

Treatment of GERD with Traditional Chinese Medicine

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Gastroesophageal Reflux Disease (GERD) is a commonly occurring ailment in modern society; roughly 20% of adults over 40 years of age experience it. Overt symptoms, such as burning sensation of the esophagus, are not always felt when reflux occurs, so frequency of reflux may be much higher than reported symptoms. Among adults, GERD is primarily due to a history of poor eating habits, development of obesity, and lack of adequate physical activity. It is a potentially dangerous condition, as prolonged experience of acid reflux can contribute to development of esophageal cancer, while scarring of the esophagus may contribute to difficulty swallowing. Often, GERD is depicted as an annoyance that inhibits freely eating what is desired (e.g., pizza) for which certain drugs will allow continued consumption of those foods that otherwise worsen the condition. However, such a presentation does not take into account the fact that GERD is more appropriately seen as a symptom of a more complex health problem.

For the most part, GERD is related to disorders of the early stages of the digestive process, as will be roughly outlined here. Food is first selected and prepared so as to make a desirable and nutritious meal or snack. It often happens that this first step, perhaps best called pre-digestion, is inadequately considered in relation to the potential contribution of dietary choices to disease. Due to modern emphasis on minimizing time involved with food preparation and the ready availability of diverse food substances, meals and snacks may prove challenging for the digestive system and the circulatory system that carries digestive nutrients. Excess of certain substances (typically fat, carbohydrate, salt, sugar, and other flavorings) that make foods seem more desirable, while at the same time having a deficiency of important food components (typically protein, fiber, plant phytochemicals), contribute to diet-induced health problems.

Although some individuals may be especially sensitive to certain foods or food types, the foods most likely to contribute to an episode of acid reflux are those yielding a thick and somewhat impenetrable mass in the stomach. An example is standard American style pizza; the pizza crust begins as a sticky flour sheet, which is then topped with a stringy cheese (mozzarella); any vegetable material, such as tomato sauce and some toppings, are cooked to become quite soft, not providing bulk, and any meat toppings tend to be oily. As will be described, this is a recipe for slowed processing in the stomach, generating more acid and giving more time for reflux to occur.

Once the foods are selected and ready to be consumed, the next step in digestion is chewing food, mastication. It has become increasingly routine experience for people to devour food with limited chewing. While the main necessity for chewing is to reduce food to small enough size that it can be swallowed without choking, for people having digestive system problems, there is more to it than that. The chewing process can serve better for digestive health when it reduces the food materials to a mash, with saliva well blended into that. Saliva includes digestive enzymes, mainly amylase, used to breakdown starches. Inadequate chewing of food puts the burden on stomach and rest of the digestive system to take care of this important step. Complaints about gas and bloating often are related to this issue.

The food mash is propelled downward through the esophagus by the swallowing action. Besides the initial swallowing motion, there is a more subtle movement of the esophagus to promote the downward flow of saliva (when not consuming food) and of the food mass with saliva during meals. Swallowing food can be under mental control, in that one can delay swallowing, such as for more chewing, or purposefully induce quicker swallowing, to intentionally get the food out of the mouth and down promptly. For the most part, though, swallowing is an automatic function during eating and drinking based on habits. For those who have problems with not chewing food adequately, paying attention to the combination of chewing and swallowing

during several consecutive meals can help reprogram the automatic tendency so as to allow for better chewing. This attention to chewing may need to be followed from time to time to keep up the good effects of slightly slowing the process.

The stomach can receive the food mash by dilating a sphincter, a muscle band where the esophagus meets the stomach, called the esophageal sphincter or lower esophageal sphincter (LES). Once food has passed from the esophagus to the stomach, this sphincter closes again so that the contents of the stomach don't get the chance to go the wrong way (upward). If there is something wrong and there is a need for vomiting, the stomach, which is basically a muscle with a cavity for food, squeezes the food upward, dilating the esophageal sphincter and ejecting the stomach contents. This should be a rare occurrence; pregnancy can increase the tendency, but in ordinary circumstances, vomiting is a protective mechanism when the body detects something potentially harmful.

The stomach secretes acid in the form of charged protons that generate hydrochloric acid, and this acid blends with the food mash while the stomach is gently kneading the material contents through its muscular function. Over time, the acid penetrates the entire food mass, more easily when it has been well chewed and when it has a variety of textures. Some foods that have a gummy nature, such as the pizza described above, are more resistant to the blending because of their sticky, congealed nature. Along with acid, the stomach secretes an enzyme group designated as pepsin. Both pepsin and acid help break down proteins. Fats, such as in cheese and meats, remain mostly intact.

The stomach can be divided into two parts, the upper and lower, but there isn't a barrier between them. The lower part of the stomach is more acidic and holds the food for a longer time, an hour or more, to allow for the digestive process to be completed. Ideally, the amount of food consumed at a meal is sufficient to fill the lower stomach but not also the upper stomach at the same time, as occurs with overeating. Rather, the upper part of the stomach is mainly a passage for the peristaltic action of the stomach muscles to blend in acid. When the stomach has worked on the acidified food mass (chyme) for an hour or two, it opens a sphincter located at bottom of the stomach, called the pyloric sphincter, so that food can be passed into the duodenum a little at a time. The duodenum is the first stage of the small intestine; it is where the chyme is neutralized by carbonate and treated with pancreatic enzymes and also with bile to solubilize the fats. Here the food material is largely reduced to absorbable components.

There are two major contributors to GERD. One is the result of any slow-down of the food departure from the stomach to the duodenum. When occurring by itself, this pattern of slow exit from the stomach is known as gastroparesis (paresis = weak movement and activity; gastro = of the stomach). It may occur with reduced muscular activity of the stomach and reduced responsiveness of the pyloric sphincter. Prolonged retention of food stimulates continued production of acid. The other contributor is the consequence of weakness of the esophageal sphincter, which then allows any pressure from below to push stomach contents, such as a thin liquid of high acidity floating on top of the food mass, up into the esophagus. The sphincter may become weakened due to repeated stresses upon it over the years from overeating or from frequent belching or vomiting. The sphincter may also weaken as an aspect of overall muscular weakness due to lack of physical activity. One of the causes of the sphincter not closing properly is a hiatal hernia. This disorder involves a distortion of the upper stomach, with the sphincter, as it pushes through the diaphragm and into the lower part of the esophagus. To some extent, the upward movement of acid can be counteracted by gravity: after eating, remain sitting or standing or walking, and do not lie down.

Apart from tiny amounts that escape when the sphincter properly opens (to allow more food into the stomach or to release air as a burp), a somewhat larger acid regurgitation can happen on rare occasions to almost anyone given particular circumstances, such as eating a large meal and soon after lying down. Thus, small

amounts of acid may go upward a short distance even in normal stomach activity, but in non-harmful and not noticeable amounts. It is then returned to the stomach by the movement of the esophagus. The reason for acid to repeatedly go up into the esophagus in larger amounts and reaching further up the esophagus where the tissues can be damaged and pain experienced, is primarily that the esophageal sphincter is not closing.

A risk factors for GERD is obesity, which is most often the result of overeating, especially when compared to caloric needs. It is part of the syndrome prevalent in the modern world which may include such problems as hypertension (too much pressure of the blood in its vessels), hyperlipidemia (too much fat in the blood), diabetes (too much sugar in the blood), and gastro-intestinal distress (from excessive quantity of food). The enlarged abdomen in obesity can restrict stomach activity, and repeated overfilling of the stomach stretches it out and makes it less effective at mashing the food materials. Obesity also contributes to hiatal hernia.

As with many other health problems, GERD is reversible if dealt with early on, and not reversible once it has been present for years. In particular, damage to the lower esophageal sphincter becomes increasingly difficult to repair.

Many of the drug therapies for GERD involve reducing the amount of acid that is available to be refluxed. When the food mass remains in the stomach too long, a pool of liquid acid can develop on top of the food mass. Acid reduction can be accomplished by over the counter remedies for neutralizing acid (using, for example, calcium carbonate tablets) or by prescription drugs that inhibit histamine release, since histamine promotes acid production, or using drugs for directly reducing acid release (inhibiting the “proton pump” that puts the acid into the stomach). The problem of GERD has become so common that low dose versions of some of the prescription medicines can now be obtained over the counter. Recent concerns over the finding of a carcinogen as a possible breakdown product of a histamine inhibiting drug, Ranitidine (Zantac), has led to increased search for natural health care methods.

Doctors often do, and at least should, inform patients either before GERD develops or when it is first detected to take care of life style factors that are involved. Unfortunately, such advice is too often not taken to heart. Once the condition becomes severe, it is more difficult to then manage it without prescription drugs as part of the treatment plan.

Traditional Chinese Herbal Medicine for GERD

GERD, in the terms we now describe pointing to features such as acid production and stomach movement, was not known to ancient physicians of Chinese medicine and so was not a direct concern for their formula development. Furthermore, either because the condition was relatively rare in the Chinese population or the nature of the condition remained unknown, during the very active period of modern Chinese medicine development, 1975-1995, there were few publications about treatment of this condition. Other stomach disorders were addressed, and sometimes reflux would be mentioned in passing as one manifestation that might occur, but the specific problem of acid reflux appears to have largely been ignored. Even more recent English language texts about Chinese medicine reflecting work done in China, do not bring up GERD as one of the ailments with treatment recommendations.

Chinese herb formulas for a variety of problems associated with the stomach can be applied to treatment of this disorder by the principle of utilizing ancient prescriptions for modern disease by parallel symptoms or compatible descriptions of disease processes. A good example of this approach is the usual first choice among TCM doctors for GERD, Ban Xia Xie Xin Tang (Pinellia Combination). This formula is traditionally utilized to aid proper direction of flow in the stomach: the direction should be downward. Ban Xia (English: Pinellia), has the reputation of redirecting movement from perverse upward rising to proper descending. At the time this formula was described, Ban Xia was also considered one of the important herbs for counteracting

coldness. According to the TCM framework, the stomach organ that has diminished capabilities is “cold.” Most of this formula is aimed at treating cold stomach with stagnation of food that is yielding the upward flow. In addition, and this intrigues modern TCM practitioners, the formula has two herbs that are said to reduce “fire,” which can be considered the manifestation of esophageal burning by the acid, a symptom that feels fiery. When this formula was developed, the prescriber likely had a different concept for the action of the two herbs. In fact, an indication for each of these herbs during this time period was treatment of uprising from the intestines (which may thus indicate also uprising in the stomach). Overall, treatment strategy combines a primary correction for stomach cold and a secondary means of alleviating the symptoms, namely to address the hot feature. The ultimate aim is to redirect the upward movement downward.

Practitioners of Chinese medicine have some differing ideas about how to organize a prescription for GERD. That is partly because different philosophies have influenced determining the starting point for selecting or developing a formula. A usual approach is to turn to ancient formulas that seem to reasonably fit the pattern of imbalance to be treated. The preferred source for many TCM physicians is the pair of books derived from the work of Zhang Zhongjing at the end of the Han Dynasty (around 220 A.D.). That leads to selecting the formula just mentioned, Ban Xia Xie Xin Tang (Pinellia Heart-Cleansing Decoction). The term heart (Xin) in the formula name seems confusing, but the stomach was apparently considered, in ancient times, as the “heart” of the torso. Heiner Fruehauf explains; “...the second meaning of the Chinese term *xin* (heart) [is] center. In Chinese medical terminology, *xin* often refers to or at least implicates the stomach, since the epigastric region constitutes the structural center of the torso.” For this treatment strategy, the stomach is to be cleansed (Xie) of a full, stagnated condition by this decoction (Tang) of herbs. The symptom pattern for which this formula is considered especially applicable is when there is a sense of fullness (referred to in the ancient text as “hardness”) in the area of the stomach and a tendency for upward flow, such as retching or vomiting. In the case under consideration, we might add upward flow of stomach fluids rich in acid that reach the esophagus. Why didn’t the formula mention the stomach (Chinese: Wei)? Most likely, the disorder was perceived at the time to involve more than just the stomach organ, involving only the physical region of the stomach.

This formula is mentioned in an article of the Healthcare Medicine Institute which in turn is derived from a recent Chinese publication by Li Hanhua, and Lau May Wah: “Ban Xia Xie Xin Tang combined with abdominal acupuncture for the treatment of gastroesophageal reflux disease clinical efficacy observed.”(1).

After considering the most ancient applicable formula, well known prescriptions of later texts are considered. Thus, another formula often mentioned in relation to GERD is Liu Jun Zi Tang. This formula is named after a smaller formula upon which it is based, Si Jun Zi Tang, the name refers to four (Si) gently acting ingredients (Jun Zi: the term refers to a gentleman) made as a decoction (Tang). Two ingredients are then added to make six (Liu) ingredients, and those two are Ban Xia, the herb featured in the discussion above, and Chen Pi (tangerine peel), which together with Ban Xia lowers rising qi from the stomach and helps disperse stagnated food staying in the stomach too long. The four gentlemen of the base formula are used to warm the paired system of stomach/spleen. Use of this formula is mentioned in two articles by Japanese researchers; the name of the formula in Japanese is Rikkunshito (Rik = six; kun shi = jun zi in Chinese, which is gentleman; to = tang in Chinese, the decoction). One article mentions that this formula helps gastric emptying (2), thus not retaining the food for so long in the stomach, which would thereby reducing the chance of reflux; and another article (3) mentions the same mechanism and specifies its effect on gastrointestinal reflux. It should be noted that despite the formula name referring to six ingredients, the formula is commonly prepared with two other herbs, Sheng Jiang (fresh ginger) and Da Zao (large Chinese zizyphus date; common name: jujube).

TCM practitioners frequently mention a modified form of Liu Jun Zi Tang as applicable to GERD. This formula is Xiang Sha Liu Jun Zi Tang, and it adds two more herbs: Mu Xiang (the meaning is wood = Mu

that is very fragrant = Xiang; English name saussurea or jurinea) and Sha Ren (Sha refers to the various kinds of cardamom, Ren means seed; English cardamom), but deletes Sheng Jiang and Da Zao. The two added herbs enhance the warming quality of the formula; they further aid in dispersing the stagnation of food and reduce regurgitation.

A third example of treatment for GERD is the traditional formula called Zuo Jin Wan that is but a pair of herbs. The formula name indicates the pill (Wan) that is gold (Jin) in color, used to correct the left side (Zuo). The reference to gold is the bright yellow of one of the herbs, namely Huang Lian (English translation: yellow thread; the thread refers to the tangle of thin roots; English name for the herb: coptis); it is in largest quantity, being six times the amount of the other herb, evodia, making the pill of ground herb material display this color, which is due to a group of bright yellow colored alkaloids. The “left side” is a reference to the ancient concept of upward and downward flow, perhaps more poetic than anatomical, with upward flow on the left side and downward flow on the right side; this pill corrects the excessive upward flow. The nature of Huang Lian is cold, and it is one of the ingredients of Ban Xia Xie Xin Tang. The other herb of Zuo Jin Wan is Wu Zhu Yu (English name Evodia or Euodia), which is named for the region where the herb was originally considered of best quality (Wu Di), and for Zhu Yu, a designation for the plant, a term that is also applied to an unrelated plant (Shan Zhu Yu: the mountain, Shan, type of Zhu Yu; English name: cornus). This herb is considered of extremely hot nature, and that is one reason why it is in such small proportion (1/7 of the formula). Since this formula is so small, it is quite common to modify it by adding other herbs.

Another traditional formula sometimes recommended for GERD is Bao He Wan. The name of the formula refers to its form (Wan = Pill) and its suggested therapeutic principle, to maintain (Bao) harmony (He), but this name most likely comes from a play on words, as Bao He (same pronunciation, but the character for bao is different) means completely full, and refers to the condition the pill treats, which is the discomfort of a very full stomach. This formula addresses the condition of slow elimination from the stomach, resulting in a prolonged sensation of fullness and resulting in belching and, as relevant here, acid regurgitation. The formula warms the stomach, especially utilizing the very warm herb Lai Fu Zi (radish seed) and helps the uprising qi to descend with Ban Xia and Chen Pi. A heat syndrome that may arise from excessive damp stagnation as with prolonged food retention, is treated by Lian Qiao (English: forsythia).

Below is a table displaying ingredients of the four formulas (plus one variant); names in italics indicate that the ingredient is used in at least two of the base formulas. Ban Xia is in three of the formulas

Formula	Warming Component	Cooling Component
Ban Xia Xie Xin Tang	<i>Ban Xia</i> , Gan Jiang, <i>Ren Shen</i> , <i>Gan Cao</i> , <i>Da Zao</i>	Huang Qin, <i>Huang Lian</i>
Liu Jun Zi Tang [or Xiang Sha Liu Jun Zi Tang]	<i>Ren Shen</i> , Bai Zhu, <i>Fu Ling</i> , <i>Gan Cao</i> , <i>Ban Xia</i> , <i>Chen Pi</i> [plus Sheng Jiang, <i>Da Zao</i> or <i>Mu Xiang</i> , <i>Sha Ren</i>]	----
Zuo Jin Wan	Wu Zhu Yu	<i>Huang Lian</i>
Bao He Wan	Lai Fu Zi, Shan Zha, Shen Qu, <i>Ban Xia</i> , <i>Chen Pi</i> , <i>Fu Ling</i>	Lian Qiao

Acupuncture for GERD

Acupuncture is especially effective for influencing muscle activity, an effect mediated via the nervous system. It is of potential use for GERD by promoting the stomach activity for blending food and acid and moving food out of the stomach and perhaps strengthening the activity of the esophageal sphincter to help prevent upward discharge of acid.

There are only a small number of publications describing specific points for GERD. The basis for virtually all the treatment strategies is the well-known pair of acupuncture points Zu San Li (ST-36) and Nei Guan (PC-6). While ST-36 is one of the most commonly used acupuncture points, in this case it is especially important for treating the weakened stomach function that results in stagnated food and accumulation of acid, as well as poor function of the sphincters. PC-6 is well-known for treatment of nausea and vomiting, and its functions may include helping to maintain the proper direction of flow, namely downward, thus applicable to inhibiting the upward movement of stomach acid.

The Conception Vessel runs along the centerline of the front of the body, and its points CV-10 through CV-17, located from the bottom of the stomach to the esophagus, are utilized in most of the treatment protocols, with Xia Wan (CV-10) for the sluggish pyloric sphincter function that has reduced movement of food downward out of the stomach, Zhong Wan (CV-12) for irritation of the stomach and weakness of its muscular activity in mashing the food and acid, Shang Wan (CV-13) or Ju Que (CV-14) when the esophageal sphincter is weak and allowing acid to move upward, and Shan Zhong (CV-17) which is the site of acid damage in the vulnerable part of the esophagus. Usually, only one or two of these CV points will be utilized for a given acupuncture session. The three points named “Wan” are the upper (Xia), central (Zhong), and lower (Shang) points of the stomach, as defined by the ancient concept. The understanding of these points is that they were used to “vent” congestion, as though pressure had built up and was being relieved.

The use of the CV points was described in the Systematic Classic of Acupuncture and Moxibustion (4; Zhen Jiu Jia Yi Jing of the third century). In the section on the stomach/spleen and intestines, it states:

[For] cold in the center and damage from overeating with inability to transform food and drink, distention, stuffy fullness...Shang Wan is the ruling point; For abdominal distention and blockage, cold in the center, damage from overeating, and inability to transform food and drink, Zhong Wan is the ruling point; For inability to transform food and drink and stomach reflux, Xia Wan is the ruling point.

Additionally, near the origin (foot) of the Spleen Meridian, the point Gong Sun (SP-4) is often chosen for this problem of food stagnation with tendency to reflux. SP-4 is utilized when there is an overly full stomach. A basic formula then is:

Zu San Li, Nei Guan, Gong Sun, and Zhong Wan (ST-36, PC-6, SP-4, CV-12)

The CV point or points selected are the main variables. This list of four points (seven needles; three bilateral points and the central CV point) is widely considered a base formula for food stagnation. The pair of CV-12 and Zhang Men (LV-13) is mentioned in the Systematic Classic for stomach distention, an indication of food stagnation. Other potentially useful points of the Stomach Meridian are Liang Men (ST-21), utilized for full stomach and vomiting, and Nei Ting (ST-44), especially for stomach fullness with constipation.

It is important to consider that if the use of traditional Chinese medicine (TCM) is not being effective within a brief time (even if prolonged therapy is needed to retain the effects) that modern medicine treatments may be needed additionally to avoid serious harmful damage to the esophagus. All patients who display some risk factors for GERD, should be counseled about altering behavior to reduce the contributing factors.

Source Identifications

1. Contemporary Medicine 3 (2013). (see: <https://www.healthcmi.com/Acupuncture-Continuing-Education-News/711-acupuncturherebskiboshacidreflux>).
2. Evidence-Based Complementary and Alternative Medicine (2011). <https://www.hindawi.com/journals/ecam/2011/248481/>); *The Traditional Japanese Medicine Rikkunshito Promotes Gastric Emptying....* K. Tominaga, et.al.
3. Surgery Today. 2010 Dec;40(12):1105-11. The effect of traditional Japanese medicine (Kampo) on gastrointestinal function. Mochiki E., et. al. <https://www.ncbi.nlm.nih.gov/pubmed/21110152>)
4. Jia Yijing and Chace, C (translators). **The Systematic Classic of Acupuncture and Moxibustion**, 1994, Blue Poppy Press, Boulder, CO.

A summary of modern medical knowledge of GERD is: <https://www.ncbi.nlm.nih.gov/books/NBK441938/>

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