

Gastrazyme™

Nutritional Support for the Gastrointestinal Tract

Although digestion begins in the mouth, the gastrointestinal tract is an important component of digestion. From a nutritional viewpoint the gastrointestinal tract is considered one of the most important organs in the body. Maintaining a health digestive tract is considered premier in optimal health, as poor digestion can cause a multitude of seemingly unrelated problems. Nutritional health and gastrointestinal health are thus closely correlated. **Gastrazyme™** combines a number of nutritional components intended to sustain a healthy digestive tract, including:

Methionine S-Methyl Sulfonium

Early studies have recognized the effectiveness of raw cabbage juice in normalizing gastric and intestinal function. Glutamine and methionine derivatives present in this juice are believed to be the active principles. Specific attention has focused on methionine S-methyl sulfonium (MMS) in the chlorinated form. MMS occurs in a variety of fruits and vegetables, such as cabbage. Traditionally, this compound has been designated "Vitamin U", although it does not meet the classic definition of a vitamin. MMS is readily absorbed and accumulates in the body, especially in the kidney and liver.⁽¹⁾ A variety of sulfur-containing agents, including MMS have documented benefits, including stimulation of the formation of gastrointestinal mucus, and the binding of free radicals. They may also serve as antioxidants, and act as methyl donors for a variety of acceptors. One study indicated that little damage to rats pretreated with MMS by gavage occurred following exposure to reserpine.^(2,3) Similar results were obtained using MMS up to forty hours after ethanol exposure in lab animals.⁽⁴⁾ Other research has shown that oral administration of MMS or cysteine aided in normalizing gut function in certain patients.⁽⁵⁾ An additional study concluded that MMS supported the normal healing process of the stomach following exposure to nonsteroidal anti-inflammatory agents (NSAIDs).⁽⁶⁾ It is not surprising then, that such versatile compounds can benefit gastrointestinal health.

Vitamin A is required for the normal differentiation and development of epithelial cells, as well as for epithelial cell integrity. Because the

gastrointestinal mucosa is rapidly overturning, its nutrient requirement is relatively high. Vitamin A deficiency has been shown to result in a reduction of cell division and differentiation of the intestinal cells, and consequentially a decline in the number of goblet cells⁽⁷⁾ in the crypt and villus.⁽⁸⁾ Inadequate vitamin A status has also been correlated with impaired barrier function of the GI tract,⁽⁹⁾ as well as immune system impairment⁽¹⁰⁾ Other studies have determined that the prevalence and severity of diarrhea diseases are particularly reduced with vitamin A supplementation⁽¹¹⁾, and that supplementation with vitamin A significantly reduced the prevalence of gastrointestinal distress, including diarrhea and loose stools.⁽¹²⁾

Natural Carotenoids, including betacarotenes, gamma carotenes, zeaxanthin, lutein and cryptoxanthin, are common dietary constituents, notably concentrated in orange and dark green, leafy vegetables. They complement vitamin E as lipid-soluble antioxidants, and indisputably are more effective scavenger of singlet oxygen than alpha tocopherol. In addition to serving as antioxidants, carotenoids are known to support healthy immune function.⁽¹³⁾ Beta-carotene also supports intercellular communication, and accordingly tissue integrity.⁽¹⁴⁾ Natural mixed carotenoids have been reported to be better assimilated and have demonstrated a greater effective lipophilic antioxidant activity *in vivo* than synthetic beta-carotene.⁽¹⁵⁾ Mixed carotenoids have also been shown to exhibit better biological activity than beta-carotene alone.⁽¹⁶⁾ Additionally, long-term supplementation (12 weeks) with mixed carotenoids was shown to ameliorate UV damage, resulting in erythema in humans.⁽¹⁷⁾



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Gamma Oryzanol, a phytosterol ferulate mixture extracted from rice bran oil, contains ferulic acid, which has documented evidence as a strong antioxidant. Ferulic acid has shown marked antioxidant properties when utilized in *in vitro* assays, as evidenced by autooxidation of methyl linoleate (MeLo) and ascorbate/Fe(2+)-mediated lipid peroxidation in rat microsomes.⁽¹⁸⁾ In the evaluation of gamma oryzanol via an oxidation accelerate test, gamma-oryzanol was found to be an organic radical scavenger, with the ability to prevent AMVN-triggered lipoperoxidation, resulting in improved oxidative stability of oils very prone to lipoperoxidation.⁽¹⁹⁾ Gamma oryzanol has also been shown to normalize intestinal function in rats subjected to reserpine or physical stress⁽²⁰⁾ as well as in mice subjected to sleep deprivation.⁽²¹⁾

Chlorophyllin, a derivative of chlorophyll, has the ability to bind divalent metal ions. Research studies in humans have indicated that DNA damage by aflatoxin can be decreased by as much as 55% through chlorophyllin supplementation.⁽²²⁾ A separate study indicated that chlorophyll was able to protect DNA against damage from heterocyclic amines *in vitro*.⁽²³⁾ Chlorophyllins have also demonstrated antioxidant properties.⁽²⁴⁾

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Supplement Facts

Serving Size: 1 Tablet

	Amount Per Serving	% Daily Value
Vitamin A (as natural mixed carotenoids and palmitate) (IU ratio 2.5:1)	3,500 IU	70%
Gamma Oryzanol (from rice)	100 mg	*
Chlorophyllins (from Mulberry leaf)	20 mg	*
Vitamin U Complex (DL-methylmethionine sulfonium chloride)	10 mg	*
Superoxide Dismutase (from vegetable culture †)	15 mcg	*
Catalase (from vegetable culture †)	15 mcg	*

* Daily Value not established

Other ingredients: Cellulose, modified cellulose gum, modified cellulose, silica and magnesium stearate (vegetable source).

† Specially grown, biologically active vegetable culture containing naturally associated phytochemicals including polyphenolic compounds with SOD and catalase, dehydrated at low temperature to preserve associated enzyme factors.

This product is gluten and dairy free.

RECOMMENDATION: One (1) tablet three (3) times each day as a dietary supplement or as otherwise directed by a healthcare professional.

KEEP OUT OF REACH OF CHILDREN

Store in a cool, dry area.
Sealed with an imprinted safety seal for your protection.

Product # 1140 Rev. 05/16

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