

## HEARTBURN AND GASTROESOPHAGEAL REFLUX DISEASE (GERD)

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**Heartburn**, a burning sensation behind the breastbone that can move up into the throat, may affect up to 44% of North Americans at least once a month. Also called acid indigestion, heartburn is the most common symptom of gastroesophageal reflux disease (**GERD**). Heartburn is categorized as a symptom and GERD as a disease. "Still, the line between heartburn and GERD is hard to draw." The lower esophageal sphincter (**LES**), a ring of muscles at the entrance to the stomach, normally keeps food moving south. If the LES does not close properly (is weak or inappropriately opens), it allows hydrochloric acid, other digestive juices, and sometimes bits of food to back up into the esophagus and perhaps the throat, producing burning irritation. **Reflux** is this backward flow. The discomfort and pressure of heartburn can last up to 2 hours. Frequent or chronic heartburn is diagnosed as GERD and can cause many problems including regurgitation, laryngitis, hoarseness, sore throat, wheezing, chronic cough, difficulty swallowing, chest or jaw pain. People can have symptoms without realizing they are having reflux. Some cases of unexplained asthma may be due to reflux causing inflammation and/or spasms in the airway. Damage to tooth enamel can also result. Chronic reflux damages the lining of the esophagus and may lead to esophagitis (inflammation of the esophagus), formation of scar tissue that narrows the esophagus and makes swallowing difficult, or eventually, Barrett's esophagus in which the cells lining the esophagus become oddly composed and shaped. In about 4% of cases, Barrett's esophagus develops into cancer. Rarely, GERD can lead to perforation or hemorrhage of the esophagus. People with **only** heartburn don't have erosion in the esophagus. But doctors rarely test people for to determine if there is such damage or not. Acid-destroying medications are over-prescribed without knowing exactly what is going on. Conditions such as angina are sometimes mistaken for heartburn and an antacid drug is prescribed. <sup>1</sup>

GERD is among the top 10 reasons people seek medical care and the incidence is increasing. Between 25% and 35% of the US populace is affected by GERD; up to 15 million have heartburn every day. Overweight, overeating, eating rapidly, stomach distention, pregnancy, smoking, poor stomach emptying, food intolerances, gluten sensitivity, celiac disease and other gastrointestinal disorders all increase risk. Stress (especially while eating), overeating or eating too hastily promotes reflux. In a clinical study, a group of volunteers who gulped their meal within 5 minutes had much more indigestion and reflux than another group who ate slowly over 30 minutes. <sup>5</sup> One reason may be that food is chewed more, producing more saliva. Eating slowly also allows the stomach to signal when it is full. Bending over or lying down after a meal or, if there is a hiatal hernia (part of the stomach pushes up into the esophagus), lying down anytime can contribute to reflux. Many medications make reflux more likely such as nitrates, non-steroidal anti-inflammatory drugs (NSAIDs) including aspirin, progesterone, opioids (like morphine), sedatives (such as phenobarbital), antidepressants, tranquilizers (like Valium), some antibiotics, calcium channel blockers (Adalat, Procardia, Cardizem), anticholinergics (Atropine, Bently), some asthma drugs (including theophylline). NSAIDs (ibuprofen, aspirin, etc.), antibiotics, Fosamax, and quinidine (Duraquin, Quinaglute Dura-Tabs, Quinidex) can damage esophageal tissues. <sup>2</sup>

Some **foods** have been blamed for lowering LES pressure and/or stimulating already irritated nerve endings in the esophageal lining, both which make reflux likely. High-fat foods (especially animal fat), chocolate, alcohol, coffee, nuts, peppermint, spearmint, garlic, onions, citrus fruits, grapes, bell peppers, popcorn, dairy products, spicy foods, tomato products, any high-acid items (such as soft drinks, citrus juices, tomatoes) have all been accused of being "well-known triggers." However, there is **insufficient** evidence that restricting these foods produces benefits or improves symptoms, with a few exceptions. Soft drinks and alcohol do irritate the digestive tract lining and are linked to reflux. New guidelines negate all the **other** restrictions. Experts no longer advise wide-ranging dietary changes to everyone diagnosed with GERD. Instead, evidence indicates that **individual** food intolerances that vary from one person to the next are far more likely to cause difficulties. Dietary modifications must be personalized. Keeping a detailed food/symptom diary—writing down everything one eats and drinks plus any symptoms is useful for identifying trigger foods. People who regularly eat high-fiber foods (fruit, vegetables, whole grains, legumes) have less reflux. Such foods are nutrient dense, tend to be non-irritating, allow food to stay in the stomach longer, travel more slowly through the digestive tract and are

subject to more digestive juices and enzymes than foods that quickly pass through. <sup>3</sup> **Overweight** and obesity often lead to reflux. Being obese more than triples the likelihood of persistent heartburn and GERD. Even moderate weight gain can double the risk. Shedding surplus weight reduces symptoms. Esophageal cancer, linked to GERD, has increased as more people have become overweight. <sup>4</sup> Smoking, especially daily and for a long time, significantly increases reflux risk. <sup>5</sup> *Helicobacter pylori* (*H. pylori*) is been blamed for causing stomach ulcers and **antibiotics** are prescribed. It is theorized that antibiotic overuse has excessively reduced normal *H. pylori* colonization, increasing GERD incidence. <sup>6</sup> Studies looking at treating gastritis and effects on GERD symptoms by eradicating *H. pylori* had varied results. Some showed improvement; others showed worsening. <sup>7</sup> People are led to believe that heartburn and GERD are caused by **excess** stomach acid. Many researchers disagree. It is very **rare** for the body to produce too much hydrochloric acid (**HCl**). But insufficient stomach acid, particularly in older people, is common. **Low** HCl can cause a wide variety of problems including heartburn, ulcers, constipation, diarrhea, belching, bloating, sense of excess fullness, sleepiness after meals, fatigue, nausea after heavy or fatty meals, gut flora imbalances, food intolerances, poor nutrient absorption, nutritional deficiencies (especially B12, folate, iron, calcium, magnesium and zinc), and more. <sup>8</sup>

**Normally** in the stomach, food is churned and mixed with gastric juice that includes HCl and the enzyme pepsinogen. Pepsinogen is converted into its active form, pepsin, when it contacts HCl. HCl and pepsin begin digestion of proteins. The normal resting pH of the stomach is between 1 and 3—very acidic. A thick layer of mucus protects the stomach lining. But other tissues, including linings of the esophagus and small intestine, cannot deal with this degree of acidity. Once the HCl and pepsin have done their work, the food will be partially broken down into a thick liquid, chyme. The pyloric valve connecting the lower stomach with the small intestine begins to open, letting chyme through a little at a time. As chyme enters the first part of the small intestine (duodenum), it triggers the intestine to release the hormones secretin and cholecystokinin. Secretin signals the pancreas to release bicarbonate to neutralize acidity and digestive enzymes to complete breaking down proteins, fats and carbohydrates into small particles that can be absorbed through the intestinal wall. The normal pH of the intestines is 7, neutral. Bicarbonate prevents the acid from irritating or injuring the intestinal wall. Cholecystokinin signals the gallbladder to release bile to emulsify fats for absorption. At this point, about 90% of nutrient absorption will have taken place in the small intestine; the remainder is absorbed in the colon.

With **insufficient** HCl, a number of problems can develop. Protein digestion is significantly impaired. Since a number of nutrients depend on some acidity for absorption (including iron, calcium, zinc, B<sub>12</sub>, B<sub>6</sub>, and folate), deficiencies can develop. Sufficient secretin and cholecystokinin are not released so there will be inadequate enzymes and bile to complete digestion as well as a lack of bicarbonate. The body senses that the chyme is not ready to move into the small intestine, so chyme can remain in the stomach longer than usual. If the meal contained carbohydrates, they will begin to ferment, producing gas (a foaming of yeast) that leads to belching, bloating and pressure against the LES, allowing acid and other stomach contents up into the esophagus. After years of gas-forming pressure, a hiatal hernia can develop. Insufficient HCl results in excessive churning of the stomach as an attempt to expose as much of the food as possible to the small amount of acid and other digestive juices there. Reflux occurs when the LES inappropriately opens—often from the excessive stomach churning—allowing acid to splash up into the esophagus. Damage is due to acid going where it doesn't belong. But the **cause** is usually insufficient—not excessive—HCl. <sup>8</sup> Stomach contents besides HCl reflux into the esophagus including pepsin and other potential irritants. Over time, low stomach acid can lead to imbalances in normal, healthy gut flora, which among its many roles, helps produce certain B vitamins. **'Sick'** bacteria are more likely to predominate, affecting even the stomach which is normally acidic enough to prevent proliferation of sick bacteria, viruses and parasites. The immune system is stressed as well as the rest of the digestive tract. Sufficient stomach acid is associated with high levels of **beneficial** flora in the intestinal tract. As unhealthy flora and yeast from the stomach come into the small intestine, dysbiosis (microbial imbalance) will develop. Resulting damage can lead to increased intestinal permeability (leaky gut) that allows poorly digested bits of food, wastes and toxins to "leak" through the intestinal tract. This can adversely affect the immune system, brain, or any other organ or system. With a leaky gut, food intolerances can easily develop. <sup>8,9,10</sup> Leo Galland, MD, considers GERD "as fundamentally being a *motility disorder*" involving inappropriate relaxation of the LES or lower esophagus. Inefficient esophageal peristalsis (wavelike movements that cause contents to be forced onward) can also occur, so food going through the esophagus does not immediately get pushed down into the stomach. <sup>6</sup> There is "strong evidence" that esophageal **muscle tone** is a contributing factor. <sup>11</sup>

**MEDICAL TREATMENT.** Heartburn is treated with antacid drugs. GERD is treated with surgery and/or acid-suppressive drugs. One surgical procedure is fundoplication in which the lower part of the stomach is wrapped around the esophagus to supposedly "recreate" the LES. "Unpleasant" side effects often include an inability to vomit and severe flatulence. New, less invasive surgeries to tighten the LES include the Stretta procedure (radiofrequency energy delivered to the LES) and Bard technique (stitches placed in the LES). Common complications are bleeding and difficulty swallowing. The vast majority of people who have surgery continue to have symptoms and keep using acid-suppressing drugs regularly. The surgical procedures do not necessarily prevent esophageal cancer or other potential GERD complications.<sup>12</sup>

**Antacids** neutralize stomach acid and are often used for long periods of time. Some contain aluminum hydroxide, a neurotoxin. Regular and prolonged use tends to produce constipation, inhibit folate absorption, reduce phosphorus levels and lead to fatigue, loss of appetite and calcium deficiency. Antacids containing magnesium hydroxide may cause diarrhea and interfere with nutrient absorption. Antacids such as TUMS contain calcium carbonate and are marketed as calcium supplements. Chronic, excessive calcium carbonate intake can change electrolytes and lower serum calcium and phosphate. Excessive use can lead to kidney disorders for some. HCl is needed to absorb calcium; antacids decrease this ability. All antacids hinder digestion of proteins. Using them for a year increases the risk of hip fractures. Most antacids reduce absorption of iron, folate, zinc and vitamin B<sub>12</sub>. Over time, these drugs cause more reflux and acid rebound.<sup>13</sup>

**H-2 blockers** (histamine type 2 receptor antagonists) such as Zantac, Pepcid, Tagamet, etc., block histamine which stimulates acid production. They reduce HCl production instead of neutralizing it. Originally prescription drugs, most are now sold over the counter in smaller doses. "You should not take them regularly for more than two weeks unless your doctor advises it." They can interact with other drugs. They do not relieve an inflamed esophagus. Risk of illness involving *Clostridium difficile* (*C.diff*) is increased since lowered stomach acid allows it to overgrow. *C. diff* is a normal component of intestinal flora; it overgrows and becomes 'sick' when healthy bacteria in the gut have been adversely affected or wiped out by antibiotics. People taking H-2 blockers have a greater risk of cognitive impairment. Generic metoclopramide (Reglan) increases muscle contractions in the upper digestive tract. This speeds up stomach emptying, interrupts and disturbs normal digestive processes. Drugs containing metoclopramide have FDA warnings of tardive dyskinesia, a serious movement disorder.<sup>13</sup>

**PPIs** (protein pump inhibitors) such as Prilosec, Nexium, etc., reduce HCl and pepsin production. PPIs decrease mucosal blood flow in esophagus, stomach and duodenum areas, increasing risk of damage and permeability in their linings. Long-term use decreases absorption of iron, calcium, magnesium, zinc and copper and decreases B<sub>12</sub> levels by inhibiting intrinsic factor secretion in the stomach. Other nutrients can also suffer impaired absorption. Dietary protein can help tighten the LES, but PPIs impair the ability to digest protein. Stomach contents can ferment, causing sour stomach, excess gas, bloating and more reflux. Rebound acid secretion occurs for 8 to 26 weeks after long-term PPI use—more reflux than occurred before taking the drug. There is increased risk of gastric polyps and no reduction in risk for gastric or colon cancers. PPIs increase risk of hip, spine and wrist fractures after use for a year. There is increased risk of pneumonia and a severe type of diarrhea due to 'sick' *C. diff* and other 'sick' bacterial overgrowth. Risk for food poisoning is increased. Risk for a serious kidney disease (interstitial nephritis) is increased with long-term use. PPIs can interact with other drugs, reducing their effectiveness, such as immune suppressants, Plavix (antiplatelet agent), and others. PPIs increase risk of a second heart attack in people with acute coronary syndrome. Common side effects include headache, abdominal pain and diarrhea.<sup>15</sup> "PPIs have accumulated a rap sheet" linking them numerous problems. PPIs are overprescribed, especially in hospitals and to older people. Weaning off unnecessarily prescribed PPIs can be difficult and can cause heartburn.<sup>16</sup> Children diagnosed with GERD and treated with gastric acid suppressive medications had a 68% higher incidence of developing food allergies than those not treated with such drugs. The drugs cause impaired digestion which causes absorption of protein fragments that increase sensitivity to milk and other foods. Symptoms may be reduced at the price of food intolerances.<sup>17</sup>

**ALTERNATIVES.** Although the vast majority of heartburn or GERD sufferers have too little stomach acid production, even a small amount of acid in the wrong place can cause symptoms and, eventually, tissue damage. Lowering the acidity of the stomach may temporarily relieve symptoms but it doesn't treat the cause. **Improving** HCl production and function will help. Back in 1955, a study reported in the *New England Journal of*



*Medicine* showed that **absent** HCl in the stomach results in epigastric pain, belching, heartburn, ulcer-like symptoms, nausea, burning tongue, metallic taste, bad breath, constipation or diarrhea. Also, nutritionally supporting the weak LES and tissues of the esophagus is important to help prevent acid from backing up. As long as the LES stays closed, heartburn and reflux won't occur. <sup>18</sup>

Researchers are discovering that a healthy **diet** reduces risks for heartburn, GERD, and GERD complications such as Barrett's esophagus. People who ate a predominantly "health-conscious" diet including high amounts of vegetables, fruits, and non-fried fish reduced their risk of developing Barrett's by 65% compared to those who ate a mostly "Western" diet including high amounts of fast-food and commercial meats. Other research found an association between esophageal cancer and consumption of soft drinks. People with GERD were randomly assigned to consume a "standard meal" either 6 hours or 2 hours before going to bed. The next night they consumed the same meal at the alternate time. Acid reflux was significantly greater after the late meal than after the earlier meal. The meal contained a McDonald's Big Mac, French fries, and a carbonated soft drink. Sadly, the "standard meal" consisted of a large processed hamburger, potatoes fried in refined rancid oil, and flavored refined-sugar water. If people with GERD raised their dietary standards, there is an excellent chance they wouldn't have GERD anymore. Nevertheless, reflux is less likely to occur if dinner is given time to enter the small intestine before lying down. <sup>19</sup> Results of one study showed that short-term consumption of a low-carbohydrate diet by obese people reduced reflux and improved symptoms. Previous reports suggested that following a similar diet for a longer time maintained improvement for up to a year. A low-carbohydrate diet might help symptoms: 1) By avoiding foods that irritate the GI tract lining such as refined sugars, refined flours, processed items (soda, pastries, white bread, pizza, etc.). 2) By avoiding foods to which the individuals have an intolerance such as wheat or corn. A review of studies indicated that eating too much food—not necessarily too much fat—upsets the stomach. Natural food fats do not need to be avoided, only altered, refined or fake fats. Low-fat diets result in increased consumption of carbohydrates, usually refined, processed types. Researchers of one study found no difference in LES pressure after participants ate high-fat meals or low-fat meals. This suggests that the fat content of meals does not increase the prevalence of reflux. <sup>20</sup>

To determine if there are **low levels** of HCl, stomach function could be tested by a physician. Or an experiment can be carried out at home: With substantial meals, drink a glass of water containing either a tablespoon or so of raw apple-cider vinegar or freshly-squeezed lemon or lime juice. If it helps indigestion, then there is likely inadequate HCl production. Then a trial of taking a supplement containing betaine hydrochloride and pepsin midway through meals may be tried. More middle-aged and older people suffer from heartburn and GERD than younger ones, usually due to lowered production of HCl and other digestive substances. <sup>21</sup>

**Melatonin** plays a role in gastrointestinal (GI) functioning. Certain cells in the digestive tract secrete 400 times as much melatonin as the pineal gland. In a clinical trial of people with GERD, the combination of melatonin; isolated/synthetic vitamins B<sub>6</sub>, B<sub>12</sub> and folic acid; L-tryptophan, methionine and betaine was superior to a PPI in relieving symptoms. But this type of supplementation is pharmacological. Taking a hormone drug regularly can be highly stimulating to some tissues and create hormonal and cellular function imbalances. Also, taking isolated/synthetic 'nutrients' can create relative deficiencies and imbalances of other nutrients. In 1995 it was discovered that many plants produce melatonin. It is not exactly the same as the human version, yet in animal experiments, feeding melatonin-containing foods raised blood levels of the indole. St John's wort, feverfew, scullcap, rice, oats, corn, tomato, cherries, bananas, grapes, pineapple, oranges, olive oil, flaxseeds, walnuts and almonds are some sources. Real foods will not create the imbalances or problems as do drugs. <sup>22</sup>

Nighttime GERD symptoms can keep people from falling **asleep** and staying asleep, but taking prescription sleep aids can amplify problems because they may sleep through reflux episodes, exposing the esophagus to HCl for a longer time. <sup>23</sup> Heartburn and GERD tend to imbalance **bacteria** in the digestive tract, so increasing healthy bacterial flora—restoring natural balance and function—would benefit digestion and long-term health. Healthy gut flora can increase absorption of nutrients by 50% and create some needed B vitamins and vitamin K2. Additionally, a balanced digestive tract is important to the immune system, endocrine system, and every other bodily system. Beneficial bacteria can be obtained from traditionally fermented foods (yogurt, kefir, sauerkraut and the like) and/or from a quality pre- and probiotic supplement. These will help reduce the potential for 'sick' bacteria excess and assist production of some nutrients in the gut. <sup>24</sup>

A number of **nutrients** can be preventive, protective and healing. People with GERD have lower **glutathione** levels in the lower esophagus compared with controls. Glutathione is not an essential nutrient since it can be produced from the amino acids L-cysteine, L-glutamic acid and glycine. However, with inadequate HCl, amino acids are not properly absorbed. Glutathione helps regulate nitric oxide, protein synthesis, prostaglandin synthesis, amino acid transport, and enzyme activation. It affects the immune system, nervous system, lungs and digestive tract. It is involved in iron metabolism. A poor diet, pollution, toxins, various medications, stress, trauma, radiation, aging, and chronic inflammation all deplete glutathione. **Whey** protein is an excellent source of glutathione. Garlic, onions, cruciferous vegetables (kale, Brussels sprouts, cabbage, broccoli, etc.) are other food sources. **N-acetyl-cysteine** and **selenium** are precursors of glutathione; vitamins **B<sub>6</sub>**, **B<sub>12</sub>** and **folate** support glutathione production; vitamins **C** and **E** complexes recycle it. **Fish oil** helps protect the stomach lining. **Minerals** such as calcium, magnesium, potassium and others can aid repair. Supplemental **digestive enzymes** can reduce symptoms, improve nutrient absorption and alleviate some effects from delayed gastric emptying or a large volume of food in the stomach. Enzymes such as lipase, amylase, protease, maltase, lactase, sucrose, phytase and cellulase are all supportive. HCl and pepsin supplementation for people with low stomach acid and delayed gastric emptying will improve digestion, symptoms, and the status of nutrients needed to improve HCl, pepsin and digestive-enzyme production. Some elderly individuals may need to continue taking HCl and digestive enzymes for the long-term, but getting the body to produce its own digestive substances is preferential for others. For example, niacinamide (**B<sub>3</sub>**), among other **B vitamins**, aids hydrogen ion production for more HCl. Niacinamide contributes to production of fuel to generate HCl from parietal cells. B vitamins help normalize stomach acid levels and support other physiological functions.<sup>25</sup> Deficiencies of **B<sub>1</sub>**, **B<sub>6</sub>**, and **zinc** reduce HCl production. Refined carbohydrates and chronic stress can deplete them. But isolated, synthetic or nonfood sources of these and all other nutrients should be avoided. Natural, whole complexes are more effective and will not create imbalances. **Sodium** and **chloride** are needed to produce HCl; food sources and unrefined salt will supply them. Homemade bone broth contains **glycine**, which helps increase proper acid production. Depending on the person, issues such as gallbladder problems, dysbiosis, and leaky gut may need to be addressed before digestion can return to normal.<sup>9</sup> Since GERD involves a disorder of the LES and/or constriction of the lower esophagus, support to these tissues require adequate **calcium** and other **minerals** to restore proper function. Muscular cells of the lower esophagus and LES either do not respond adequately to **non-food** versions of minerals found in many supplements or there is a deficiency of these minerals and other nutrients needed for mineral function.<sup>6</sup> Fat-soluble vitamins such as **A** and **E** and **K** as well as vitamin **C** complex are important to the health and function of mucous membrane linings. A, E, K, C and minerals all work together for tissue integrity and participate in the normal inflammation and **repair** processes.

Herbalists often recommend **licorice** for heartburn and GERD symptoms. Glycyrrhizinic acid in licorice may elevate blood pressure, so a deglycyrrhizinated type can be used if this is a concern. Licorice may build a mucus barrier in the esophagus lining, protecting it from acid backwash and allowing repair to take place. Kerry Bone recommends 1 gram of root (typically 300 mg of extract) per day. **Aloe vera** juice can aid reflux and chronic indigestion. Aloe contains many natural constituents, at least 75 active ingredients. It contains small amounts of enzymes such as amylase and lipase, some vitamin C and E, catalase, superoxide dismutase, B vitamins, chromium, magnesium, and all eight essential amino acids. It also contains a bit of salicylic acid which may ease discomfort. To offset the sour, slightly unripe flavor, add a squeeze of lemon and a spoonful of raw honey (lemon provides acid in the stomach and honey soothes the GI lining). Take at least a tablespoon of pure aloe juice before each meal. **Slippery elm** helps provide an extra protective barrier in the esophagus and stomach linings. It's the mucilage—a sticky gel-like polysaccharide—in this and some other herbs (such as marshmallow root) that soothes tissues. When taken right after meals, the herb mixes with digestive secretions and forms a protective gel on top of the food in the stomach. If reflux occurs, the first thing coming up is the mucilaginous gel rather than the acid. Take a rounded teaspoon of powder mixed with a little water or three capsules after meals and before bed if heartburn occurs at night.<sup>26</sup>

With a hiatal hernia in particular, the head of one's bed should be raised about 6 to 8 inches (using bricks or slabs of wood under the bed) to encourage stomach contents to move down the digestive tract instead of flowing back up into the esophagus. If one has heartburn at night (without a hiatal hernia), sleeping on the left side, not on the right side or back, reduces the backup of food and acid into the esophagus; still, raising the head of the bed may also help. A bed wedge can be used which elevates the upper body; in contrast, using

large pillow to raise the head is not effective and may even worsen matters. Don't eat within three hours of bedtime to make sure the stomach is empty. Avoid wearing tight-fitting clothing. Walking can ease heartburn. <sup>2</sup>

Summary of suggested **therapeutic actions** for the person with heartburn or GERD:

1. Increase the body's natural production of stomach acid by adequate nutrition and avoidance of toxins.
2. Eliminate food triggers—personal intolerances. Use an elimination diet, then reintroduction.
3. Consume a natural, real food diet. Avoid refined, processed, chemicalized non-foods; they exacerbate acid reflux, deplete needed nutrients, add toxins, and upset the bacterial balance in the digestive tract. Eat high quality organic and preferably locally raised foods.
4. If needed, temporarily take a hydrochloric acid supplement and possibly digestive enzymes.
5. Lose excess weight. A diet of healthful foods, portion control and exercise will help.
6. Don't eat within three hours of going to bed.
7. Avoid huge meals. Don't drink a lot of alcohol as it is an irritant to the GI tract lining. If you smoke, quit.
8. Sleep on your left side, not your right side or your back to reduce heartburn at night. If needed, elevate the head of your bed.
9. Wear comfortable, loose-fitting clothes. Tight pants, pantyhose, slenderizing undergarments, and belts put pressure on the stomach.

Individuals with evidence of low HCl and other digestive factors may try the following supplements to aid the production of digestive juices as well and support the digestive processes:

15 Minutes Before Each Meal:

1 Okra-Pepsin, coats and soothes

Just Before Two Largest Meals:

2 Cataplex B (chew), B vitamins

2 Cataplex G (chew), B vitamins

1 Cataplex C (chew), vitamin C complex

Midway Through Two Largest Meals:

1 Betaine Hydrochloride (for 2 or 3 months)

1 Multizyme (for 3 to 6 months), digestive enzymes

1 Cod Liver Oil, vitamins A & D, fatty acids

After Two Largest Meals:

2 tablespoons Whey Pro Complete OR

1 tablespoon Calcifood Powder, protein, minerals

1 St John's Wort, melatonin

If needed, Medi-Herb Licorice extract (as long as blood pressure is not an issue), 2-5 ml in water once per day.

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