

Gastro Esophageal Reflux Disease (GERD or Reflux)

60% of Americans are diagnosed with Gastroesophageal Reflux Disease (GERD). It occurs when stomach contents (food, acidic juices and digestive enzymes which are activated by acid) splash up into the esophagus, which usually causes “heartburn”. This material may splash up as far as the throat and even the nose and sinuses causing a variety of symptoms such as a sore throat, post nasal drip, the feeling of a tickle or lump in the throat or hoarseness. It may even contribute to cancer. The fundamental issue has to do with the function of the *lower esophageal sphincter* or LES. This is the valve connecting the lower esophagus to the stomach and acts as a valve, opening up to let food in and closing down to prevent backwash, which is what reflux essentially is. Many patients who have problems in their throat from reflux may not have any heartburn at all! This is called silent reflux. There is a perception that the treatment for reflux is to take acid reducing medications. These medications are a band-aid and do NOT stop reflux from occurring. They may improve symptoms but they may actually make reflux worse and mask damage that is still occurring. They do decrease acidity but the real treatment is to stop the material from splashing up in the first place. The following is a list of recommendations for minimizing reflux:

- 1) **Go to bed on an EMPTY stomach.** This means no eating or drinking (not even water) at least 2-3 hours before bedtime. It’s simple physics; if you lay down with material in your stomach, it will splash upwards and cause irritation. Even water will mix with the acids, increase volume and lead to reflux. The thinner the substance, the more it splashes.
- 2) **Avoid or limit FATTY foods.** Fat, which we get primarily from animal sources such as meat, dairy (especially cheese), fish and eggs, cause the LES to relax inappropriately leading to reflux. It’s partly why we get heartburn after fatty meals. People often think that chicken, pork or fish are “lean meat” alternatives but that is a myth. Chicken for example has the same amount of cholesterol as red meat and only a slightly better caloric fat percentage. Fish has a significant amount of saturated fat as well. The fats that we get from such plant sources as nuts and avocado do not have the same effect on the LES but certain vegetable and tropical oils can. Limit them (including olive oil).
- 3) **Avoid or limit spicy or acidic foods.** Acidic foods are irritants and also activate digestive enzymes so even if you take an antacid, the enzymes will cause damage. You need to do your research to identify what is acidic. For example, carbonated beverages, even seltzer water, are extremely acidic.
- 4) **Lose weight.** Excessive weight, especially in the midsection, increases pressure in the abdominal cavity putting pressure on the LES, leading to reflux. Watching your diet and following an exercise program, including aerobic exercise and resistance training (weights) are crucial to good health. All the extra pressure from the abdominal mass causes the LES to malfunction.
- 5) **Raise the head of your bed by 4-6 inches with blocks (not pillows).** This will put your whole body at a slight angle, which will help keep stomach contents in the stomach. **Important note:** using too pillows can actually make reflux worse by bending you at the neck and waist which increases pressure in the abdomen which will actually push material in to the esophagus and throat! You want your whole body on an angle. A wedge may be acceptable if it is large enough.
- 6) **Sleep on your back or side. Left side is the best.** Sleeping on your stomach promotes reflux.
- 7) **Limit Caffeine, especially late in the day.** Found in coffee, tea, iced tea, colas, chocolate... caffeine does three things that contribute to reflux. First, it is a diuretic and makes your body lose water. This dries and irritates the mucous membranes that line the throat and mouth. Second, it stimulates more acid production in the stomach. Third, and most importantly, it relaxes the muscle sphincter that separates the stomach from the esophagus, thus allowing reflux to occur. Limit your intake of caffeine to 3-4 beverages per day. Even decaffeinated beverages have enough caffeine to loosen the LES. Keep in mind that caffeine clears the body slowly. Its half-life is 6 hours. Limit your caffeine intake to as early in the day as possible, preferably before noon.
- 8) **Eat smaller meals.** Large meals, especially dinner, distend the stomach, which slows emptying. The longer material sits around in the stomach, the more chance it has to reflux upwards. Eating less will also help you lose weight.
- 9) **Do NOT Smoke or use other tobacco products.** In addition to the many other life-threatening effects of tobacco, it stimulates acid production in the stomach and is a strong irritant to the mucous membranes.
- 10) **Do not exercise within 2 hours of eating or drinking.** Exercise increases intra-abdominal pressure.
- 11) **Drink plenty of water.** Keeping the mucous membranes hydrated is important. You should consume 8-10 glasses of water per day (more if you continue to drink caffeinated products). It is also important to take frequent sips of water throughout the day. Each swallow coats and soothes the throat with moisture. Do not to drink water within a few hours of going to bed.

The lower esophageal sphincter is the key to controlling reflux. All fat but especially saturated fat impacts on how this sphincter works. When you eat fatty foods, there is an enzyme called *cholecystokinin* or CCK which is produced which also relaxes the LES. This CCK effect does not happen with fats from whole foods such as nuts, seeds or avocado because they contain fiber which blunts this effect. It does occur however with all oils, especially tropical and some vegetable oils, since they contain no fiber.

Our stomachs make acid whenever you eat or even think about or smell food. When the acid gets into the small intestine, it gets neutralized by bicarbonate, produced by the pancreas. The stomach is acidic but the small intestine is alkaline. The stomach has a mucus layer which protects us from the acid. If that rhythm of acid and bicarbonate gets disrupted, the balance of bacteria in the small bowel can change leading to a condition called Small Intestinal Bacterial Overgrowth (SIBO) because it’s not normal to have an alkaline stomach which happens when you take antacids. The most commonly purchased medications at pharmacies are over the counter acid reducers. They are simply not healthy to take chronically.

Acid reducing medications are sometimes necessary for severe reflux but most people don't need them. Again, the meds do not treat reflux. They decrease acidity and this can be very unhealthy as it impacts on digestion and nutrient absorption. It also impacts on production of CCK, an enzyme which helps control LES activity. In fact, some of these medications (PPIs or Proton Pump Inhibitors like Prevacid, Protonix, Nexium, Omeprazole...) are linked with dementia, bone loss, kidney damage, pneumonia and even gut wall disruption and SIBO. The stronger PPI medications must be tapered down since the body has to get used to producing a normal amount of acid all over again. Often when patients stop them suddenly, there is a rebound increase in acidity for a few days which is very uncomfortable. People often think they need to keep taking their meds since they make them feel better. A good way to taper is:

- 1) Take Pepcid Complete after dinner. It is a less potent antacid but does not result in rebound when discontinued.
- 2) Week 1, take the PPI (Nexium, Protonix, Omeprazole...) every other night 30-60 minutes before dinner (or whenever you are used to taking it).
- 3) Week 2, take it every third night then discontinue altogether.
- 4) Continue the Pepcid Complete for another week then discontinue and take as needed.

Acid Reducers - They help the symptoms but don't stop the disease.

The most commonly purchased medications in US pharmacies, whether prescription or over-the-counter, are acid reducers. These medications are used to treat heartburn or its more advanced form, gastroesophageal reflux disease (GERD). Although they seem innocent enough and they can relieve heartburn and reflux symptoms, they do not treat the underlying disease, can make the problem worse by masking the problem. As with any other medication, they have many side effects, some of them quite serious.

The acid in our stomachs is hydrochloric acid, a much more acidic substance than anything we eat, and it serves multiple purposes. It activates enzymes responsible for breaking apart and digesting food. It also destroys and kills foreign substances we ingest either by swallowing or from the regular drainage of nasal and lung mucus along with our saliva. In total, we produce almost a gallon of secretions a day which are normally swallowed (1/3 rd-1/2 gallon of nasal secretions, 1/4 of a gallon of lung mucus and 1/4 of a gallon of saliva - a day!). When our stomach acid levels are reduced, which can occur through simple aging or artificially through medications, a number of problems can develop.

- Poorer digestion and absorption of food overall.
- Low magnesium levels because of poor absorption which can result in:
 - Weakened bones (osteoporosis).
 - Kidney disease.
 - Muscle weakness and cramping.
- Pneumonia, because of decreased bacterial destruction.
- Dementia. The mechanism is not clear and this link is still very much debated.
- Alterations in the gut microbiome.
- Vascular disease because of decreased nitric oxide production (gastric acid helps convert nitrite, from foods such as green leafy greens and beets, to nitric oxide which relaxes arterial smooth muscle).
- B12 deficiency, because of poor absorption.
- Increased risk for Clostridium Difficile, H.Pylori, and other gut microbial infections.

LOW ACIDITY. As mentioned above, too much acid does not cause reflux. In fact, excessive acid levels are pretty rare. Low acidity on the other hand is more common especially as you age. As odd as it sounds, sometime the symptoms of reflux are actually caused by acid levels which are too low. This test will help determine if you have low stomach acidity, and will help you to determine your correct dose for supplementation to improve digestion:

Instructions:

- Find a bottle of Betaine HCl at 200-500 mg strength, a formulation that has includes pepsin or pepsinogen in it as well (this is a digestive enzyme that will be synergistic in helping your digestion).
- **15 minutes** prior to eating a main meal (with protein) **take one capsule.**
- Within about 15 minutes of taking the Betaine HCl you might feel a warm sensation, like you just drank a hot cup of tea (or it might feel like a burn).
- If you feel this sensation, you can stop: *you have adequate stomach acidity.*
- If you have *insufficient* stomach acidity (a.k.a. hypochlorhydria) you will feel no sensation.
- Proceed with eating your meal.
- At the next meal, repeat these steps, but with 2 capsules. Continue increasing the dose by one capsule per meal until you get the warm/burning sensation, then back off by one capsule.

Your stomach acidity may normalize with treatment over a period of weeks to several months. As it normalizes, you may begin to notice the warm sensation at your current dose, in which case you would taper back by one capsule and then continue at that dose until the sensation returns, and continue tapering in this way.

For some individuals with extreme stress levels, they remain reliant upon Betaine HCl as a supplement.