Metabolic Endoscopy: State-of the-Art

IFSO

XXIX IFSO World Congress

1-4 September 2026 | Toronto, Canada

TORONTO2026

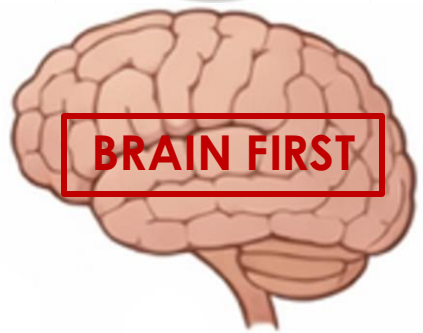
The Future of Obesity Management:
From Weight Loss to Health Gain

SMALL INTESTINAL ENDOSCOPIC THERAPIES FOR METABOLIC DISEASE

Small Intestinal Endoscopic Therapies

OF THE ENDOLUMINAL APPROACH TO METABOLISM

THE GUT-BRAIN AXIS – A COMMUNICATION NETWORK



The Brain Dictates The Engery Demand

The Gut–Brain Axis is a Bidirectional but Hierarchical Communication Network Linking the Gastrointestinal Tract and the Central Nervous System

Stier C, Chiappetta S, Kermansaravi M. A Physiological Model of Incretin-Based Therapies and Hierarchical Energy Allocation Across Metabolic Phenotypes. Diabetes Obes Metab. 2026 Aug;28(8):7652-7657.

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The **Gut–Brain Axis** is a
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The GUT senses nutrients, harvests energy, and signals the brain – the priority energy recipient - through hormonal and neural pathways.

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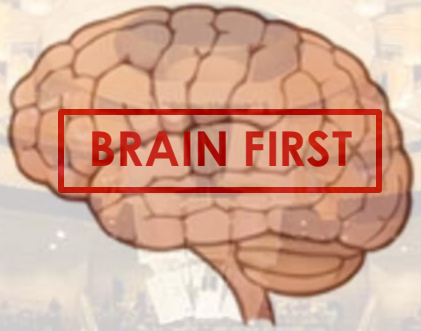

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The Body Must Meet this Demand

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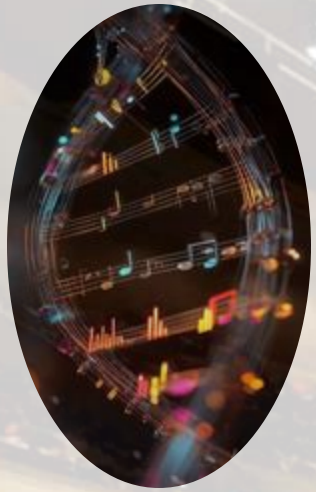
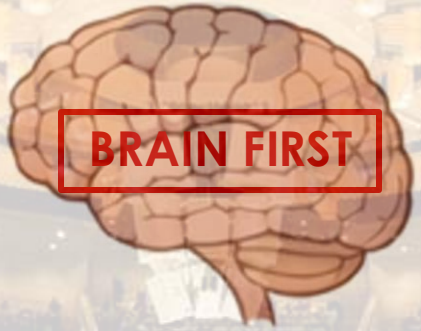
THE GUT-BRAIN AXIS – A COMMUNICATION NETWORK IN THE ERA OF OBESITY



Genes set the tone, but they don't play the whole song.



The Brain Dictates The Engery Demand

The Body Must Meet this Demand

The **Gut–Brain Axis** is a **Bidirectional but Hierarchical Communication Network** Linking the Gastrointestinal Tract and the Central Nervous System

The adipogenic environment, with its ultra-processed foods, turn up the volume and shapes the melody

The GUT senses nutrients, harvests energy, and signals the brain – the priority energy recipient - through hormonal and neural pathways.

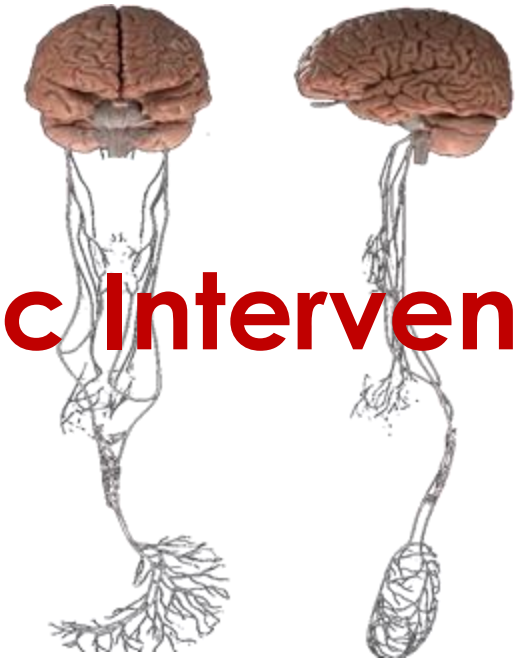
Stier C, Chiappetta S, Kermansaravi M. A Physiological Model of Incretin-Based Therapies and Hierarchical Energy Allocation Across Metabolic Phenotypes. Diabetes Obes Metab. 2026 Aug;28(8):7652-7657.

THE INTERVENTIONAL APPROACH – TURNING DOWN THE METABOLIC VOLUME

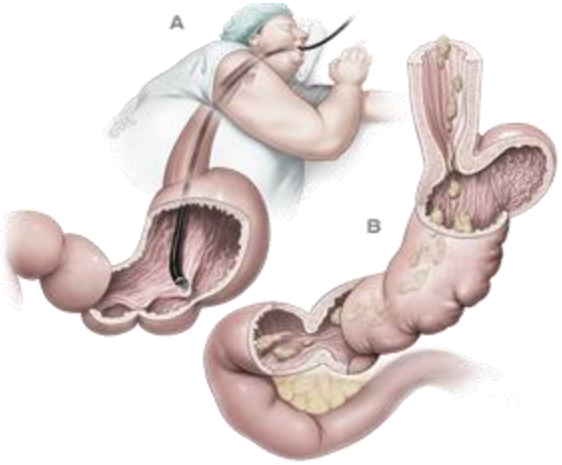
BY CHANGING THE METABOLIC SIGNALS FROM THE GUT TO THE BRAIN

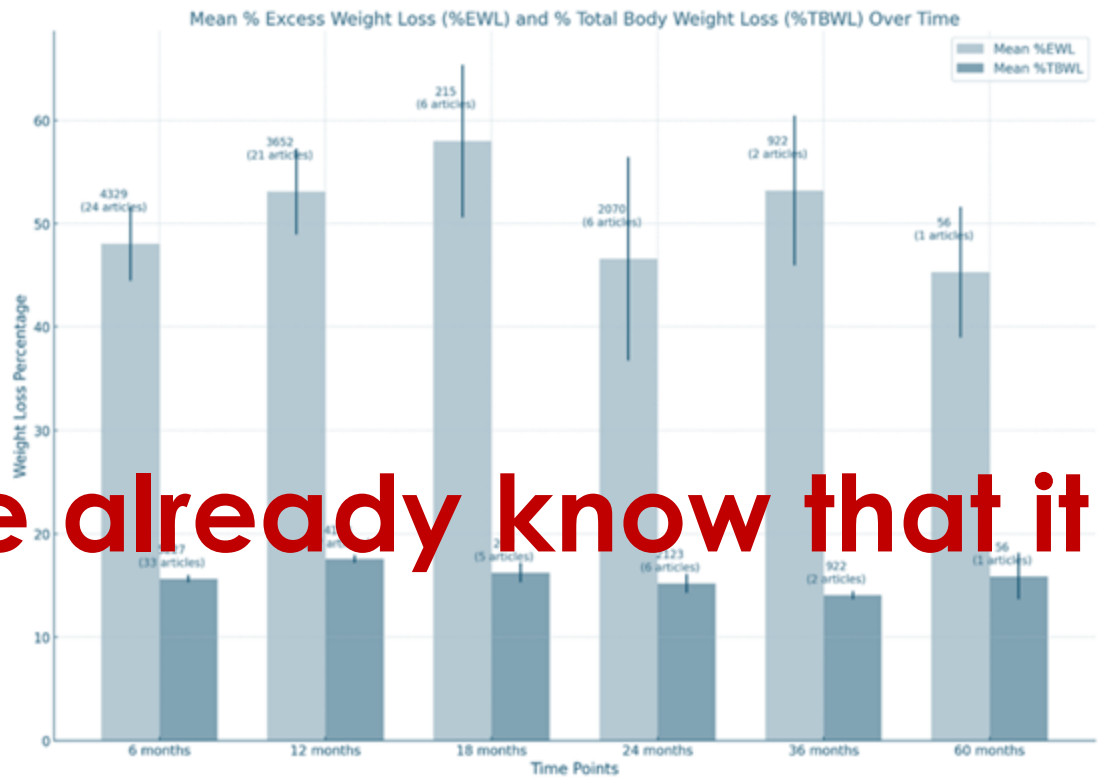
TARGETING THE GUT-TO-BRAIN SIGNALLING

BARIATRIC AND METABOLIC ENDOSCOPY
Treatment Turns the Volume Back Down
by Modulating Gut-to-Brain Signaling



Gastric Interventions





We already know that it works

Dayyeh BKA, Stier C, Alqahtani A, Sharaiha R, Bandhari M, Perretta S, Jirapinyo SP, Prager G, Cohen RV. IFSO Bariatric Endoscopy Committee Evidence-Based Review and Position Statement on Endoscopic Sleeve Gastroplasty for Obesity Management. Obes Surg. 2024 Dec;34(12):4318-4348.

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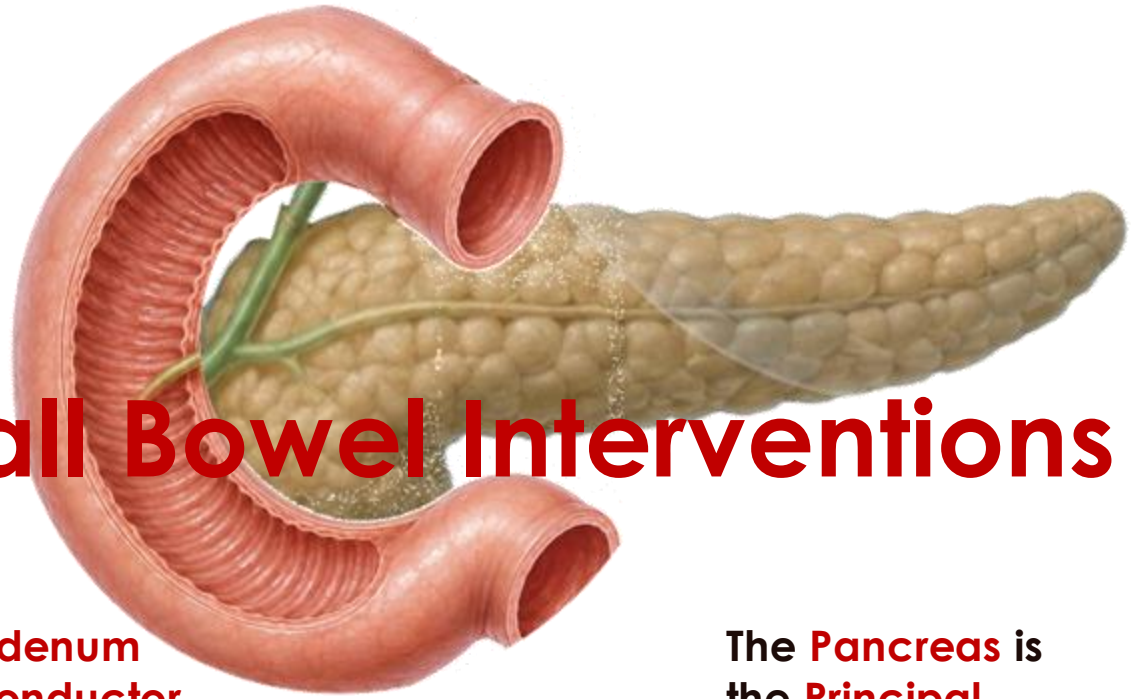
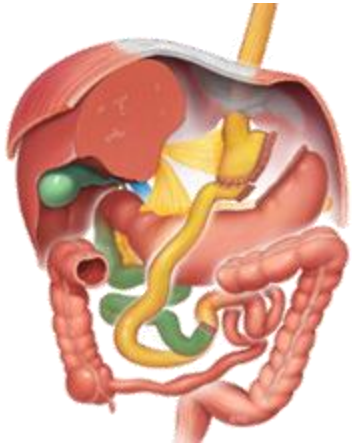
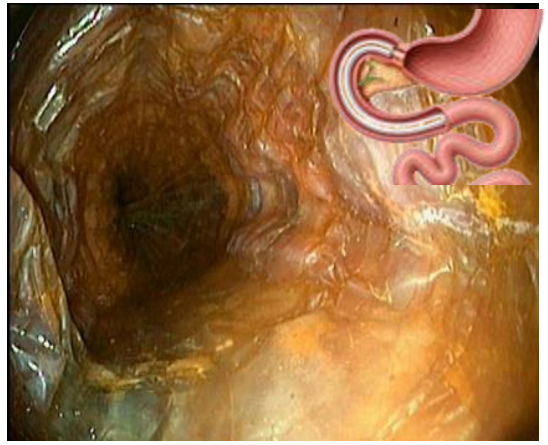


Small Bowel Interventions

The Duodenum ist the Conductor of the Metabolic Orchestra

The Pancreas is the Principal Player outside the CNS





We already know that it works

	Baseline	1m	3m	6m	9m	12m
DJBL	9.04 ± 1.74	8.32 ± 1.56	7.49 ± 1.38	7.43 ± 1.38	7.58 ± 1.55	7.30 ± 1.40
RYGB	8.47 ± 1.47	7.26 ± 1.08	7.06 ± 2.03	6.53 ± 1.14	6.09 ± 0.48	6.16 ± 0.92

Günthert SJ, Aksan A, Schröder O, Meyer G, Hausmann J, Stein J, Stier C. Glycemic control and BMI changes after endoscopic implantation of a duodenojejunal bypass liner compared with laparoscopic Roux-en-Y gastric bypass surgery: a propensity score matching analysis. Surg Endosc. 2022 Aug;36(8):5979-5985.

Implants. Duodeno-Jejunal Bypass Liner

Diverts Biliopancreatic Secretions from Nutrition

van Baar ACG, Meiring S, Holleman F, et al. **Alternative treatments for type 2 diabetes and associated metabolic diseases: medical therapy or endoscopic duodenal mucosal remodelling?** Gut. 2021 Nov;70(11):2196-2204.

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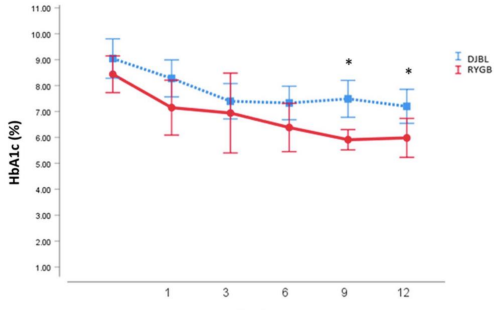

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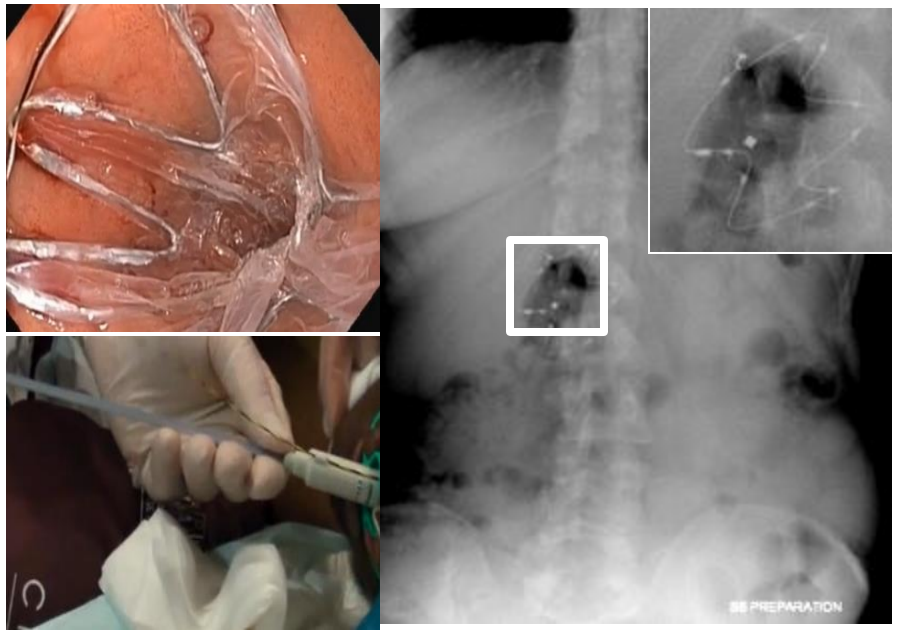
Reset. **Former EndoBarrier**



EndoBarrier, GI Dynamics, Boston MA.
Now rebranded RESET, Morphic Medical.

Robert Caiazzo

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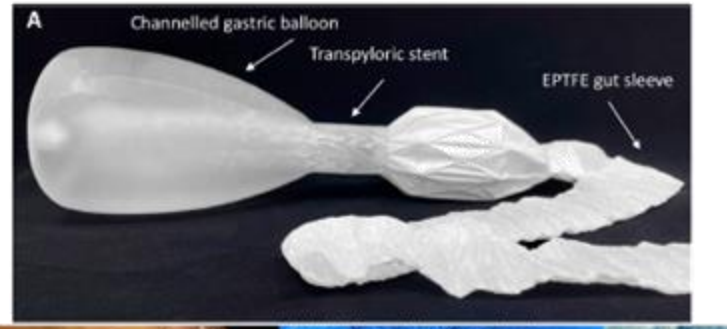

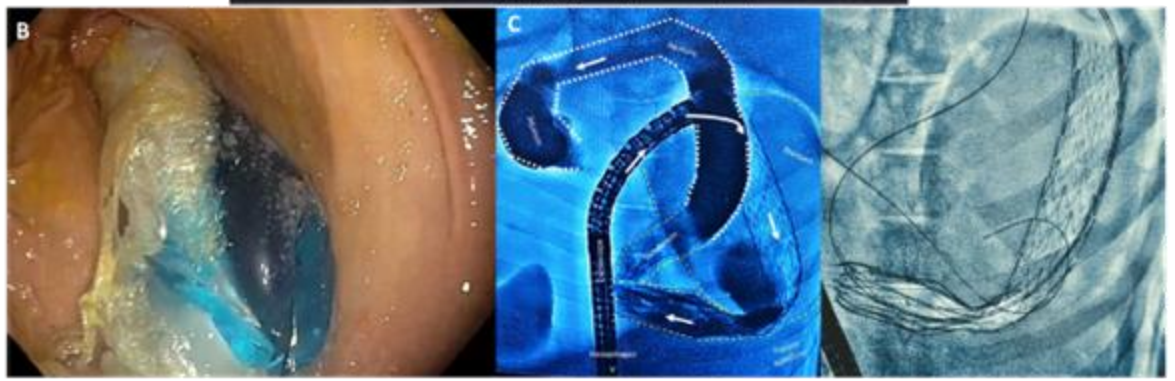

Silicone intragastric balloon occupying two-thirds of gastric volume, with a central channel. 60cm sleeve, ntinol funnel, transpyloric ePTFE-coated stent for anchoring and stabilisation.

Reset. **Former EndoBarrier**

Keyron ForPass **upcoming human trial**

Implants. Duodeno-Jejunal Bypass Liner

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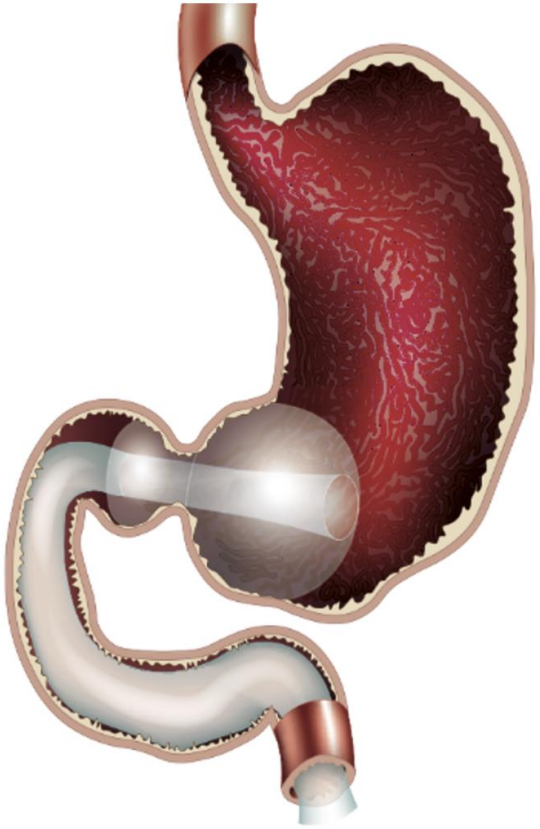

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Trans-Duodenal Barrier. **upcoming human trial**

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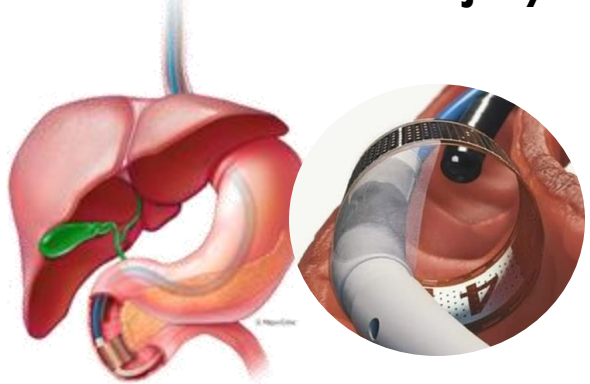
COMPARISION OF IMPLANTS VERSUS DIRECT MUCOSAL APPLICATION

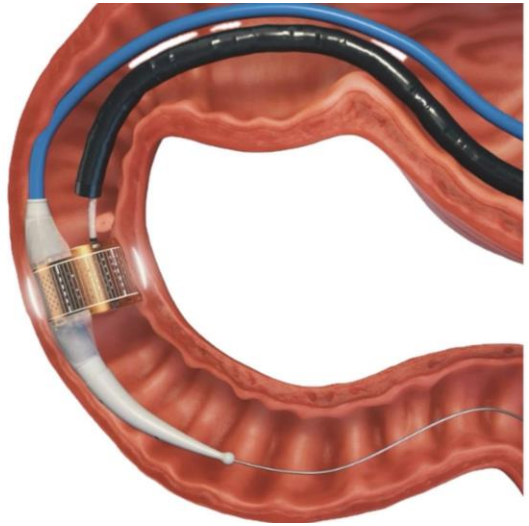
Implants. Duodeno-Jejunal Bypass Liner

Diverts Biliopancreatic Secretions from Nutrition

Direct Mucosal Injury



Alters entero-endorine signalling



The Endogenex ReCET system's catheter has an expandable electronic circuit for delivering pulsed-field energy to the duodenum's wall. [Illustration courtesy of Endogenex]

ReCet.

Electroporation pulsed electric field

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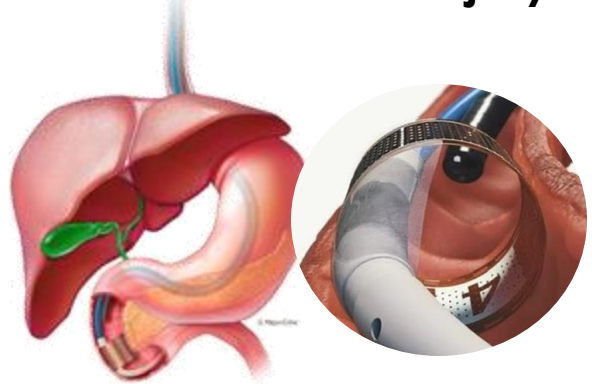

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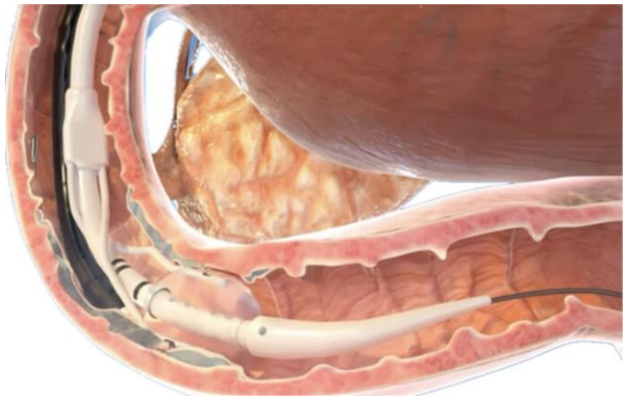

Fractyl's Revita system uses a single-use catheter for hydrothermal ablation in an endoscopic procedure called duodenal mucosal resurfacing. [Illustration courtesy of Fractyl Health]

DMR.	**Hydrothermal Ablation**
Cryotherapy	**Conceptual cold basesd**
VaporAblation	**waterbased**

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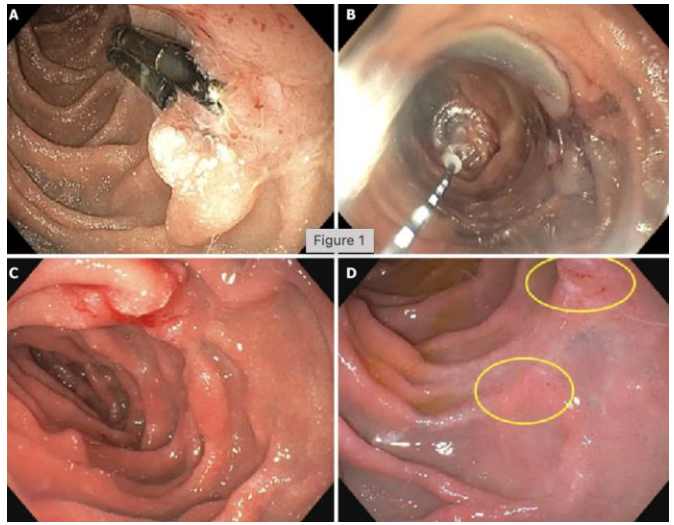
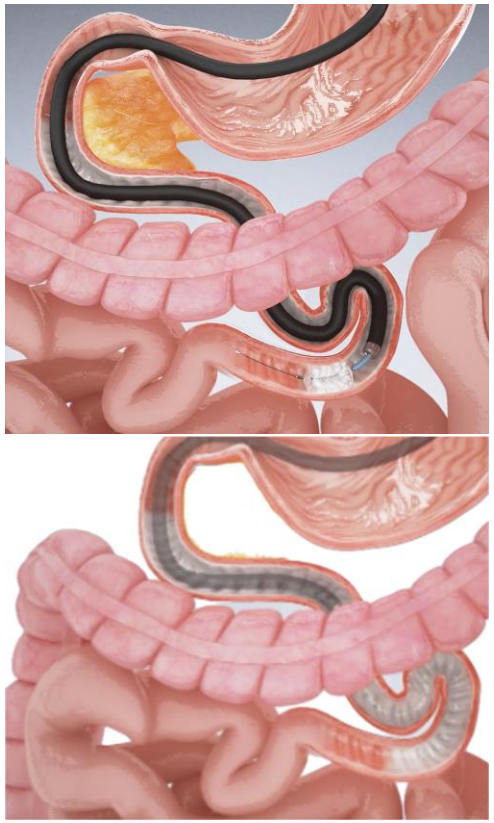
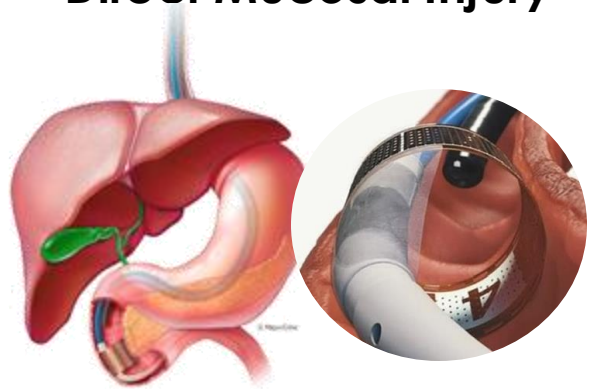


CryoAblation



VaporAblation

Direct Mucosal Injury



Alters entero-endorine signalling

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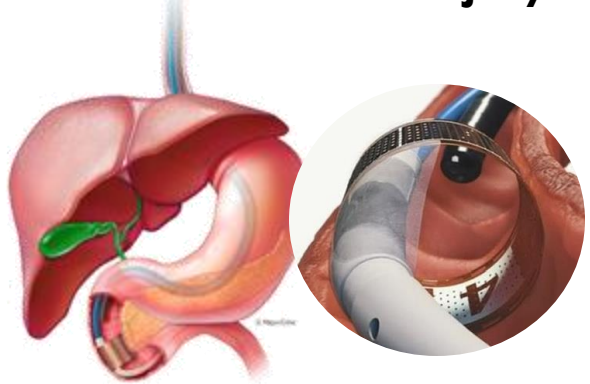

Alters entero-endorine signalling

SIMILAR MECHANISM? - BOTH ARE EFFECTIVE

Reset.	**Former EndoBarrier**	**ReCet.**	**Electroporaion pulsed electric field**
Trans-Duodenal Barrier.	**upcoming human trial**	**DMR.**	**Hydrothermal Ablation**
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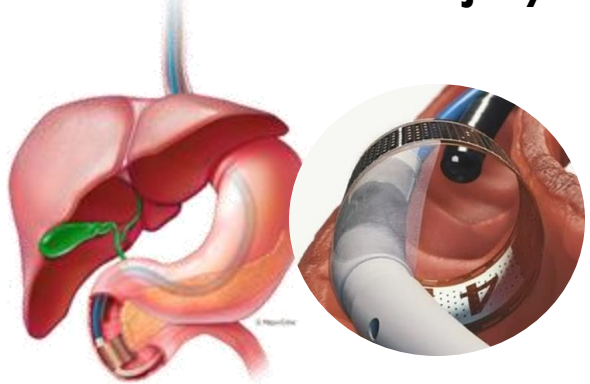

Alters entero-endorine signalling

SIMILAR MECHANISM? - BOTH ARE EFFECTIVE

Duodeno-Jejunal Implants:

⇒ physical separation of nutrients from the duodenal/jejunal mucosa leads to reduced proximal nutrient sensing and enteroendocrine stimulation

⇒ altered gut-hormone and metabolic signaling

IN VIVO MODEL OF THE BPL

Acute Injury of Duodenal Mucosa:

⇒ transient loss/dysfunction of nutrient-sensing and enteroendocrine cells

⇒ epithelial regeneration with restoration of cell numbers, but

⇒ potentially altered functional phenotype.

SYNTHESIS

Five things we have learned

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XXIX IFSO World Congress
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1. **The duodenum is a legitimate metabolic target.**

   Surgery established it, the liner reproduced it endoscopically in humans.

2. **Physiology can be rented, not owned.**

   Endoscopic exclusion works while the device is in place and leaves no anatomical memory.

3. **The anchor was the enemy, not the sleeve.**

   Duodenal bulb fixation drove the events that ended the first generation.

4. **Patient selection.**

   Glycaemic response varies markedly. We MUST treat a selected population.

5. **The comparator has changed.**

   Any device must CONSIDER GLP-1 and GIP receptor agonists as (sparring) partners.

COMPARISION OF THE TREATMENT WITH INCRETIN-BASED DRUGS

Incretin Medication Pens

ONCE-WEEKLY INJECTION

	Semaglutide Ozempic®	Semaglutide Wegovy®	Dulaglutide Trulicity®	Tirzepatide Mounjaro®	Tirzepatide Zepbound®
Use	Once-weekly subcutaneous injection	Once-weekly subcutaneous injection	Once-weekly subcutaneous injection	Once-weekly subcutaneous injection	Once-weekly subcutaneous injection
Mechanism of action	Semaglutide (GLP-1 receptor agonist)	Semaglutide (GLP-1 receptor agonist)	Dulaglutide (GLP-1 receptor agonist)	Tirzepatide (Dual GIP/GLP-1 receptor agonist)	Tirzepatide (Dual GIP/GLP-1 receptor agonist)
Available dose strengths*	• 0.25 mg • 0.5 mg • 1 mg • 2 mg	• 0.25 mg • 0.5 mg • 1 mg • 1.7 mg • 2.4 mg	• 0.75 mg • 1.5 mg • 3 mg • 4.5 mg	• 2.5 mg • 5 mg • 7.5 mg • 10 mg • 12.5 mg • 15 mg	• 2.5 mg • 5 mg • 7.5 mg • 10 mg • 12.5 mg • 15 mg
Approved for	Type 2 diabetes	Chronic weight management (obesity or overweight)	Type 2 diabetes	Type 2 diabetes	Chronic weight management (obesity or overweight)
Key features	Also available as oral tablet (Rybelsus®)	Higher dose up to 2.4 mg approved for weight reduction	Easy to use with pre-filled single-dose pen	Acts on two incretin receptors (GIP and GLP-1)	Approved for weight reduction in obesity or overweight

*Not all doses are available in every country.
Please refer to the prescribing information of the respective product.

THE FUTURE OF OBESITY MANAGEMENT: FROM WEIGHT LOSS TO HEALTH GAIN
IFSO
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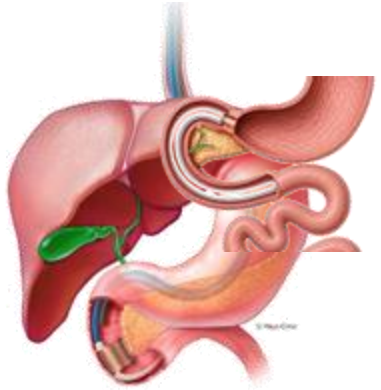


COMPLETELY DIFFERENT MECHANISM WHILE BOTH ARE EFFECTIVE

- Incretin-based

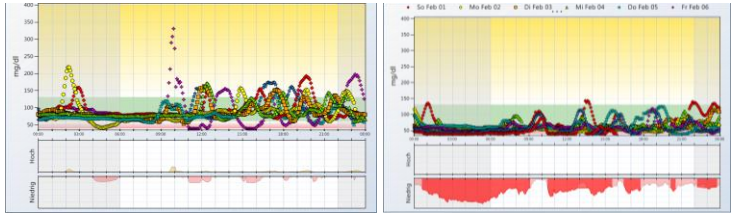
Medications offer a supernatural Incretin dosage (HL 7 days)

- GIP
  GLP-1

=> MODIFIES INSULIN SECRETION?

- Limited GIP secretion
- High GLP-1 output

=> MODIFIES INSULIN SECRETION



Conclusion

The interventional target is the GUT.

Gastric interventions
modify volume, emptying and satiety (fullness) signaling

Small-bowel interventions
modify nutrient sensing and metabolic signaling

Differnt Targets – One Principle – One Signalling Pathway:
The GUT-Brain Axis

WE INTERVENE IN THE GUT -
BUT THE ULTIMATE TARGET IS THE **BRAIN'S CONTROL OF ENERGY BALANCE.**


THE FUTURE OF OBESITY MANAGEMENT: FROM WEIGHT LOSS TO HEALTH GAIN
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THANK YOU

XXX IFSO WORLD CONGRESS

"Advancing Multimodal Obesity Care"

24-27 August 2027

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See you in

PARIS