How's your stomach lately? If it's not so good, you have plenty of company. New York gastroenterologist Dr. Michael Glick explains how the stress and anxiety caused by the COVID pandemic is screwing up America's collective stomachs. And lungs, too.

As I have written before, I have rather severe asthma [1], which has been under control due to some pretty snappy research [2] and the resulting development of several injectable antibody drugs that are nothing short of little miracles in a vial.

For years I've been able to avoid ‘Prednisone – Satan's Little Helper’ [3] because these drugs worked so well. But starting this year things started to feel not so great in my chest. It wasn’t classic asthma. Just an uncomfortable tightness in my upper chest which did not respond well to a rescue inhaler.

So, naturally, my asthma doc had me consult... a gastroenterologist. Huh? What sense does this make? Turns out it makes plenty of sense, and New York gastroenterologist Dr. Michael Glick kindly agreed to explain what is going on. There’s a pretty good chance that some of you are experiencing something similar.
JB: Thank you, Dr. Glick, for agreeing to talk with us. Asthma exacerbated by GERD (1)? Who knew?

MG: Thank you for having me, it's great to be talking about acid reflux, an under-appreciated issue that's much more common than some might expect. At least 60 million Americans have acid reflux symptoms each month. When we eat, food quickly navigates down the esophagus and then lingers for an hour or two in the stomach, which is basically a deflated football filled with acid. The stomach rests high in the abdomen, partly behind the ribcage, and only about a foot from your mouth. The gateway between the esophagus and the stomach is the lower esophageal sphincter (LES), a muscle that acts as a gentle fist, easing when food drops down the chute and tightening when food is churning in the stomach.

JB: "Tightening sphincters" and "churning stomachs" doesn't sound all that marvelous. What's going on?

MG: For many people, the LES goes haywire and relaxes when it shouldn't, leading to acidic fluid regurgitating back into the esophagus, throat, mouth, sinuses, and even lungs, potentially causing inflammation wherever it goes. This is called acid reflux, also known as gastroesophageal reflux disease (GERD), and can lead to major quality of life problems along with medical concerns, like asthma exacerbation.

JB: Most people think that acid reflux/GERD is just heartburn. It sounds like there's a lot more to it.

MG: There sure is. When we think of acid reflux, many of us think of a heartburn medication commercial: an elderly man in agony clutching an image of fire on his chest. In reality, this affects people of any age, and symptoms often do not include heartburn. You could simply have one of the following: frequent throat clearing, chronic dry cough, chronic sore throat, excessive belching, nausea, sour taste in the mouth, hoarse voice, bad breath, or post-nasal drip, among many other irritating and frustrating symptoms.

What's interesting is that aside from a few basic functions, like helping to absorb calcium and vitamin B12, stomach acid isn't that important for digestion. Neither is a stomach. It often causes more harm than good. For instance, a patient with stomach cancer may need their entire stomach removed, with their esophagus reconnected to the small intestine. In most cases, people without stomachs can digest all foods and lead a full life. The small intestine and pancreatic enzymes will pick up the digestive slack.

JB: If stomach acid causes so much trouble then why did we evolve to have it?

MG: That's a good question. For early humans, an acidic stomach may have been crucial. There's a theory that we were once a scavenger species, and the concept of us chasing down a woolly mammoth for dinner may not be completely accurate. It is more likely that when early man stumbled upon a rotting carcass days later, there would be dangerous bacteria festering in the meat. Before the technology of cooking was developed, we would be at risk for food poisoning with every bite. As a result, highly acidic stomachs helped "cook" the meat by destroying the bacteria. This theory seems to be supported by the fact that other scavenger species, like the
turkey vulture, have highly acidic stomachs. But with modern-day cooking and hygiene, stomach acid no longer serves this life-saving function.

**JB:** Can it be long until someone comes up with the "rotting carcass" diet?

**MG:** To each his own.

**JB:** Regarding stress and anxiety caused by COVID, from what I've been reading I'm not the only one whose asthma has been exacerbated by GERD. It's a nerve-wracking time to be alive, which is evidenced by marked increases in drinking as well as antidepressant and antianxiety drug use. Sounds like anxiety is a big part of this, right?

**MG:** That's right, acid reflux clearly worsens when someone is under significant stress. Think about when you're anxious—you can feel the tightening of the muscles you can control in your arms and legs, called skeletal muscles. In contrast, the body's sphincters consist of smooth muscle, and these go lax when we're stressed. That's why someone might feel the need to run to the bathroom before giving a presentation at work. The LES also consists of smooth muscle and will loosen when someone is anxious. This leads to more acid reflux, which can cause more stress and the cycle self-perpetuates. On top of that, the use of alcohol and caffeine further exacerbates LES relaxation.

**JB:** Can you compare the incidence of these symptoms you have seen in your practice before and after the COVID pandemic began?

**MG:** It's been eye-opening to see how many patients are reporting acid reflux symptoms since the pandemic began. As gastroenterologists we treat dozens of conditions, but at least half of the patients I've seen since the pandemic began are making appointments solely due to acid reflux symptoms. I've found that either the symptoms started with the onset of the lockdown in March 2020, or six months later when social isolation, anxiety, changes to diet, and sedentary lifestyle have become too much for the gut to handle. In addition, many patients are reporting weight gain during the pandemic. This leads to more pressure on the stomach, pushing acid back into the esophagus.

"It's been eye-opening to see how many patients are reporting acid reflux symptoms since the pandemic began."

**JB:** What is your approach when a new patient sees you for acid reflux-related symptoms.

**MG:** Before considering medication, dietary change is usually the first step. Limiting the consumption of acidic foods and drinks can help many patients improve symptoms. Unfortunately, acidic foods can be the most delicious foods, as we crave the taste of acid. So the list of foods to minimize can be daunting: vinegar, tomatoes, citrus fruits, garlic, onions, chocolate, and especially those addictive flavored carbonated drinks (soda in particular). Reducing alcohol and caffeine intake can help limit LES relaxation, thereby reducing acid reflux. Since a meal can take two
hours to empty out of the stomach, if you lie down within two hours of eating, there can be more regurgitation as gravity drags stomach contents into the esophagus.

For an outstanding breakdown of this diet, I recommend reading the *Acid Watcher Diet* by Dr. Jonathan Aviv. Dr. Aviv describes a healing phase and a maintenance phase to the diet, in which the first month of acid restriction gives way to fewer and fewer restrictions as the esophagus and throat heal. As a result, with focused, short-term dietary change, many patients do not have to rely on severe, long-term dietary restrictions or be dependent on medication.

**JB: No Diet Coke or chocolate?? How can I go on?**

MG: It’s easy for me to make recommendations, but there’s no doubt that it can be extremely difficult to make even simple changes to what we eat and drink on a daily basis. It’s important to not kick ourselves when we make dietary mistakes and to remind ourselves that most people with acid reflux can have dramatic improvement with time.

**JB: What medications do you recommend?**

When used appropriately, drugs can help decrease the amount of acid that finds its way into the wrong places. I’d always recommend consulting with your doctor before starting medication, whether it’s over-the-counter or prescription, to make sure that no further testing is needed and that you make a safe decision.

Short-acting options include Tums and Gaviscon, which quickly neutralize stomach acid but may only work for minutes to an hour or two. A class of drugs called histamine or H2 blockers, like famotidine, work within an hour and can reduce the actual production of stomach acid for many hours. If you no longer see Zantac (ranitidine) on the shelf that’s because it was recently pulled from the market after it was found to be contaminated by a potential carcinogen (2). Lastly, proton-pump inhibitors, such as omeprazole (also known as Prilosec), can be extraordinarily effective at healing ulcers and severe damage to the esophagus, but take days to start working and there is concern about potential long-term risks.

**JB: It's not intuitively obvious that the gastrointestinal and respiratory systems are closely linked or that GERD would have anything to do with asthma. What's going on?**

MG: I agree, it’s surprising how closely the two are linked but it all makes sense. When acid reflux occurs, some of the acid reaches the throat and trickles down the trachea into the lungs. Chronic irritation of the lungs can cause tightening of the airways, worsening symptoms in someone who has asthma, or even causing asthma-like symptoms of chest tightness, cough, and wheezing in someone who never had asthma at all.

**JB: If diet and medication don't work what's next?**

MG: An upper GI endoscopy is a procedure we perform by guiding a thin tube with a high-definition camera through the mouth to visualize and even biopsy the esophagus, stomach, and part of the small intestine. This allows us to rule out pre-cancerous lesions, ulcers, damage to the lining of the esophagus, and hiatal hernias (when the stomach bulges into the chest cavity), among other problems. The endoscopy can be an important test for patients who are having
difficulty controlling acid reflux despite treatment or have concerning symptoms such as weight loss, swallowing difficulties, upper abdominal pain, vomiting, or black stool. Discussing symptoms with your doctor is always key.

JB: Thanks very much, Dr. Glick for your time and expertise. This information is going to be invaluable for many people suffering through such a difficult time.

NOTES:

(1) GERD is an acronym for gastroesophageal reflux disease.

(2) The carcinogen N-nitrosodimethylamine has been found in a number of other drugs, including metformin and four different blood pressure medicines. It is an impurity, not a metabolite.

Michael P. Glick, MD, is a gastroenterologist who practices at Gotham Gastroenterology in Manhattan. He is board-certified in internal medicine, gastroenterology, and nutrition. After graduating cum laude from Columbia University, he received his MD from NYU School of Medicine. He completed his residency in internal medicine at Columbia University Medical Center, followed by fellowship training in gastroenterology and nutrition at Memorial Sloan Kettering Cancer Center. He is a clinical instructor at NYU School of Medicine.