

TRI COUNTY EAR NOSE AND THROAT, P.C.

Laryngopharyngeal Reflux (LPR)

What is LPR? LPR is a type of reflux in which stomach contents leak into the voice box region, the lower throat area and trachea (windpipe) region. The esophagus (food pipe) may, or may not, be involved, so often patients with LPR don't feel the classic heartburn symptoms seen with Gastro-esophageal reflux Disease (GERD.)

What are the symptoms of LPR? Hoarseness, foreign body and lump sensation in the throat, chronic cough, increased amount of mucous/phlegm, difficulty swallowing, and sensation of throat irritation are signs that small amounts of acid may be traveling up the esophagus, spilling over to the trachea, and irritating the throat even if you don't feel a sensation of heartburn. These symptoms usually occur in the upright position, while with GERD the symptoms usually occur with lying down.

What causes LPR? There are two valves protecting the esophagus and throat from excessive acid exposure from the stomach, the upper and lower esophageal sphincters. It is felt by the majority of researchers that one of these valves does not function properly in individuals who have LPR. Excess weight, dietary factors and, smoking also play a major role in causing malfunction of these valves.

What can happen if LPR goes untreated? Untreated LPR can lead to breathing difficulties (wheezing, shortness of breath, etc.), and choking spells, scars and persistent lesions in the throat and voice box region. Severe cases can lead to the development of certain throat, voice box and esophageal cancers.

How do I know if I have LPR? If you have symptoms of LPR your primary provider can examine you and prescribe a trial of treatment. She/he may also refer you to an Ear, Nose and Throat (ENT) Specialist who can do more specific tests to determine if you have LPR. **Half of all people who have LPR don't have any heartburn at all, so don't wait to experience heartburn to get screened if you have any of the above symptoms.**

Even children can get LPR, which can cause throat, sinus, ear and breathing problems. Since it's more difficult to diagnose in children, please bring your child to a Ear Nose and Throat Specialist promptly if they have any of the symptoms described.

Can LPR be cured? LPR is considered a chronic/intermittent disease. Its symptoms come and go. Unfortunately, damage may be continuing to occur in your throat even if you don't have symptoms. If you have diagnosed LPR, and you stick to the treatment and lifestyle regimen prescribed for you, the disease may go away for months, or perhaps even years. It will likely recur, though, if you don't adhere to the regimen. You will need to keep your follow-up visits with the ENT Specialist to determine whether or not you still have laryngeal irritation. Weight loss and dietary/lifestyle changes **can** significantly reverse LPR.

Is there medicine for LPR? Over-the-counter medications such as Maalox, Mylanta and Gasviscon may help the symptoms of LPR, but the stomach-acid reducers, such as Nexium, Protonix, Prilosec, Prevacid, Aciphex and Dexilant are considered more useful. Doses for LPR, as prescribed by your

provider, are often higher than that prescribed for GERD.

What about lifestyle modifications? Chewing gum, particularly bicarbonate gum after meals, adopting a low fat diet, avoid fried foods & chocolate, soda & other carbonated beverages, alcohol and caffeinated drinks, don't eat snacks or a meal within 3 hours before bed, avoid rough play or exercise within 1 hour after meals, not wearing clothing that's tight around the waist and elevating the head of your bed can all help relieve LPR. **If you Smoke, Stop !!!**

Anti-reflux Measures

1. Head elevation - Bricks under the head of the bed or wedge pillow.
2. Avoidance of the following foods:
Coffee, Alcohol, Chocolate, Peppermint, Spearmint, Tomatoes (including sauce), Spicy foods, Milk/Milk products, Orange Juice, Fatty Foods.
3. Avoidance of cigarettes.
4. Avoid stressful situations if possible.
5. Eat small meals - Avoid eating four hours prior to reclining.
6. Avoid tight fitting clothes.
7. Weight loss if applicable.
8. Sleep on right side.

What CAN I eat?

Agave and Honey
Artificial sweeteners (maximum 2 tsp. per day)
Bagels and (non-fruit) low-fat muffins, Graham Crackers
Beans (black, red, Lima, lentils, etc.)
Bread (especially whole grain & rye), Brown Rice, Popcorn
Chamomile tea (most other herbal teas are NOT acceptable)
Caramel (maximum 4 per week)
Chicken (grilled, broiled, baked or steamed; no skin), Turkey Breast
Chicken stock or bouillon
Coffee (1 cup per day), Skim or Soy Milk
Fish (gilled, broiled, baked or steamed), Tofu
Ginger (root, powdered or preserved)
Herbs (excluding all peppers, citrus, garlic & mustard)
Melon (honeydew, cantaloupe, & watermelon), Bananas
Cereal, Oatmeal (all whole-grain cereals)
Olive oil (maximum 2 Tbsp. per day)
Whole grain bread, crackers & pasta
All raw or cooked vegetables except onions, peppers, tomatoes
Aloe Vera
Celery, Fennel, Mushrooms, Potatoes, Turnips, Parsley
Egg Whites

Note: LPR patients who adhered to the diet above have demonstrated an improvement in symptoms in clinical studies.

It's very important to keep follow-up appointments with your ENT Specialist to track the course of your condition, since lack of symptoms doesn't always reflect disease improvement.

Questions regarding side effects of PPI medications and the need to take Calcium Supplements:

I've heard that medicines for LPR can affect bone health. Is there anything I should worry about?

Proton Pump Inhibitors (PPIs) reduce the acid in your stomach, which effectively treats reflux disease. On the flip side, though, our bodies require a higher acid content in our GI tract in order to absorb ingested calcium (Ca), which is necessary for healthy bones. Thus, PPIs, which lower Ca absorption, have been linked in some studies to osteoporosis. However, there are also studies that refute this.

So what should I do to treat my LPR and protect my bones? As a rule, post-menopausal women on PPIs should be taking calcium supplement. Discuss your risk profile with your primary healthcare provider.

Should I be taking a Ca supplement? Supplements are meant to provide what your diet is lacking. Nutrients should be obtained from foods first, since they are more readily absorbed that way. If your diet or a medical condition causes you to be deficient in Ca, a supplement may be advised. Remember, though, that more is not necessarily better in the case of some supplements, so take only what is advised. As far as Ca is concerned, if a supplement is advised, it's best to take one with additional Vitamin D, since Vitamin D assists in the absorption of Ca

How much should I take? The National Institute of Health recommends Calcium/Vitamin D

Age	Male	Female
1-6 Months	200 mg/400 IU (10mcg)	200mg/400 IU
7-12 Months	260 mg/400 IU	400 IU
1-3 Years	700/600 IU (15mcg)	700 mg/600 IU
4-8 Years	1,000 mg/600 IU	1,000 mg/600 IU
9-13 Years	1,300 mg/600 IU	1,300 mg/ 600 IU
14-18 Years	1,300 mg/600 IU	1,300 mg/600 IU
19-50 Years	1,000 mg/600 IU	1,000 mg/600 IU
51-70 Years	1,000 mg/600 IU	1,200 mg/600 IU
71+	1,200 mg/800 IU (20mcg)	1,200 mg/800 IU

Remember, these are numbers for total recommended requirements. Your individual requirement depends on your dietary intake.

There are so many different kinds of Ca supplements. How do I know which is right for me?

Discuss this with your healthcare provider, a nutritionist or your pharmacist, and be sure you include ALL of your health data, including your medical conditions and what other medications (over-the counter and prescriptive) you take. Calcium carbonate is more commonly available and is both inexpensive and convenient, and is absorbed more efficiently when taken with food. Calcium citrate is absorbed equally well when taken with or without food.

Is there a best time to take Ca supplements? That depends largely on when you' re eating and taking other medications. Calcium is absorbed most efficiently when taken in doses of 500 - 600 mg at a time, so, if you need to take doses higher than that, they should be spread out throughout the day. Ca supplements should not be taken with bisphosphonates (used to treat osteoporosis), thyroid preparations, Dilantin, certain antibiotics, and some diuretics.

Any side effects to these supplements? Calcium supplements can cause constipation, gas, & bloating. Too much vitamin D can cause weakness, fatigue, sleepiness, headache, loss of appetite, metallic taste, dry mouth, nausea and/or vomiting. Too much Ca can result in kidney stones, renal disease, and, according to recent studies, possibly increase the risk of heart attack and prostate cancer. Too much Vitamin D may increase the risk of worsening atherosclerosis.

Remember, Ca is BEST absorbed from foods. Don t forget to walk - best exercise for bone health!

Food	Milligrams (mg) Per Serving	Percent DV*
Yogurt, plain, low fat, 8 ounces	415	42
Yogurt, fruit, low fat, 8 ounces	338-384	34-38
Mozzarella, part skim, 1.5 ounces	333	33
Sardines, canned in oil, 3 ounces	325	33
Cheddar cheese, 1.5 ounces	307	31
Milk, nonfat, 8 ounces**	299	30
Milk (2% milk fat), 8 ounces	293	29
Milk, buttermilk, 8 ounces	282-350	28-35
Milk, (3.25% milk fat), 8 ounces	276	28
Tofu, made with calcium sulfate	253	25
Salmon, canned, solids with bone, 3 ounces	181	18
Cottage cheese, 1% milk fat, 1 cup	138	14
Tofu, soft, made with calcium sulfate,	138	14
Instant breakfast drink, 8 ounces	105-250	10-25
Frozen yogurt, vanilla, soft serve	103	10
Ready-to-eat cereal, calcium-fortified	100-1,000	10-100
1 cup Turnip greens, fresh, boiled, cup	99	10
Kale, fresh, cooked, cup	94	9
Kale, raw, chopped, cup	90	9
Ice cream, vanilla, cup	84	8
Soy beverage, calcium-fortified, 8 ounces	80-500	8-50
Chinese cabbage, raw, 1 cup	74	7
Bread, white, 1 slice	46	7
Tortilla, corn, ready-to-bake/fry, one 6" diameter	32	5
Tortilla, flour, ready-to-bake/fry, one 6" diameter	31	3
Sour cream, reduced fat, 2 tablespoons	30	3
Bread, wholewheat, 1 slice	21	3
Broccoli, raw, cup	14	2

** Calcium content varies slightly by fat content; the more fat, the less calcium the food contains.

*** Calcium content is for tofu processed with a calcium salt. Tofu processed with other salts does not provide significant amounts of calcium.

What potential side effects are there regarding long term PPI use?

Rare potential adverse side effects from prolonged use include: rebound acid hyper-secretion syndrome, enteric infection, possible increase incidence in pneumonia, acute interstitial nephritis, hypomagnesemia and hypocalcemia, vitamin B12 deficiency, and gastritis. Close follow-up with your Otolaryngologist will help ascertain that you are taking the lowest dosage and frequency possible without adversely affecting control of your LPR.