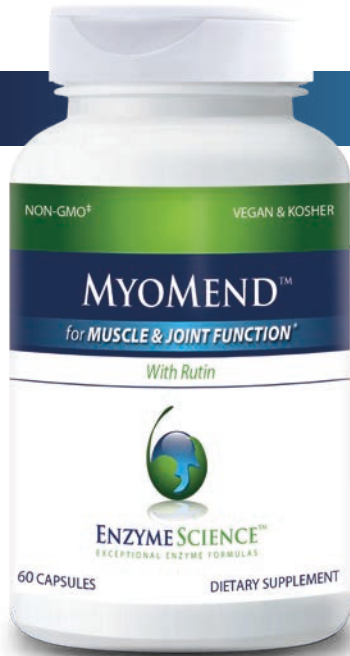




MYOMEND™

for **MUSCLE & JOINT FUNCTION***

With **Rutin**



Muscle soreness and physical discomfort is common after exercise, prolonged sitting, or after a new physical activity.

According to research conducted by the Centers for Disease Control and Prevention (CDC), 1 in 4 American adults sit for more than eight hours a day and 4 in 10 are physically inactive.¹ Delayed onset muscle soreness (DOMS), resulting in uncomfortable and stiff muscles, is commonly felt after unaccustomed or strenuous exercise. While muscle strains induced by exercise are quite common in athletes, individuals with a lack of muscle fitness, and weak muscles as a result of aging, muscle and joint discomfort can also be the result of free radical damage and oxidative stress.

FREE RADICALS AND OXIDATIVE STRESS

Even though oxygen is essential for survival, oxygen is also involved in toxic reactions that are a constant threat to our well-being. Most of the potentially harmful effects of oxygen are believed to be the result of the formation and activity of ROS (also known as 'free-radicals').² Oxidative stress, encompassing oxidative damage to proteins, is brought on by the imbalance between free radical production and available antioxidants. Balance is of utmost importance for proper physiological function.

Excessive free radicals from normal body metabolism that includes glycation, for example, are believed to be major contributors to aging, muscle soreness and joint discomfort.^{3,4} Our body burns fuel at a faster rate with high-intensity physical exercise, which causes rapid chemical reactions that make free radicals at a faster rate.^{4,5,6} Glycation occurs when sugar bonds with a protein or lipid to form compounds known as advanced glycation end products (AGEs). These molecules speed up the oxidative process and damage cells. Research suggests that the accumulation of glycation end products in joint tissues cause joint stiffness and discomfort.⁷

Our body's response to oxidative stress includes redness, soreness, stiffness or general discomfort. The immune system response to a physical condition under oxidative stress is perfectly normal and is actually a very important part of a healthy body. Our body naturally produces defense mechanisms in the form of antioxidants to quench free radical reactions. Enzymatic and non-enzymatic antioxidants work to neutralize oxidative stress by breaking down and removing free radicals and interrupting free radical chain reactions.⁸

THERAPEUTIC PROTEOLYTIC ENZYMES

Proteolytic enzymes are responsible for protein degradation. Research has shown therapeutic effects of proteolytic enzymes by potentially digesting oxidatively damaged protein accumulated as cellular debris.⁶ Identifying and degrading damaged proteins into smaller fragments for elimination may prevent accumulation or build-up that could otherwise create discomfort in joints and muscles.⁹

Proteolytic enzymes may also reduce muscle soreness and speed up recovery after an intense physical activity.* A small cohort study concluded that protease supplementation including papain and bromelain may facilitate muscle healing and allow for faster recovery after intense physical activity.⁶ In addition, bromelain has shown to diminish the

SUPPLEMENT FACTS

Bromelain	1,250 GDU
Protease Thera-blend™	100,000 HUT
Catalase	100 Baker
Rutin	60 mg
Papain	3,500,000 PU
Serrapeptase	100,000 SPU
Nattokinase Blend w/ NSK-SD®	700 FU

OTHER INGREDIENTS:

100% Vegetarian Capsule, (gellan gum, cellulose, water)

CONTAINS NO:

dairy, egg, preservatives, salt, sucrose, soy, wheat, yeast, nuts, corn, gluten, casein, potato, rice, artificial colors or flavors.

RECOMMENDED DOSAGE:

Take 2 capsules three times per day on an empty stomach (1/2 hour before or 2 hours after a meal). More may be taken as recommended by your healthcare practitioner.

OUR QUALITY



3 BENEFITS IN 1



damaging effects of advanced glycation end products by degrading the protein receptor for AGEs.*¹⁰ Proteases including serrapeptase have demonstrated effectiveness at reducing oxidative stress on muscle and joint function.*^{11,12}

Catalase, an antioxidant enzyme, is one of the body's natural defenses against free radicals and oxidative stress. Oxidative cellular metabolism produces hydrogen peroxide molecules contributing to free radical damage. Catalase breaks down peroxide into water and oxygen and therefore plays a crucial role in protecting cells.* Non-enzymatic antioxidants, such as the bioflavonoid rutin, are known to scavenge free radicals and contribute to protecting cells from oxidative stress.*¹³ In traditional medicine, rutin is known for its ability to help strengthen blood vessels and improve circulation.* A review published in the International Journal of Molecular Sciences suggested that rutin may help reduce leg discomfort and cramping which is likely due to its therapeutic effect in improving the capillaries and overall leg circulation.*¹⁴

MYOMEND™ ACHIEVING OPTIMAL HEALTH

Enzyme Science formulated MyoMend to include an array of vegetarian proteolytic enzymes including bromelain, papain, protease Thera-blend, serrapeptase, nattokinase and antioxidants to support muscle and joint health.* This unique combination of natural ingredients may help achieve targeted goals, whether it be decreasing muscle soreness, speeding recovery after physical activity, or supporting joint mobility.* In order to be effective, supplemental enzymes must reach muscle tissue and joints after absorption from the gastrointestinal tract. To reach this area of need, the enzymes must not be subjected to the acidic environment of the stomach. MyoMend is formulated in a special targeted delivery capsule for the enzymes to safely bypass stomach acid and remain intact. This unique capsule functions as an enteric coated capsule without unhealthy plasticizers or phthalates that are common in enteric coatings.

REFERENCES

- ¹ U.S. Department of Health and Human Services. The Centers for Disease Control and Prevention (CDC, 2019). *National Center for Health Statistics for Exercise or Physical Activity*. <https://www.cdc.gov/nchs/fastats/exercise.htm>
- ² Whitney, E., Rolfes, R. (2016). *Understanding Nutrition, Fourteenth Edition*. Stanford, CT: Cengage Learning.
- ³ DeGroot, J., et al. (2004). *Arthritis Research & Therapy*, 6(Suppl 3), 78.
- ⁴ Simioni, C., et al. (2018). *Oncotarget*. 9(24).
- ⁵ Husain, T., et al. (2016). *Oxidative Medicine and Cellular Longevity*. doi:10.1155/2016/7432797
- ⁶ Miller, P.C., et al. (2003). *Journal of Sports Sciences*. 22.
- ⁷ Kim, C. S., Park, S., & Kim, J. (2017). *Journal of exercise nutrition & biochemistry*, 21(3), 55–61.
- ⁸ Langseth, L. (1995). Washington, D.C. International Life Sciences Institute (ILSI).
- ⁹ Davies, K.J. (1986). *Journal of Free Radicals in Biology & Medicine*. 2(2):129-34.
- ¹⁰ Stopper, H., Schinzel, R., Sebekova, K., Heidl, A. (2003). *Cancer Letters*. 190(2):151-6
- ¹¹ Rathnavelu, V., Alitheen, N. B., Sohila, S., Kanagesan, S., & Ramesh, R. (2016). *Biomedical reports*, 5(3), 283–288.
- ¹² Swamy, A.H., Patil, P.A. *Indian Journal of Pharmaceutical Sciences*. 70(1) : 114-117.
- ¹³ Nikfarjam, B.A., Adinen, M., Hajjalil, F., Nassiri-Asl, M. (2017). *Journal of Pharmacopuncture*, 20(1).
- ¹⁴ Mansilha, A., & Sousa, J. (2018). *International journal of molecular sciences*, 19(6), 1669.

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