

➔ The Moss Nutrition Professional Line ➔

CLINICAL SUPPORT FOR HEALTHY DIGESTION

Supplement Facts

Serving Size: 1 Capsule
Servings Per Container: 120

	Amount Per Serving	% Daily Value
Betaine Hydrochloride	750 mg	**

** Daily Value (DV) not established.

Other Ingredients: Cellulose (capsule), dicalcium phosphate, microcrystalline cellulose, L-leucine.

SUGGESTED USE: 1 CAPSULE WITH MEALS OR AS DIRECTED BY YOUR HEALTHCARE PROFESSIONAL.

WARNING: IF TAKING MEDICATION, PREGNANT OR NURSING CONSULT A PHYSICIAN BEFORE USING.

- Helps maintain & replenish healthy gastric HCl levels.*
- Enables efficient breakdown of dietary protein and minerals.*
- Addresses symptoms of hydrochloric acid deficiency.*
- Quality vegetarian formulation.*

Betaine HCl from Moss Nutrition supplies 750 mg of pure anhydrous betaine hydrochloride in an easy-to-swallow vegetarian cellulose capsule.

Supplemental betaine HCl helps to optimize hydrochloric acid levels in people with low stomach acid and can help to improve digestive function and comfort in patients of all ages. Many symptoms of digestive distress such as acid reflux, heartburn, gas, bloating or nausea after eating may be due to abnormally low or non-existent gastric acid secretion (*hypochlorhydria* and *achlorhydria*, respectively.)

Endogenous HCl production naturally decreases with age but other factors such as illness, highly processed and acidic diets, overuse of antacids and high stress physiology in general may impair the body's ability to generate healthy HCl levels. In addition to impaired digestion, hypochlorhydria has been associated with bacterial overgrowth, enteric infection, low vitamin B12 levels and an increased risk of gastric neoplasms.

Hydrochloric acid is secreted by parietal cells in response to the presence of food in the stomach. HCl activates the conversion of pepsinogen to pepsin, an enzyme required for the digestion of proteins. Gastric HCl also works directly on protein molecules to assist in their breakdown and helps to separate nutrients from their carrier compounds (e.g. releasing vitamin B12 from protein molecules, and cleaving calcium from carbonate.) By helping to support efficient breakdown of proteins, betaine hydrochloride can help to prevent large peptide molecules from entering the intestines where they may contribute to inflammation and leaky gut pathologies.

Adequate HCl levels in the stomach also help to minimize food sensitivities. In one study, 25% of patients taking acid-lowering drugs for dyspeptic disorders exhibited increased IgE formation towards commonly ingested foods. The same study suggested that food allergenicity could be reduced up to 10,000-fold by enhanced gastric digestion.

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*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.



Gastric hydrochloric acid plays a role in immune defense by destroying foodborne pathogens and microbes such as *Helicobacter pylori*, implicated in the pathogenesis of stomach ulcers. Although stomach ulcers are typically associated with excess acid production and treated with acid-blocking drugs, insufficient gastric HCl may, in fact, be a predisposing factor in ulcerative pathology. *H. pylori* is, of course, only one biological organism that multiplies in the absence of sufficient gastric HCl levels. Many species of bacteria and fungi overpopulate in the high gastric pH environment caused by low hydrochloric acid production, contributing in turn to a variety of metabolic and dysbiotic symptoms both within and beyond the digestive tract.

Based on molecular weight, **Betaine HCl** is composed of 76.26% betaine and only 23.74% HCl. Hence we propose that the betaine component of the supplement may play a key role in its functionality. Nutritionally, betaine (also known as *trimethylglycine*) is obtained from beets and other sources—either as betaine directly or as synthesized endogenously from choline-containing foods. By serving as a methyl donor, betaine helps to support proper liver function, cellular replication and liver detoxification. Betaine also serves as a critical cofactor in the conversion of homocysteine to methionine. Betaine is well known to help reduce high homocysteine, associated with increased risk of Alzheimers and cardiovascular disease. Patients with sub-optimal thyroid function may also benefit from supplementation with **Betaine HCl**, since thyroid hormones play an important role in the regulation of methyl group and homocysteine metabolism. Research suggests that decreased hepatic betaine-homocysteine S-methyltransferase, the betaine-dependent enzyme that catalyzes folate-independent remethylation of homocysteine, may be a cause of T(3)-mediated hyperhomocysteinemia. In addition, high cortisol levels have been negatively associated with plasma betaine concentrations while increased dietary betaine intake has been suggested to reduce systemic inflammation.

A NOTE ABOUT OUR QUALITY As one of only six strong acids on Earth, hydrochloric acid must be specially treated and dried for use in supplements. Many betaine HCl supplements are made using raw material that is carried on *polyvinylpyrrolidone* (also known as Povidone or PVP), an adhesive binder used in glue sticks. Moss Nutrition's **Betaine HCl** is made with material carried strictly on *hydroxypropyl cellulose* (HPC), a much cleaner carrier.

REFERENCES

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