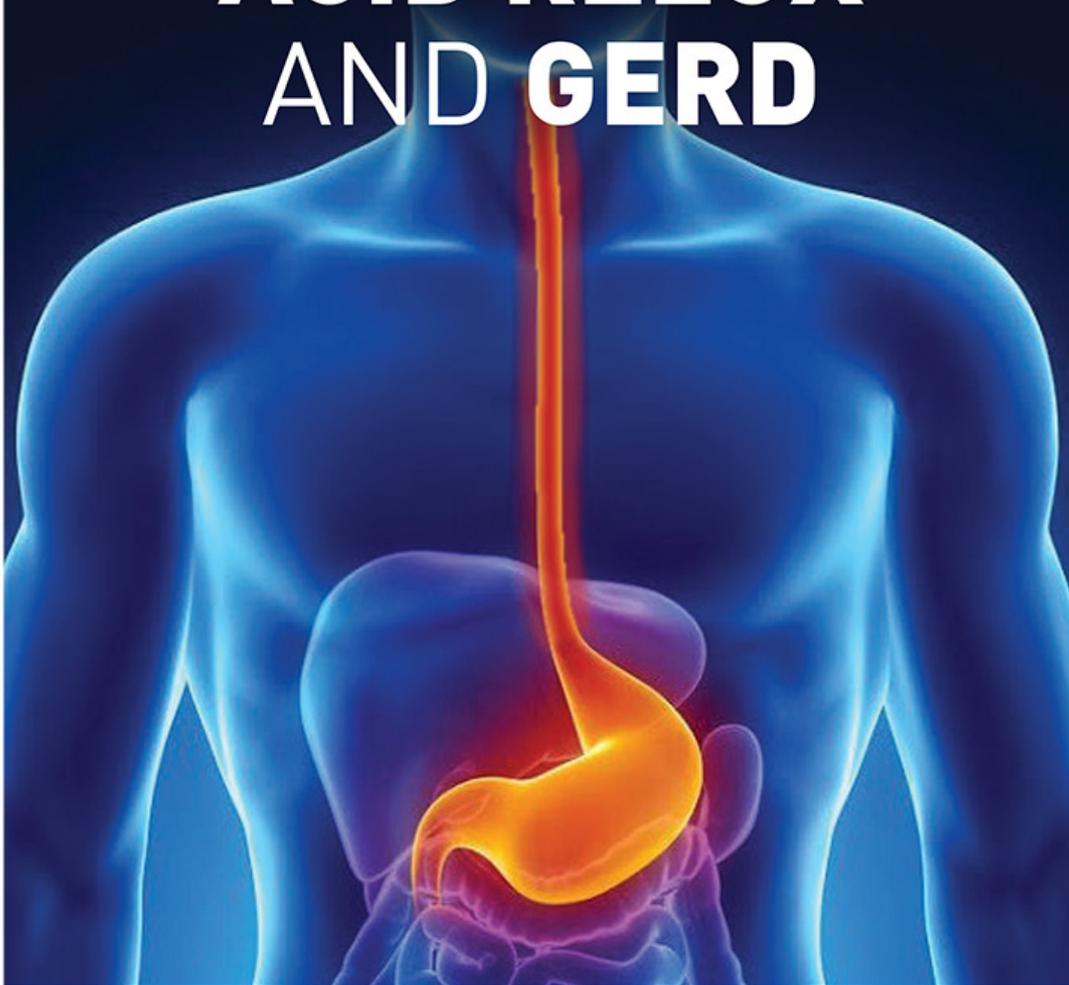


# RELIEF FROM ACID RELUX AND GERD



Solutions, Aids  
and Remedies

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# ***INTRODUCTION***

Gastroesophageal reflux commonly known as the Acid Reflux is a condition which occurs when the acid from the stomach moves backwards into the oesophagus tube causing uneasiness and a burning sensation. This happens due to failure in muscular actions and other protective mechanisms.

You know you are suffering from acid reflux when you experience a burning sensation in your chest and a feeling of acid backed up in the oesophagus.

One important reason why this happens is when the sphincter muscle which is located between the stomach and oesophagus becomes weak due to various factors.

If not treated on time and with effective medications, this could lead to various complications. Moreover, the irritating and constant burning sensation makes life miserable for the person suffering from this condition.

With a little life style adjustments it is possible to prevent or completely cure Acid Reflux.

This book offers you in depth information about this condition, methods of prevention and the various treatment options.

When the acid contents from the stomach moves into the oesophagus, there is an irritating burning sensation caused. Continuous irritation of the oesophagus lining leads to a condition called adenocarcinoma which is a type of a cancer originating in the glandular tissue.

Standing or walking for some time after a meal can considerably reduce heartburns.

# ABOUT THE OESOPHAGUS

The Oesophagus is commonly known as the food pipe. This pipe is in the form of a tube which is about nine and a half inches in length extending from under the tongue to the stomach.

Oesophagus is quite narrow at the top, bottom and the centre. The outermost layer consists of fibrous tissue. The layer in the centre consists of smooth muscle and the innermost layer contains numerous tiny glands.

The epiglottis protects the trachea by folding over it when you swallow food. This prevents the food from getting into the lungs.

The Gastroesophageal Reflux Disease (GERD) exhibits two common symptoms that are Heartburn, where you will experience a burning sensation in the chest, along with Regurgitation that feels like all the acid from your stomach is backing up into the oesophagus.

Apart from acid there are other products like bile, pepsin, etc which can also cause discomfort when they back up into the food pipe.

## WHAT EXACTLY HAPPENS -

Wavelike muscular contractions also called peristalsis occurs when you swallow the food. This action causes the oesophagus to move into the

stomach where the food is broken down into starch, fat and protein with the help of acids and enzymes like the hydrochloric acid and pepsin.

The stomach is protected from these fluids with the help of the mucus present in the lining.

This lining is unable to offer a strong defence against these fluids when the acids and enzymes back up and get into the oesophagus.

Oesophagus on the other hand is protected by muscles like the Lower Esophageal Sphincter commonly known as the LES. This muscle is present at the place where the oesophagus meets the stomach and is structured like a band.

## **LOWER ESOPHAGEAL SPHINCTER –**

The LES acts as a protective door to the oesophagus. When we swallow the food, the LES opens to allow the food to pass to the stomach and immediately closes to prevent any kind of regurgitation of the stomach contents like the gastric acid.

The LES remains closed till we swallow food again. LES is thus a very important valve which helps to keep the contents of the stomach away from the oesophagus and the trachea or the windpipe.

LES is a zone of high pressure made up of the diaphragm muscles surrounding the bottom of the oesophagus and the oesophagus muscles.

Apart from the LES, there is a flap valve at the top of the stomach called the gastroesophageal flap valve. This valve is the area into which the

bottom of the oesophagus protrudes into. This flap can be viewed on upper endoscopy.

## **KNOWING YOUR DIGESTIVE SYSTEM AND STOMACH**

The whole process which involves the movement of your food through the digestive tract including mixing and chemical breakdown is called digestion.

Chemical breakdown involves the breaking down of the larger molecules of food into small molecules.

The digestion process which starts when we chew the food and swallow it in the mouth ends in the small intestine. The process and chemicals involved varies according to the food we eat.

Organs of the digestive system are large and hollow and they move in such way that they aid the food to move through the tube. They propel the food and liquid forward and also helps in the mixing within organs.

Peristalsis helps the food along through the hollow tube and each organ. The first major muscle movement happens when you swallow the food. Swallowing is by choice but once we have swallowed the involuntary process controlled by the nerves takes over.

The swallowed food reaches the entrance to the stomach. As we have already seen, the LES opens up and allows it to pass into the stomach.

Functions of the stomach involve storing the food and liquid. The upper part of the stomach has to thus relax to facilitate large volumes of food to enter.

The stomach then produces digestive juices and mixes the food and liquid with the help of the muscles present in the lower part. Lastly, the stomach has to empty the contents into the small intestine gradually.

Food is further dissolved in the small intestine where there occurs a segregation of the digestive juices that are secreted from the intestine, pancreas and liver. and pushed forward for further digestion.

After the digestion process is complete, the nutrients which are digested are absorbed into the system through the walls of the intestine. Finally, the undigested and waste materials like fibre and the old cells are pushed to the colon where after a day or two they are expelled as feces with the help of bowel movements.

## **THE DIGESTIVE JUICES -**

The salivary glands present in the mouth produce an enzyme called that begins the process of digestion of food. This enzyme break down the starch present in the food into smaller molecules.

As the next step, the glands in the stomach lining produce an enzyme for digesting proteins and also the stomach acid. Though this acid is strong enough to break down the food, the stomach mucosa is not affected by this juice. In fact it acts as a protective layer against this acid.

When the food and juice mixture from the stomach is sent to the small intestine, the juices from digestive organs like the pancreas and walls of the intestine again mix with the food and the digestion process continues.

Bile juice is a highly potent digestive enzyme secreted in the liver that is stored in the gallbladder. When we eat food, this bile is squeezed out of the gallbladder and reaches the intestine through the bile ducts to act on the fat content in the food.

The bile acids dissolve the fat which is then digested by the enzymes secreted by the pancreas and intestine walls.

## **CONTROLLING DIGESTION THROUGH HORMONES -**

Hormones like gastrin, secretin and cholecystokinin control the digestion process.

Gastrin is the hormone which instigates the stomach to produce the acid which helps in digestion of food by dissolving it. Gastrin also helps in normal growth of stomach lining, colon and the small intestine.

Another hormone which helps pancreas to produce a digestive juice rich in carbonate is the secretin. Secretin is instrumental in stimulating the stomach to produce the enzyme called pepsin for digestion of proteins. Liver is also instigated by this hormone to produce the bile.

CCK or the cholecystokinin assists in the growth of the pancreas and produce the pancreatic juice which is a very important digestive enzyme.

CCK also helps in emptying the gallbladder.

# STOMACH – THE MASTERMIND

As seen above, the most important part of the digestion takes place in the stomach.

Problem of regurgitation and acid reflux occurs when the Lower Esophageal Sphincter situated at the top of the stomach which is supposed to regulate the food that passes to the stomach does not have enough pressure barrier to prevent the acid backing into the oesophagus.

## ASSOCIATED CONDITIONS -

- **ESOPHAGITIS** - GERD is quite a common occurrence and is curable in most of the people. In about 20% of them, this condition becomes a chronic one. When this happens and the acid starts creating inflammation and irritation, the resulting condition is called Esophagitis.

When the condition worsens still and causes damage to the oesophagus, it is called Erosive Esophagitis.

- **NON EROSIIVE ESOPHAGEAL REFLUX DISEASE** – The symptoms of Esophagitis can sometimes occur even without damage or inflammation of the oesophagus. This condition is known as the Nonerosive Esophageal Reflux Disease commonly referred to as NERD.

People suffering from NERD normally experience discomfort and a burning sensation behind their breastbone for a period of at least three months. They do not have inflammation or erosion in the oesophagus.

According to some researchers, this may be due to the exposure of the nerves near the lining surface to the acid which has penetrated through the layers.

- **BARRETT'S ESOPHAGUS** – In rare instances, a person suffering from GERD may eventually go in for a serious complication resulting in stages of precancer in the lining tissue of the oesophagus.
- **EOSINOPHILIC ESOPHAGITIS** – Characteristics of this disorder which can occur with GERD includes difficulty in swallowing. This occurs due to rings and furrows developed in the oesophagus.

One of the treatments for this condition is to swallow fluticasone propionate which is actually one of the ingredients in some of the asthma medicines.

## WHAT EXACTLY IS THIS GERD?

### CAUSES -

- One of the main reasons for this condition is constant and persistent eating of acidic and fatty foods. People who consume acidic foods experience discomfort and a burning sensation in their chests when they bend down, lift something or even after a nap.

However, persistent symptoms can mean there is something more to it. It could be due to abnormal biological or structural factors.

- LES or the Lower Esophageal Sphincter as we have seen earlier can sometimes malfunction due to various reasons like weakening of the muscles, dietary changes, drugs, etc.

When the LES does not close completely after emptying contents into the stomach, the acid from the stomach goes back into the oesophagus through the LES.

- In some of the GERD patients, the muscles and nerves do not function properly. This results in impairment in the mobility of the muscles and the muscles stop acting spontaneously.

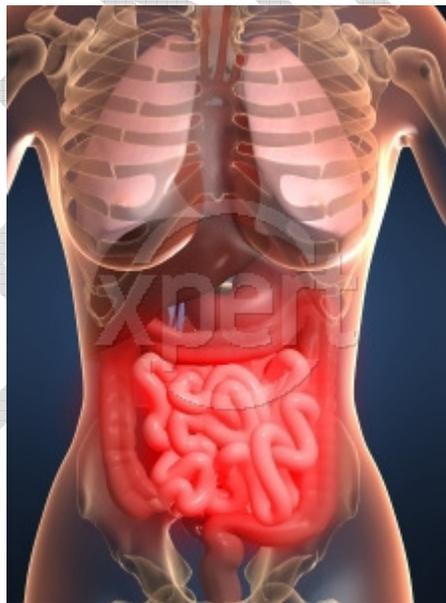
This in turn causes a delay in the emptying of the stomach contents thereby increasing the risk of acid back up.

- Some abnormalities in the oesophagus can also result in symptoms like hoarseness, cough and a feeling of blockage in the throat indicating the presence of GERD.
- There are instances where the muscle action or peristalsis does not occur spontaneously. But then it is not very clear as to whether this symptom is the cause or the result of GERD.

- One other reason for GERD is the presence of multiple rings in the oesophagus which results in difficulty in swallowing. This condition called the Adult Ringed Esophagus usually occurs in men.
- Hiatus Hernia can also cause GERD. The oesophagus passes through a small hole in the diaphragm. Normally, the oesophagus fits snugly into this hole.

When there is a problem of enlargement or weakening of the oesophagus, the stomach muscles protrude into it causing a condition called Hiatus Hernia.

This condition which is quite common among older people is believed to impair the LES muscle function causing GERD.



Hiatas Hernia is aggravated by Obesity and Smoking.

- GERD can also be caused by factors genetically inherited. Factors inherited can be muscular or structural problems in the stomach. This may result in vulnerability to Barrett's esophagus which is a condition prior to cancer resulting from severe condition of GERD.
- Asthma is another cause of GERD. When the person afflicted with asthma coughs or sneezes severely, the pressure changes in the chest causing reflux.

There are certain drugs used for treating asthma which relaxes the LES causing GERD.

- Some of the other conditions causing GERD are Crohn's disease, diabetes, gastrointestinal disorder, cancer, lymphomas and peptic ulcers.

## • **CHROHN'S DISEASE –**

A chronic inflammation of the intestine, especially the terminal portion of the small intestine called the ileum is called Crohn's disease. This chronic disease is also referred to as regional enteritis. This disease is a pre runner of colorectal cancer.

## • **CURING PEPTIC ULCERS SOMETIMES LEADS TO GERD**

One of the major causes of peptic ulcer is a bacteria called Helicobacter Pylori which is found in the mucous membranes. Ulcers can be cured by giving the patient the antibiotic which can eradicate H. Pylori.

Unfortunately, studies have indicated that H. Pylori may actually reduce stomach acid and protect from GERD. Curing the peptic ulcer by giving an antibiotic to act against H. Pylori may actually cause GERD among patients.

Evidence shows that a combination of H. Pylori and acid suppression leads to atrophic gastritis in the patient which is a pre cancerous condition.

- Drugs sometimes cause GERD. Some of the drugs known to cause this condition are –

Calcium channel blockers which are given to patients with angina and high blood pressure.

Anticholinergics present in drugs which are prescribed for urinary tract disorders, glaucoma and various allergies.

Drugs like beta adrenergic agonists used prescribed for asthma and lung disorders.

Dopamine which is a drug prescribed for Parkinson's disease

Biphosphonates used for osteoporosis

Sedatives, iron pills, potassium and antibiotics.

- Another cause for GERD is the weakening of Peristalsis movement. Peristalsis as we have seen earlier is the rhythmic and automatic movement of the oesophagus to facilitate the movement of food through the digestive tract.



- Another risk factor causing GERD is when people eat a heavy meal and immediately bend over from the waist or lie on their back. Doing these things cause heart burn.

This is the reason it is advisable not to have heavy snacks just before bedtime. This is also one of the reasons why it is advisable to have dinner early at least two to three hours before going to bed.

- Heart burn is also common in pregnant women especially in their third trimester. This is because of the pressure created on their stomachs by the uterus which is growing. Normally, this heartburn cannot be treated even with antacids.

- Another important risk factor causing and aggravating GERD is obesity. A lot of researchers have proved that being obese is a sure risk of erosive esophagitis in GERD patients.
- Lung disorders which are chronic and result in blockage of air flow in the lungs is called Chronic Obstructive Pulmonary Disease also known as COPD. These can also trigger GERD.

COPD may be of two types – Emphysema and Chronic Bronchitis. Damages resulting from COPD are usually irreversible.

- Smoking is another factor which can cause GERD. Smoking reduces the LES function, damages important throat muscles, destroys the mucous membrane and also increases the acid secretion.

Apart from all this, smoking also reduces salivation. Saliva is important for neutralizing acids. Reduction of saliva causes the acid to be secreted more.

- Alcohol is another risk factor which produces GERD. When a person consumes alcohol, the LES relaxes and the mucous membrane in the oesophagus gets affected. This results in GERD. A combination of smoking and alcohol also increases the risk of cancer.
- Non Steroidal Anti Inflammatory drugs (NSAID) are also said to cause GERD.

## **GASTROESOPHAGEAL REFLUX DISEASE IN CHILDREN -**

When a child exhibits symptoms like anemia, weight loss, respiratory problems like severe cough, wheezing, frequent infections, gasping for breath during sleep, vomiting, etc he or she has to be examined by the physician for GERD.

However, not all children exhibiting the above symptoms necessarily are afflicted by GERD.

Though GERD is quite common in children of all ages, it is usually pretty mild.

A child who has neurological problems is at a greater risk of GERD.

Similarly a child who is allergic to certain types of food is also potentially vulnerable to GERD.

Children who are afflicted by Scoliosis, frequent vomiting, cystic fibrosis, digestive tract infection or disease or any problem in the nose, throat, ears or lungs should be tested for GERD.

## **GERD IN INFANTS –**

Any infant who has a noticeable feeding problem should be checked for GERD.

Infants who keep refusing to eat and are late in starting solids probably have swallowing problem and should be immediately tested for GERD.

GERD infants tend to be more cranky and cry more often than the ones who are not affected by GERD.

One thing to be noted in children is if there is an irreversible erosion of tooth enamel it means the child is definitely suffering from GERD.

Acute GERD may also result in rare instances in infants where the infants do not survive.

There may be cases where the feeding problems may result in constant vomiting and acute anemia.

In some cases, the acid reflux gets into the infant's airways causing pneumonia.

## **GERD MANAGEMENT IN INFANTS –**

There are certain things which have to be followed by the parents to prevent all these problems to a certain extent.

As soon as you feed the baby, make sure you carry them vertically until they burp once or twice.

If your child has been diagnosed with GERD, make sure you feed him his formula at the right consistency to prevent acid reflux.

Unlike what is normally recommended for infants, the doctor will advise parents of infants suffering from GERD to make them lie on their stomachs.

Parents have to make sure the infant's head and shoulders are positioned in such a way that their breathing process is not obstructed in

any way. It is a good idea to take the advice of the doctor regarding their sleeping position.

Food allergies should be constantly monitored as these can trigger off GERD in infants. Parents should consult their physician before deciding on the formula for their infant. Food intake should be gradually increased monitoring carefully for any kind of a rejection or allergy.

## **GERD MANAGEMENT IN CHILDREN –**

Older children suffering from GERD are normally treated with the same drugs given to adults. However, the physician has to be definitely consulted before settling on the mode of treatment for them. Parents should not go in for their own medications picked up across the counter.

Initially, they are given antacids to see if it works.

As a next step, they are given H2 Blockers like famotidine, cimetidine, ranitidine, etc.

If they still do not respond to these medications, proton pump inhibitors like omeprazole, lansoprazole, etc are prescribed. These are quite safe and effective for children who do not respond to less intensive treatments.

In extreme cases, children are advised surgery. If the child's symptoms of GERD are acute, surgeons may advise you to go in for surgery.

Surgery involves Surgical Fundoplication which is the wrapping of the upper curve of the stomach or the fundus around the oesophagus. This is done with the objective of strengthening the LES in children.

Doctors try to avoid surgery in some children by prescribing the proton pump inhibitor drugs.

This laparoscopic surgery is performed by making small incisions.

## **MORE ACID REFLUX SYMPTOMS –**

GERD as we have seen is manifested as a severe burning sensation radiating from the stomach to the chest and throat. People suffering from heartburn may experience acute pain and discomfort during the day or during the night.

People have reported experiencing acute pain in the night time due to GERD just like in heart failure or angina.

The severity of heartburn does not necessarily indicate damaged oesophagus.

Dyspepsia is a syndrome which many of the GERD patients suffer from. Symptoms include a feeling of nausea after meals, pain in the abdomen, etc.

Regurgitation as we have seen earlier is the backing up of the acid in the throat. Regurgitation sometimes occurs upto the patient's mouth which is called Wet Burping.

There are cases where GERD does not result in heartburn or regurgitation. They exhibit symptoms which include pain or discomfort in the chest region. Patients must be careful in discriminating between the chest pain resulting from GERD and from angina or heart attack.

GERD may also manifest symptoms in the throat sometimes. Symptoms include occurrence of persistent hiccups, sore throat, trouble in swallowing and even choking frequently over the food and even acid laryngitis.

## **COMPLICATIONS RESULTING FROM EROSIVE ESOPHAGITIS –**

When the problem of GERD is severe and acute, the patient may go in for a condition called erosive esophagitis. Overweight Caucasian males, according to studies are at the highest risk of developing erosive esophagitis.

This results de to inflammation and irritation caused by the acid to produce injuries to the esophagus. As the GERD worsens in patients, esophagus also erodes more.

A lot of complications arise out of Erosive Esophagitis.

Bleeding is one of the symptoms arising out of this condition. The patient may pass tarry coloured stools or even vomit blood if the oesophagus is eroded and ulcers are present. This condition is very serious which has to be attended to immediately.

Erosive Esophagitis can lead to severe anemia or lack of blood in some patients requiring them to go in for blood transfusion. This may occur even without any symptoms of blood vomitting or even heartburn.

As an advanced stage of Erosive Esophagitis, the patient may go in for Barrett's Esophagus or even cancer in the esophagus. GERD though is not a pre runner for development of cancer.

Stricture is a condition arising out of narrowing of the oesophagus due to acute injuries. This results in difficulty in swallowing and sometimes the food particles even get stuck in the tube.

In extreme cases, the patient may have to go in for a surgery to correct the problem and to restore normal swallowing. Ironically, strictures prevent the acid from coming back to the throat thereby preventing GERD.

## **ASTHMA -**

As seen earlier, asthma is often a side effect of GERD. They occur together. This connection between asthma and GERD is due to the fact that the Vagus nerves in the gastrointestinal tract is stimulated by the acid leaking from the oesophagus.

The nerves which are triggered cause the airways in the lungs nearby to constrict thereby causing difficulty in breathing or asthma.

The acid reflux into the mouth may sometimes be inhaled into the airways which is called aspiration. This acid may cause some reactions in the airways triggering off asthma.

Some people claim asthma causes GERD while others claim GERD causes asthma.

People suffering from GERD are also found to be susceptible and vulnerable to upper respiratory diseases like sinus, diseases occurring in the ear and nasal passages and airways of the lungs.

They are also at a higher risk of chronic sinusitis, bronchitis, pulmonary fibrosis, pneumonia and emphysema.

## **DENTAL COMPLICATIONS –**

There are also various dental problems that can arise out of GERD. Dental erosion is one of the most common problems which is the erosion of the dental enamel due to the reaction of the acid in the mouth.

## **THROAT CONDITIONS –**

Chronic throat infections, laryngitis, hoarseness, cough, constant throat clearing and granulomas which are soft pink bumps on the vocal chords are some of the commonly occurring throat complications arising due to GERD.

## **SLEEP APNEA –**

Sleep Apnea is one of the causes of GERD. When the breathing stops in between the sleep temporarily but repeatedly over a period of time, GERD develops.

According to some people, Sleep Apnea occurs because of GERD. Though it is not very clear as to whether GERD triggers Sleep Apnea or the other way around, GERD becomes severe when the patient is suffering from Sleep Apnea.

According to one section of researchers, Sleep Apnea occurs when the acid reflux during GERD blocks the air passage.

Another section of researchers say that during Sleep Apnea when the breathing is quite disordered, there is an alteration in the pressure in the chest area thereby causing GERD.

For both the conditions, it is risky for the patient to sleep on his back. CPAP is the commonly recommended treatment for these conditions, whereby the air passage of the patient is opened up with the help of a device called CPAP.

## **FACTS ABOUT BARRETT'S ESOPHAGUS**

Barrett's Esophagus is a condition which can result in Oesophageal Cancer.

Changes that occur in the cells of the lower esophagus is called Barrett's Esophagus. These changes can result in the cells becoming abnormal which is a pre indication of cancer.

There are two categories of Barrett's Esophagus – The Short Segment and The Long Segment.

When 3 cm or more of the esophageal cells get affected, it is known as the long segment BE which is quite a serious condition. This occurs in about 3 to 7 percent of GERD patients.

When the portion of the esophageal cells affected is less than 3 cm, it is known as the short segment BE. This occurs in about 10 to 17 percent of people affected by GERD.

Barrett's Esophagus is considered to be affecting about 10 percent of GERD patients on an average.

While it is a common assumption that white men who are obese, consume alcohol, smoke and are above the age of fifty are prone to Barrett's Esophagus, studies have revealed no such connections.

Research is on in this field and recent studies indicate that using specific immune factors you can determine the development of Barrett's Esophagus.

## **DOES BARRETT'S ESOPHAGUS LEAD TO CANCER?**

Esophageal cancer when it manifests is almost impossible to cure. According to a recent study by the American Cancer Society, there was an average of 15000 deaths by Esophageal Cancer in America. Survival rate for a period of five years is only about 15 percent.

Most of the Esophageal Cancer patients start with Barrett's Esophagus and more than half of them do not exhibit any symptoms before diagnosis of the disease.

One encouraging news is that very few people afflicted by BE developing Esophageal Cancer and GERD by itself is not a risk factor for this condition.

Barrett's Esophagus is diagnosed by a process called the endoscopy whereby the physician inserts a tube down the throat to view the oesophagus. Patients who are overweight and suffer from chronic GERD are generally advised by the physician to go in for this one time diagnosis.

On the other hand, patients who are diagnosed with Barrett's Esophagus have to have a regular screening and periodical endoscopy to detect early symptoms of cancer.

# TREATMENT OPTIONS FOR BARRETT'S ESOPHAGUS –

Treating Barrett's Esophagus is still at the research stage. Till date, there is no treatment method whereby the damaged cells can be made alright in a person afflicted by Barrett's Esophagus.

High dose proton pump inhibitor, according to some experts is a good treatment option for Barrett's Esophagus. This helps in reducing the acid reflux.

The standard drugs used are – Omeprazole or Prilosec and other oral PPIs like Aciphex, Prevacid and Nexium. Though these drugs may provide temporary relief, the symptoms normally recur when you stop taking the drugs.

People suffering from chronic conditions may have to depend on drugs throughout their lives.

Another treatment option is to use COX -2 (cyclooxygenase – 2) which reduces inflammation and pain and does not instigate peptic ulcers.

# PEPTIC ULCERS –

Perforation of the ulcer through stomach or duodenum occurs with severe abdominal pain with or without symptoms of bleeding. Presence of black tarry stools indicates a serious condition.

Certain techniques like Photodynamic Therapy (PDT), laser, heat or electrical probes are used to remove the mucus lining of the esophagus.

This is done in a patient suffering from severe symptoms of Barrett's Esophagus in order to possibly remove cancerous or pre cancerous tissues. This may allow fresh and hopefully healthy tissues to grow in the esophagus.

Another surgical procedure is the Esophagectomy. This involves surgical removal of the esophagus either the whole thing or a part of it. If there is an indication of developing cancer in a patient afflicted with Barrett's Esophagus, then they have to go in for this procedure.

Normally, after removing full or part of the esophagus, it is replaced with a new tube or conduit.

## **GERD AND BE DIAGNOSIS –**

Upon suspicion of GERD or Barrett's Esophagus due to difficulty in swallowing or signs of bleeding, a few other invasive tests are conducted.

### **Barium Swallow Radiograph -**

This procedure helps identify abnormalities in the oesophagus and severe inflammations called Erosive Esophagitis.

The patient is required to take a solution of barium after which he is X-rayed. This test accurately shows active ulcer craters, hiatal hernia, strictures, erosions, etc. However, mild irritations cannot be recognized by this procedure.

## Upper Endoscopy –

This procedure is also called esophagogastroduodenoscopy or panendoscopy. This procedure is much more accurate than a barium radiograph.

Being widely used for GERD diagnosis, this procedure is however more invasive and expensive. Patients with Barrett's Esophagus are periodically monitored using this procedure. Upper Endoscopy is used in various surgical techniques now a days.

Endoscopy to diagnose GERD can be performed either at your physicians or in the hospital. There are a few rules to be followed before going in for endoscopy –

- Before going in for the procedure the patient is required not to eat for at least six hours.
- Patient is given a local anesthetic with both an oral spray and intravenous sedative in order to both relax the patient and to suppress gag reflex.
- Endoscope is then placed inside the patient's mouth down his esophagus. Breathing continues normally as this procedure does not interfere with that process. Most of the patients just sleep through the procedure.
- With the help of a small camera, the physician sees the surface of the esophagus for any kind of abnormality or damage to the mucus lining.

- The physician then takes out some tissues for biopsy. Biopsy is done to detect tissue injury or presence of cancer cells. Biopsy also identifies presence of other conditions such as viral infections, yeast, etc.
- This procedure is usually comfortable with no complications except for minor bleeding from the site of biopsy and slight irritation.

### **Capsule Endoscopy –**

This is a procedure involves the use of PillCam which reduces the imaging time as compared to the original capsule endoscopy technique.

PillCam capsule which contains tiny video cameras on two sides is swallowed by the patient. A series of colour pictures numbering 2600 are transmitted immediately to a device which downloads and records them. These pictures are then interpreted by the doctor.

The latest version of this device is very efficient in identifying GERD and investigating the esophagus.

This procedure takes about twenty minutes. The capsule comes out through the digestive system within twenty four hours.

Though this capsule is quite efficient we still have to rely on traditional endoscopy to remove polyps and gather tissue samples for biopsy.

### **PH Monitor Examination –**

This is a technique used to determine acid backup. This technique is normally used when there is no tissue damage found in the mucus lining in the esophagus but still GERD symptoms exist.

Traditionally, a tubular probe was inserted into the patient's nose down to the esophagus. This tube had to left for twenty four hours which used to be very irritating and uncomfortable for patients.

The new technique called the Bravo PH test attaches a data transmitter which is the size of a small capsule in the wall of the oesophagus. This is done during endoscopy.

This capsule is used to record the PH levels and this data is transmitted to a receiver carried around by the patient. This capsule is naturally eliminated after a few days through the digestive tract.

### **Manometry –**

This technique is used to record and measure pressure in the muscles. A tube containing a lot of openings is placed through the oesophagus.

Manometry determines if the GERD can go in for surgery by measuring the LES.

This procedure analyzes whether chest pain in people afflicted with GERD is due to impairment in peristalsis or any other motor abnormality.

Stomach motility which is the condition where the stomach muscles are not able to contract normally is also detected by Manometry.

Apart from the above mentioned tests, Blood and stool tests and Bernstein test is also conducted in patients to determine the presence and extent of GERD.

### **SIMILAR DISORDERS –**

There are a few other illnesses which resemble GERD with similar symptoms.

Dyspepsia is one such disorder which is confused with GERD. This condition does not manifest heartburn but all other symptoms are present like pain in the upper abdomen, bloating, feeling of fullness in the stomach and nausea.

Angina is another condition which manifests similar symptoms like chest pain especially after a meal. Patients must be careful in not neglecting chest pain thinking it is due to GERD. They will be at a risk of a heart attack if they neglect prolonged symptoms of angina.

## **SURGERY –**

Surgery is usually recommended only if everything else fails. If lifestyle changes and medications do not improve the condition or if the patient has some other complications, doctors usually recommend going in for a surgery.

Surgery is also recommended for younger people who face a lifetime of inconvenient medications and treatment. Surgery can cure their ailment once and for all.

Surgery is recommended as a permanent solution for chronic GERD as many minimally invasive surgical procedures are available.

One negative point is that about 15% of patients are still required to be on drugs even after surgery. Surgery does not cure them completely of GERD in some cases.

It has also been proved that surgical procedures in chronic and severe GERD cases or Barrett's Esophagus do not reduce the risk of cancer. Patients should therefore be very cautious before accepting to go in for a surgery.

## **HOW TO PREVENT GERD AND RELATED CONDITIONS –**

### **Diet Regulations –**

If you are suffering from heartburn, the first thing you should try doing is bringing in a few changes in your lifestyle and diet. A lot of people have had relief from GERD by altering their diet.

Foodstuffs which have to be necessarily avoided to prevent GERD are coffee, chocolates, alcohol, spearmint, peppermint, all carbonated drinks, etc.

If you are overweight, you have to definitely cut down on your input of fatty stuff. Cutting down on fats will definitely reduce your weight thereby reducing the possibility of an attack of GERD.

Increasing protein in the diet will help strengthen your muscles in the valve. Whole grain products with selenium content protects against cell changes which are dangerous in people afflicted with Barrett's Esophagus.

Having a lot of rich fruits and vegetables will be of great help. It is advisable though to avoid oranges, lemons, pineapple, tomato, grapefruit, etc which are acidic in nature.

If you are not able to swallow comfortably, you must definitely avoid vegetables with skins, pasta, bread which is doughy and tough meats.

## **NIGHTTIME GERD –**

Most of the patients afflicted with GERD suffer more in the night. They also experience more severe pain during nighttime. There are some preventive measures which can be taken to make their sleep a little more comfortable.

It is very important for the GERD patients to remain upright after a meal. It is also a very good idea to go for a walk after every meal.

You must not eat for at least two hours before your bed time. You must also definitely avoid bed time snacks.

It is better for a person suffering from GERD to lie on his left rather than the right side. This is because of the fact that the stomach is situated a little higher than the esophagus. When you sleep on your right, pressure is put on the LES and there are more chances of fluid backing up.

Sleeping at an inclined angle or tilted position will be of great help as this will help the acid to remain in the stomach.

Children suffering from GERD should be given a reflux board to lie on. The reflux board helps the child to sleep with his body tilted upward in order to prevent the contents of the stomach from going back into the esophagus, mouth and possibly even the lungs.

A few other important preventive measures include giving up smoking, reducing your weight if you are obese, avoiding tight fitting clothes especially at the stomach area and most importantly avoiding non steroidal and anti inflammatory drugs like aspirin, naproxen, ibuprofen, etc. Alternately, they can take Tylenol which is an equally effective pain killer without side effects.

Chewing on gums thirty minutes after meals can also actually increase salivation in the mouth which actually neutralizes the acid.

## **DRUGS USED FOR TREATING GERD –**

### **Antacids –**

For mild symptoms of GERD, patients are normally prescribed with antacids. Antacids are good for occasional occurrence of heartburn which is unpredictable.

Antacids actually neutralize the acid in the stomach and also increase bicarbonate and mucous secretion in the stomach stimulating the defence systems.

Antacids are available across the counter at any medical shop. Though the brands are many, the three basic ingredients antacids are made of are aluminium, magnesium and calcium.

Magnesium salts are commonly available as magnesium hydroxide and the side effect of taking antacids containing magnesium is diarrhea.

These side effects are balanced by combining magnesium with aluminium.

Calcium carbonate is a very strong antacid which acts very fast. Over a long period of time, some people may go in for hypercalcemia which is nothing but elevated levels of calcium in the blood. This condition is very dangerous leading to kidney failure.

Aluminium salts are also commonly used as antacids. People taking antacids containing aluminium exhibit side effects such as constipation. Taking aluminium based antacids over long period of time also leads to reduction of calcium and consequently osteoporosis.

Osteoporosis is a condition where the bone tissues are continuously thinning due to progressive loss of bone density leading to constant fractures and injuries.

It is believed that liquid antacids are more effective than tablets. One more disadvantage with antacids is that it interacts with other drugs in the intestine reducing their absorption. This can be avoided by taking the drugs much before the antacids are taken.

Long term use of antacid can also result in kidney stones.

## **H2 Blockers -**

H2 Blockers are used to reduce acid formation. They do this by blocking the histamine which is responsible for production of acid.

H2 Blockers are available across the counter in all pharmacies and it provides immense relief to a lot of patients suffering from GERD. This drug works in about half an hour and the effect lasts for quite some time.

This drug is taken during bed time to enable the patient to have a comfortable sleep as it inhibits the secretion of acid for a period of anywhere between six and twenty four hours.

There are four brands of H2 Blockers available in the market –

Famotidine is one of the most popular H2 Blocker. One major side effect of famotidine is headache which occurs in about 4% of its users. FDA

has issued a warning though that this should not be had by patients suffering from kidney problems.

Cimetidine is there in the market for a long time. This drug has practically no side effects. Only around one percent of its users experience mild dizziness and diarrhea.

Ranitidine interacts with very few other drugs. One of the common side effects of ranitidine is again head ache which occurs in about three per cent of its users.

Nizatidine Capsules is practically free of any side effects and interactions with drugs. This drug is also proving to be very effective for helping cope with night time GERD symptoms.

### **Important drugs which are commonly prescribed for Acid Reflux are –**

1. Aciphex Oral – This is a PPI drug which works by blocking the production of acid in the stomach. Apart from acid reflux, this drug is also used to treat ulcers, Zollinger-Ellison syndrome, erosive esophagitis, etc. This medicine can be combined with antibiotics to treat ulcers caused by bacterial infection.

This medicine should be taken usually once daily as prescribed by the doctor. This has to be swallowed whole and not to be crushed, chewed or split. You can also take an antacid along with this medicine.

Length of treatment and dosage depends on the seriousness of your condition. To benefit the most from this drug, this has to be taken for the full course prescribed, even if you think you are feeling better.

2. Maalox Oral – Maalox Oral is very effective in the treatment of too much stomach acid or upset, indigestion and heartburn.

This being an aluminium and magnesium antacid it works very quickly to lower the acid in the stomach. In the liquid form, antacids are more effective than capsules or tablets.



Maalox works on reducing or eradicating existing acid in the stomach. It does not prevent acid production. This drug can either be used alone or in combination with H<sub>2</sub> blockers such as cimetidine or ranitidine and PPIs such as omeprazole.

Maalox has to be taken by mouth after meals. Follow the dosage as prescribed by the doctor. This is also available as chewable tablets and in liquid form.

Maalox may sometimes react with other medicines such as iron, tetracycline, quinolone, ciprofloxacin, etc. If you are on any of these drugs, you must consult your doctor and work out your schedule to prevent any kind of adverse reaction.

This drug is used to treat increased mast cells, benign tumors of the hormone producing glands, acid reflux, ulcer in the stomach, duodenum and from stomach acid, stress related GI, etc. Maalox also treats for high phosphate in the blood, low calcium, osteoporosis and post menopausal osteoporosis prevention.

Nexium Oral - Esomeprazole works by blocking the production of acid in the stomach. This is a PPI used to normally treat acid related throat and stomach problems like acid reflux, erosive esophagitis, etc. This in turn relieves symptoms like heartburn, difficulty in swallowing, cough and sleeping trouble.

Nexium also prevents acid damage to the digestive system. This medicine is usually used combined with antibiotics while treating ulcers of the intestines caused by bacterial infection.

Nexium Oral should be taken by mouth once a day at least one hour before the meal. The capsule has to be swallowed whole and it should not be chewed or crushed.

If you find it difficult swallowing this capsule, you can open and mix the contents of the capsule with soft foods such as yogurt or even with juice or water and taken as directed.

You can take antacids with this drug. Dosage depends on the doctor's prescription.

Using this medication regularly even if you tend to feel better after a few days and at the same time each day will help greatly in relieving symptoms of GERD.

Pepcid Oral – Famotidine is a popular drug for ulcers of the stomach and intestines. This drug is also prescribed for patients who have undergone

treatment for intestinal ulcers. This prevents this condition from recurring.

This drug is used also for treatment of acid reflux. This is a H<sub>2</sub> blocker which works by reducing the acid in the stomach thereby healing and preventing ulcers and improving symptoms of stomach pain and heartburn.

This is one of the GERD drugs available across the counter. This should be taken preferably at bedtime by mouth with or without food. Dosage and length of treatment depends on your doctor's prescription.

Doctors determine the dosage in children based on their body weight. To benefit from this drug, you have to take this on a regular basis even if you find you are much better. Always consult your doctor before starting, stopping or adjusting your dosage of this medicine.

Pepsid Oral treats mast cells, benign tumors of Hormone Producing glands, Zollinger Ellison syndrome, aspiration, acid reflux, ulcer of the stomach and duodenum, etc.

The Lansoprazole in Prevacid Oral blocks acid production in the stomach. This is a PPI. This drug treats symptoms like GERD, ulcers, erosive esophagitis, Zollinger Ellison syndrome, difficulty in swallowing, persistent cough, sleeping trouble, etc. This drug is also effective in preventing damage to the digestive system due to the acid.

Ulcers resulting from long term use of drugs like NSAIDs for pain and swelling can also be treated by Lansoprazole. This drug can be effectively used combined with certain antibiotics to treat ulcers resulting from bacterial infection.

Prevacid Oral has to be taken by mouth once daily before the meal or as directed by your doctor. The capsule should not be crushed or chewed

and has to be swallowed whole. If it is difficult to swallow, you can mix contents of the capsule in soft foods like yogurt or juice and taken.

You can also take antacids along with this drug if needed to. Regular use of the medicine is very important for effective benefits.

Prilosec OTC oral – This drug has Omeprazole as its main ingredient and works by blocking the production of acid in the stomach. This is a PPI and is used to treat acid related stomach problems and throat problems.

This drug can be used in combination with antibiotics to treat certain ulcers of the intestine caused by bacterial infection.

Just like the other drugs this medicine has to be taken by mouth usually once daily about 15-30 minutes before a meal. You can also take antacids along with this medicine if necessary.

Taking this drug regularly makes sure you get cured of your condition. It usually takes around four days for you to feel the benefit of the drug.

Protonix Oral - This drug is used to treat Zollinger Ellison Syndrome, erosion of the esophagus with inflammation, acid reflux in the stomach, excess secretion of acid in the stomach, etc.

It also treats conditions like stomach ulcer, ulcer of the duodenum caused by the Helicobacter Pylori, ulcer in the stomach, etc.

Drug treatments can be of two types – Step up and Step down.

The step up approach involves first trying the H2 blocker drug available across the counter. These drugs include famotidine, ranitidine, nizatidine, etc. If this does not improve the condition, then patient is

prescribed with proton pump inhibitor which is more powerful usually the omeprazole.

The step down approach involves first using a more potent drug often the proton pump inhibitor like the omeprazole. When the patient is a little better his dosage is reduced to half. If symptoms do not persist though, the medications may even be withdrawn.

Physicians recommend the step down approach for people suffering from moderate to severe GERD. In cases where both these treatment methods do not work, the physician normally checks for other conditions.

## **Combinations of Drugs for GERD –**

One of the best approaches for people who suffer from heart burn or GERD is to go in for a combination of antacids and H2 Blockers which are available across the counter.

This is because of the time taken for the drugs to act. While antacids act very fast and the effect is short lived the H2 blockers take a longer time to act but the effect lasts for a longer time.

Another combination is the proton pump inhibitors with H2 Blockers. Sometimes people who are taking the proton pump inhibitors are asked by their physicians to take a dose of H2 Blockers in the nighttime. This is because of their belief that H2 Blockers will prevent the rise in acid reflux in the night.

## **SOME DISADVANTAGES –**

H2 Blockers - In most of the cases, the H2 blockers are quite safe and effective. In some cases though, this drug can interact with other drugs taken by the patient.

It is very important for the patient who is on H2 blocker to keep his doctor informed about any other drugs he may be taking.

Proton Pump Inhibitors – Proton Pump Inhibitors or PPIs are known to inhibit the molecule in the glands that are responsible for secretion of acid called the gastric acid pump in the stomach. The standard PPI prescribed is the Omeprazole or Prilosec which is available in all pharmacies.

One disadvantage of the PPIs is that they provide practically no protection against Barrett's Oesophagus. Some researchers also say these PPI drugs may even cause cancer in patients infected with H.Pylori due to constant suppression of acid if given on a long term basis.

PPIs are known to give significant relief for patients suffering from heartburn, erosive esophagitis, laryngitis caused by GERD, etc. The most effective and popular PPI in use is the esomeprazole also known as Nexium.

Other advantages of Proton Pump Inhibitors are – they are effective in the treatment of chest pain caused by GERD, in treatment of acid reflux caused by strenuous exercise, etc.

Adverse effects of the Proton Pump Inhibitors include head aches, diarrhea, nausea, itching, constipation, etc.

Expectant and nursing mothers are advised not to take proton pump inhibitors.

Proton Pump Inhibitors also should not be taken with certain drugs such as blood thinners, anti anxiety drugs, antiseizure agents, etc as they tend to interact with them causing problems and reactions.

Research points to development of B12 deficiency on long term use of PPIs.

Sucralfate – This agent is known to protect the mucus lining in the gastrointestinal tract. Sucralfate sticks to the ulcer crater and protects it from stomach acid and pepsin. This is of help in people suffering from mild or moderate condition of GERD.

Though this drug has very negligible side effects it tends to interact with a variety of drugs like tetracycline, warfarin and phenytoin.

Drugs which prevent both acid and non acid reflux like back up of bile include Baclofen which is also known as gamma-amino butyric acid. This drug is usually prescribed for muscle spasms.

Having this drug increases the LES pressure thereby preventing backup of acid. This is known to be effective in as much as seventy percent of patients.

## **SURGICAL PROCEDURES FOR GERD –**

The surgical treatment for GERD is known as fundoplication. This procedure increases the LES pressure thereby preventing acid backup or acid reflux.

This procedure is also used to treat hiatal hernia which is one of the causes of acid reflux.

Fundoplication is of two types – Open Nissen fundoplication and Laparoscopic fundoplication.

Both these procedures are known to decrease or cure patients of heartburn. It also gives the sufferer relief from coughs and other respiratory symptoms induced by GERD.

Furthermore, it is also known to improve peristalsis and stomach emptying thereby reducing GERD.

Limitations of this procedure includes patients still having to continue with anti GERD drugs even after the procedure and a percentage of them going in for new problems and symptoms such as trouble in swallowing, gas, bloating, etc. These symptoms usually come up after a year of surgery.

There is strong evidence that fundoplication does not cure one suffering from esophageal cancer or reduce the risk of cancer in patients suffering from Barrett's Esophagus.

Patients who have reduced stomach motility do not respond very well to this procedure.

The Open Nissen Fundoplication procedure involves wide incisions. The upper part of the stomach is wrapped around the esophagus resembling a collar like structure.

Doing this creates pressure on the LES thereby preventing fluids from the stomach backing up.

This procedure requires the patient to stay for a period of at least six to ten days in the hospital.

## **GERD – THE SERIES -**

The esophagus is a narrow and muscular tube. The function of this tube is to carry food from the mouth to the stomach.

There is a sphincter at the place where the esophagus joins the stomach which prevents the reflux of acid and food from the stomach to the esophagus.

As seen earlier, when the sphincter does not function properly, the acid and food refluxes from the stomach back into the esophagus leading to heartburn and even damaging the lower part of the esophagus.

If this damage leads to the narrowing of the esophagus, it may even lead to cancer of the esophagus.

After trying out medications for treatment of GERD, if the reflux does not subside, surgery is the only option. The most prevalent surgical procedure for GERD is the esophageal fundoplication.

### **FUNDOPLICATION –**

Fundoplication involves making an incision in the upper midline using a laparoscopic procedure.

The laparoscopic procedure involves making small incisions in the abdomen of the patient and passing long and narrow instruments through them. The surgery is thus viewed through the narrow camera which is passed through one of these incisions.

Though there are various fundoplication procedures, all of them involve wrapping of the upper stomach around the esophagus to recreate the lower esophageal sphincter.

Nissen fundoplication is one of the most commonly performed procedures. Fundoplication generally gives the patient freedom from lifelong medications.

### **LAPAROSCOPIC FUNDOPLICATION –**

This is an invasive procedure which is replaced by less invasive fundoplication procedure using laparoscopy these days.

This operation involves making of tiny incisions in the abdomen and passing small instruments and a tiny camera through them to enable the surgeon to view the area.

The next step involves making of a collar using the fundus. An experienced surgeon can perform this procedure in such a way that it gives a fast result and is equal to the standard open fundoplication.

Laparoscopic fundoplication is considered to be safe even in small children and babies. Obese people and patients whose esophagus is short face difficulty with this procedure.

### **VARIATIONS OF FUNDOPLICATION –**

Other fundoplication procedures include the Toupet fundoplication which is actually a partial fundoplication. It involves partial wrapping just as in Thal fundoplication.

This variation is employed in patients with limited motility of the esophagus. Patients with normal motility are usually given a full wrap.

Partial fundoplication procedures require the patients to stay for a shorter while in the hospital and also result in fewer complications like gagging, bloating, trouble in swallowing, etc.

## **COMPLICATIONS ARISING OUT OF FUNDOPLICATION –**

One of the complications resulting from fundoplication is slowing down of intestinal function resulting in vomiting, bloating and gagging. This problem resolves usually in a few weeks time.

If the symptoms do not disappear and persists over a period of time, patient is likely to go in for a lot of complications like – a fundus which is excessively wrapped causing gas, bloating, inability to burp, gagging and most commonly difficulty in swallowing.

Other surgical complications include an obstruction in the bowel, the wound getting infected, injury to nearby organs, respiratory complications like a collapsed lung, etc.

Some people may also experience muscle spasms after they swallow their food. This condition is extremely painful forcing the patient to live on liquid diet sometimes even for weeks.

One of the reasons why this procedure fails is due to hiatal hernia. Another reason could be excessively tight wrap around the fundus, slips, breakages, etc.

## **SURGICAL PROCEDURE USING ENDOSCOPY –**

A lot of research is being made in the field of GERD. One of this is to find methods to increase LES pressure and preventing acid reflux.

Transoral Flexible Endoscopic Suturing – This is also known as the Bard's procedure which involves using a small device at the end of the endoscope which is exactly like a mini sewing machine.

This device places sutures in two places near the LES and then these are tied together in order to tighten the valve to increase pressure. Making an incision can be avoided in this procedure and this can be done even without a general anesthesia.

Radiofrequency – This procedure is also called the Stretta procedure. The tip of the needle has radiofrequency energy which heats and destroys the tissue in the LES spot where the problem lies.

As a side effect, the patient may sometimes experience stomach pain or even chest pain after this procedure.

There have even been reports of hemorrhage, perforation and even death. On the positive side, recent studies have reported that around 81% of the patients who have gone through this procedure have remained symptom free for at least three years after this procedure.

Implants - This is also known as the Enteryx procedure. This is considered as a treatment option for patients with persistent symptoms of GERD. Unfortunately, this procedure was removed from the market by the manufacturer himself due to various problems related to the injection technique.

To stop bleeding – This procedure is done using a probe which is passed through the endoscopic tube applying either electricity or heat to coagulate the blood and stop bleeding. This is also referred to as the endoscopic ablation treatment.

Dilation Procedure - Abnormally narrow regions of the oesophagus also known as strictures need to be dilated with endoscopy. This is done by inflating a balloon in the oesophageal passage.

Patients normally require a series of this procedure in order to fully dilate and open the passage.

Studies have also indicated that this process of dilation also helps in correcting problems associated with swallowing which occurs after fundoplication.

SLEEPNITE

## DIET MYTHS – ACID REFLUX –

A little bit of an adjustment in your diet can help in a permanent solution for your acid reflux, even though across the counter antacids may provide temporary relief.

There are a few myths popular among people when it comes to treating acid reflux –

1. Many people feel you will get a relief from acid reflux if you drink milk before going to sleep in the night. It is not so. In fact milk may even be a cause acid reflux.

The main cause for acid reflux in the night is overeating. Eating too much food in the night causes excess production of acid in the stomach.

Though it may seem that milk relieves the problem, it actually encourages secretion of acid as a rebound action causing acid reflux.

You can try some adjustments in your diet like keeping your meals small and having a light snack just before going to bed.

2. The second myth is people with the problem of GERD are advised to avoid citrus fruits, spicy food and coffee. Recent studies have proved this to be wrong.

Studies have clearly proved that the only things that can reduce acid reflux are eating less and keeping your head elevated while sleeping.

## **DIET MODIFICATIONS WHICH CAN HELP –**

There are a few things you can modify in your diet which can help reduce symptoms of GERD considerably. They are –

Taking frequent and small meals instead of three big meals helps in reducing acid reflux. Doing this considerably reduces the stress on the stomach. The stomach therefore requires producing less acid for digestion.

One more thing to be followed is to include foods that are rich in complex carbohydrates. Carbohydrates present in breads, pasta, rice, etc help in tying up excess stomach acid and are easy on the stomach.

Another important thing to be followed by the GERD patient is they should avoid taking meals rich in fat especially in fast food restaurants.

Foods with a high fat content remains in the stomach for a very long time and due to this the stomach is required to produce more acid in order to digest them.

One thing that has to be avoided is consumption of alcohol. Alcohol also irritates the stomach lining causing a burning sensation.

Do not go to bed immediately after your meal. It is a good idea to remain upright for at least forty five minutes after the meal. Doing this relieves symptoms to quite an extent.

Lying on the bed with the head elevated is also good to prevent acid reflux. Elevation should be at least eight inches.

Avoid taking beverages as these stimulate the secretion of acid. Beer, wine and pop should be avoided at any cost. Beer especially is the worst of the lot as it almost doubles the acid in the stomach almost within an hour of consumption.

Foods that should be avoided include citrus fruits, caffeine drinks and alcohol, fried and fatty foods, onions and garlic, mint flavourings, chocolate, spicy foods, tomato based foods such as salsa, chilli, pizza, spaghetti sauce, etc.

### **ACID REFLUX IN CHILDREN –**

GERD is quite common in infants and children do not display any discomfort due to the occasional spitting and vomiting. Infants also outgrow GERD usually by their first birthday.

If the problem continues beyond the first year, then there is a chance it may be GERD. They then exhibit the symptoms of reflux like coughing, nausea, vomiting, etc. They may also constantly arch their back due to discomfort after eating. These children are poor eaters and lose weight.

If you notice these symptoms in your infant or child, it is advisable to take them to the physician immediately. Doctor may just prescribe something mild or just give you some ideas to avoid reflux.

Some of the suggestions he may give you include making your infant burp after feeding and keeping them in an upright position for at least thirty to forty five minutes after the feed.

In older children, the physician may recommend smaller and frequent meals and avoiding certain items in the food like chocolate, peppermint, spicy foods, sodas containing caffeine, foods which are acidic in nature like oranges, tomatoes, pizzas and most importantly fatty and fried foods.

Children suffering from GERD must be fed at least two to three hours before they go to bed. Raising the head of the child with wood blocks secured under the bedposts will be of great help.

If symptoms still persist after trying out these simple adjustments, the physician will prescribe some medications for the child suffering from GERD.

Children who do not respond to medications will have to go in for surgery, though such cases are very rare.

### **GERD IN EXPECTANT MOTHERS –**

Expectant mothers usually experience symptoms of heartburn during their second or third trimester.

Reasons for this include the changes in the hormone levels of the patient which affects the muscles of the digestive tract and also in how foods are tolerated.

Hormones produced during pregnancy causes the LES to relax allowing the acid content from the stomach to get into the esophagus.

Enlargement of the uterus is also another reason for GERD as this results in crowding of the stomach due to which the acid is pushed upwards.

There are various methods by which one can reduce symptoms of acid reflux in pregnant women without affecting the baby in any way. Following these simple things provides them relief from heartburn –

Making sure you eat smaller meals more frequently instead of large ones.

Eating slowly. Avoid gobbling food.

Avoiding spicy foods rich in fat. It is a good idea to avoid any food which tends to relax the Lower Esophageal Sphincter or the LES.

Drinking large amount of water while eating increases risk of GERD. Drinking less or even no water will help.

Sitting upright at least for forty five minutes after the meals also reduces symptoms.

Keeping the head of the bed higher than the foot or placing pillows under the shoulders will prevent stomach acid rising to the chest.

Certain medications under the guidance of your doctor like Maalox or Tums will be of great help in relieving symptoms.

Last but not the least it is advisable to wear loose fitting clothes as tight clothes increases the pressure on the abdomen.

On the brighter side, heartburn completely disappears after childbirth. For temporary relief expectant mothers can take drugs which are safe to alleviate symptoms.

## **CAN I TRAVEL WITH HEARTBURN?**

People who suffer from heartburn will find vacations a major inconvenience. This is due to the fact that during your trips, your food will be unusual, your meals will not be regular and you will tend to

overindulge on fatty foods and beverages which are not good for heartburn.

When you are very happily vacationing, you tend to sleep less and along with irregular meals this will definitely create a problem for people suffering from GERD.

It is possible though to have fun on your holiday and reduce the heartburn symptoms as much as possible by following a few sensible tips –

The first thing you should be careful about is eating food which will not trigger your heartburn. Instead of succumbing to temptation and suffering in leisure, it is a good idea to exercise that will power to stay away from foods which are attractive but harmful.

Avoiding food rich in fat and spice is a good idea. Even from the local cuisines, choose from foods which are less spicy and fatty.

The next thing to remember is not to over indulge in alcohol consumption. Especially on a vacation, you tend to be carried away among family and friends.

Again exercise that will power to limit your consumption of liquor. Doing this will enable you to enjoy your vacation better.

Consciously making sure you have something to eat frequently preferably small meals will be of help.

The most important thing is to remember not to get so hungry that the moment you see food you tend to gobble. This is a sure shot way of inviting trouble and heartburn. Avoiding this will ensure you an enjoyable vacation.

Tight and uncomfortable clothing during your travel will surely make you uncomfortable and invite heartburn by exercising pressure on your stomach.

This should be avoided at any cost. Make sure you wear loose and comfortable clothing throughout your vacation, especially if you are a GERD patient.

Another thing to remember is to be balanced in your sleep time. You must neither sleep too much nor too little. It is a good idea as seen earlier to keep your head raised with two or three pillows to avoid acid from backing up.

Do not forget to pack your medicines. Always make sure to keep medications handy. It is a good idea to keep them in your purse wherever you go for any kind of emergencies.

If you are very sure you are going to overeat or overindulge, then it is a good idea to even take your medications beforehand instead of waiting for the heartburn.

It may seem a bit boring to follow all these precautionary measures while on a vacation, but then if you don't you will end up facing a miserable vacation. These few simple precautions will ensure you a comfortable, enjoyable and a memorable vacation.

## Alternative Wedge Pillow Method

Some special pillows are developed under medical supervision to give comfort to people suffering from various diseases. One of them is the **Wedge Pillow**. These are meant to give comfort to the people suffering from Acid Reflux. These pillows prevent the acid to travel backwards when a person sleeps.

The design of the pillow gives total comfort to your upper body. It can be used with or without your regular pillow. The height of the pillow is 8 inches high and measures just over 25 inches in width. It has 3.25 inches of soft memory foam on a firm foam base which provides support and comfortable sleep either on your side or even if you sleep on your back. It has a gentle slope which supports your body all the way to bed level. This is important as pillows that have a sudden drop to the bed can damage your back.

Some people have reported sliding down the pillow at night. This can be alleviated by placing a thin regular pillow on top of the wedge pillow. The pillow is very effective and with time you will find you are no longer slipping down the pillow.

In a clinical trial run by Tonya Kaltenbach, MD; Seth Crockett, MD; Lauren B. Gerson, MD, MSc wedge pillows were found to significantly help most patients suffering from acid reflux and GERD.

The use of this pillow is not only restricted to Acid Reflux patients. Asthma patients, heart patients, children and babies, pregnant women, people having snoring problems, and many more, can also use it.

# **NATURAL REMEDY FOR ACID REFLUX –**

Eating Healthy is always beneficial. Whether you are suffering from any health disease or not it is better to eat healthy to stay healthy. But some diseases are such that one needs take extra care of their daily routine also. A small change in their routine or the food habits and the aliment puts up its head and starts causing some health problems. Let us take diabetes for example: If you have even a small piece of a sweet, which you are not supposed to have, the next day you see the high level of sugar and then for the rest of the week or a couple of weeks. So it is better to keep a control or not eat what has been prohibited. Similarly the people suffering from acid reflux need to follow some diet or control eating certain things.

You will be surprised to know that there are many remedies that can cure your acid reflux woes in just a few minutes, that you can make in your home. There are also several natural as well as organic substances that you can use to control the symptoms of acid reflux.

## **Active Manuka Honey –**

One of the main benefits of using the active manuka honey for treating acid reflux is that it is absolutely free from side effects unless you are allergic to honey. This can be taken along with the medicines prescribed by the doctors.

Active Manuka Honey is a medicinal honey which occurs naturally and is anti bacterial in nature. This honey grows from the wild and un cultivated tea tree bush in New Zealand.

Active Manuka Honey is used both internally and externally. It has antibiotic properties called the Unique Manuka Factor or the UMF.

Active Manuka Honey soothes, protects, coats and heals the tissues of the esophagus which are damaged due to acid reflux. To feel the benefits you have to take this honey for at least three to six months.

Difference is felt by people in just three days. Signs of improvement include no pain or discomfort after the meals, lesser symptoms of acid reflux such as heartburn, etc. It is better though to take medical advice before starting any natural remedy.

There are a few advantages listed below of treatment with Active Manuka Honey –

- No side effects
- Researched extensively
- Natural remedy for acid reflux, ulcer in esophagus, GERD and other GI tract infections and disorders, etc
- Soothing healing process by naturally coating the esophagus
- Can be safely used long term
- Easy to use
- Has an anti inflammatory effect
- Has antibacterial effect almost four times more than the standard antiseptic
- Destroys staphaureus, streptococcus and H.Pylori naturally

- Very cost effective

## **HOW IT HAS TO BE TAKEN –**

Acid Manuka Honey has to be taken at least three to four times a day with a square inch size of bread, toast, slice or bagel, a slice of banana or a piece of apple at least twenty to thirty minutes before a meal. Doing this coats your esophagus and the internal tract.

Taking this with bread, banana, apple, etc makes sure it reaches your stomach. If taken by itself, it tends to dissolve very fast in the blood stream and barely reaches the stomach.

Active Manuka Honey can be stored in your kitchen cupboard or first aid closet in room temperature. Though it need not be refrigerated, the honey should not be exposed to natural sunlight.

## **OTHER NATURAL REMEDIES-**

**Aloe Vera:** Due to its cool properties Aloe Vera can lessen the intensity of the acid level. Aloe Vera is also available in the juice form and should be taken daily once in a day.

**Ginger:** Ginger improves the digestion and keeps the system light. It should be consumed in small quantities. You can use this in number of recipes and also in the tea.

**Fresh black pepper:** This is herb which helps in boosting up the digestion process.

Black pepper is widely available in India.

**Jeshthamadh:** Sweet in taste, this spice is a common ingredient in Indian recipes. It is a natural anti acid and an effective remedy for acid reflux. It can be added to the tea. Also an effective medicine for headaches and blood pressure.

**Pimpali:** Best effective it improves the digestion levels can be consumed through food in small quantities. It keeps digestive system clean.

**Garlic Effect:** Chewing fresh garlic cloves keep the acid levels in control. 2 to 3 cloves can be consumed every day. It improves the digestion power and is a cure for many other health problems like heart problems, cancers and cholesterol levels.

**Amla:** Amla or Gooseberry, also cures the acid reflux due to its anti-oxidant properties.

**Fresh vegetables:** As the title implies fresh vegetable juices can be consumed. You can make a combination of vegetables and juice them. Consume the juices in various combinations

**Apple or apple cider vinegar:** Eating an apple every day is quite healthy and also the best remedy for acid reflux. Apple cider vinegar made of apple juice also is effective. It is also available in pill form. But the liquid form is more easily absorbed by the body.

## **SYNOPSIS –**

Due to the weak working of the muscle covering the esophagus the acid from the stomach travels back into the throat. This acid is so strong that it also may damage the lining of the esophagus.

People who can suffer from this are the ones who have irregular eating habits, smokers, people who do not exercise, who drink alcohol, pregnant women, children and babies.

Making few healthy changes in the routine can also help.

Treatments for acid reflux are also effective. Cures like medicines, home remedies, natural cures, herbal cures. These can be done along with following a proper diet.

**Some small tips to follow consciously are-**

- Eat slowly and in small quantities. Give time for the food to digest by eating in intervals instead of filling the stomach with food or eating in large quantities.
- Drink lots of water to detoxify the digestive system. And a glass of warm water after the meals also helps in digestion.
- A cup of herbal tea also boosts the digestion process.
- Non exercising people also tend to suffer from acid reflux. Exercising is the easiest way to stay fit and happy.
- Following the diet with the home or the natural remedies gives a natural and a faster effect. So if you cut down the unwanted food products and along with that follow the home remedy or the natural remedy then it will give you the best effects.

Heartburn or acid indigestion is the most common symptom of Acid Reflux or GERD.

Not everyone who is suffering from GERD has heartburn. Symptoms could also include asthma, dry cough or trouble in swallowing.

If your symptoms still persist even after self medication with antacids, you must consult our doctor. Under normal circumstances, your doctor will refer you to a gastroenterologist (a doctor who treats stomach and intestinal diseases).

Doctors will first advice you on certain dietary and lifestyle changes. Medicines are also prescribed depending on your condition. In some severe cases, surgery may also be recommended.

Most of the infants are healthy in spite of frequent spit up or vomit. They generally outgrow GERD by their first birthday.

If symptoms persist beyond a year causing them discomfort they will exhibit symptoms like arching and irritability. Older children will have

chest pain or abdominal pain. All these are indications of the presence of GERD.

## **RESEARCH ON GERD –**

People suffering from acid reflux are prone to various other health issues.

The most common of it being heart burn. Acid reflux causes are different symptoms in different people. In some people it can even go undetected. Various medicines, which give relief, can be taken by consulting the doctor. There are surgeries that can be performed to give a long to term effect against the reflux but again these surgeries need to be re-performed after a certain period of time.

There are various cures available against the reflux. Food items, which have the chances to increase the acid levels, should be avoided. Chocolates, coffee, cold drinks, soda drinks. Lime increases the chances of aggravating the acid, so avoid having fruits and food which contain citrus like oranges.

We do not know why only certain people are affected by GERD and others are not. A lot of research is being done on the various risk factors which lead to GERD and its relation to other conditions like asthma and laryngitis.

Extensive research is also being carried out in developing advanced devices and methods of treatment for this condition.

For more information on Acid reflux or GERD there are various organizations, associations and colleges which will be of help.

## **FOR MORE INFORMATION –**

### **American College of Gastroenterology**

P.O. Box 342260  
Bethesda, MD 20827–2260  
Phone: 301–263–9000  
Internet: [www.acg.gi.org](http://www.acg.gi.org)

### **American Gastroenterological Association**

National Office  
4930 Del Ray Avenue  
Bethesda, MD 20814  
Phone: 301–654–2055  
Fax: 301–654–5920  
Email: [member@gastro.org](mailto:member@gastro.org)  
Internet: [www.gastro.org](http://www.gastro.org)

### **International Foundation for Functional Gastrointestinal Disorders**

P.O. Box 170864  
Milwaukee, WI 53217–8076  
Phone: 1–888–964–2001 or 414–964–1799  
Fax: 414–964–7176  
Email: [iffgd@iffgd.org](mailto:iffgd@iffgd.org)  
Internet: [www.aboutgerd.org](http://www.aboutgerd.org)

### **North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition**

P.O. Box 6  
Flourtown, PA 19031  
Phone: 215–233–0808  
Fax: 215–233–3918  
Email: [naspghan@naspghan.org](mailto:naspghan@naspghan.org)  
Internet: [www.naspghan.org](http://www.naspghan.org)

**Pediatric/Adolescent Gastroesophageal Reflux Association, Inc.**

P.O. Box 486

Buckeystown, MD 21717-0486

Phone: 301-601-9541

Email: [gergroup@aol.com](mailto:gergroup@aol.com)

Internet: [www.reflux.org](http://www.reflux.org)

Tonya Kaltenbach, MD; Seth Crockett, MD; Lauren B. Gerson, MD, MSc  
Are Lifestyle Measures Effective in Patients With Gastroesophageal  
Reflux Disease?

<https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/410292>

**The National Digestive Diseases Information Clearinghouse –**

This organisation collects information about diseases related to digestion for the National Institute of Diabetes and Digestive and Kidney Diseases reference collection. This database provides titles, abstracts, and availability information for health information and health education resources. The NIDDK Reference Collection is a service of the National Institutes of Health.

You may view the results of the automatic search on [heartburn, gastroesophageal reflux \(GER\), and gastroesophageal reflux disease \(GERD\)](#).

If you wish to perform your own search of the database, you may access and search the [NIDDK Reference Collection database online](#).

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**National Digestive Diseases Information Clearinghouse**

Address: 2 Information Way

City: Bethesda,

State: MD

Zip: 20892-3570

TTY: 1-800-891-5389

Fax: 703-738-4929

Email: [nddic@info.niddk.nih.gov](mailto:nddic@info.niddk.nih.gov)

Internet: [www.digestive.niddk.nih.gov](http://www.digestive.niddk.nih.gov)

The National Digestive Diseases Information Clearinghouse (NDDIC) is a service of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). The NIDDK is part of the National Institutes of Health of the U.S. Department of Health and Human Services.

Established in 1980, the Clearinghouse provides information about digestive diseases to people with digestive disorders and to their families, health care professionals, and the public.

The NDDIC answers inquiries, develops and distributes publications, and works closely with professional and patient organizations and Government agencies to coordinate resources about digestive diseases.

Publications produced by the Clearinghouse are carefully reviewed by both NIDDK scientists and outside experts. This publication was originally reviewed by M. Brian Fennerty, M.D., Oregon Health and Science University, and Benjamin D. Gold, M.D., Emory University School of Medicine.