



THYROID PHARMACIST

THE THYROID FATIGUE- STOMACH ACID CONNECTION

Izabella Wentz, PharmD, FASCP



ThyroidPharmacist.com



About The Author

Dr. Izabella Wentz, PharmD, FASCP is a pharmacist who has dedicated herself to addressing the root causes of autoimmune thyroid disease after being diagnosed with Hashimoto's Thyroiditis in 2009. Dr. Wentz received the Doctor of Pharmacy Degree in 2006, and is a Fellow of the American Society of Consultant Pharmacists.

She holds certifications in Medication Therapy Management, Advanced Diabetes Care and is a 2013 recipient of the Excellence in Innovation Award from the Illinois Pharmacists Association.

Dr. Wentz is the author of the *New York Times* best-selling patient guide *Hashimoto's Thyroiditis: Lifestyle Interventions for Finding and Treating the Root Cause* and the protocol-based book *Hashimoto's Protocol: A 90-Day Plan for Reversing Thyroid Symptoms and Getting Your Life Back* (March 2017 release). She is also the author of her newest cookbook: *Hashimoto's Food Pharmacology: Nutritional Protocols and Healing Recipes to Take Charge of Your Thyroid Health*.

Dr. Wentz is dedicated to educating the public and healthcare professionals about the impact of appropriate diagnosis, proper medication management, lifestyle interventions and functional medicine methods on the treatment of thyroid and autoimmune conditions.

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Studies have found that people with Hashimoto's and hypothyroidism often have hypochlorhydria (low stomach acid) or achlorhydria (lack of stomach acid).

When we have low stomach acid, this puts us at greater risk for many undesirable health consequences:

- ✓ **Contracting parasites from our food** - stomach acid helps us sterilize our food, killing off potential infecting pathogens
- ✓ **Food sensitivities** - proteins that are not properly broken down are more likely to induce an antigenic response from our immune system leading to food sensitivities, especially to gluten and dairy
- ✓ **Small intestinal bacterial overgrowth (SIBO)** - without stomach acid which keeps them at bay, bacteria in the small intestine may grow and thrive and poorly digested proteins. 54% of people with hypothyroidism were found to have SIBO, in one small study
- ✓ **Nutrient depletions** - especially in iron, calcium, ferritin and B12
- ✓ If prolonged can lead to hypergastrinemia, (excess secretion of gastrin, another digestive enzyme, as a compensatory mechanism due to low stomach acid), which can lead to tumors/cancerous growth in the gastrointestinal tract

Symptoms

There aren't too many tell-tale signs of low stomach acid, other than perhaps feeling full and tired after meals as well as experiencing acid reflux like symptoms. Nonetheless, low stomach acid is very common in Hashimoto's. Signs and symptoms that would leave me to believe that a person with Hashimoto's had low stomach acid include: acid reflux symptom (*this "condition" that is conventionally treated with acid suppressants can actually be caused by low stomach acid*), low B12, ferritin, or iron levels, fatigue despite thyroid medications and constipation/diarrhea.

What is Betaine Hcl and Pepsin

Betaine HCl and Pepsin are naturally occurring components of gastric-juice that make nutrients and amino acids from our protein containing foods more bioavailable by breaking down protein bonds. They are especially important for proper absorption of protein, calcium, B12 and iron.

Betaine, also known as trimethylglycine, is a naturally occurring amino acid derivative that is isolated from beets, and the acidic HCl version of it promotes gastric lumen acidity. Betaine HCl used to be available as an over-the-counter (OTC) drug, marketed as a "stomach acidifier and digestive aid", but it was removed from OTC use in 1993 due to "insufficient evidence of it working", and banished to being a "dietary supplement" by the FDA (*dietary supplement companies cannot make claims of the effectiveness of their products, while drug companies can make specific claims*). However, studies done in 2014, did indeed find that Betaine HCl can re-acidify gastric pH.



In other forms, trimethylglycine is also used to reduce fat tissue and increase lean muscle mass in pigs (*though there are no studies to support it can do the same for humans*), can be helpful for breaking down homocysteine, especially in those with the MTHFR gene mutation, and can be a helpful adjunct in depression, though increasing endogenous amount of SAME, a naturally occurring substance with mood boosting and pain relieving properties, that is also available as a supplement in the US and drug in other countries.

Pepsin is a naturally occurring **digestive enzyme** that breaks apart proteins into smaller pieces so they can be properly absorbed by the small intestine. In supplements, pepsin is usually derived from porcine sources.

How Betaine with Pepsin can Help Hashimoto's

In my May 2015 survey of 2232 people with Hashimoto's, out of 627 people who took **Beta-ine HCl and Pepsin**, 59% of people said that it made them feel better, 33% said that it made them feel worse, while 7% saw no difference in symptoms. Based on the improvement rates, this leads me to believe that 50-70% of people with Hashimoto's are likely deficient in stomach acid. Those that felt worse, were likely not deficient- taking the supplement can make a person with adequate stomach amounts feel worse for a short time (*burning in the throat and stomach upset may occur*). Those that did not see improvement may not have been dosed adequately, as Betaine with Pepsin dosage needs to be individualized.



Betaine HCL with Pepsin

The biggest improvements seen after taking this supplement were improved energy levels (58% of those who found it helpful reported this), reduced pain (40% reported this, to my surprise), and improved mood (35%). One fourth of people felt that this supplement also helped them with losing weight.

Betaine HCl and Pepsin, which supports stomach acid production, can make a tremendous difference in a person's symptoms because once we begin to digest our proteins correctly, a few great things can happen:

1. The body does not need to expend as much energy on digestion, and since digestion is one of our body's biggest energy expenditures, we often have a surplus of energy
2. The amino acids found in proteins become bioavailable, helping with creating neurotransmitters and fuel for our bodies
3. We are less likely to react to our foods, as the food particles get broken down into individual amino acids before they get further down into our gut
4. We generally feel lighter after we eat and do not have cravings for food when full

Who Should Not Take Betaine HCl with Pepsin

For example, people who have a history of peptic ulcers or gastritis or take NSAIDs, steroids, or other medications that can cause an ulcer, should not take Betaine with Pepsin.

Signs and symptoms of an ulcer- dull pain in stomach, weight loss, nausea/vomiting/acid-reflux, bloating/burping, *pain improves when you eat, drink or take antacids.

Signs and symptoms of gastritis-gnawing/burning in your upper abdomen, nausea/vomiting, fullness after eating. *symptoms can improve or get worse after eating.

Using this supplement in excess can lead to stomach irritation, and I always recommend a slow dose titration to determine your optimal dose.

A person using proton pump inhibitor medications would not likely want to take Betaine with Pepsin, as these medications and the Betaine with Pepsin have opposing effects.

Additionally, while having hypothyroidism/Hashimoto's in itself can cause low stomach acid, as can ageing and in some cases this can be a genetic issue, there are other root causes of low stomach acid that need to be considered.

Addressing these root causes should always be done in conjunction with Betaine HCl with Pepsin supplementation:

- ✓ **H Pylori infection** (which can also trigger Hashimoto's, article coming soon), treatment of indication is indicated to address the root cause
- ✓ **B12 deficiency**, which may be associated with a vegan diet or with antiparietal cell antibodies ([Thyroid and B12 article](#))
- ✓ **Adrenal dysfunction** which can deplete nutrients required for stomach acid ([Adrenals and Thyroid article](#))



- ✓ **MTHFR mutation** - the MTHFR gene mutation is associated with a buildup of homocysteine due to impaired methylation. There are two main pathways of breaking down homocysteine. One of them involves the use of trimethylglycine (Betaine), and this gene mutation could theoretically make someone trimethylglycine deficient ([Hashimoto's and MTHFR Mutation Article](#))
- ✓ Other nutrient deficiencies, especially in thiamine ([Thiamine and Thyroid Fatigue Article](#))

Proper Dosing

[Betaine HCl and Pepsin](#) should be taken after a protein-rich meal, starting with one capsule per meal, at the end of the meal.

The dose should be increased by one more capsule at each meal until symptoms of too much acid are felt (burping, burning, warming in the stomach region, etc.).

At that point, you will know that your dose is one capsule less than what resulted in symptoms.

Drinking a mixture of one teaspoon of baking soda in a glass of water can reduce these temporary symptoms.

Dosing Example

- **Meal No. 1:** Took one capsule, didn't feel symptoms
- **Meal No. 2:** Took two capsules, didn't feel symptoms
- **Meal No. 3:** Took three capsules, didn't feel symptoms
- **Meal No. 4:** Took four capsules, felt symptoms

Target dose is: three capsules

Recommended Supplement Brand

I recommend Rootcology [Betaine with Pepsin](#), which provides 750 mg betaine hydrochloride along with pepsin, and is free of fillers and common reactive ingredients like gluten, dairy, soy and pesticides. I also like the [Pure Encapsulations](#) brand, which contains Vitamin C derived from non-GMO corn dextrose, in addition to betaine and pepsin. The dextrose, a corn sugar, is consumed in the creation of the Vitamin C and does not contain corn proteins, which are the reactive component of corn for most people with Hashimoto's who are corn sensitive. The supplement itself is hypoallergenic.



Alternate Ways to Support Stomach Acid

Others have found that apple cider vinegar (one teaspoon of apple cider vinegar in one glass of cold water) and/or lemon juice (squeeze the juice of one lemon into a cup of hot water) can support digestion in some cases of low stomach acid.

Hope this information helps you on your journey!

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