North Carolina Society of Gastroenterology
2026 Annual Meeting

Tackling Obesity: Endobariatrics vs. GLP-1's

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Joint Providership

ASGE
American Society for Gastrointestinal Endoscopy

Disclosures:

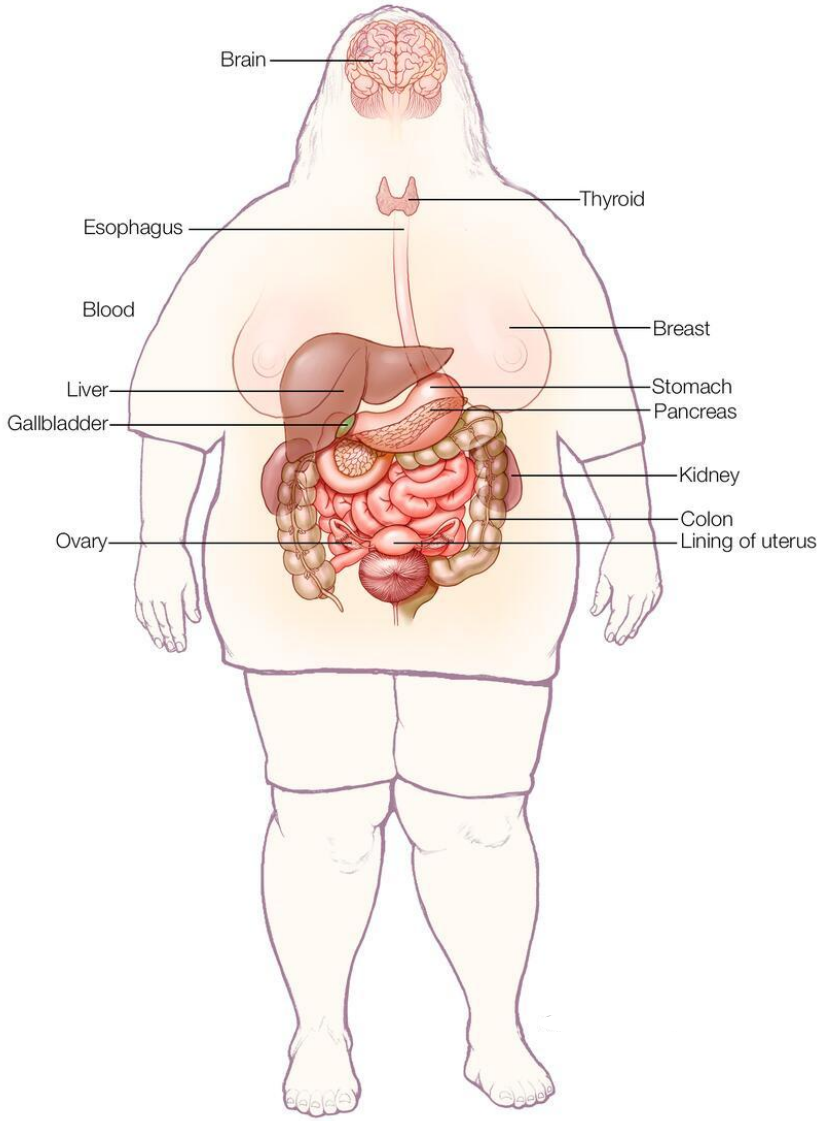
- **Research Grants**: Apollo Endosurgery, Boston Scientific, Endogenex, Endo-TAGSS, Enterasense, EnVision, MGI Medical, Motion Medical/Mayo Clinic Ventures, OnePass, SofTac
- **Consultant**: Boston Scientific, Cook, Endogenex, Endo-TAGSS, Enterasense, EnVision, Fuji, MGI Medical, OnePass, SofTac, Sotelix, Steris, GI Dynamics, Intuitive, Lean Medical, Medtronic, Microtech, Olympus, Qaelon

LEARNING OBJECTIVES

- Introduce the fields of Endobariatrics and Metabolic Endoscopy
- Understand FDA-approved endoscopic (through-the-mouth) options for weight loss through case examples
- Explore an emerging endoscopic procedure aimed at diabetes

The *Epidemic*

- 39.6% of US clinically obese (BMI > 30)
  - Disproportionate effect on minorities
    - 46.8% African American, 47% Hispanic
- Associated with:
  - COVID-19 mortality
  - Metabolic syndrome → T2DM, liver disease
  - Vascular disease
  - Cancer
  - Psychiatric illness



PRE-TALK Question

Which is the most prevalent pediatric nutritional disorder world-wide in 2026?

1. Vitamin B12 deficiency
2. Obesity
3. Starvation
4. Celiac disease

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Pediatric Obesity: A Signal To the future?

- Tripled in 4 decades to 11.3% (BMI > 95th percentile)
- #1 pediatric nutritional disorder worldwide
- Diseases never seen in children are emerging:
  - Obesity associated sleep apnea
  - MASH and **cirrhosis**
  - Type 2 diabetes

CDC Fact sheet at: https://www.cdc.gov/obesity/data/childhood.html

New Fields in ***Diabesity*** management

- *Endobariatrics*:
  - Endoscopic approaches to primary weight loss and trans-oral revision after bariatric surgical interventions for weight loss
- *Metabolic endoscopy*:
  - Endoscopic approaches to metabolic disease including diabetes, MASLD, MASH

- Goals: 10% TBWL = macrovascular, hepatic fibrosis and glycemic benefits

GLP-1 RA's vs. Endobariatrics

- IMO, a mistake to "compete"
- A great toolbox has multiple tools for a given task
- Studies suggest combination approaches are superior

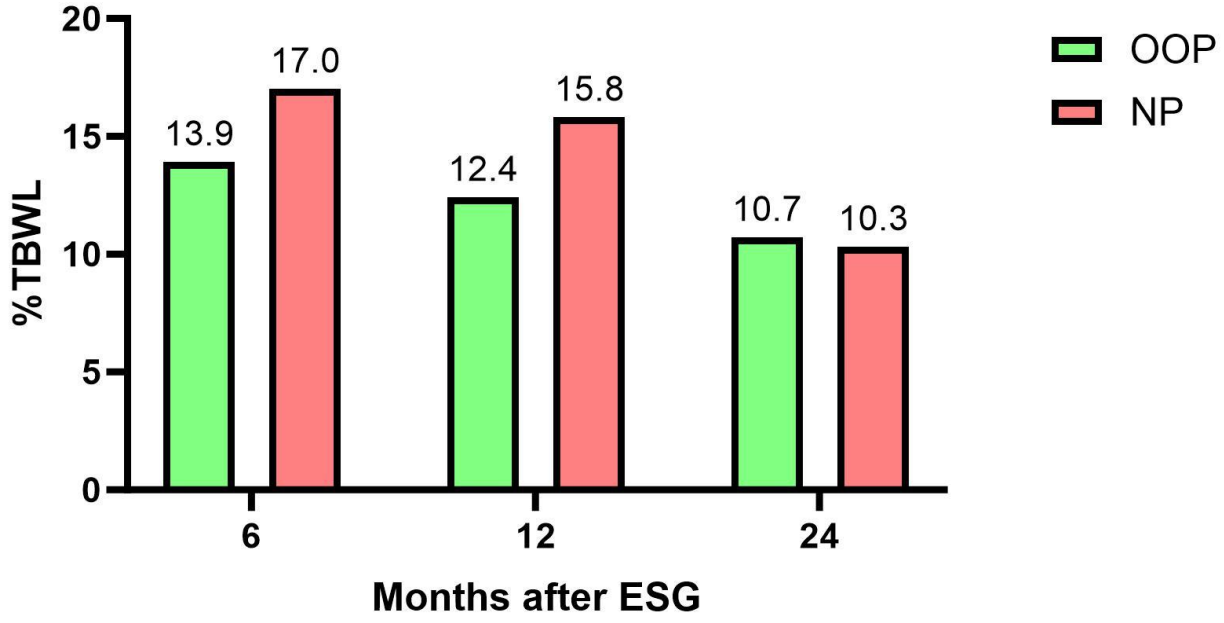
	GLP-1 RA's	Endobariatric Procedures
Weight loss	7-20%*	15-20%
Durability	Requires ongoing therapy	Maintained up to 5-year data
Metabolic Impact	Strong glycemic benefit	Good glycemic benefit
Invasiveness	None	Minimal
Risk	Common side effects, rare SAEs	Rare SAEs
Cost (out of pocket price)	$15k **per year indefinitely**	$10-15k, once

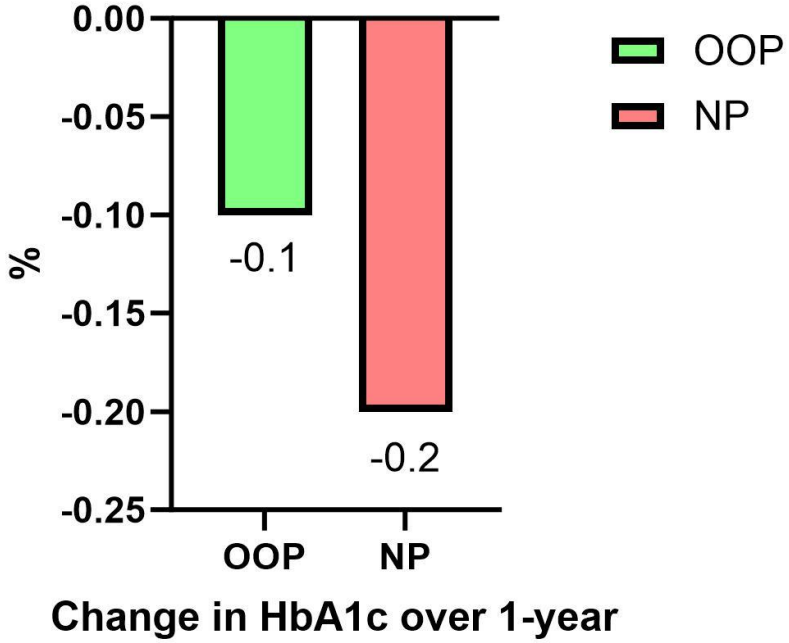
*"Triple-G" Retatrutide (GLP-1, GIP, Glucagon): early reports of nearly 25% weight loss

Skin in the Game

- No difference in outcomes with out-of-pocket payment(s)
- Society should not require “skin in the game”

Cat I CPT Code January 2026

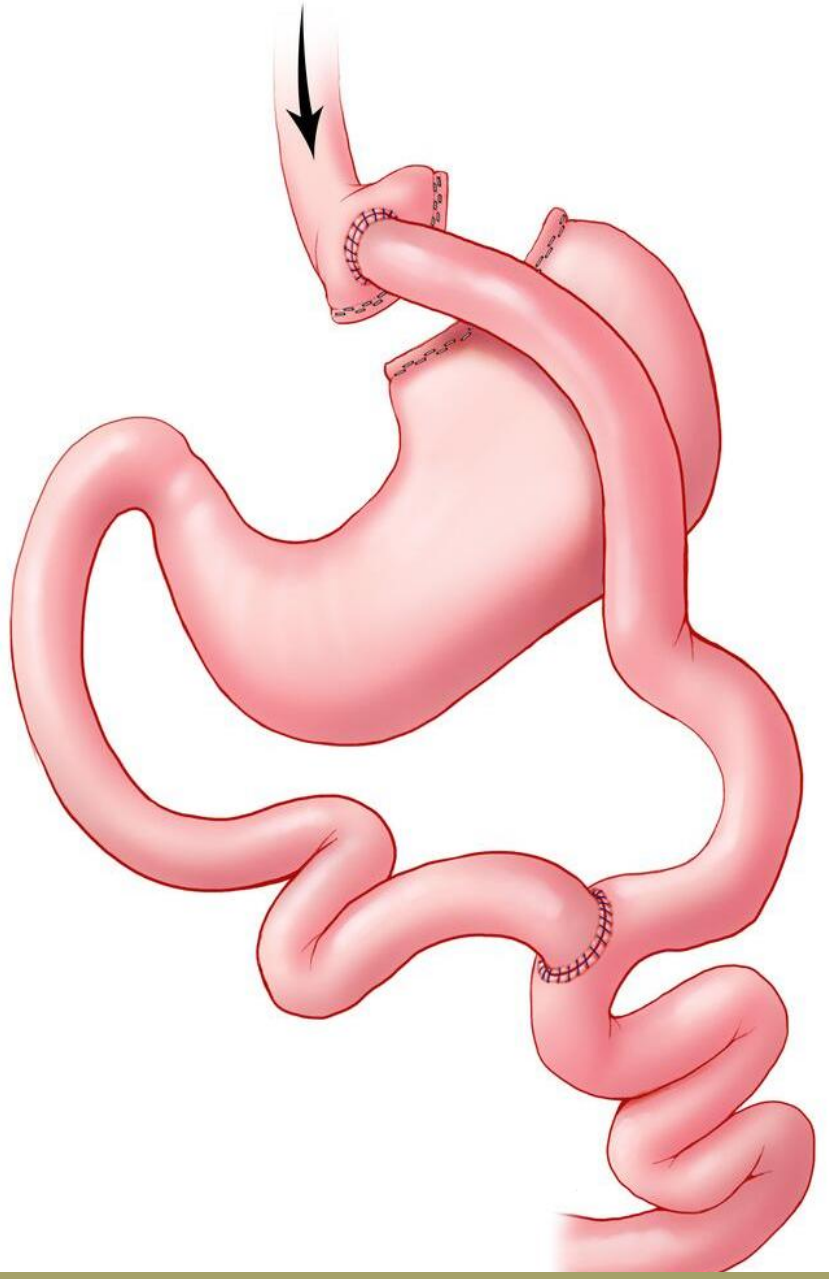




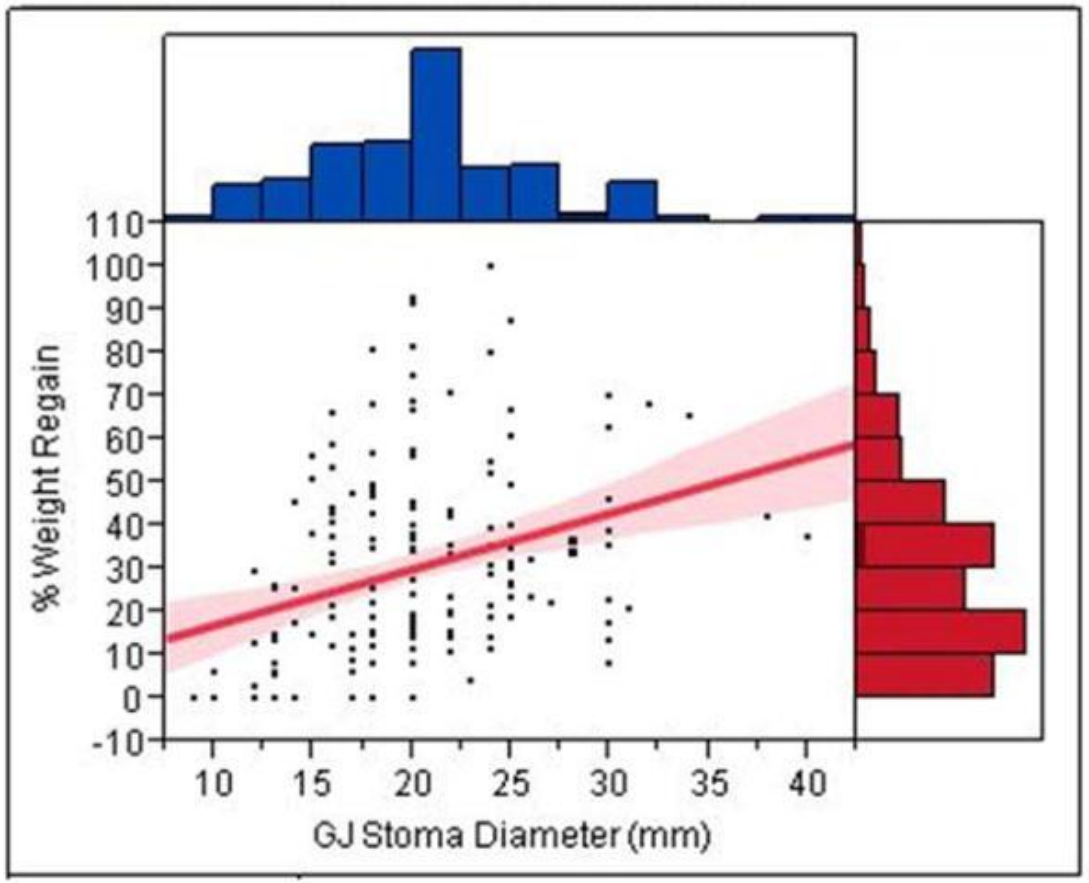
Salameh T, Storm AC; DigDisWeek, 2024

Case 1: Weight Recurrence

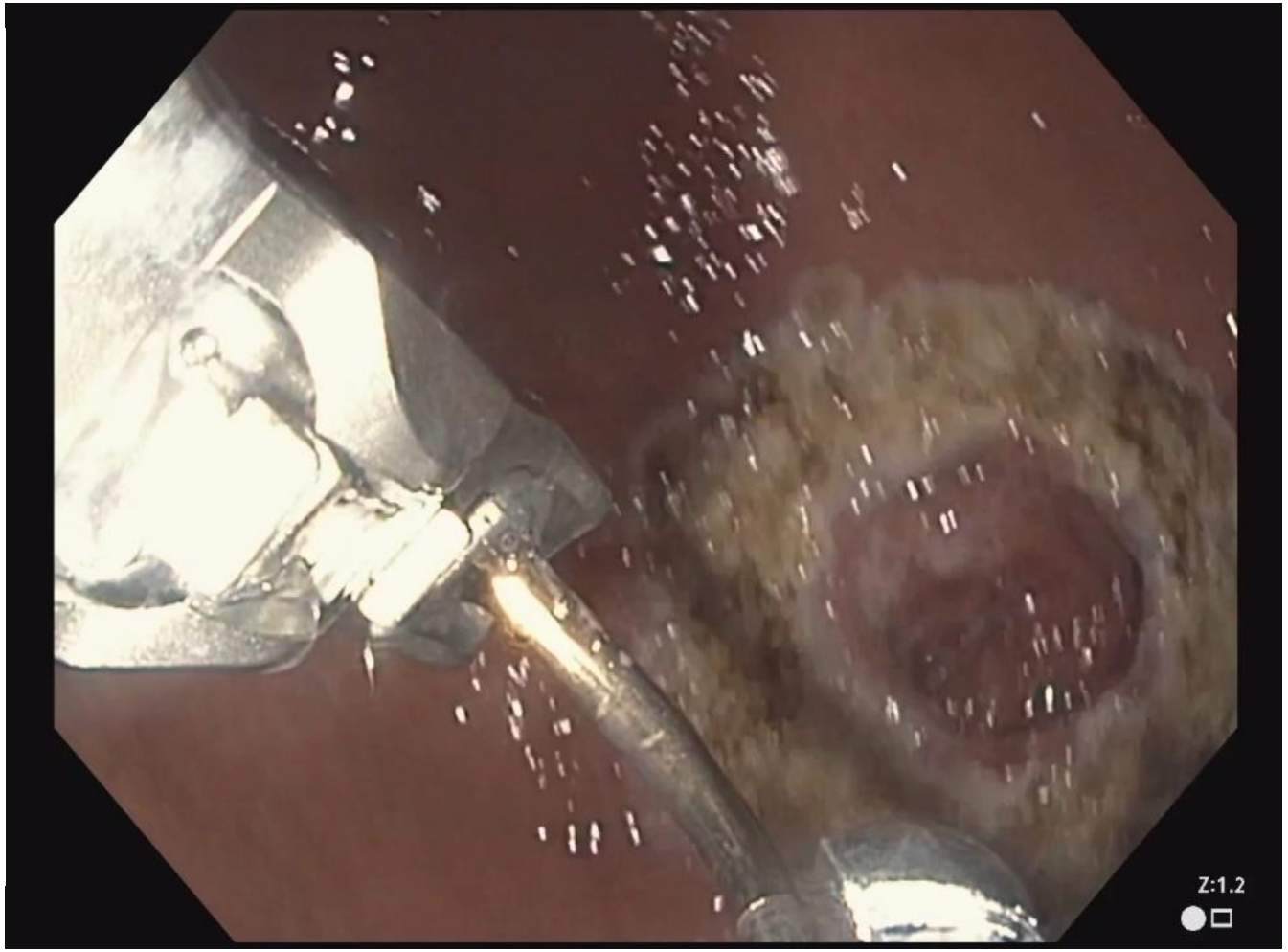
- 48-year-old woman
  - s/p RYGB 8 years prior for class 3 obesity and DM2
  - Weight loss from 350 to 190 lbs, weight recurrence now to 250 lbs
  - Weight recurrence complicated by joint pain and return of hyperglycemia



Weight Recurrence after RYGB: REVISE

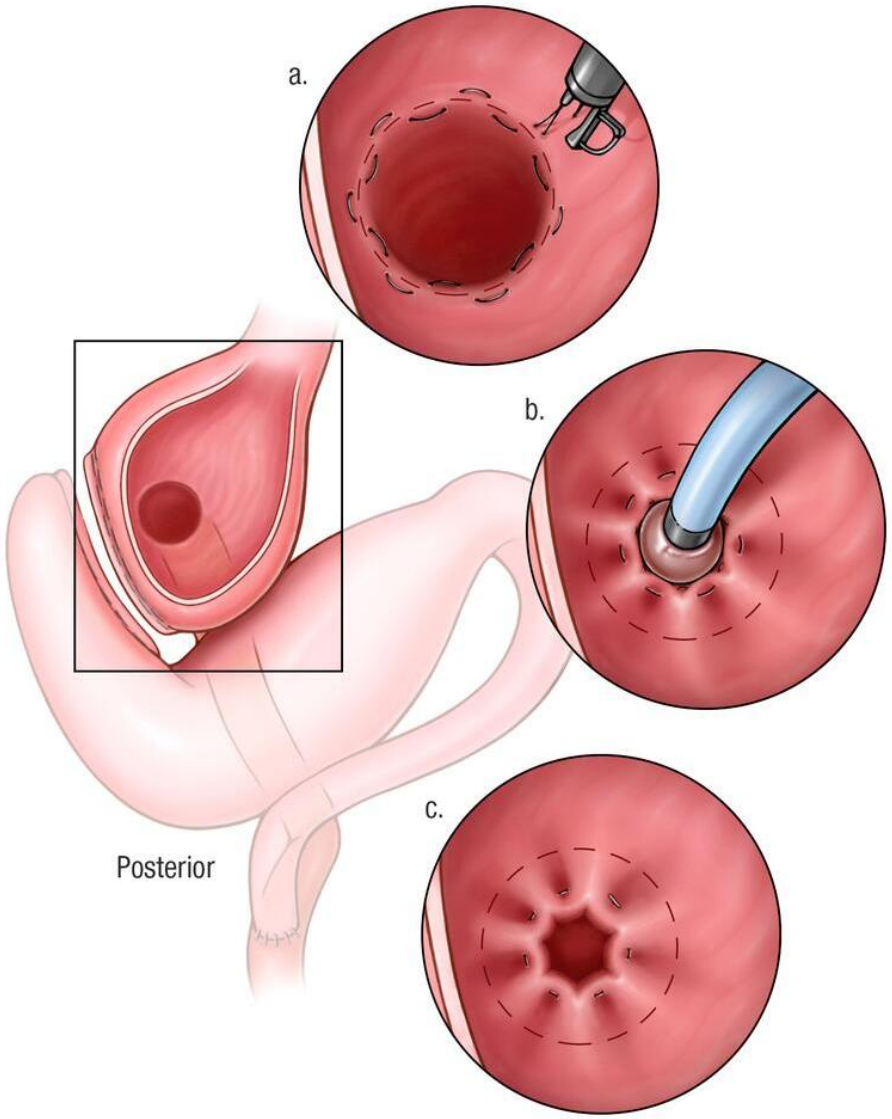


Abu Dayyeh et al. CGH 2011



TORE (Revise) procedure

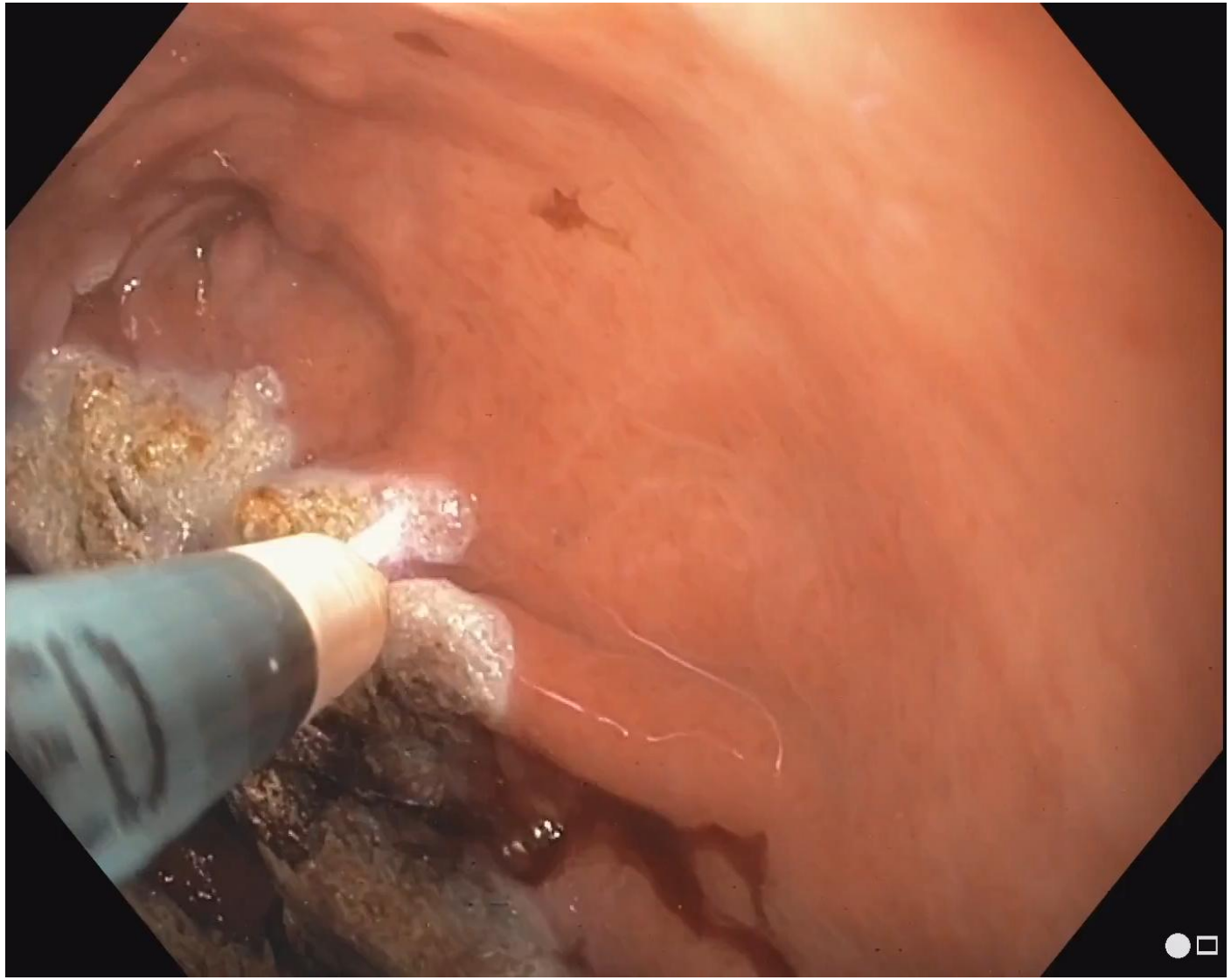
- Outpatient procedure
- Recovery time: 2-3 days at home, then back to work
- Diet: 6 weeks liquids
- Typical weight loss: 10% total weight, or more



New Tech: OverStitch NXT

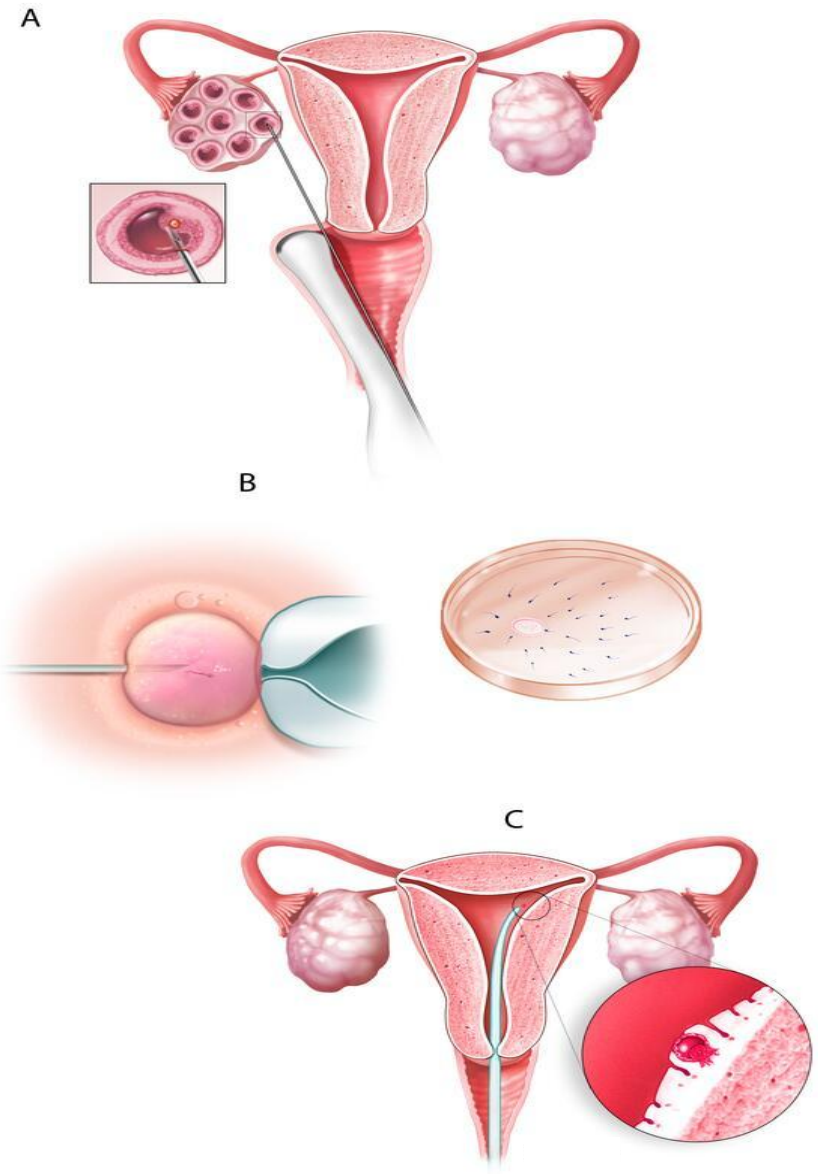
1st in-Human cases: Dec. 12, 2023

- Fits single channel gastroscope
- New add-ons:
  - Helix Pro
  - Max-Flex

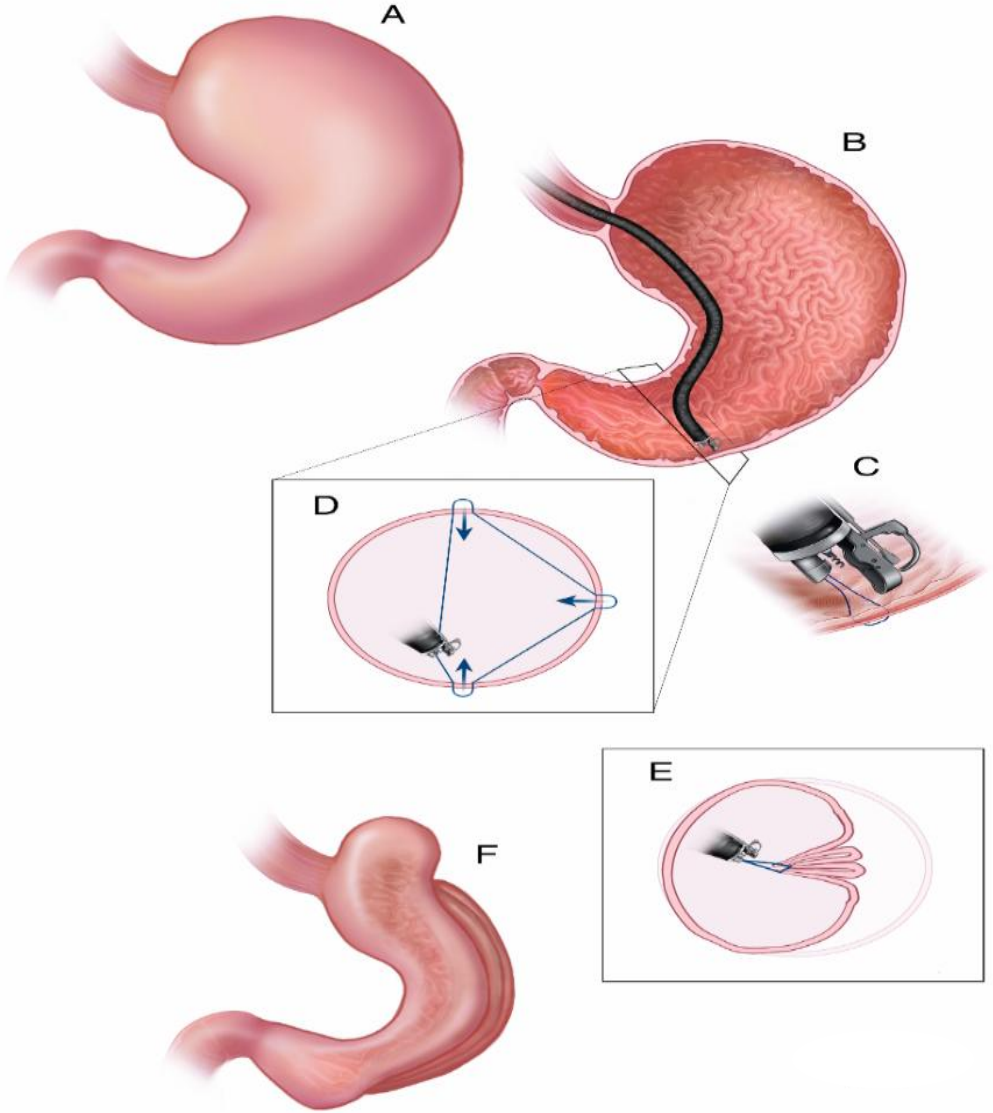


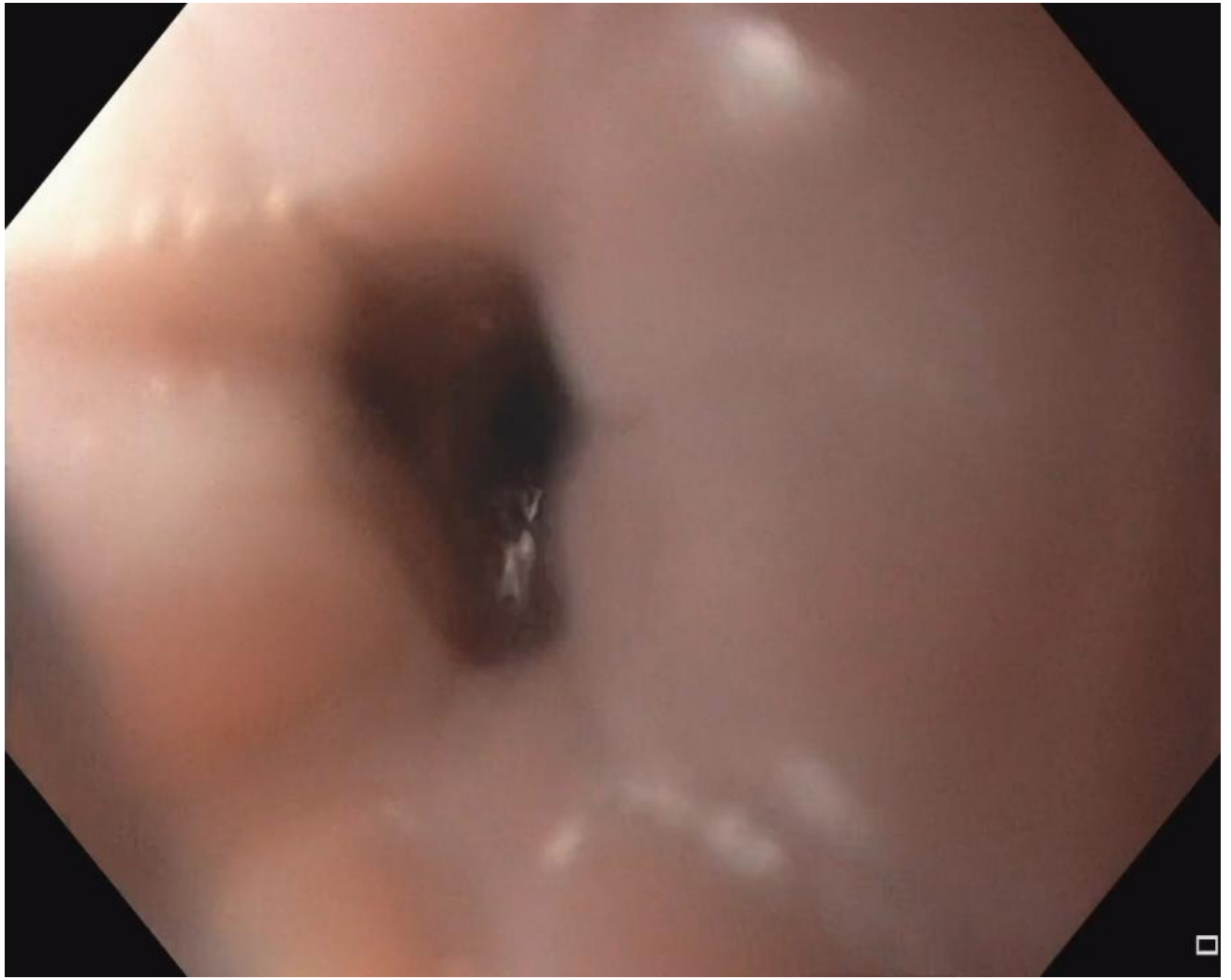
Case 2

- 38-year-old woman
  - BMI 38, complicated by infertility issues s/p failed IVF x 3.
  - Surgery averse
  - Willing to consider endoscopic options for weight loss

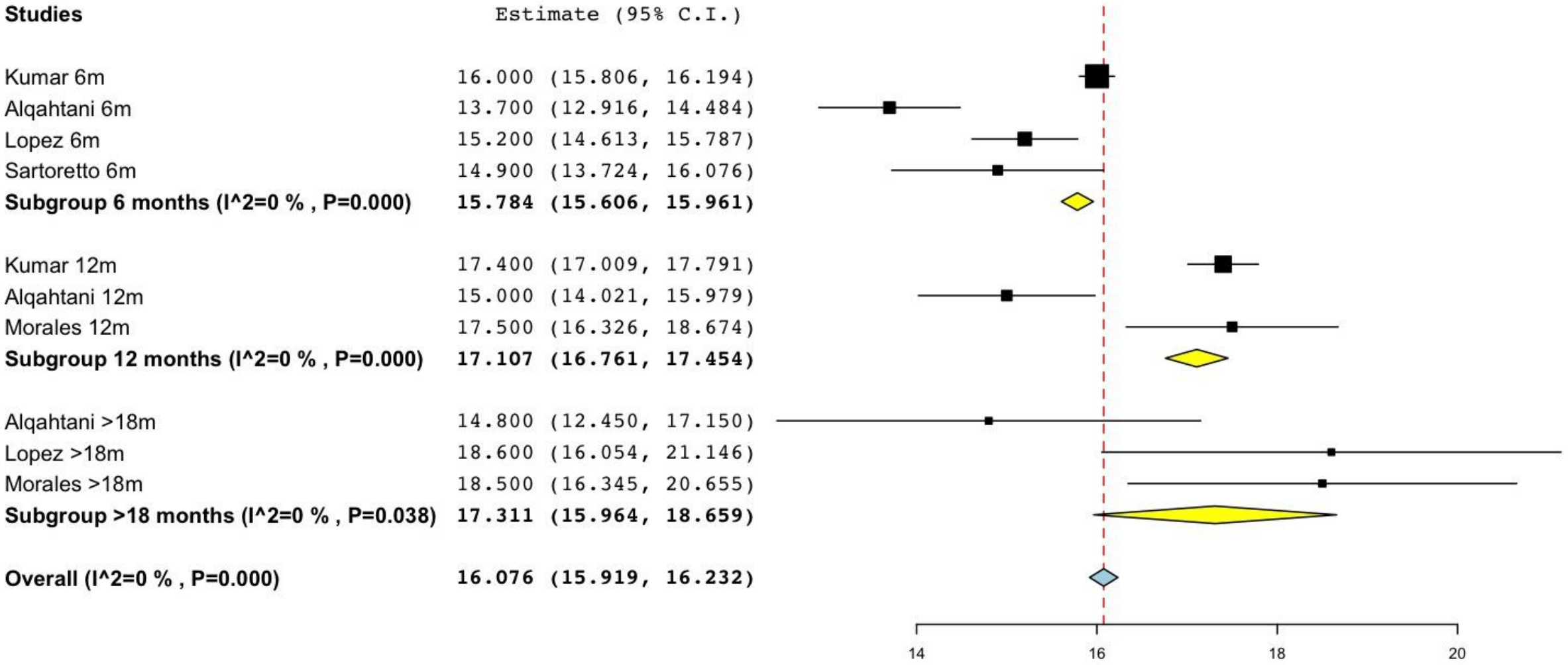


Endoscopic Sleeve Gastroplasty (ESG)





ESG Meta-Analysis (N = 1607)



Storm AC, Abu Dayyeh BK, GIE 2019

New Tech: SimpleStich

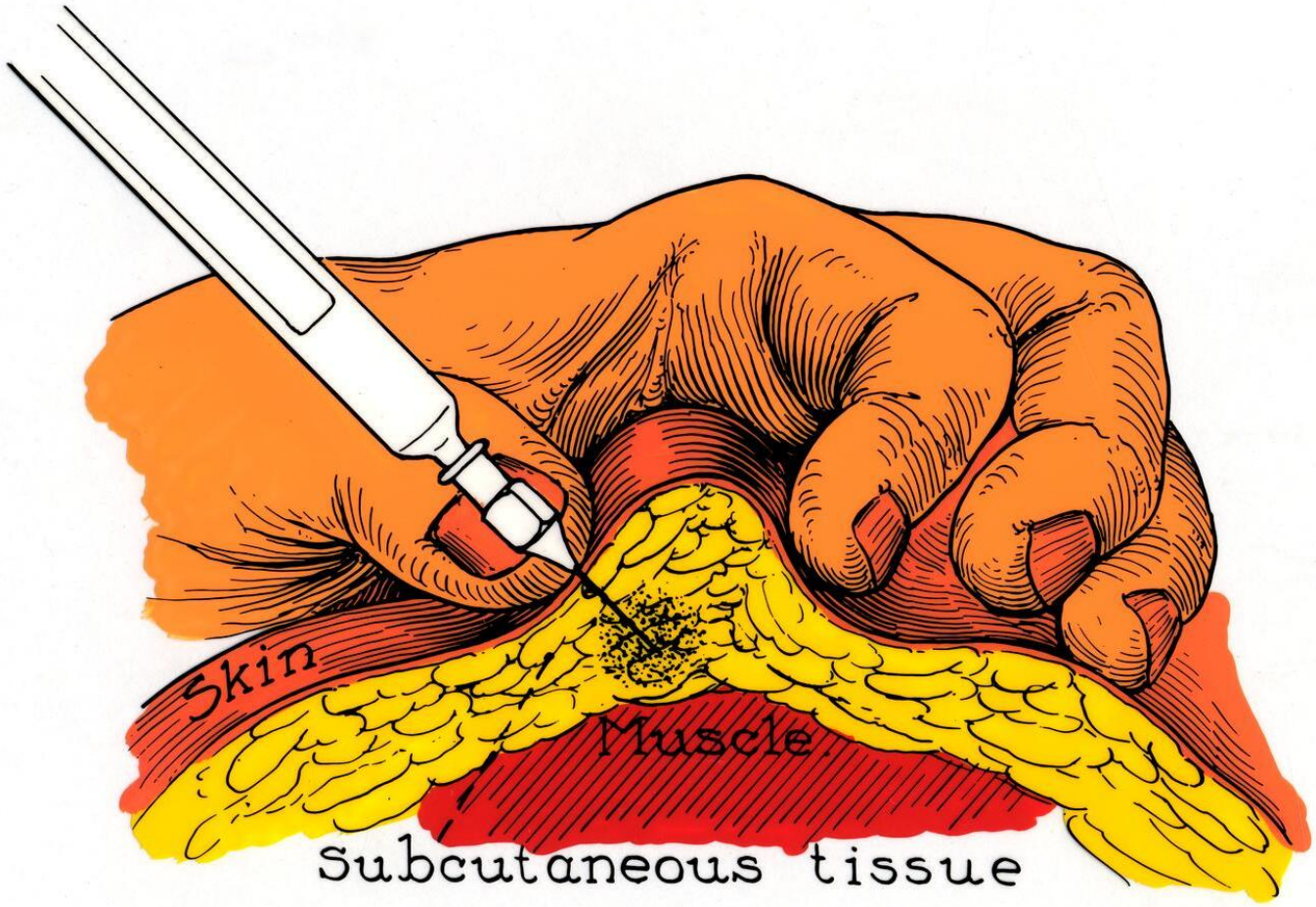
FDA clearance: early 2025, FIH: 2026

- Fits single channel gastroscope
- Simplified suturing


LOOKING TO THE FUTURE

Case 3

- 50-year-old man with diabetes presents insisting on:
  - Alternative option for managing his diabetes
  - No needles
  - No daily medications

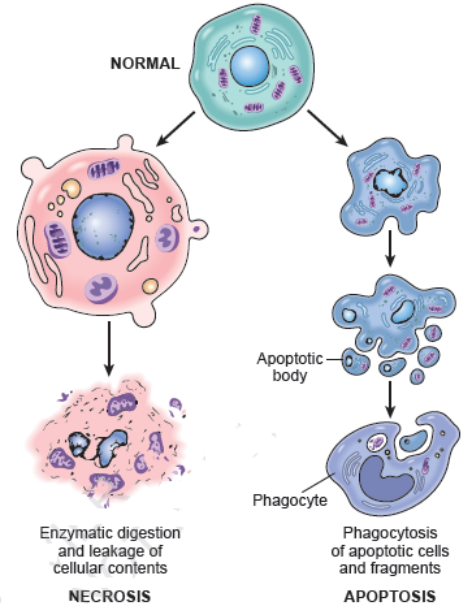


Duodenal Mucosal Resurfacing

- Resurfacing of the post-papillary duodenal mucosa and subsequent regeneration
- Mechanism?
  - Decrease anti-incretins
  - Induce the formation of new enterocytes
  - Improvement of gut microbiome
- Potential treatment in T2DM
  - Inspired by RYGB and other intestinal bypassing procedures

Electroporation

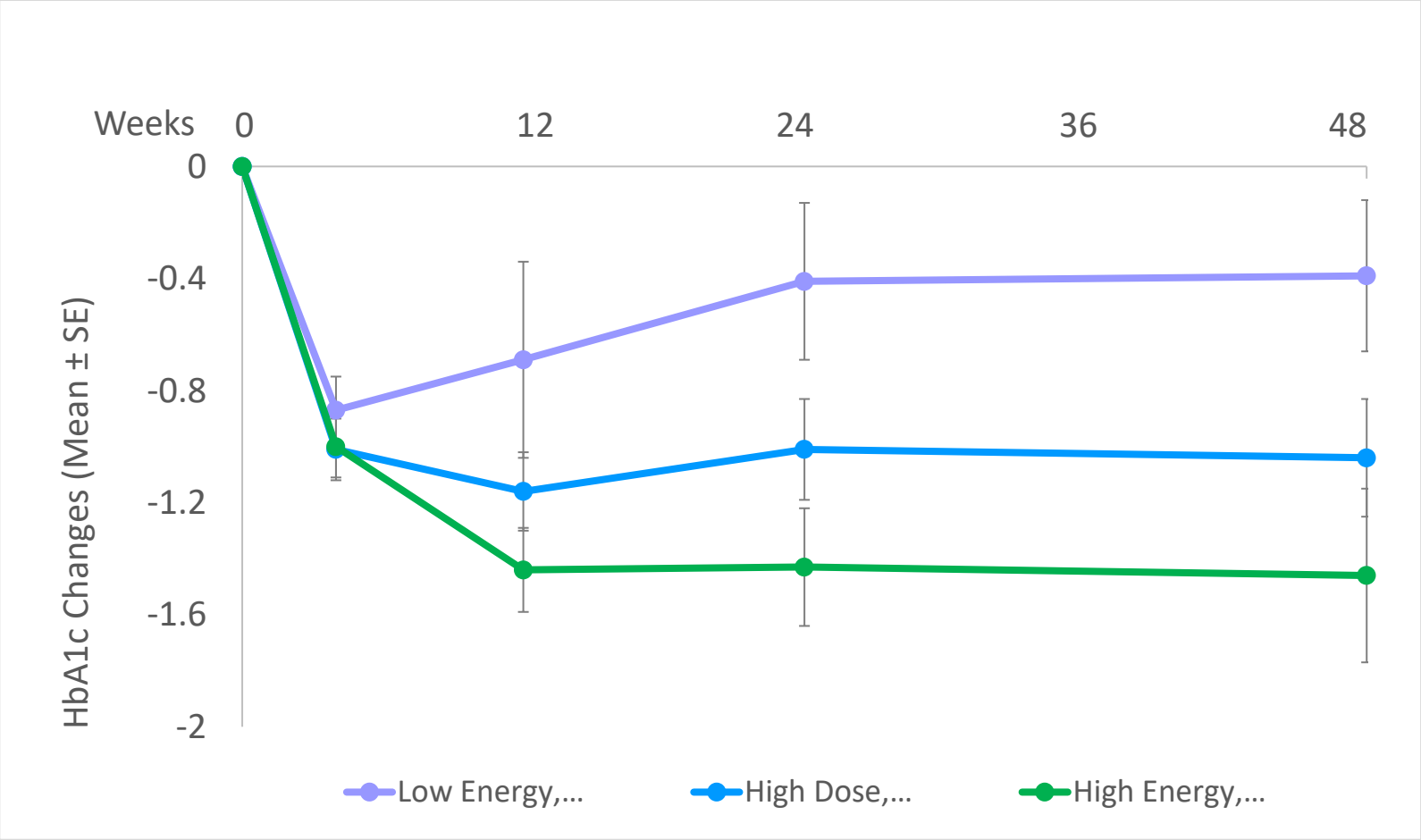
- **Pulsed electrical field (PEF)**
  - Early use for food preparation in 1960s
  - Creates a voltage gradient across living cells
  - Triggers apoptosis and subsequent cellular regeneration
- Advantages over thermal ablation:
  - Apoptosis vs. necrosis (repeatability)
  - Larger surface areas (efficiency)
  - Deeper penetration (safety)
  - No submucosal lift (simplicity)



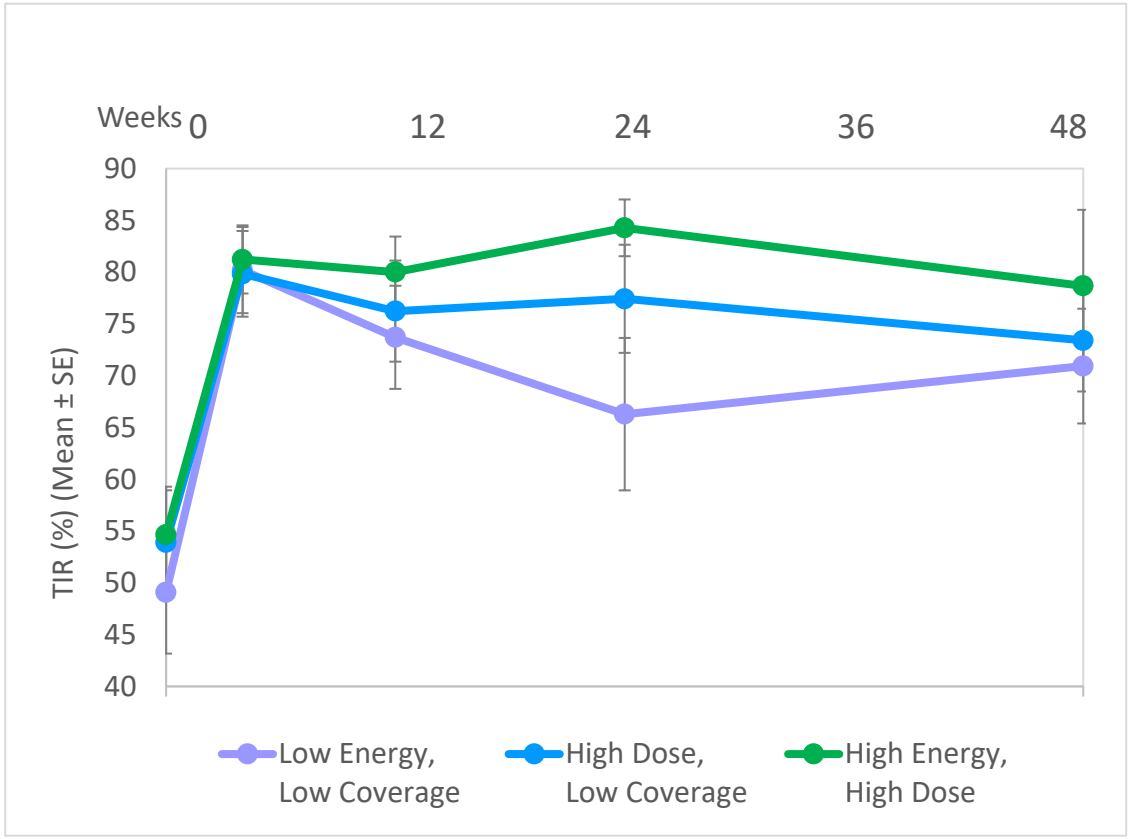
RECET

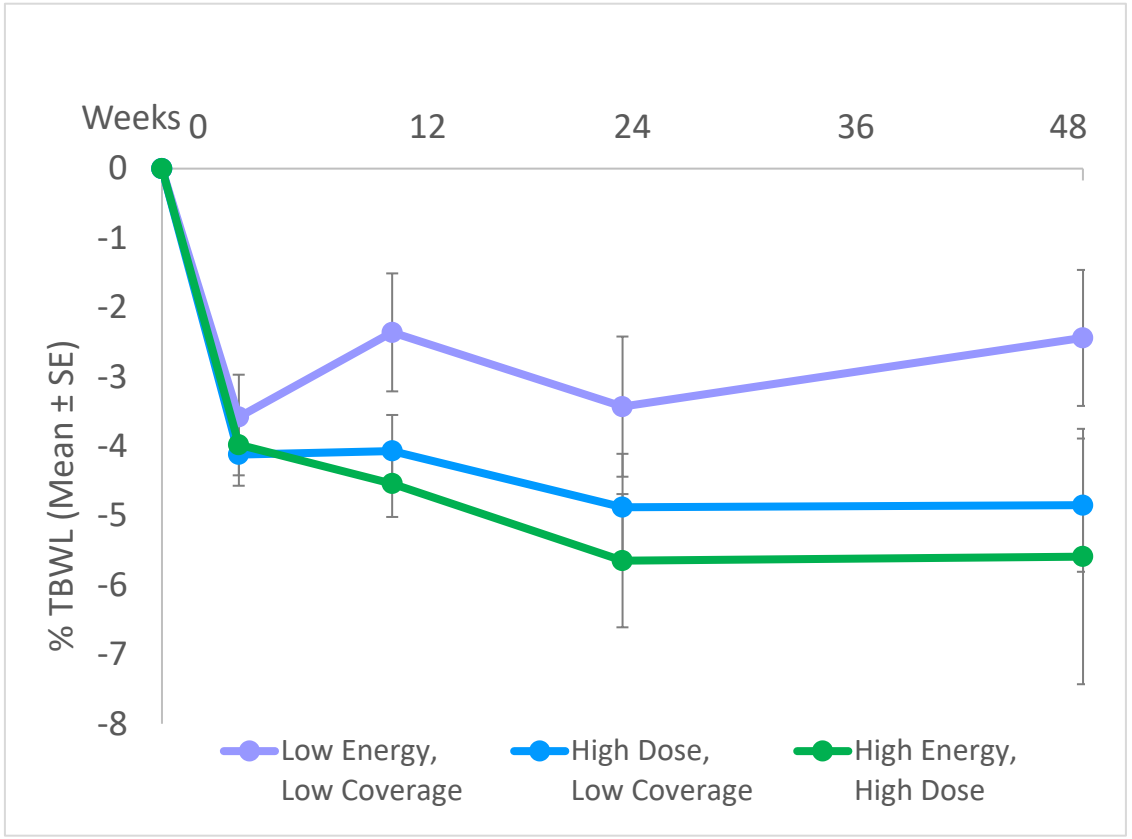
- Novel generator, controller, and a flexible catheter with electrodes on an expandable flex circuit
- Controlled delivery of PEF, targets mucosa and submucosa without disrupting tissue architecture
- Delivers 750+ volts of current
- Currently @ 7 treatments in the post-pyloric duodenum

Improvement in HbA1c

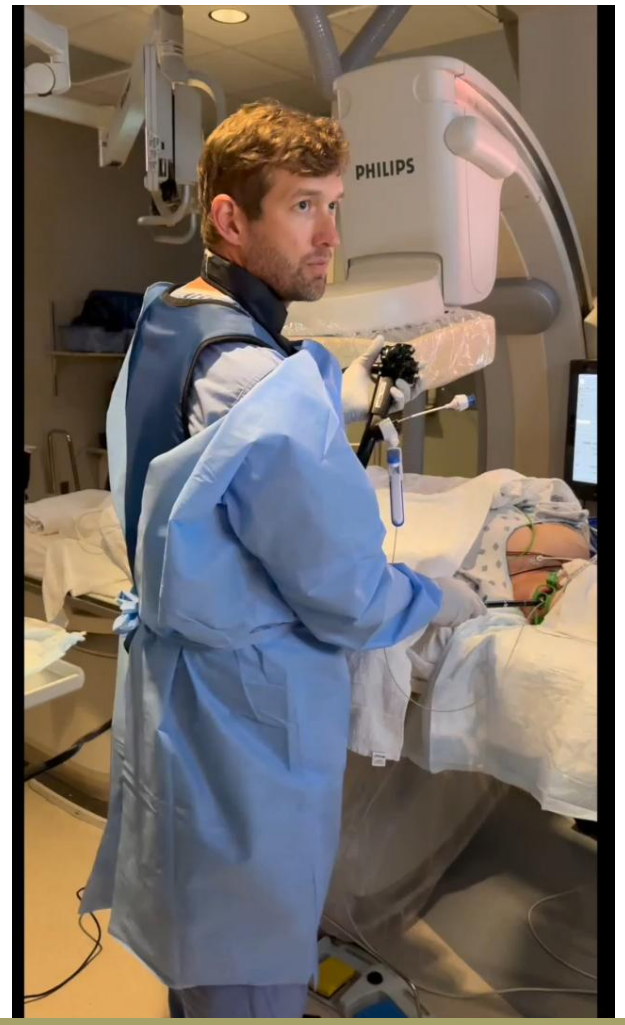


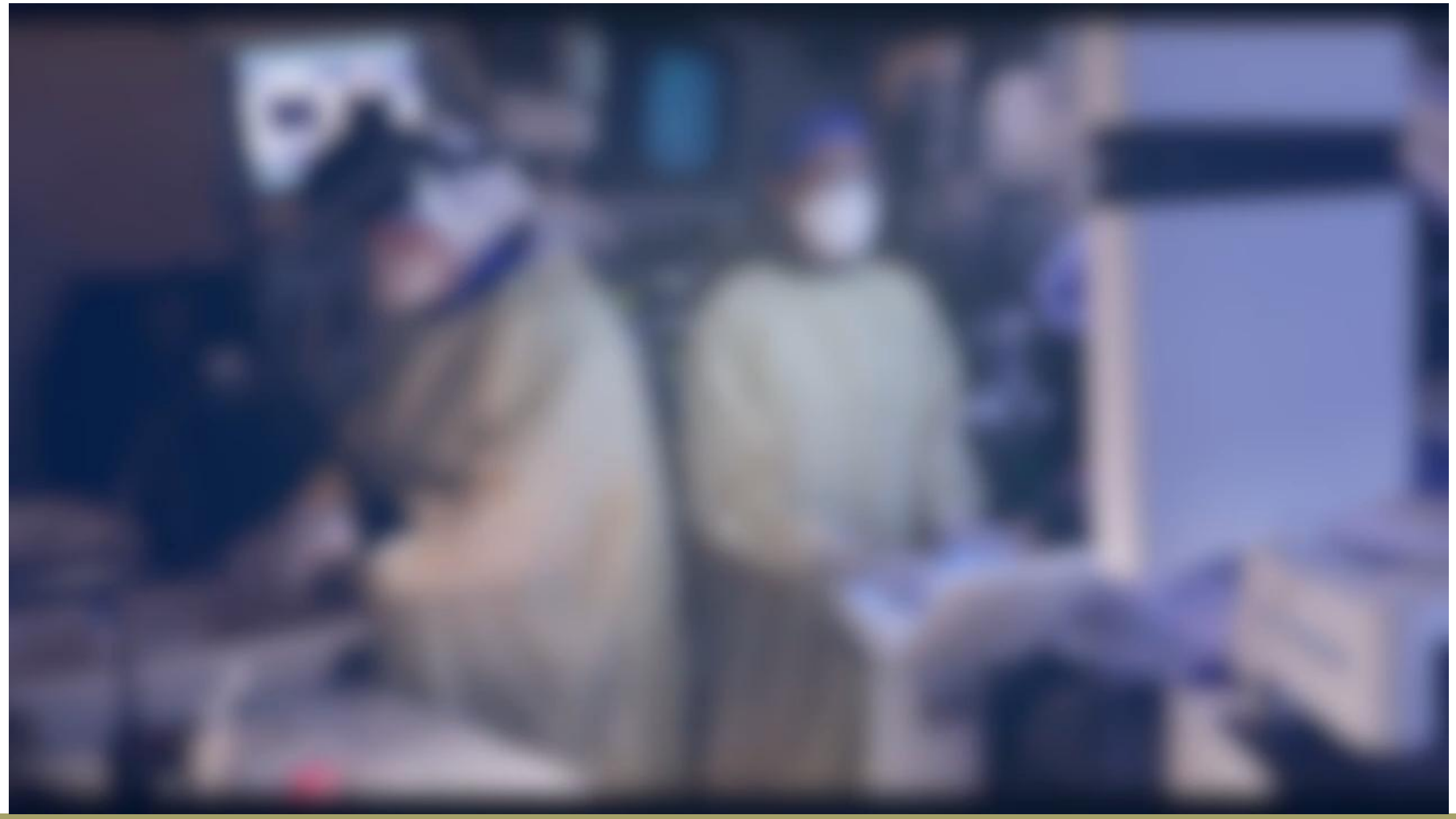
Time-in-Range & Weight Loss





Future tech? A Cry for help..





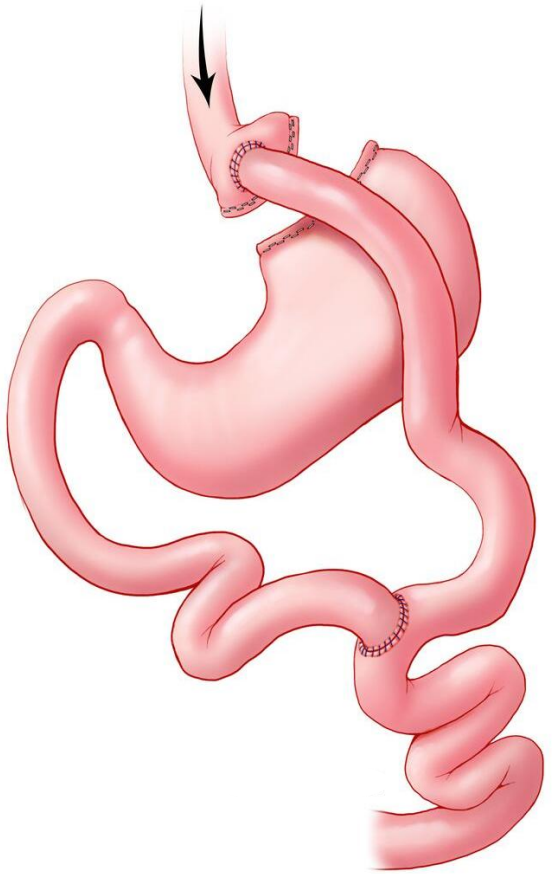
Conclusions

- Obesity care is expanding to all fields of medicine
- Endoscopic procedures are attractive due to: safety, repeatability, combination therapy and cost
- Approved GI Endoscopy options for weight loss include:
  - Revise (TORe) for weight recurrence after surgery
  - Endoscopic sleeve gastroplasty
- Procedures/devices targeting diabetes are on the near horizon

CME/MOC Question

For a patient with remote history of Roux-en-Y gastric bypass and BMI of 42 due to weight recurrence who is not interested in a revisional surgical procedure, which endoscopic bariatric procedure may be offered for weight loss?

1. Endoscopic sleeve gastroplasty
2. Intragastric balloon
3. Trans-Oral Revision (TORe)
4. Duodenal mucosal resurfacing procedure



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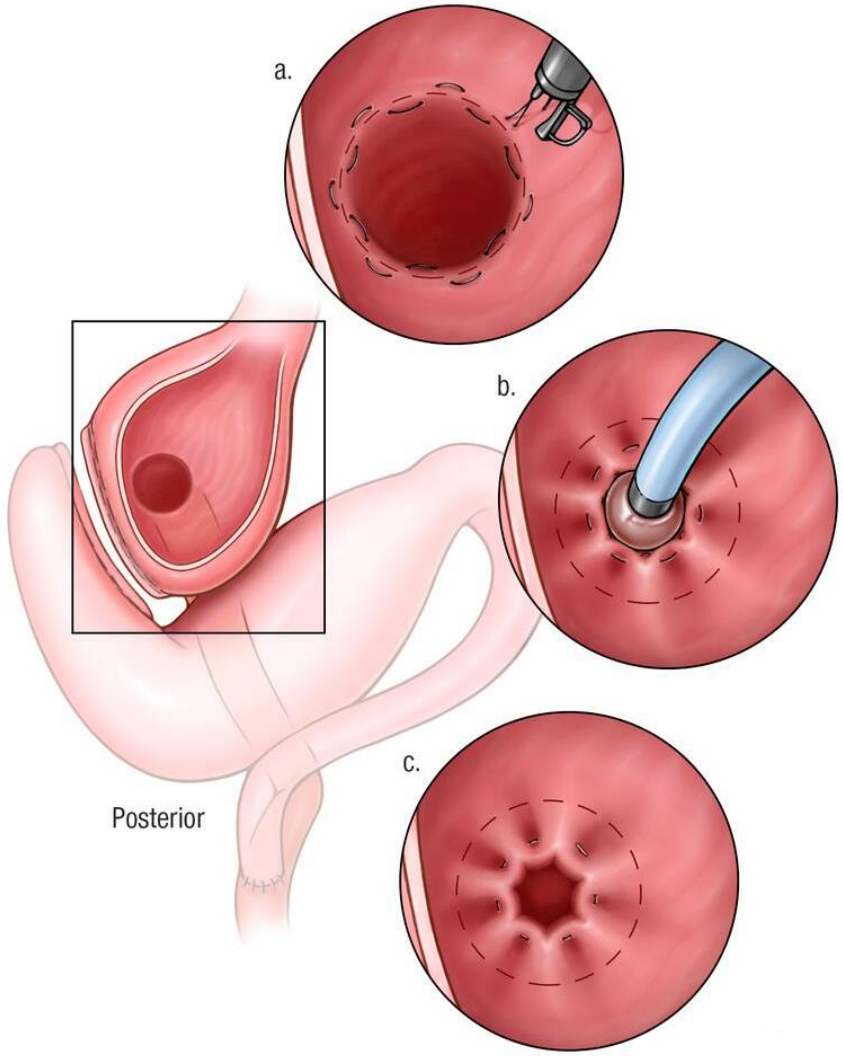
Rationale

- Endoscopic sleeve and balloon: for primary weight loss (1, 2)
- DMR is currently experimental, for diabetes (4)
- The Revise procedure (TORe) is aimed a revision for weight recurrence after surgical sleeve or bypass. (3)



REFERENCE(S):

Popov V, Storm AC. Toward a Better Understanding of Endoscopic Bariatric Therapies. Clin Gastroenterol Hepatol. 2023 Jun;21(6):1422-1426.