

COMPLETE F-M

Ingredients: Each Two Tablets Supplies: Malic Acid 588 mg, Magnesium (as malate, citrate) 118 mg, Calcium (as citrate) 20 mg, Zinc (as malate) 12 mg, Grapeseed extract 8 mg, Betaine HCL 13 mg, Silymarin Extract (20% silybin) 8 mg, Bromelain 24 mg, Papain 24 mg, Trypsin (chymotrypsin) 4 mg, Lipase 12 mg, Amylase 16 mg, Pancreatin 6x 44 mg, Lecithin (phosphatidyl choline 12 mg) 26 mg, L-Leucine 22 mg, L-Valine 22 mg, Glucosamine Sulfate 50 mg, N-Acetyl Glucosamine 20 mg, Ornithine Alpha Ketoglutarate 20 mg.

Supportive Function: Nutritional support for healthy muscles and joints.

When is Complete F-M helpful? Muscle/connective tissue pain and/or inflammation, sleep disturbances, fatigue, Fibromyalgia

Clinical Applications and Research:

Malic Acid: Malic acid is a necessary intermediate factor for the Krebs's cycle, which fuels our energy production. Several studies have found that it can be helpful for fibromyalgic support. In one randomized, double blind, placebo controlled, crossover pilot study published in the Journal of Rheumatology, significant reductions in the severity of all three primary pain/tenderness measures were obtained. A dose of 1200 mg of malic acid daily achieved the desired results, and the study concluded that malic acid was safe and may be beneficial in the treatment of patients with FM (Russell IJ et al. Treatment of Fibromyalgia syndrome with Super Malic: a randomized, double blind, placebo controlled, crossover pilot study. (J Rheumatol. 1995 May; 22(5): 953-8.)

Magnesium (as Malate, citrate): Calcium and magnesium ions play a key role in the physiology of muscular contraction/relaxation, and also general muscle health. FM patients have low magnesium, which is needed for over 200 biochemical reactions in the body, including energy production and muscle tissue repair. Magnesium is especially effective in FM when it is chelated to a Krebs's cycle intermediate, such as malate or citrate.

Calcium (as Citrate): Chelated to citrate, a Krebs cycle intermediate, calcium provides double support for muscle homeostasis. There is evidence that an imbalance of calcium and magnesium may be involved in the etiology of the Fibromyalgia syndrome.

“Changes in calcium ions concentration may be involved in the pathogenesis of Fibromyalgia. ... The results obtained show that in Fibromyalgia patients the intracellular calcium and magnesium concentration seems to be a peculiar characteristics of Fibromyalgia patients and may be potentially responsible for muscular hypertonus” (Magaldi M, et al. Changes in intracellular calcium and magnesium ions in the physiopathology of the Fibromyalgia syndrome Minerva Med. 2000 Jul-Aug; 91(7-8): 137-40.)

Zinc (as malate): Zinc stimulates the release of growth hormone, and is essential for all of the body's protein synthesis. It regulates the contraction of muscle, and has also been reported to accelerate healing time, and promote growth and mental alertness (Mindell, E, (RPh, Ph.D.), *Earl Mindell's Vitamin Bible*. New York: Warner Books, 1991:94).

Grapeseed extract: Grapeseed extract contains proanthocyanidins, which are powerful bioflavonoids. Bioflavonoids are effective because they stabilize cell membranes, decrease the release of inflammation mediators, and decrease the contraction of smooth muscle (Murray M. Enc of Nat Med. Prima Publ. Rocklin, CA 1991 p.298). Bioflavonoids also improve capillary integrity and stabilize the collagen matrix by preventing free radical damage (Merck Index, 11th ed. 1989, Merck and Co. Inc., Rahway, NJ p.1243; Murray M. Enc of Nat Med. Prima Publ. Rocklin, CA 1991 p.330).

Betaine HCL: Many fibromyalgics have poor digestion and assimilation. HCL assists in protein breakdown and functions as a signaling mechanism for pancreatic enzyme release and bile release from the gall bladder. Hcl provides the proper pH to discourage bacterial/parasitic invasion. Proper pH also allows for absorption and solubility of calcium.

Silymarin Extract (20% Silybin): Silymarin is a component of milk thistle, and is traditionally utilized to promote liver detoxification. Metals, environmental toxins, dysbiosis, food allergens, and other factors can present a toxic assault that overwhelms the detox systems of the body, and allows deposits of toxins in tissues that cause pain and discomfort. Offending toxins interfere with normal muscle and tissue health.

Bromelain, Papain, Trypsin (chymotrypsin), Lipase, Amylase, Pancreatin: Proteolytic enzymes support anti-inflammatory mechanisms (clear debris that attracts inflammation), while other enzymes (lipase and amylase) can be beneficial for digestive support of fats and starches. Lipase has been utilized in studies with “significant improvement”, including reduction of energy loss (Arch Dis Child 1993 68(2):227-30).

Bromelain, found in pineapple, “has therapeutic effects in the treatment of inflammation and soft tissue injuries”, and was found to reduce skeletal muscle injury (Med. Sci. Sports Ex. 1992; 24:20-5).

Lecithin (Phosphatidylcholine): Lecithin is made up mostly of phosphatidylcholine (PC). It emulsifies and breaks down fat deposits in the body, which makes it a key player in healthy heart and healthy liver functioning. PC is also a component of the brain neurotransmitter, acetylcholine, and is needed for normal brain functioning. Lecithin, being a major component of all cell membranes, supports all cell structures.

L-Leucine and L-Valine: The branched chain amino acids L-Leucine and L-Valine increases growth hormone release naturally. Growth hormone administration was found to be effective for relief of Fibromyalgia when 18 randomized controlled trials were reviewed (Systemic drug treatment for chronic musculoskeletal pain. Moulin DE. Clin J Pain. 2001 Dec; 17(4 Suppl): S86-93.) While use of the actual growth hormone poses risks that vary from side effects to death, natural supplementation has not shown to cause side effects.

Glucosamine Sulfate: Glucosamine is a well-known nutrient used for support of connective tissue health. A building block necessary for joint and tissue health, glucosamine is a helpful nutrient for fibromyalgics.

N-Acetyl Glucosamine: N-Acetyl Glucosamine (NAG) is a building block for extracellular tissue. It decreases bacterial growth by strengthening intestinal mucosa, promoting growth of bifidobacteria (Gauhe A. et al., Arch Biochem Biophys 1954; 48:214), and reduces adherence of organisms such as *Candida albicans* to the gut wall, a common occurrence in Fibromyalgia. It prevents cell damage (Int J Parasitol. 1991 Dec; 21(8): 941-4), and blocks the release of the leukocyte elastase enzyme (elastase is an enzyme which breaks down elastin connective tissue (Clin Exp Rheumatol. 1991 Jan-Feb; 9(1): 17-21).

Ornithine Alpha Keto-glutarate: Supplementation of ornithine alpha ketoglutarate has been reported to stimulate the release of GH from the pituitary (Pearson, D and Shaw, S. *Life Extension*. New York: Warner Books, 1982:289-290).

Suggested Dosage: 2 tablets 3 times daily or as directed

Size: 120

Vegetarian: No

Contraindications: High doses of glucosamine sulfate (1500 mg) can cause high blood sugar levels and/or GI distress (however smaller synergistic amounts are used in this formula and there are no reported problems).