

The background features a dark blue gradient with a starry space pattern. Overlaid on this are several technical diagrams, including circular gauges with numerical scales (e.g., 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260) and various circular arrows indicating motion or flow. The text is centered in the upper half of the image.

# EVALUATION OF THE GEJ

A STEP TOWARDS UNIFORMING THE DESCRIPTION OF  
THE GEJ

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## WHY?

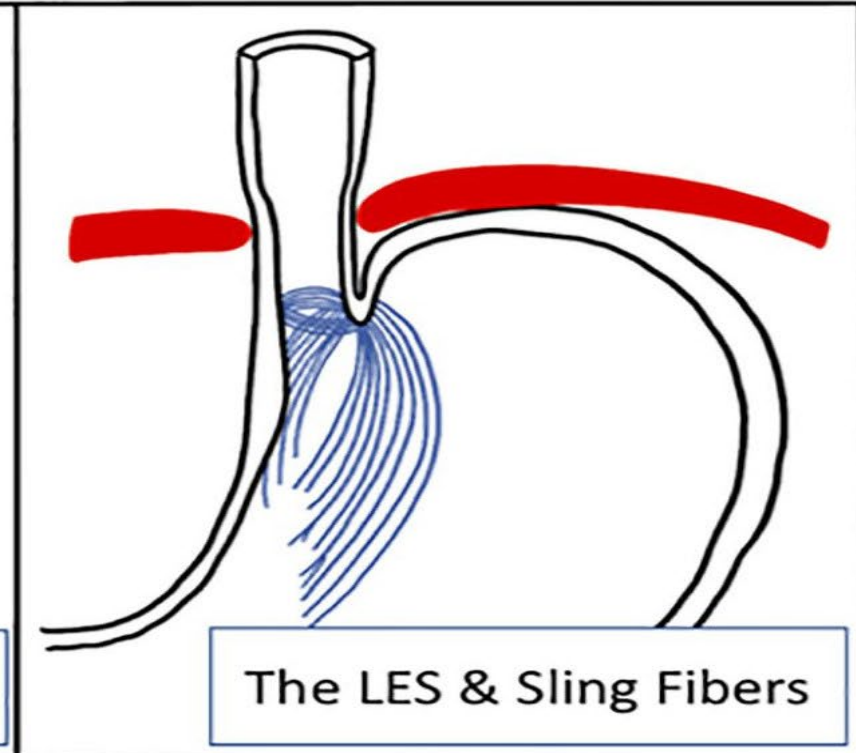
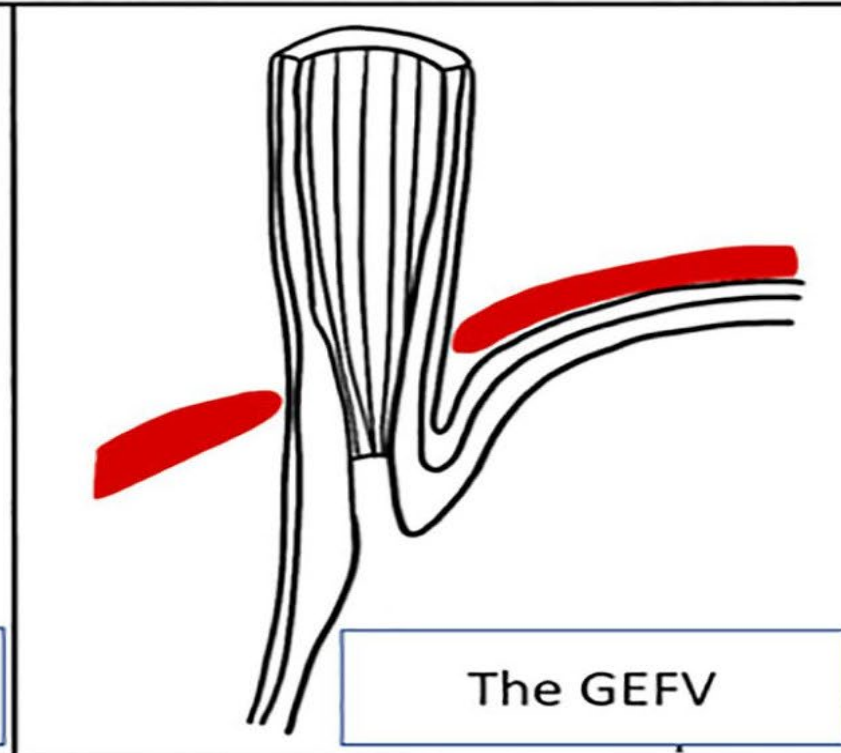
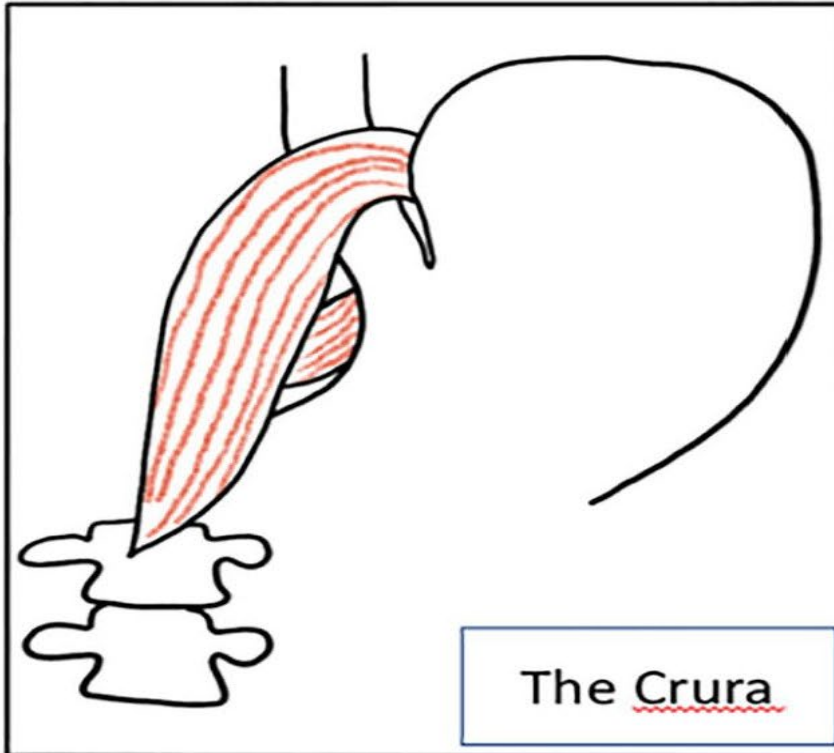
- Can we assess the LES competency by endoscopy?
- Dose it matter if the hernia is small, medium or large?
- Are we on the same page in assessing the size of the hernia?
- Where is the trend going universally?

## THE COMPONENT OF THE GEJ:

- (1) the LES and its sling fibers,
- (2) the crural diaphragm,
- (3) the phrenoesophageal ligament,
- (4) the gastroesophageal flap valve,
- (5) the presence of intraabdominal esophageal length,
- (6) the acute angle of His.

# AFS Position Statement on Components of ARB

## Components of the Anti-Reflux Barrier (ARB)



Physiologic  
Mechanical

Mechanical

Physiologic

## WHERE IS THE PROBLEM?

- The presence of esophagitis, Barrett's esophagus, and a clear hiatal hernia make the diagnosis very easy, but the problem exist when symptoms are present and none of the above is present.
- Use of the terms small, medium, and large to reference the size of the hernia is of no value, as there are no guidelines for what that means in terms of size.

- Agreement on axial length of a hernia is difficult, principally because of movement of the SCJ due to esophageal shortening with respiration and alteration of the GE junction with distention.

## HOW TO START?

- A complete evaluation of the competence of the anti-reflux barrier can be evaluated at endoscopy in 2 ways: by measuring the axial length of a hiatal hernia and by grading the so-called flap valve using the Hill classification.

## PREOPERATIVE ASSESSMENT:

- This is especially important when evaluating the patient preoperatively.
- clinical trials of transoral incisionless fundoplication (TIF) and the original magnetic sphincter augmentation trials (MSA) excluded hernias  $>2$  cm from inclusion

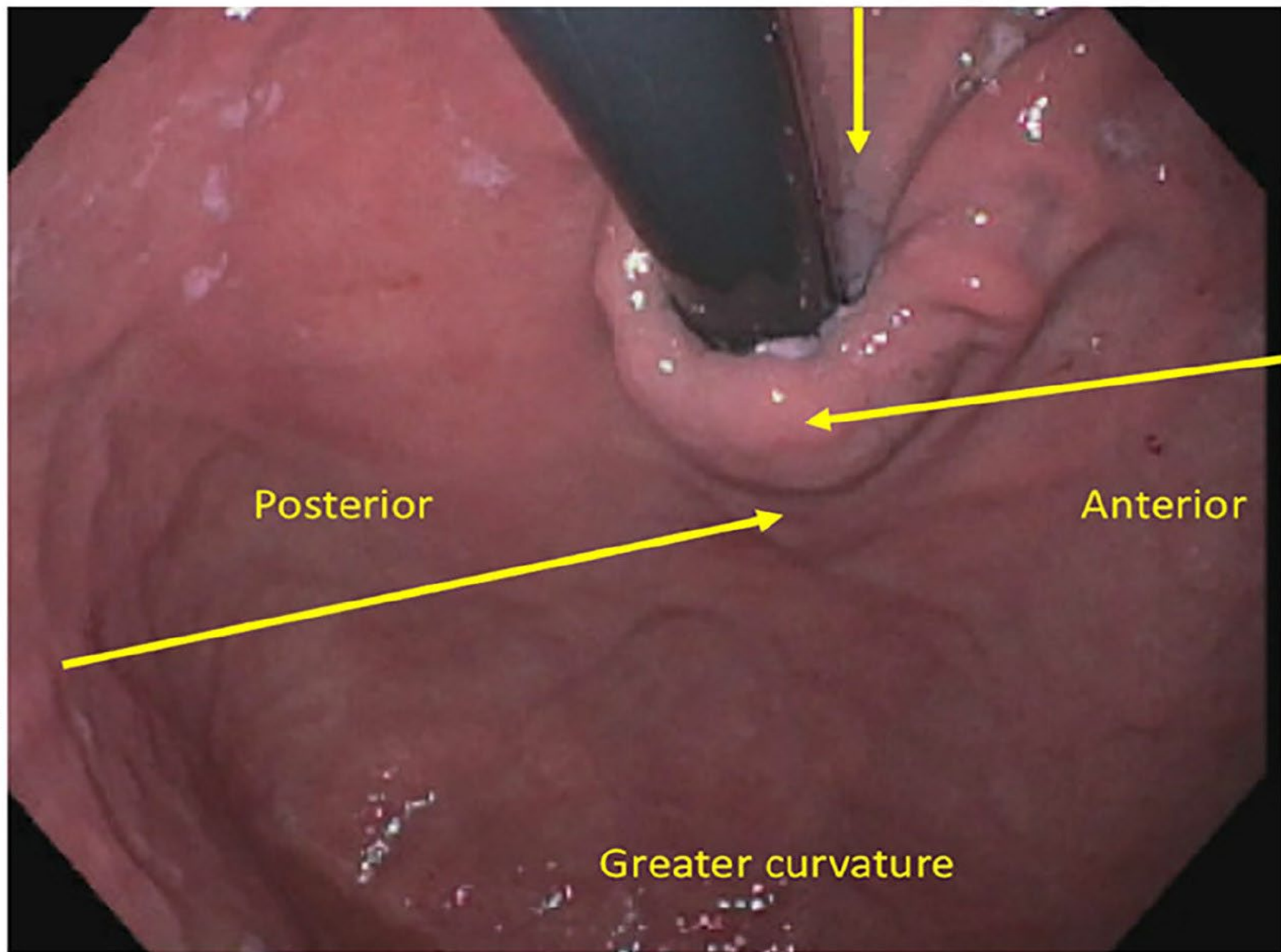
# HILL CLASSIFICATION

- In 1996, Hill et al reported on an in vitro cadaver model wherein they found that there was a pressure gradient between the esophagus and the stomach across the EGJ.5
- Since there is no LES function in a cadaver model, the gradient was attributed to a competent “flap valve,”
- Hill and colleague proposed that the endoscopic view of the flap valve correlated with the degree of reflux.

- They then conducted a small in vivo study of control patients without reflux (n=12) and a cohort of patients with reflux (n=12) reporting a distinct difference in appearance of the flap valve.
- They concluded that the appearance of the valve was a better predictor for the presence of reflux than measurement of the LES pressure.
- But No significant influence from intensity of GERD symptoms, QoL, and the Hill grading was found.

- Based on these findings, Hill et al proposed a 4-point grading scale of the retroflexed endoscopic visualization of the EG

**Lesser Curvature**



**Lip of flap valve**

**Posterior**

**Anterior**

**Body of flap valve**

**Greater curvature**



## PREOPERATIVE ASSESSMENT OF BARIATRIC SURGERY:

- Evaluation of the GEFV is also important for the preoperative assessment of Laparoscopic Sleeve Gastrectomy
- Patients with grade 2 have a possibility of GERD alone whereas grade 3 patients have increased incidence of GERD and EE. All patients with grade 4 seem to definitely have GERD and EE post sleeve gastrectomy.

## THE AFS RECOMMENDATIONS:

- The American Foregut Society (AFS) convened a working group tasked to critically review the Hill grade classification and formulate a proposal for its revision.
- A key difference of the new classification is that it focuses not only on the flap valve but also anatomic disruption of the diaphragmatic hiatus (crural separation) and the axial extent of hiatal herniation

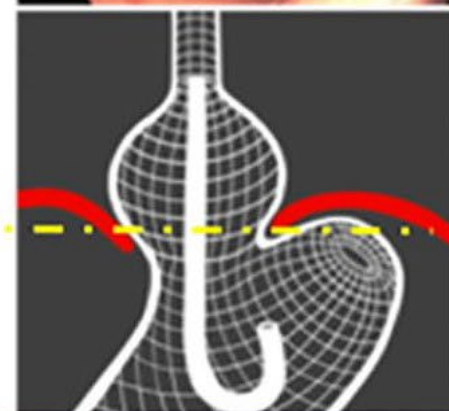
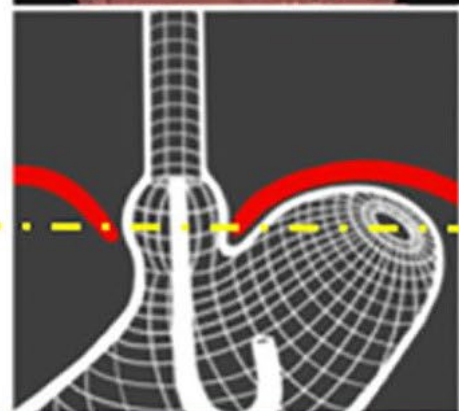
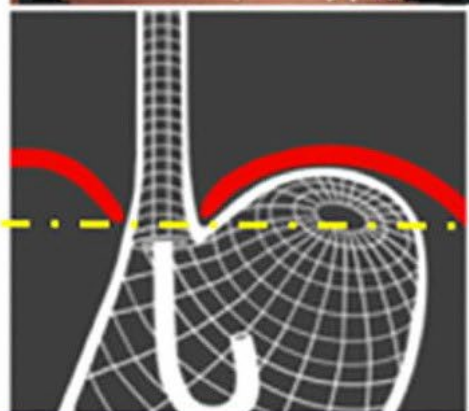
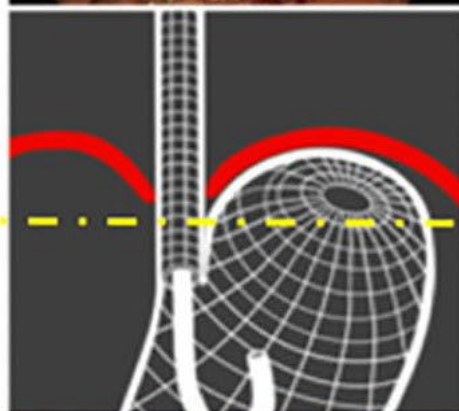
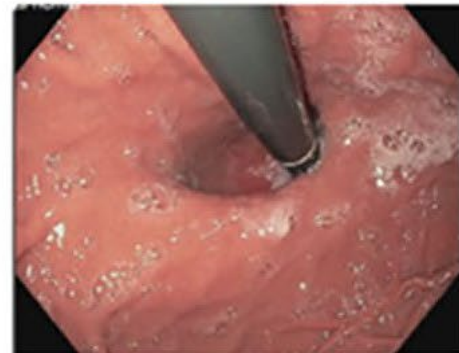
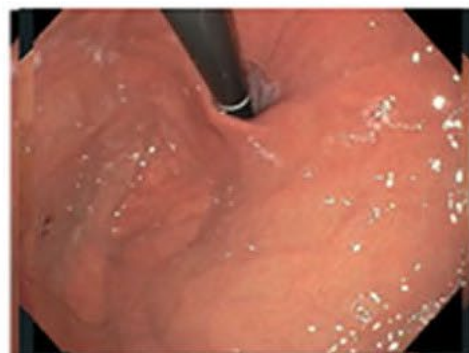
**AFS Hiatus  
Grade**

**Grade 1  
Intact**

**Grade 2  
Partial disruption**

**Grade 3  
Moderate disruption**

**Grade 4  
Complete disruption**



**AFS Hiatus Grade**

**1**

**2**

**3**

**4**

**Hiatal axial Length, cm (L)**

**None (0 cm)**

**None (0 cm)**

**0-2 cm**

**>2 cm**

**Hiatal aperture, cm (D)**

**Snug to scope  
1 cm**

**Loose  
1-2 cm**

**Open  
2-3 cm**

**Wide open  
>3 cm**

**Flap valve (F)**

**Present, full lip with  
Omega shape (F+)**

**Absent, thinning &  
flattening valve lip (F-)**

**Absent (F-)**

**Absent (F-)**

**LDF components**

**L0, D1, F+**

**L0, D1-2, F-**

**L0-2, D2-3, F-**

**L>2, D>3, F-**

## HOW TO EXAMINE THE GEJ:

- Careful exam with minimal distension to assess the esophagitis and axial herniation.
- After complete exam we do retroflex exam to evaluate the flap valve, the hiatus area, and Cameron lesions. Make sure you inflate for 30-60 min.
- Assess the hiatal length ( between the diaphragmatic pinch and the tip of the gastric folds) on the way up with minimal inflation.

## NOW WHAT?

- Shall we stick to our old way of describing the GEJ?
- Or shall we use the Hill classification?
- Or shall we use the AFS recommendations?
- Or do you recommend another easy and accurate classification?