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# A Pharmacist's Guide to Osteo Bi-Flex<sup>®</sup> Joint Health Dietary Supplements

**OLDER ADULTS MAY EXPERIENCE CHANGES** to their mobility—the ability to move or walk freely and easily—which is critical for functioning well and living independently.<sup>1</sup> There are many reasons for these changes, which may occur within the joints as a normal part of aging.<sup>2</sup> It is imperative that pharmacists stay apprised on updates in joint health so they can better manage their patients.

## AGE-RELATED CHANGES IN JOINTS

Within normal joints, healthy articular cartilage is made up of the extracellular matrix (ECM), a dense, complex connective tissue matrix that is responsible for cushioning joints and bones.<sup>3</sup> This cartilage provides a smooth surface for joint movement, resists compression, and transmits loads without damage.<sup>3</sup>

As a natural part of aging, normal physiological changes occur within joints that can lead to reduced mobility, gait speed, and range of motion.<sup>4,5</sup> Older age is associated with decreased articular cartilage hydration and compressibility that can impact long-term cartilage health.<sup>3,6</sup> These changes can be detected with MRI imaging.<sup>3</sup>

Joint health and comfort may be top of mind for older adults visiting the pharmacy who may be experiencing these age-related changes in joint function.

## RECOMMENDATIONS FOR PROACTIVE JOINT HEALTH SUPPORT

Regular physical activity and nutritious diet are essential for maintaining overall wellness and healthy joints.<sup>4,7,8</sup> Obtaining sufficient amounts of essential vitamins, minerals, and phytonutrients from the diet is important for supporting the natural process of synthesizing cartilage, collagen, and other joint components.<sup>8</sup> Several dietary supplements that are available within the pharmacy can promote healthy cartilage, joint comfort, and physical functioning.\*

## ACTIVE INGREDIENTS IN DIETARY JOINT CARE SUPPLEMENTS

Key components that can contribute to healthy articular cartilage include type 2 collagen, glucosamine, chondroitin sulfate, methylsulfonylmethane (MSM), and *Boswellia serrata* extract.<sup>3,9-14</sup> Dietary joint care supplements may include these ingredients alone, in different combinations, or in combination with other vitamins and minerals (eg, vitamin C, vitamin D, manganese).

### Glucosamine and Chondroitin

Chondroitin sulfate is incorporated into one of the most abundant building blocks of the ECM in articular cartilage, and it contributes to the ability of the articular cartilage to resist compressive loads.<sup>3</sup> Glucosamine is a key structural component in cartilage.<sup>9</sup> It is used by the body as a precursor for articular cartilage synthesis that facilitates joint mobility, and it contributes to synovial fluid lubrication.<sup>9</sup> Although the body can synthesize glucosamine and chondroitin, there are few known food sources of these compounds.<sup>15,16</sup>

Glucosamine and chondroitin are among the most common ingredients studied and used in joint supplements.<sup>8,17</sup> Dietary supplements that contain these factors may be an option for people looking to increase their daily intake.<sup>8</sup>

### Methylsulfonylmethane (MSM)

As a dietary supplement, MSM is often used in combination with glucosamine and chondroitin to support joint health.\* MSM is a naturally occurring, sulfur-containing metabolite that provides components important for cartilage and other connective tissues.<sup>10</sup> MSM is found in a variety of fruits, vegetables, and grains in small amounts; therefore, it may be challenging to consume adequate levels of this factor in the daily diet.<sup>10</sup>

### Type 2 Collagen

Type 2 collagen represents 90% to 95% of the collagen in the ECM; it contributes to the compressive and tensile strength of articular cartilage.<sup>3</sup> UC-II<sup>®</sup> is a source of undenatured type 2 collagen that is derived from chicken cartilage.<sup>18</sup> Daily oral supplementation with 40 mg of UC-II has been shown to support joint health, joint range of motion, and comfortable joint movement.<sup>18</sup> This effect may be temporary in nature,<sup>18</sup> so the supplement should be consumed regularly to maintain the benefit.\*

### Boswellia Serrata

*Boswellia serrata* is an herb grown in mountainous regions of India, Northern Africa, and the Middle East.<sup>19</sup> Beneficial uses for the gum resin of the *Boswellia serrata* plant have been known for thousands of years, and modern scientists have also identified its health benefits.<sup>19</sup> Use of *Boswellia serrata* extracts can promote joint comfort, a healthy inflammatory response, and support healthy cartilage.<sup>11-14,\*</sup>

\*These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.

# INFORMATION *for the* PHARMACIST

## ABOUT OSTEO BI-FLEX® JOINT HEALTH

Osteo Bi-Flex has been responsible for leading the way in the joint health supplements category for over 25 years, providing products in a variety of formulations with different combinations of these ingredients. Osteo Bi-Flex is the #1 pharmacist recommended *joint health* dietary supplement brand according to the results of a *Pharmacy Times*® survey of US Pharmacists' OTC recommendations (2024-2025).<sup>20</sup>

When asked for a specific product recommendation, pharmacists can provide information about various Osteo Bi-Flex formulations that feature such joint health ingredients as glucosamine, type 2 collagen, and MSM (**Table**<sup>21</sup>). Most Osteo Bi-Flex products contain the clinically tested ingredient, 20% 3-O-acetyl-11-keto-β-boswellic acid (AKBA)—known as Joint Shield™ 5-LOXIN Advanced®—which is a highly concentrated extract of *Boswellia serrata*.<sup>11-14,22</sup>

In several clinical studies, daily supplementation with Joint Shield 5-LOXIN Advanced was associated with improved joint comfort, mobility and physical function in adults.\* Joint Shield 5-LOXIN Advanced has been safe and effective in clinical trials.<sup>11-14</sup>

## JOINT SHIELD 5-LOXIN ADVANCED® IN CLINICAL STUDIES

The tolerability and effectiveness of daily supplementation with Joint Shield 5-LOXIN Advanced (100 mg standardized for 20% AKBA) vs placebo was assessed in over 200 adults across 4 double-blind, randomized, placebo-controlled studies.<sup>11-14</sup> Compared with placebo, supplementation with Joint Shield 5-LOXIN Advanced was associated with improvements in joint comfort, stiffness, and function within 7 days with continued and significant improvement when taken daily over 90 to 180 days.<sup>11-13</sup> There were no serious adverse events reported in the studies.<sup>11-13</sup> No significant changes were noted in the

results of laboratory tests measuring safety markers associated with use of 20% AKBA.<sup>11-13</sup>

Results from the most recent study by Murphy et al., as presented as a poster at The American Society for Nutrition 2024 Annual Meeting, showed that daily intake of Joint Shield 5-LOXIN Advanced was associated with significantly improved functional mobility (as measured by the 6-minute walk test and stair climb test) when compared with daily use of placebo.<sup>14</sup> Additionally, as compared with placebo, daily use of Joint Shield 5-LOXIN Advanced was associated with significant improvements in biomarkers of cartilage metabolism and inflammation and in MRI-measured changes in joint space, cartilage thickness, and cartilage volume from baseline to the end of the 180-day study.<sup>14</sup>

## ROLE OF THE PHARMACIST

Pharmacists can help patients to understand individual joint health needs and encourage them to follow healthy lifestyle habits as part of their proactive joint health regimen. For example, pharmacists can provide information on the benefits of regular physical activity and proper nutrition and their importance for maintaining an active lifestyle and healthy joints. Additionally, pharmacists have an opportunity to support consumers who come to the pharmacy looking for a joint health supplement option to support their health, comfort, range of motion, and mobility.\*

Joint Shield 5-LOXIN Advanced is a clinically tested form of the traditional herb *Boswellia serrata*.<sup>11-14,22</sup> The majority of Osteo Bi-Flex products contain this ingredient. To help their patients, pharmacists can answer questions about potential use of available safe and effective dietary supplements and increase awareness about supplements formulated with ingredients that support a proactive joint health regimen.\* 🌱

**TABLE.** Key Differences in Select Osteo Bi-Flex® Formulations Available in the Pharmacy<sup>21</sup>

Product	Dietary Ingredients	Recommended tablets/d, No.
Osteo Bi-Flex Triple Strength <sup>a</sup>	Glucosamine, Joint Shield 5-LOXIN Advanced, vitamin C, chondroitin/MSM complex	2
Osteo Bi-Flex Triple Strength <sup>a</sup> + Vitamin D	Glucosamine, Joint Shield 5-LOXIN Advanced, chondroitin/MSM complex, vitamin D (2000 IU)	2
Osteo Bi-Flex Triple Strength <sup>a</sup> + MSM Formula	Glucosamine, Joint Shield 5-LOXIN Advanced, MSM	2
Osteo Bi-Flex Triple Strength <sup>a</sup> + Turmeric	Glucosamine, Joint Shield 5-LOXIN Advanced, turmeric extract	2
Osteo Bi-Flex Triple Strength <sup>a</sup> + Magnesium	Glucosamine, Joint Shield 5-LOXIN Advanced, magnesium	2
Osteo Bi-Flex One Per Day	Glucosamine, Joint Shield 5-LOXIN Advanced, vitamin D (400 IU)	1
Osteo Bi-Flex Ease	UC-II collagen, Joint Shield 5-LOXIN Advanced, vitamin D (400 IU)	1

IU, international unit; MSM, methylsulfonylmethane.

<sup>a</sup>Refers to level of Glucosamine HCl per tablet compared to Regular Strength.

**References are available on [PharmacyTimes.com](https://www.pharmacytimes.com).**

\*These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.

## ONLINE ONLY

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