

THIS INFORMATION IS PROVIDED FOR THE USE OF PHYSICIANS AND OTHER LICENSED HEALTH CARE PRACTITIONERS ONLY. THIS INFORMATION IS INTENDED FOR PHYSICIANS AND OTHER LICENSED HEALTH CARE PROVIDERS TO USE AS A BASIS FOR DETERMINING WHETHER OR NOT TO RECOMMEND THESE PRODUCTS TO THEIR PATIENTS. THIS MEDICAL AND SCIENTIFIC INFORMATION IS NOT FOR USE BY CONSUMERS. THE DIETARY SUPPLEMENT PRODUCTS OFFERED BY DESIGNS FOR HEALTH ARE NOT INTENDED FOR USE BY CONSUMERS AS A MEANS TO CURE, TREAT, PREVENT, DIAGNOSE, OR MITIGATE ANY DISEASE OR OTHER MEDICAL CONDITION.

Baxaprin™ is a revolutionary approach for the complications of physical and stress-induced muscle tension and back pain, a condition that plagues everyone from professional athletes and weekend warriors to those with occasional overuse injuries.* Baxaprin™ is designed to optimize core musculoskeletal physiology to limit stresses on the spine and associated tissues that may lead to back pain and injury. Unlike most common back pain therapies today, Baxaprin™ does not just address the pain and/or inflammation associated with the condition, but instead it helps deal with the underlying foundational causes at the tissue level that may lead to injuries and the resultant pain and inflammation.* This product may be helpful for individuals looking for a natural alternative to pharmaceutical drugs for pharmaceutical pain relief drugs that often present unwanted side-effects.

How does Baxaprin™ address the root causes of back pain?

The ingredients in this product help regulate the natural contraction and relaxation of muscles that influence the spine. They also support the neurological actions of the motor neurons that control muscle function. If an individual is deficient in the nutrients required for physiological function of individual muscle cells, adjunct therapies such as physical therapy will likely not be maximally effective.

Calcium, Magnesium and Potassium

These three electrolyte minerals are essential for nerve transmission and the proper contraction and relaxation of muscle fibers; deficiency in any of them may result in tetany.¹ Calcium, magnesium and potassium are abundant in commonly consumed foods but certain physiological circumstances may warrant supplementation with amounts greater than those which would typically be obtained from the diet alone. Although anyone may be at risk for marginal status in one or all of these minerals, individuals who may be at greater risk for muscle injuries—such as athletes or those with jobs that involve repetitive motion, particularly if performed outdoors—may have especially increased need for calcium, magnesium and potassium owing to losses in sweat.²⁻⁴

Calcium plays a role in nerve impulse transduction, muscle contraction, and constriction and dilation of blood vessels, all of which may affect muscle pain and stiffness in the neck and back, as well as throughout the rest of the body.⁵ Magnesium, as a natural calcium channel blocker, is well known for its muscle relaxing properties; magnesium deficiency may cause muscle cramps and spasms and is a major contributor to central and peripheral neuromuscular symptoms, sometimes called latent tetany or spasmophilia.⁶⁻⁸ This mineral promotes vasodilation and has an antispasmodic effect on skeletal muscles.

The body contains 30-40 g of potassium, most of which is stored inside muscle cells. Proper potassium levels are critical for functioning of the sodium-potassium pumps that maintain the biologically essential electrochemical gradient across cell membranes. Muscle cramps and weakness may be symptoms of potassium deficiency, and potassium depletion during strenuous exercise may increase muscle fatigue, reduce performance and cause muscle spasms or cramping.^{9,10} Magnesium deficiency may lead to potassium depletion as magnesium is required for cellular uptake of potassium from serum, so it is important to keep these minerals in proper balance.

Vitamin D

Vitamin D is included in Baxaprin™ based on the demonstrated advantages of vitamin D therapy in helping to alleviate chronic aches in muscles, bones and joints. Nearly every cell in the body expresses vitamin D receptors, so vitamin D appears to be needed for proper functioning of every organ and tissue system, including skeletal muscle.^{11,12} Numerous studies demonstrate that vitamin D deficiency is associated with muscle pain and weakness and risk of falling, and that repletion via supplementation significantly improves these.¹³⁻¹⁷ Higher serum levels of vitamin D are associated with reduced rates of injury and improved athletic performance.¹⁸ Additionally, vitamin D regulates calcium homeostasis in the body, stimulating increased intestinal absorption of calcium, decreased calcium excretion, and increased osteoclast activity to increase the blood calcium level when it becomes low.

Baxaprin™ may be beneficial for:

- Occasional pain/tension
- Loss of flexibility
- Myofascial pain syndrome (trigger points)
- Neck tension
- Sciatica pain
- Sports injuries
- Stress headaches
- Stress induced muscle tightness

Valerian, Passion Flower and Lemon Balm

These are nervine botanicals recognized for their relaxant properties, mainly via promoting activity of GABA, the calming neurotransmitter.¹⁹⁻²¹ Psychological stress and tension may exacerbate physical pain, particularly in the back, neck and shoulders. (The phrase “carrying the weight of the world on your shoulders” is not entirely metaphorical.) Acute and extended use of lemon balm and passion flower may help support a normal response to anxiety, which may be beneficial for alleviating physical tension as well.^{21,22} In vitro studies indicate that lemon balm extract has a substantial inhibitory effect on GABA transaminase (GABA-T), the enzyme that degrades GABA, which may be the basis for its calming effects.^{23,24} (Select pharmaceutical pain relievers are GABA-T inhibitors.) A main constituent of lemon balm is rosmarinic acid, which has been shown in rodent models to have antinociceptive effects involving the cholinergic system and the L-arginine-nitric oxide pathway.²⁵ These may also play a role in lemon balm’s noted antispasmodic properties.²⁶ Valerian and its primary active component, valerenic acid, have anxiolytic and sedative effects also through GABA-ergic mechanisms. Human trials have validated the use of valerian for anxiety and muscle spasms, as well as for insomnia and restlessness, which may be beneficial for those whose pain interferes with restful sleep.²⁷⁻²⁹ Passion flower exerts anxiolytic activity also via GABA-ergic mechanisms, and has been shown in rodent models to be antinociceptive against neuropathic allodynia via GABA- and opioid-ergic means.^{30,31}

These herbs may work through effects on benzodiazepine receptors but without the undesirable side-effects of such drugs. The authors of a paper reviewing the use of valerian for insomnia and anxiety wrote that valerian may be useful in weaning patients with insomnia off of benzodiazepines and similar potential has been observed for passion flower extract.^{29,32}

Supplement Facts

Serving Size 6 capsules
Servings Per Container 30

Amount Per Serving	% Daily Value	Amount Per Serving	% Daily Value
Vitamin D (as Cholecalciferol)	50 mcg (2000 IU) 250%	Passion Flower Extract	200 mg *
Calcium	200 mg 15%	(<i>Passiflora incarnata</i>)(aerial)	
(as DimaCal® Di-Calcium Malate)		[standardized to contain	
Magnesium (as Di-Magnesium Malate)	500 mg 119%	3.5% flavonoids]	
Potassium	90 mg 2%	Lemon Balm Extract	100 mg *
(as Potassium Glycinate Complex)		(<i>Melissa officinalis</i>)(leaves)	
Valerian Extract	200 mg *	[standardized to contain 3%	
(<i>Valeriana officinalis</i>)(root)		rosmarinic acid]	
[standardized to contain 0.8% valerenic acid]			

Other Ingredients: Microcrystalline cellulose, cellulose (capsule), vegetable stearate.

Recommended Use:

- As a dietary supplement, take six capsules per day with a meal, or as directed by a health care practitioner (divided dosing recommended).

For a list of references cited in this document, please visit:

http://catalog.designsforhealth.com/assets/itemresources/Baxaprin_References.pdf

*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.

To contact Designs for Health, please call us at (860) 623-6314, or visit us on the web at www.designsforhealth.com.