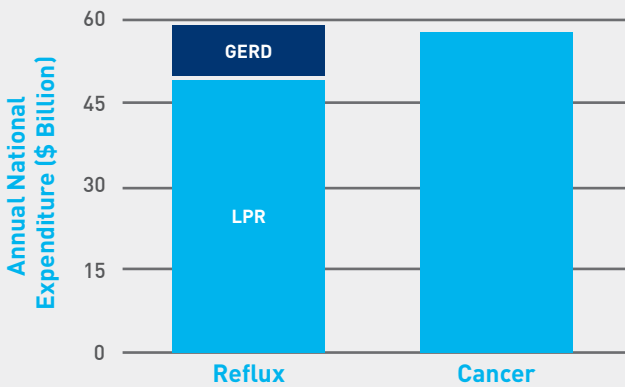


## ATYPICAL REFLUX: An Ever-Present Enigma

An estimated 40% of the American population is affected by reflux disease<sup>1</sup> — roughly half of which manifest with atypical symptoms. Currently, the most common approach is an 8 week trial with PPIs to assess symptom improvement. However, only 40% of patients respond to PPI treatment with pH and symptom normalization, leaving no clear answer for the remaining 60%.<sup>2</sup> Physicians across the U.S. and over 30 countries around the world are adopting a new method of assessing reflux — and this is why:

### Comparison of Estimated Economic Burden

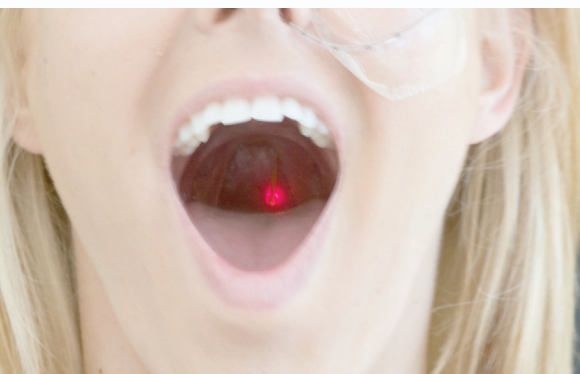


The standard of reflux management represents an estimated national expenditure just shy of \$60 billion, exceeding the estimated expenditures on cancer management.<sup>1</sup>

*Adapted from Francis, 2013.*

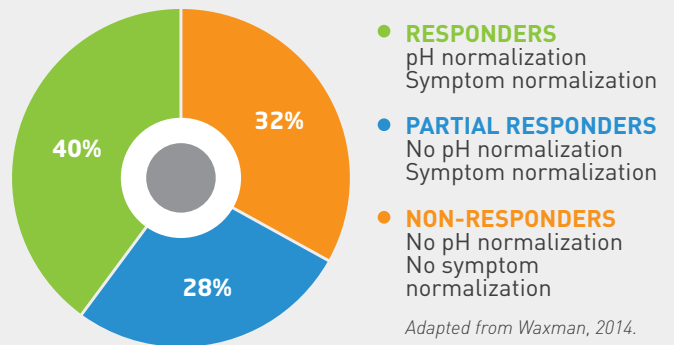
### An Evidence-Based Approach to Reflux Diagnostics

Restech's simple, reliable, and highly accurate pH sensor effectively identifies patterns of reflux in the oropharynx. The detailed activity report provides physicians with critical data to appropriately develop or adjust a tailored treatment plan.



**Shown Left:** Restech's pH probe's unique placement just below the uvula allows for a comfortable patient experience while capturing highly accurate pH data.

When positive RYAN Score patients are treated with BID PPI for 12 weeks, approximately 60% of patients fail to normalize and have a persistent positive RYAN Score when retested on PPI.<sup>2</sup>



*Adapted from Waxman, 2014.*

### Public Health Burden

Further complicated by the lack of definitive diagnostic and treatment standards, laryngopharyngeal reflux (LPR) management often leads to extraneous specialty consultations, procedures, and prescription medications.

### The Importance of Testing for LPR Before Treatment

Signs and symptoms of LPR are not necessarily specific to the disease, so why do they carry so much weight in a diagnosis? This is a standard of practice that is actively changing, as physicians worldwide are rapidly adopting the Restech pH system for a confirmatory diagnosis.

Although PPIs are extremely effective for controlling symptoms of GERD, PPI therapy has shown mixed results in eliminating symptoms associated with LPR. Studies show that the majority of symptoms improved similarly in both PPI and control groups, while laryngopharyngeal pH failed to normalize following PPI treatment.<sup>3,4</sup>

## Predictive Value for Surgical Outcomes & Compliance with Therapy

Anti-reflux surgery effectively stops reflux in about 93% of patients.<sup>5</sup> An abnormal pharyngeal (Restech) pH test was present in 90% of these patients with a successful surgical outcome.<sup>6</sup> Patients with an abnormal pharyngeal test were more likely to see symptom improvement after a fundoplication than those with an abnormal proximal esophageal test.<sup>6</sup> Those who received a confirmatory diagnosis via pH monitoring were also more likely to comply with medical therapy and lifestyle modifications.<sup>7</sup>

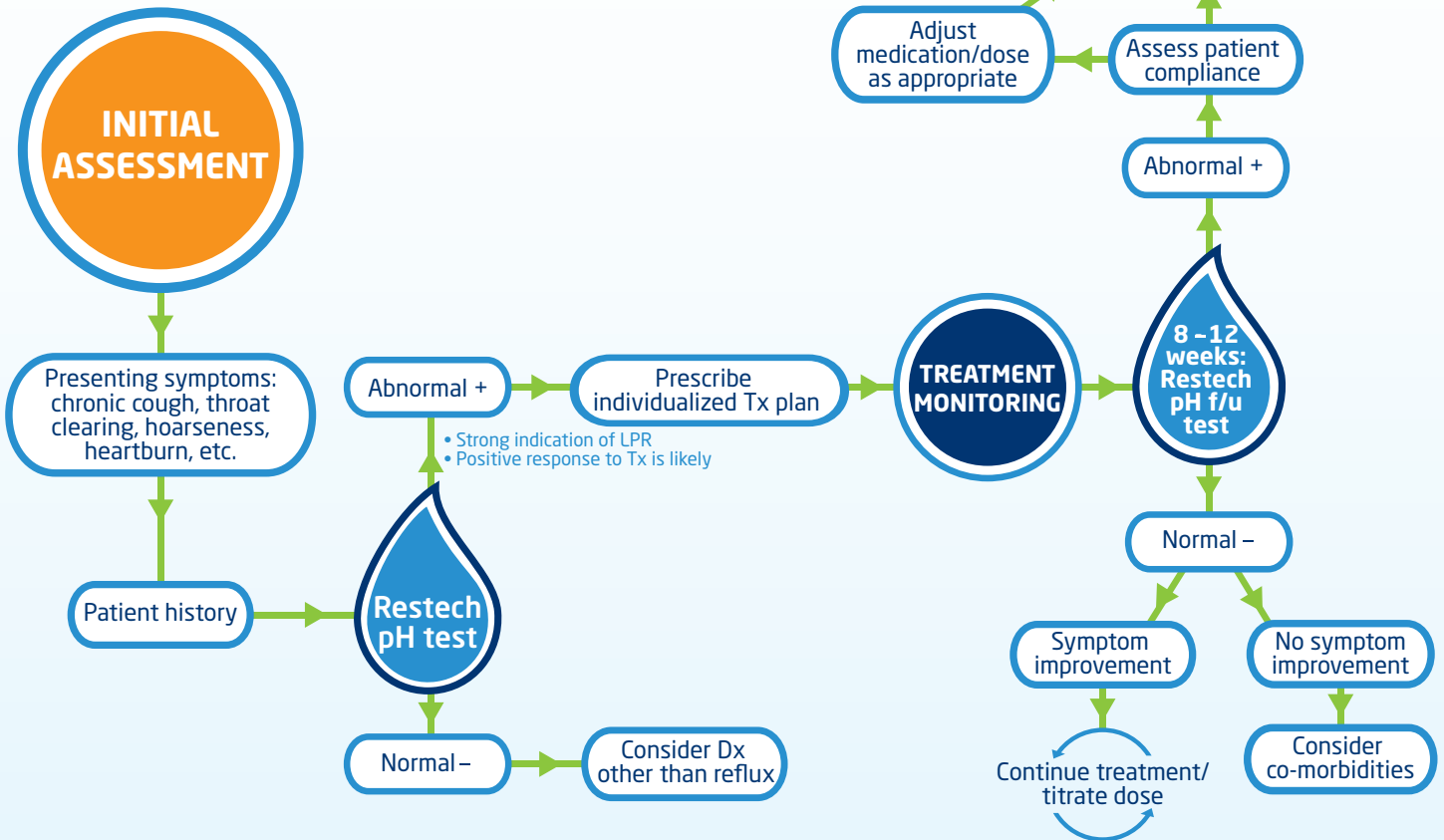
## Why More Physicians are Adopting Evidence-Based Reflux Diagnostics

Self-reported symptom scores — as determined by the reflux symptom index (RSI) — do not reliably predict presence or severity of acid reflux disease.<sup>8</sup> The presence of anxiety and depression has been shown to further impair the predictive value of the RSI for LPR.<sup>9</sup> Research also shows no significant difference in RSI seen between RYAN+ and RYAN- patients.<sup>10</sup> (The RYAN score is Restech's proprietary scoring system for LPR).

## Restech's High Accuracy and Reproducibility

Compared to conventional pH sensors, Restech's sensor samples pH with greater accuracy and a much higher frequency, with two pH readings per second and increased sensitivity in the pH 3-5 range.<sup>11</sup> Studies show Restech correctly identifies 100% of positive responders (PPI's), as well as day-to-day reproducibility of study results.<sup>4, 12-13</sup>

“Control of the symptoms is not good enough... control of the reflux is the key.”<sup>5</sup>  
Jeffrey Hagen, M.D.



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