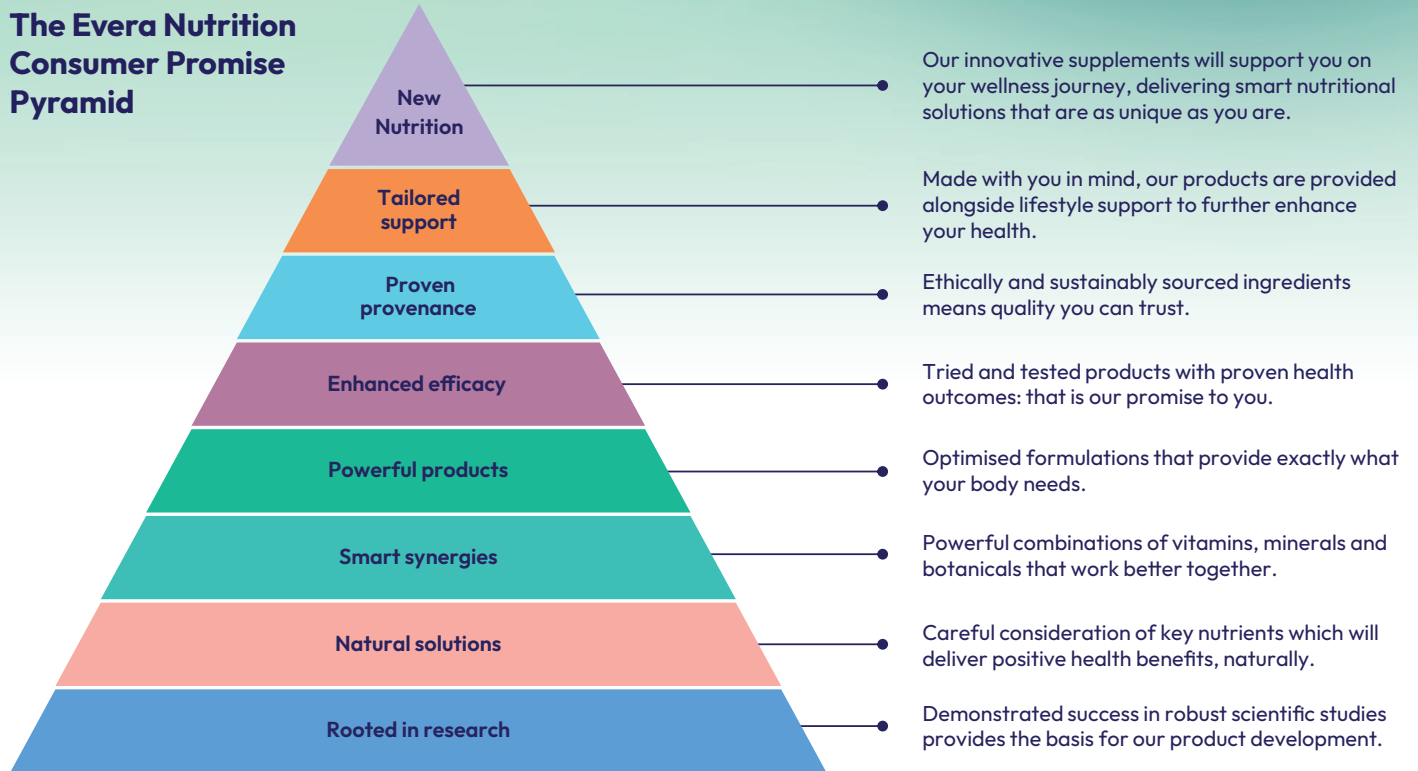
*Your Health Redefined*

**JOINT  
ACTIVE**



Healthy joints and good mobility are crucial for a comfortable and active life, allowing for ease of movement, reduced pain and discomfort as well as improved overall function. They also play a role in preventing injuries and maintaining good posture.

**The Evera Nutrition  
Consumer Promise  
Pyramid**



**Delivering innovation in supplementation**

Good mobility allows for a full and pain-free range of motion, and enhances the ability to bend and stretch, allowing for greater ease of movement which leads to improved balance and coordination that can help reduce the risk of falls. Healthy joints and mobility allow individuals to engage in daily activities and hobbies with greater ease and comfort, contributing to a higher quality of life.

## The Anatomy of Synovial Joints

Synovial joints are the most common type of joint in the human body, characterised by their capacity for a wide range of motion (1). They are essential for mechanical support and facilitating various movements, such as flexion, extension, abduction, adduction, and rotation.

There are six types of synovial joint:

1. Hinge Joint (e.g. knee; elbow)
2. Ball and Socket Joint (e.g. shoulder; hip)
3. Pivot Joint (e.g. the neck)
4. Plane Joint (e.g. fingers and toes)
5. Saddle Joint (e.g. thumb)
6. Condyloid Joint (e.g. wrist)

Understanding the intricate structures within these joints provides insights into the complex mechanisms underlying age-related changes and their effects on joint health and function.

Changes in the structure of synovial joints play a pivotal role in shaping an individual's mobility and overall wellbeing. Such alterations involve intricate interactions between structural elements like Articular Cartilage (AC), synovial membrane and fluid, ligaments and tendons, and the joint capsule, all of which can result in decreased joint function (2).

## Issues Around Deterioration of Synovial Joints

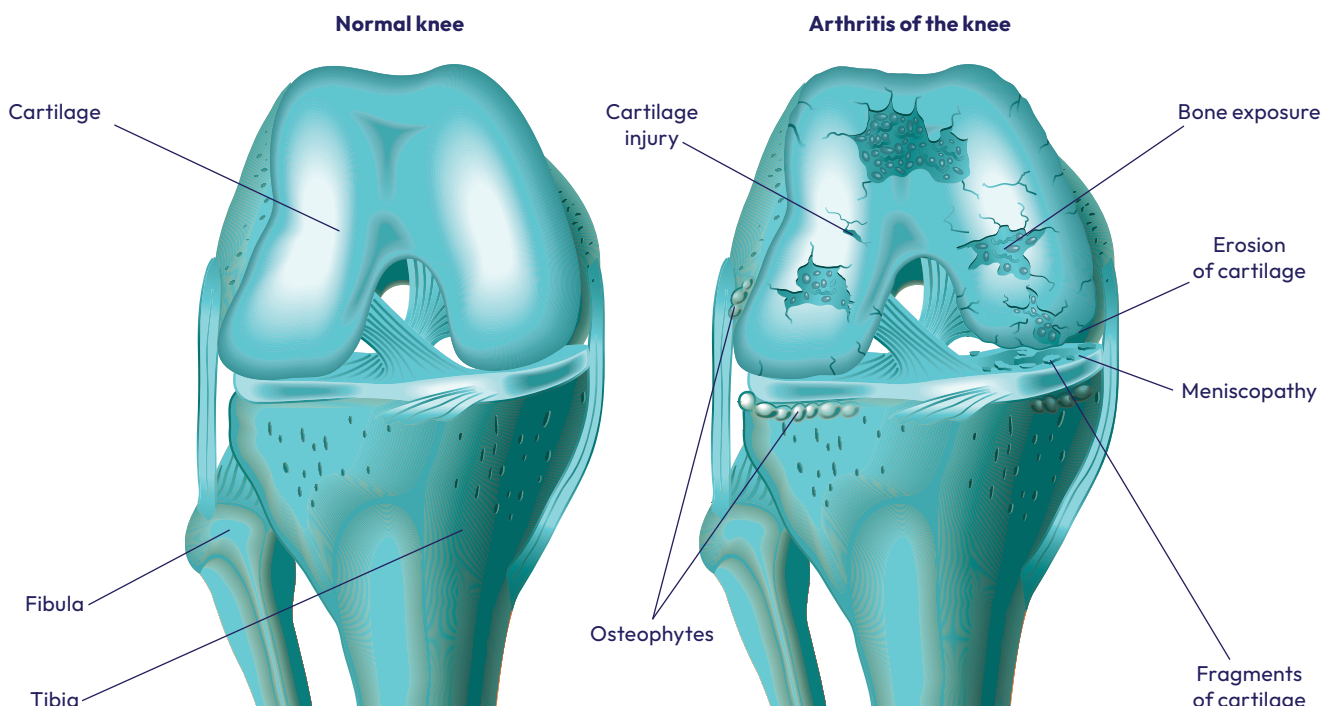
When Articular Cartilage undergoes structural changes, including thinning, loss of elasticity, and increased fibrillation and fissuring, this leads to reduced shock absorption, increased susceptibility to damage, and the development of degenerative joint conditions such as Osteoarthritis (OA) (3).

Changes in the composition and viscosity of synovial fluid can contribute to increased joint surface friction, discomfort, stiffness, and decreased range of motion. With aging, ligaments and tendons may experience a decrease in tensile strength and elasticity, leading to decreased joint stability and an increased risk of injury (4).

Should flexibility and elasticity of the joint capsule diminish, a decrease in the joint's range of motion and flexibility can occur. Changes to the synovial membrane may lead to the accumulation of waste products, production of inflammatory mediators and an increase in inflammatory responses within the joint resulting in joint stiffness, discomfort, and restricted range of motion, significantly influencing joint performance and mobility.

## The Vicious Cycle of Inflammaging and Joint Health

Chronic low-grade inflammation, often called "inflammaging", is closely linked to the degeneration of synovial joints (5). Persistent inflammation within the synovial membrane can lead to the release of proinflammatory cytokines and enzymes, which contribute to the breakdown of cartilage and other joint tissues. This chronic inflammatory state can perpetuate a cycle of tissue damage and repair, ultimately accelerating the deterioration of the joint structure (6).



Elevated levels of inflammatory mediators within the synovial fluid can disrupt the balance of lubricating agents and enzymes, leading to decreased viscosity and impaired lubrication (7). This in turn can increase joint surface friction, causing pain, stiffness, and reduced mobility. Inflammation can also affect the integrity of the joint capsule and surrounding ligaments, leading to a loss of elasticity and increased stiffness. Moreover, chronic inflammation can promote the formation of adhesions within the joint capsule, further restricting joint movement and exacerbating the overall decline in joint function (8).

Inflammatory mediators can trigger the release of enzymes that degrade cartilage and bone, leading to the erosion of joint surfaces and the development of pain, swelling, and deformity (9). The resulting joint damage can severely compromise joint function and significantly limit an individual's mobility and overall quality of life (10).

## The Burden of Joint Pain

Osteoarthritis (OA) is one of the most disabling diseases in industrialised countries with hip and knee OA ranked as the 11th highest contributor to global disability (11). OA is the highest cause of work loss in the United States costing the US economy more than \$100 billion annually, and is one of the top 5 healthcare costs in Europe (12). In the United Kingdom a third of people aged 45 and over (8.75 million people) have sought treatment for OA, and at least half of these individuals have knee OA (13). The prevalence of OA is set to increase in parallel with the increase in the number of people aged 60 years and older and the rise in obesity across the world (14).  
 Direct costs: surgery; hospital resources; caregiver time; pharmacological and nonpharmacological treatments; costs of side effects from treatments; research (15).  
 Indirect costs: lost workplace productivity often resulting in absenteeism or presenteeism; early retirement; disability, as well as disability payments/benefits (16).  
 Intangible costs: pain and suffering; decreased quality of life; potential depression/anxiety (17).

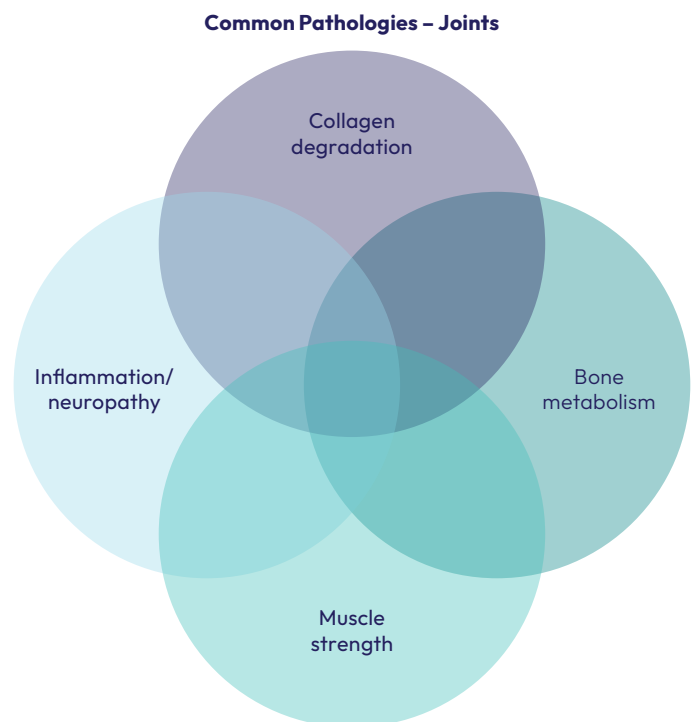
## How Evera Nutrition Joint Active Supports Joint Health

At Evera Nutrition we realise that the issues which might impact upon joint mobility are complex and vary from individual to individual. Our team of scientists has reviewed the scientific literature to identify the most common causes and created a formulation that uses specific ingredients that work together synergistically to address the most likely causes and deliver efficacy in the most natural way.

## The Evera Nutrition Joint Active Formulation

Ingredient	Amount per 2 capsule serving	% NRV*
Vitamin D3	20mcg	400
Vitamin K	75mcg	100
Vitamin C	160mg	200
Manganese	2mg	100
Flex Botanical Fusion: Consisting of standardised extract of Turmeric and Boswellia delivering 230mg of curcuminoids and boswellic acid	Equivalent to 2000mg of natural botanicals	**
Flex Nutraceutical Fusion: Consisting of Avocado and Soy Unsaponifiables; Glucosamine Sulphate 2Kcl, Palmitoylethanolamide (PEA)	500mg	**

## Evera Nutrition Joint Active Addresses the Most Frequent Common Issues Affecting Joint Mobility



# The Ingredients in Evera Nutrition Joint Active that Work Together

**Collagen degradation:** Vitamin C, Avocado & Soy Unsaponifiables, Boswellia, and Glucosamine (18-21)

**Bone metabolism:** Vitamins D and K2, Manganese, Avocado & Soy Unsaponifiables, and Boswellia (22-25)

**Muscle strength:** Vitamin D, Avocado & Soy Unsaponifiables, and Palmitoylethanolamide (PEA) (26-28)

**Inflammation/neuropathy:** Curcumin, Boswellia, Avocado & Soy Unsaponifiables (ASUs), and Palmitoylethanolamide (PEA) (29-32)

**Boswellia and Turmeric:** Boswellic acids, found in Boswellia, can inhibit the 5-lipoxygenase pathway, a major source of pro-inflammatory leukotrienes (molecules which can contribute to joint pain, swelling and damage) (33). Curcuminoids, found in Turmeric, can inhibit cyclooxygenase-2 (COX-2), an enzyme associated with inflammation and pain (34). Some studies suggest that Boswellia and curcumin may help counteract decreases in glycosaminoglycans (GAGs) – a key component of musculoskeletal health – and reduce the activity of Matrix Metalloproteinases (MMPs) – enzymes involved in cartilage degradation (35). This could potentially slow the progression of osteoarthritis. Research suggests that these compounds may work synergistically to reduce pain, decrease inflammation, and potentially slow cartilage degradation and that the combination is more effective than curcumin alone (36).

**Palmitoylethanolamide (PEA):** Palmitoylethanolamide (PEA) is a naturally occurring fatty acid extracted from lecithin and is considered an extended member of the endocannabinoid system which helps relieve peripheral and musculoskeletal pain (37). In OA it reduces pain and inflammation, protects cartilage and modulates the immune response (38).

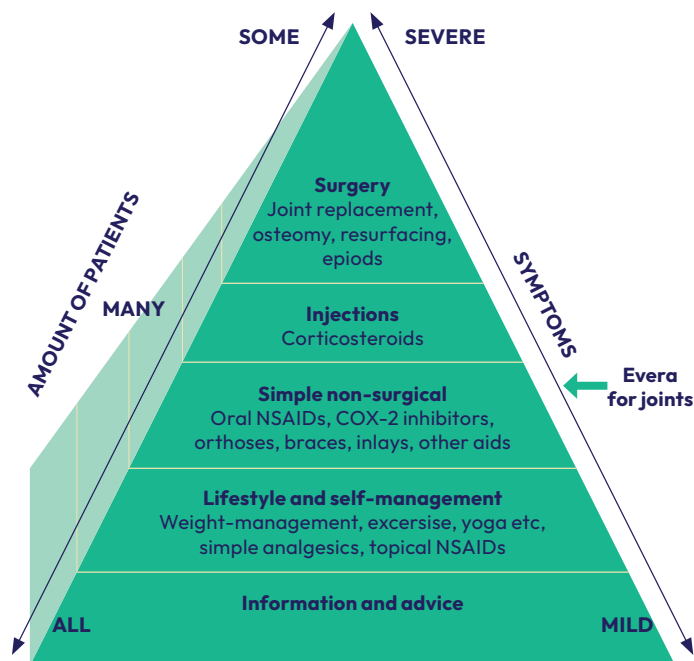
**Avocado & Soy Unsaponifiables (ASUs):** Avocado & Soy Unsaponifiables (ASUs) are a mixture of natural compounds derived from avocado and soybean oils which in numerous clinical studies have been shown to have anti-inflammatory benefits in reducing pain and stiffness, improving joint function, and slowing the progression of osteoarthritis (39).

# Why Recommend Joint Active?

- Evidence based ingredients that support all the important elements involved in delivering joint mobility
- The ingredients in Joint Active have been investigated in numerous high quality clinical studies, and the robustness of efficacy is further demonstrated by the systematic reviews and meta-analyses below:

Ingredient	Studies	Participants	Conclusions
Glu-cosamine	7	1168	Significant improvement in pain (40)
Vitamin D	4	1138	Significant improvement in pain and function (41)
PEA	8	1871	Significant reduction in pain (42)
Boswellia	4	216	Significant improvement in pain and function (43)
ASUs	4	664	Significant reduction in pain (44)
Curcumin	5	331	Significant improvement in pain and function (45)
Curcumin vs NSAID	2	442	Equal effectiveness for pain and function with less side effects (46)

- May promote overall wellbeing and can be used safely with lifestyle changes
- Suitable for long term use
- Gentle on the GI tract
- Can be used in conjunction with conventional joint remedies such as NSAIDs and may have reduce the amount of NSAIDs an individual requires.
- Integrates into any care pathway



(References available upon request)

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