

## Incisionless Surgery for Chronic Heartburn or Reflux

TIF (transoral incisionless fundoplication) is the most advanced procedure for safely and effectively treating chronic acid reflux, also known as gastroesophageal reflux disease (GERD). A completely incisionless procedure, TIF reconstructs the antireflux barrier to provide a solution to the anatomical root cause of GERD. The procedure is for patients who are dissatisfied with current pharmaceutical therapies or are concerned about the long-term effects of daily use of reflux medications.

TIF is performed endoscopically using the innovative EsophyX surgical device from EndoGastric Solutions. In clinical studies, 93% of patients remained free of their heartburn and 79% off their daily PPIs (proton pump inhibitors) at two years after the TIF procedure.



### What is GERD?

If you have heartburn or reflux twice a week or more, you may have GERD. Heartburn is the most common symptom, but you may also experience:

- Hoarseness or sore throat
- Frequent swallowing
- Asthma or asthma-like symptoms
- Pain or discomfort in the chest
- Sleep disruption
- Bloating
- Excessive clearing of the throat
- Persistent cough
- Burning in the mouth or throat
- Intolerance of certain foods
- Dental erosions or therapy-resistant gum disease or inflammation

Normally, after swallowing, a valve between the esophagus and the stomach opens to allow food to pass, then it closes to prevent stomach contents from "refluxing" back into the esophagus, causing a burning sensation in the chest. For people who suffer from GERD, the valve is dysfunctional and unable to prevent acid from refluxing into the esophagus.

### Why pharmaceuticals are not a long-term solution

GERD today is typically treated with medications such as histamine receptor antagonists (H2 blockers), such as Pepcid, Tagamet and Zantac, and proton pump inhibitors (PPIs), such as Nexium, Prilosec and Protonix. While often effective for short-term treatment, these medications can lose their effectiveness over time. They also don't treat the underlying root cause of reflux, the deteriorated anatomy of the antireflux barrier, so life-long medication therapy is required. In addition, recent studies on the adverse effects of long-term use of PPIs suggest a significantly higher incidence of hip fractures, particularly among women.

### Conventional surgical treatment

For people who have moderately severe to severe GERD, surgical intervention may be required. Though conventional laparoscopic procedures have long proven an effective long-term solution, they are still "invasive."

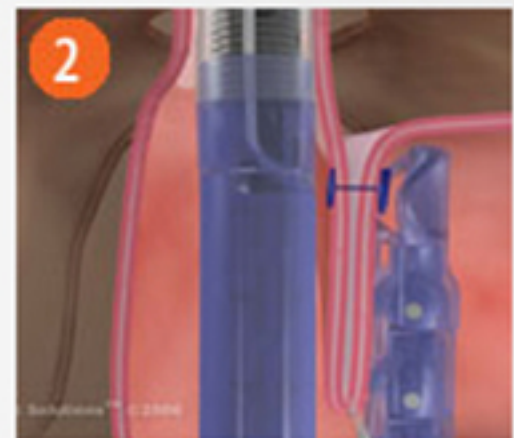
### TIF procedure

TIF was developed to emulate more invasive surgical techniques, but from within and completely without incisions or visible scars. Using the EsophyX device, the procedure is performed through the mouth, rather than through an abdominal incision. Typically lasting only 45-60 minutes, the procedure is performed under general anesthesia and reconstructs the body's natural physical antireflux barrier. Most patients can go home the next day and return to work within a few days.

**Step 1:** The specially designed EsophyX device enters the esophagus through the mouth and is positioned at the junction of the stomach and esophagus.



**Step 2:** The EsophyX device pulls and fastens a tissue fold.



**Step 3:** Step 2 is repeated multiple times to reconstruct a robust, tight gastroesophageal valve (GEV) that prevents the reflux of stomach fluids up into the esophagus, resulting in the effective elimination of GERD.

