

## 2. GERD Health-Related Quality of Life (GERD-HRQL) Questionnaire

- Developed and validated by Velanovich to measure the change in typical GERD symptoms as a result of medical or surgical treatment (Velanovich, 2007; Velanovich & Karmy-Jones, 1998).
- Consists of 10 scaled items (the first 6 measuring heartburn), which are scored, and a general satisfaction question, which is not scored (see the table below).
- Individual scores reflect on different symptom severity levels and can vary on the scale from 0 to 5, with 0 = "No symptoms", and 5 = "Symptoms are incapacitating, unable to do daily activities".
- The total GERD-HRQL score is derived by adding individual item scores, with the best possible score being 0 (asymptomatic in all items) and the worst possible score of 50 (incapacitated in all items).
- Satisfaction question is a patient-reported assessment of their present health condition with respect to GERD. It doesn't have a numerical score, and is not added to the total GERD-HRQL score. The three possible responses to this question are: satisfied, neutral, and dissatisfied.
- Symptoms are considered eliminated when the scores to each question are from 0 (none) to 1 (not bothersome).

Scale:

0=No Symptoms    1=Noticeable, but not bothersome    2=Noticeable, bothersome, but not every day  
3=Bothersome daily    4=Bothersome and affects daily activities    5=Incapacitating to do daily activities

	None			Severe		
	0	1	2	3	4	5
How bad was the heartburn?						
Heartburn when lying down?						
Heartburn when standing up?						
Heartburn after meals?						
Does heartburn change your diet?						
Does heartburn wake you from sleep?						
Do you have difficulty swallowing?						
Do you have pain while swallowing?						
Do you have gassy or bloating feeling?						
If you take reflux medication, does this affect your daily life?						

### Supplemental Regurgitation Related Questionnaire

	None			Severe		
	0	1	2	3	4	5
How bad is the regurgitation?						
Regurgitation when lying down?						
Regurgitation when standing up?						
Regurgitation after meals?						
Does regurgitation change your diet?						
Does regurgitation wake you from sleep?						

How satisfied are you with your current health condition? Satisfied\_\_\_\_ Neutral\_\_\_\_ Dissatisfied\_\_\_\_

References:

Velanovich V (2007) The development of the GERD-HRQL symptom severity instrument. *Diseases of the Esophagus* 20:130-134

Velanovich V, Karmy-Jones R (1998) Measuring gastroesophageal reflux disease. *American Surgeon* 64:649-65

### 3. Reflux Symptom Index (RSI) Questionnaire

- Nine-item self-reported questionnaire developed by Belafsky (2002) measures laryngopharyngeal reflux (LPR) symptoms such as hoarseness, throat clearing and cough (see the table below).
- The scale for each item ranges from 0 (no problem) to 5 (severe problem).
- The total RSI score is derived from adding the individual item scores, with a maximum total score being 45.
- The total RSI score less or equal to 13 is considered to be normal.
- Individual scores from 0 to 1 are indicative of eliminated symptoms.

Scale: 0=No Symptoms    1=Noticeable, but not bothersome    2=Noticeable, bothersome, but not every day  
 3=Bothersome daily    4=Bothersome and affects daily activities    5=Incapacitating to do daily activities

	None			Severe		
	0	1	2	3	4	5
Hoarseness or a problem with your voice?						
Clearing your throat?						
Excess throat mucus or postnasal drip?						
Difficulty swallowing foods, liquids, or pills?						
Coughing after you ate or after lying down?						
Breathing difficulties or choking episodes?						
Troublesome or annoying cough?						
Sensation or something sticking or a lump in your throat?						
Heartburn, chest pain, indigestion, or stomach acid coming up?						
Upper abdominal bloating, distention?						
Excess flatulence?						

#### Supplemental Questions to Assessing Reflux Symptoms (not officially a part of RSI)

Scale: 0=No Symptoms    1=Noticeable, but not bothersome    2=Noticeable, bothersome, but not every day  
 3=Bothersome daily    4=Bothersome and affects daily activities    5=Incapacitating to do daily activities

	None			Severe		
	0	1	2	3	4	5
Upper abdominal bloating, distention?						
Excess flatulence?						

**Reference:**

Belafsky PC, Postma GN, Koufman JA (2002) Validity and reliability of the reflux symptom index (RSI). *Journal of Voice* 16.2:274-9

## 4. GERD Symptom Score (GERSS) Questionnaire

- Patient-reported assessment of five GERD symptoms, described by Anvari (Anvari et al., 2006): heartburn, regurgitation, bloating, dysphagia and epigastric/retrosternal pain (see the table below).
- Each symptom is measured in terms of severity (on the scale from 0 to 3) and frequency (on the scale from 0 to 4).
- Individual symptom scores are calculated by multiplying the symptom's severity by its frequency with values varying from 0 to 12.
- The total GERSS score is derived by adding all the symptom scores and can vary from 0 to 60.
- Patients with controlled reflux symptoms have a total symptom score of less than 18.
- Individual scores of 0 to 1 on both severity and frequency scale are indicative of eliminated symptoms.

Scale: 0=Not at all    1=Intermittently    2=Moderately    3=Severely

	Not at all		Severely	
	0	1	2	3
How much has heartburn bothered you on a daily basis?				
How much has regurgitation bothered you on a daily basis?				
How much has abdominal distention bothered you on a daily basis?				
How much has dysphagia bothered you on a daily basis?				
How much has coughing bothered you on a daily basis?				

Scale: 0=Never    1=Once a month    2=Once a week    3=2-4 times a week    4=Daily

	Never			Daily	
	0	1	2	3	4
How often have you experienced heartburn?					
How often have you experienced regurgitation?					
How often have you experienced abdominal distention?					
How often have you experienced dysphagia?					
How often have you experienced coughing?					

### Reference:

Anvari M, Allen C, Marshall J, Armstrong D, Goeree R, Ungar W, Goldsmith C (2006) A randomized controlled trial of laparoscopic Nissen fundoplication versus proton pump inhibitors for treatment of patients with chronic gastroesophageal reflux disease: one-year follow-up. *Surgical Innovation* 13.4: 238-249