



# New Anti-Reflux Procedures

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# Myth 1: Sliding Hiatal Hernia = GERD?

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- 70% over 70 y
- 4% have GERD
- Crural repair – no effect
  - fails >50% after LF
- HH + Dysfunctional LES = ↑ Pressure gradient = ↑ GERD severity

Normal LEHPZ = NO GERD

# Myth 2: Assessing Success

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- Acid exposure tests?
  - No single parameter
  - PPV low
  - Negative PV high
    - Diagnosis NOT outcome
- Clinical improvement !
  - GERD-HRQL most validated
  - PPI use





# GERD Rx by Invasiveness

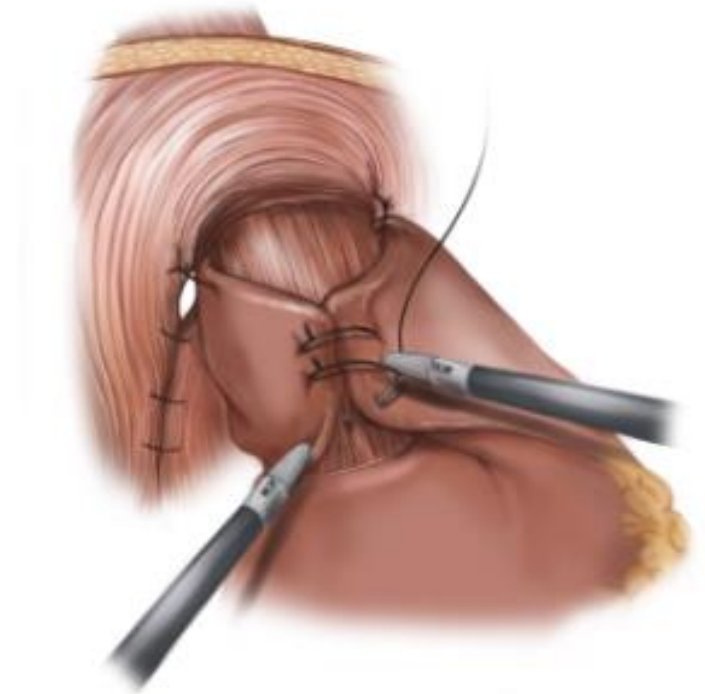
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1. Life style changes
2. Life long PPI
  - % Incomplete responders high
  - Long term risks
3. Trans oral operations
4. Laparoscopic / open operations

# Fundoplication

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- LES not repaired
- Wrap = new HPZ
  - Fundus pressure
- Centers of excellence 
- Community 



**US: 100k ops/y**

**> 8,000,000 suffer**

# Why so few?

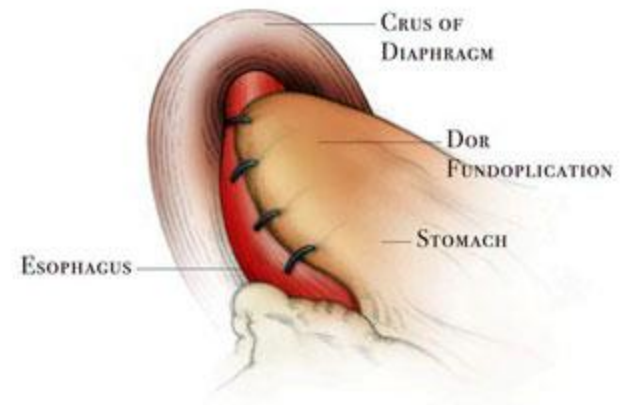
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- Non experts = poor results
  - Large scale studies - > 60% PPI
  - Redo LF - Hard
  - 360° = 30 - 10% dysphagia
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- **GI do not refer**



Pars flaccida dissection

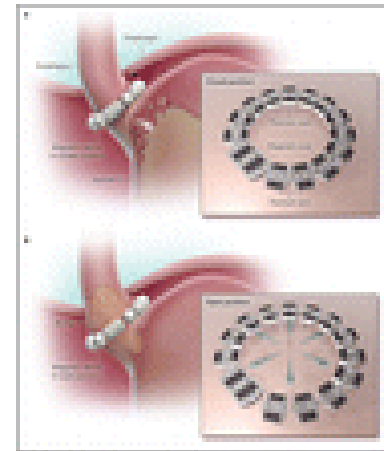
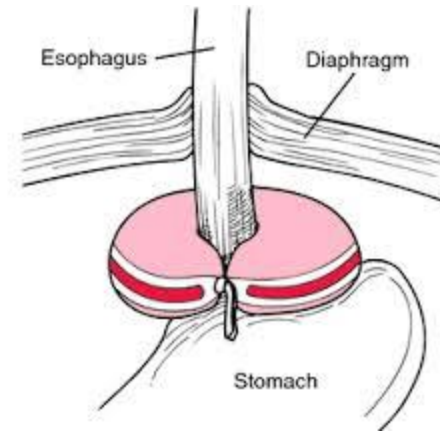


Partial FP – min dysphagia

# Angelchik ring 1977

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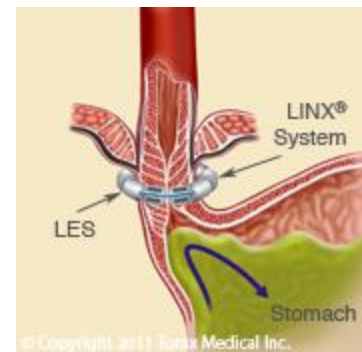
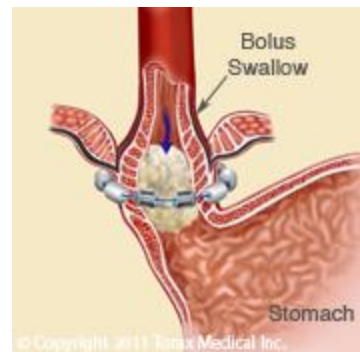
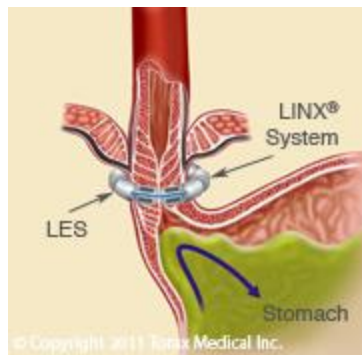
- > 100k implanted
- Dysphagia, erosion
- LINX same idea



# LINX: New and improved

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- Magnetic Beads
- Expands on swallowing
  - Dysphagia, erosions
- Safe and effective
- Easy = more surgeons





# Will LINX increase referrals?

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- Laparoscopic
- Patients don't like scars
- More surgeons!



↑ Surgeons  $\neq$  ↑ referrals

# Trans-Oral Operations

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- Many dead and gone
- On the market
  - Stretta
  - Esophyx } > 10 K patients
  - MUSE ~ 150 pts

# Stretta

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- Low power radiofrequency
- Outpatient ~ 40 min
- Safe and effective – selected patients

# Mode of Operation

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- Affect LES directly
- How?
  - Blunts nerve ending – unlikely
  - Scarring – some increased collagen
    - No strictures or dysphagia > 8y
  - Increase muscle bulk
    - demonstrated

# Stretta - Disadvantages

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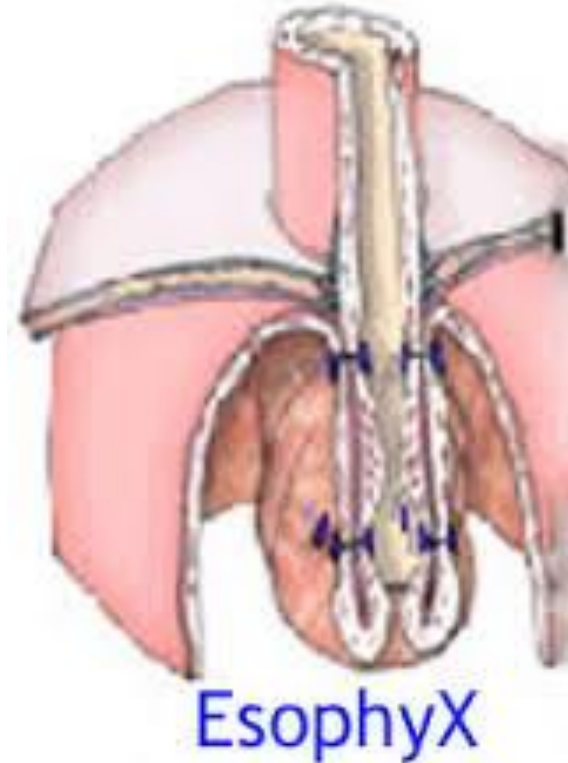
- HH < 2 cm
- ~ 3 months to relief
- Selected patients

Target: mild to moderate  
GERD

# Esophyx

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- Inkwell
  - Belsey mark IV
- Multiple fasteners
  - 6-20
- Current results excellent



# EsophyX Disadvantages

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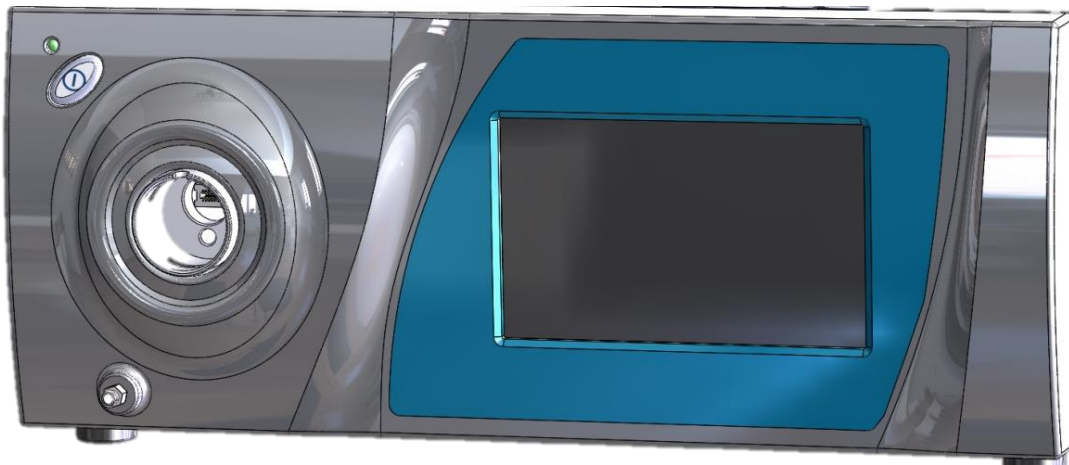
- Two Operators
- Conversion difficult
- HH < 2 cm
- Not available outside US



# MUSE

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- Single patient use flexible stapler
- Single Operator
- Computer Controlled





# Anterior fundoplication (Dor-Thal)

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- Fundus stapled to esophagus
- Video/US guided
- 4.8mm (Green) “B” stales
- 2-4 Staggered quintuplets



# Precautions

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- Skill in advanced endoscopic procedure
- Anti-emetics ASA class 3
  - 2 drugs
  - NO metoclopramide
- PEEP of 7 cmH<sub>2</sub>O on induction
- SHH - PEEP up to 15 or until HH reduces
- Full muscle relaxation

# New Options for GERD

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Mild

**PPI**

Mild to Mod  
PPI risk

**Stretta**

Mod  
To severe  
Reducible  
HH

**MUSE**

Moderate  
Small hernia

**Esophyx**

Severe  
Irreducible HH

**LF**

