비만대사수술의 현재:

적응증, 약물치료와의 연계, 그리고 장기관리

위비앙 병원

이홍찬

위비앙병원
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The Changing Landscape of Obesity Treatment

Timeline:

- Lifestyle era
- Pharmacotherapy era
- GLP-1 era
- Combination metabolic care era

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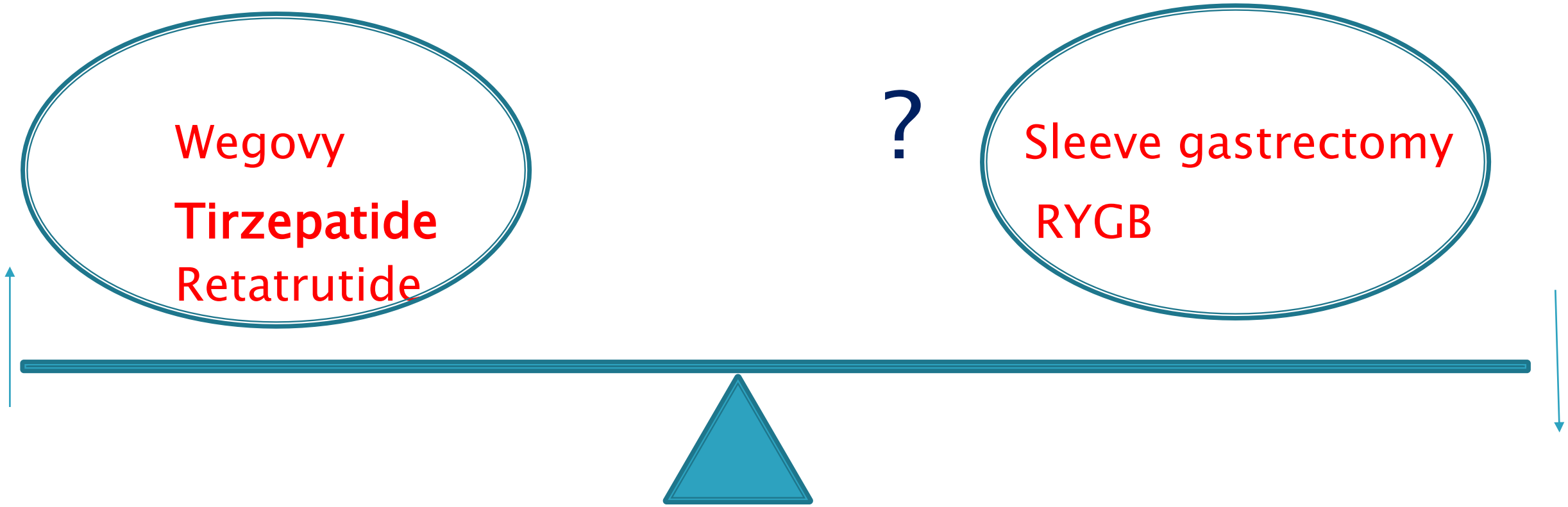
“In the GLP-1 era, do we still need surgery?”



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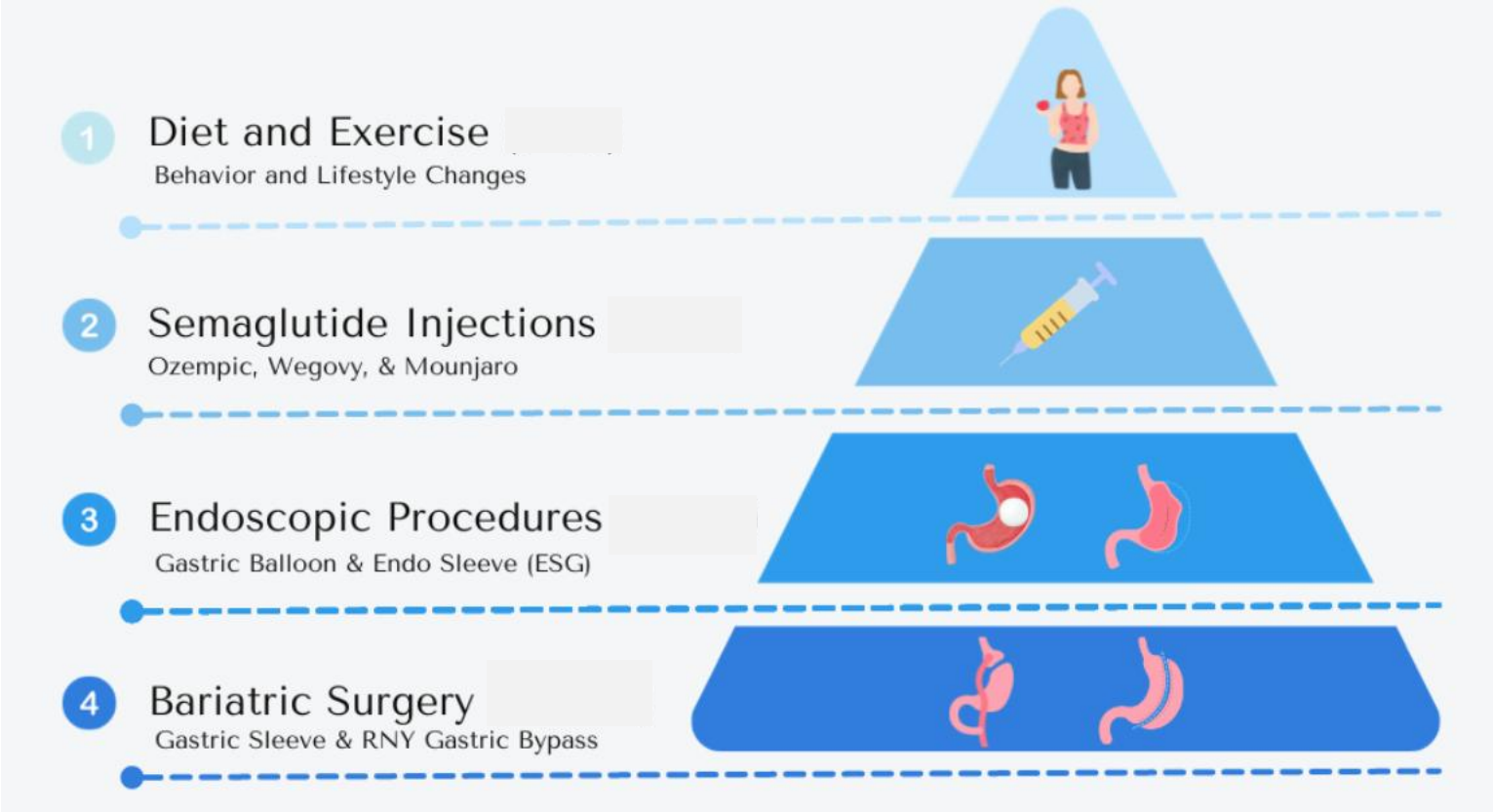
Weight loss treatment options and effectiveness



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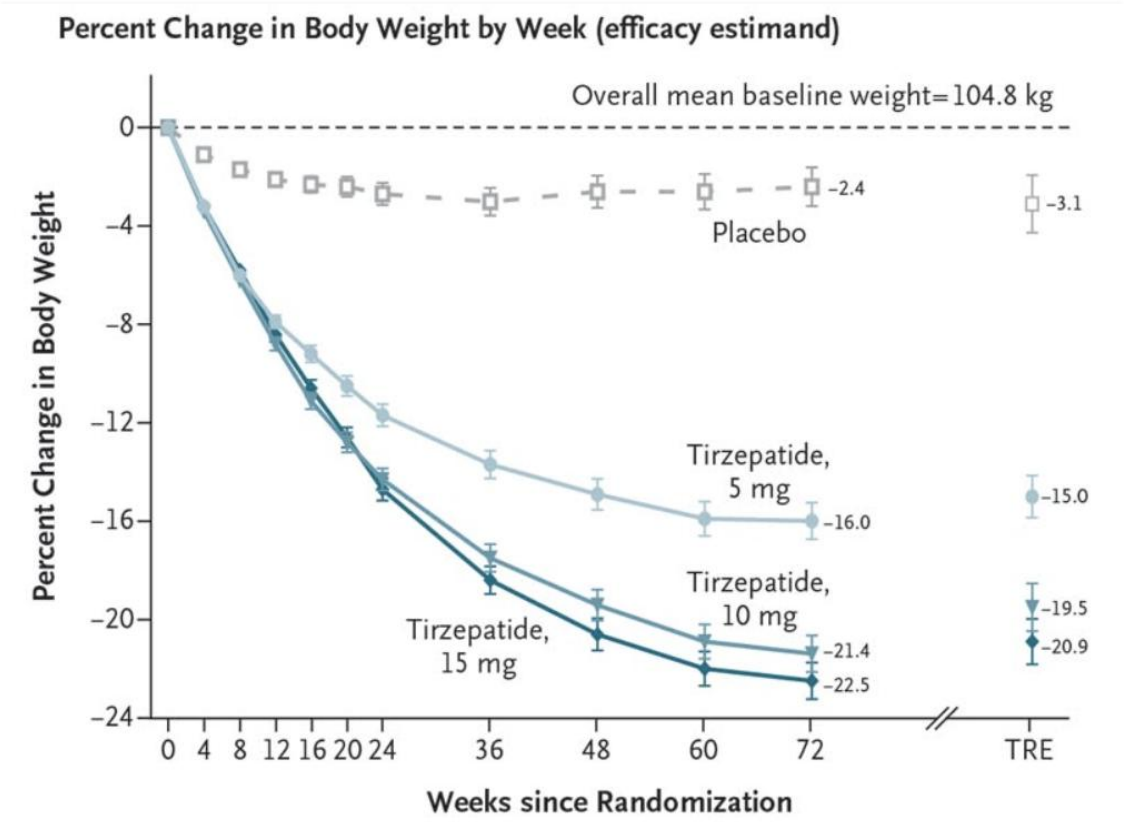
SURMOUNT-1
tirzepatide efficacy



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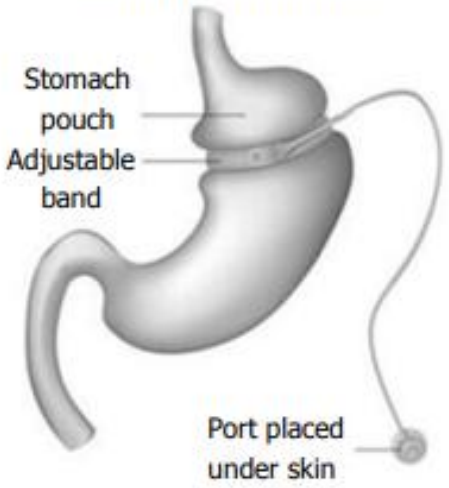
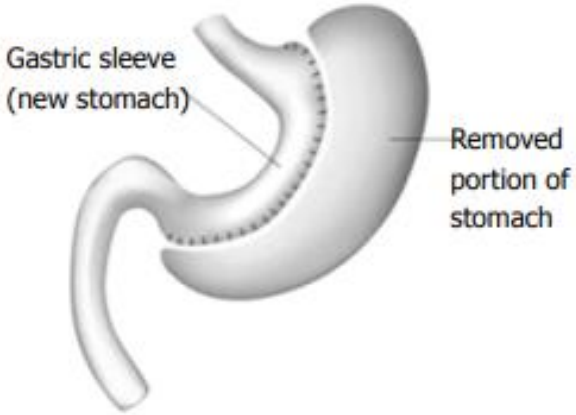
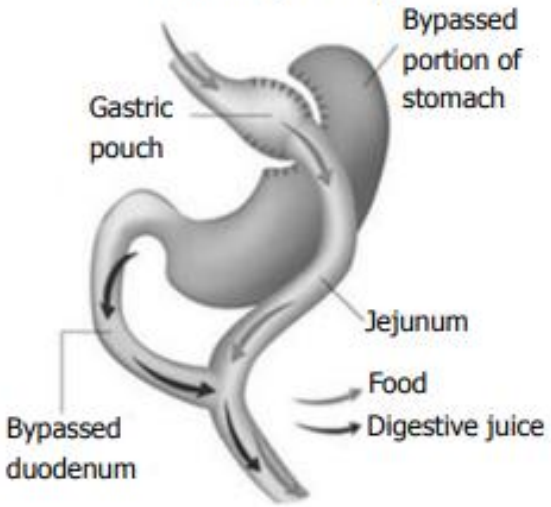
Adjustable gastric band



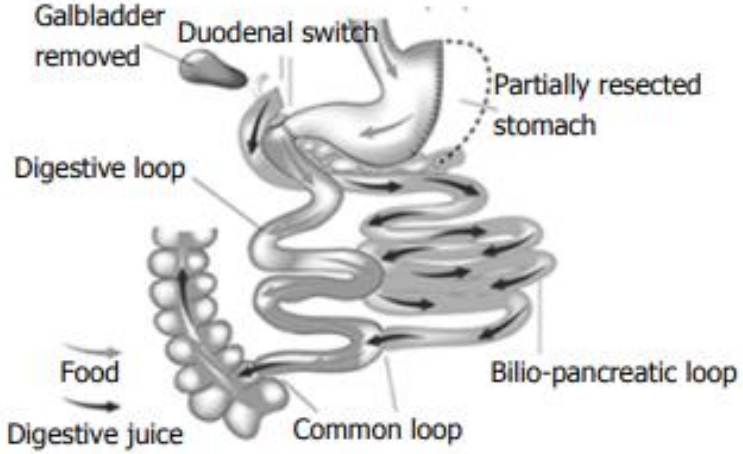
Sleeve gastrectomy



Roux-en-Y gastric bypass



Biliopancreatic diversion



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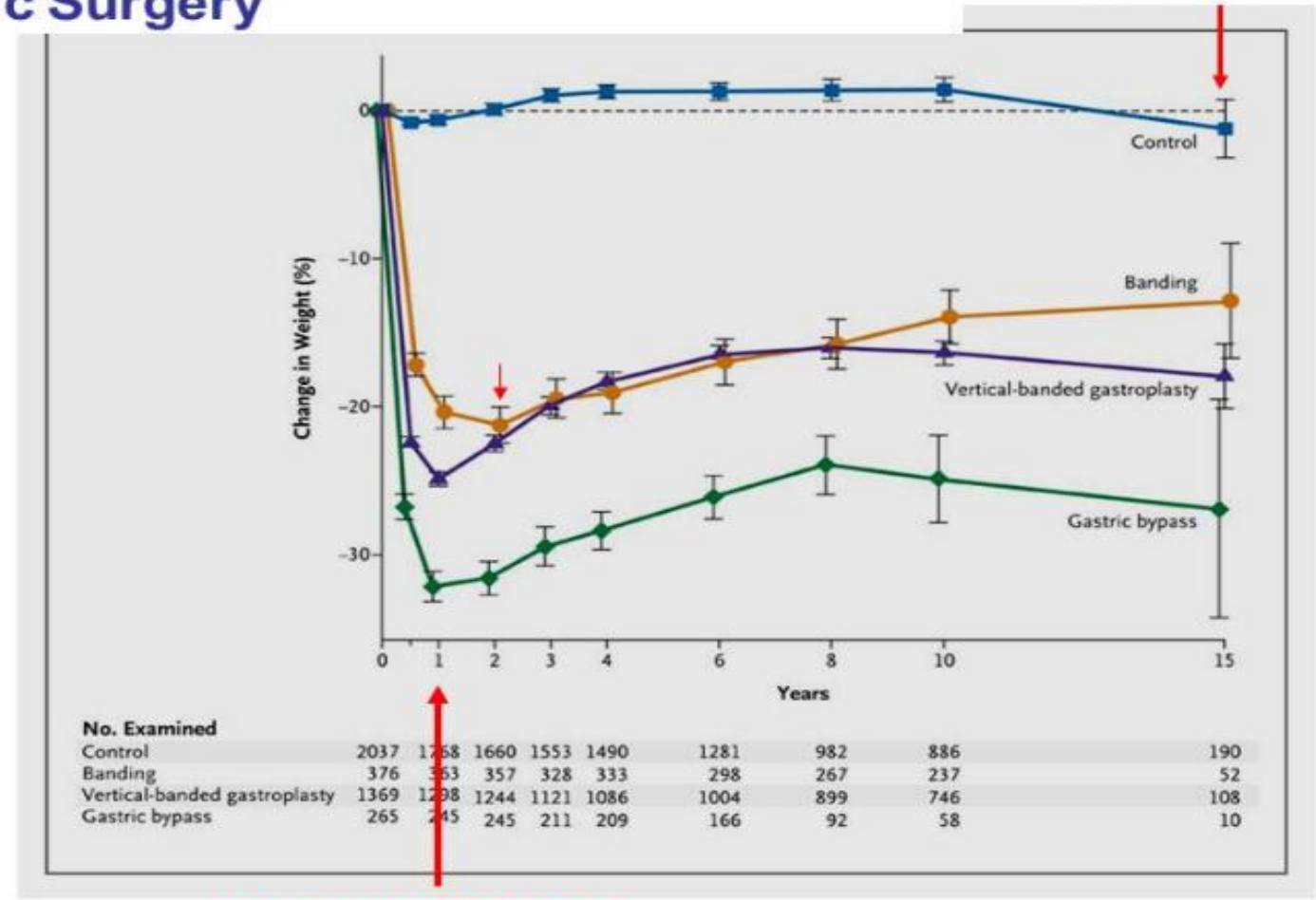
Swedish Obese Subjects (SOS)

Mean Percent Weight Change during a 15-Year Period According to the Method of Bariatric Surgery

Very poor results of non-surgical treatments



Maximal Weight loss

Sjostrom L et al (SOS) N Engl J Med 2007;357:741

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- Bariatric surgery is as safe or safer than some of the most commonly performed surgeries in America including gallbladder surgery, appendectomy and knee replacement.[5]

Effectiveness

- Studies show patients typically lose the most weight 1-2 years after bariatric surgery and see substantial weight improvements in obesity-related conditions.[6,7]
  - Patients may lose as much as 60% of excess weight six months after surgery, and 77% of excess weight as early as 12 months after surgery.[8]
  - On average, five years after surgery, patients maintain 50% of their excess weight loss.[9]
- Majority of bariatric surgery patients with diabetes, dyslipidemia, hypertension, and obstructive sleep apnea experience remission of these obesity-related diseases.[10]

Condition/Disease	Remission Rate
Type 2 Diabetes	92%
Hypertension	75%
Obstructive Sleep Apnea	96%
Dyslipidemia	76%
Cardiovascular Disease	58%

Safety & Risks

- The risks of severe obesity outweigh the risks of metabolic/bariatric surgery for many patients.[11,12]
  - The risk of death associated with bariatric surgery is about 0.1% and the overall likelihood of major complications is about 4%.[14]

Economics of Bariatric Surgery

- The average cost of bariatric surgery ranges between $17,000 and $26,000.[15]
- Because of the reduction or elimination of obesity-related conditions and associated treatment-costs:
  - Estimates suggest third-party payers will recover bariatric surgery costs within 2 to 4 years.[16]
  - Healthcare costs are reduced by 29% within five years of bariatric surgery.[17]

Estimate of Bariatric Surgery Numbers, 2011-2019

	2011	2012	2013	2014	2015	2016	2017	2018	2019*
Total	**158,000**	**173,000**	**179,000**	**193,000**	**196,000**	**216,000**	**228,000**	**252,000**	**256,000**
Sleeve	17.8%	33.0%	42.1%	51.7%	53.6%	58.1%	59.4%	61.4%	59.4%
RYGB	36.7%	37.5%	34.2%	26.8%	23.0%	18.7%	17.8%	17.0%	17.8%
Band	35.4%	20.2%	14.0%	9.5%	5.7%	3.4%	2.7%	1.1%	0.9%
BPD-DS	0.9%	1.0%	1.0%	0.4%	0.6%	0.6%	0.7%	0.8%	0.9%
Revision	6.0%	6.0%	6.0%	11.5%	13.6%	14.0%	14.1%	15.4%	16.7%
Other	3.2%	2.3%	2.7%	0.1%	3.2%	2.6%	2.5%	2.3%	2.4%
Balloons	–	–	–	–	0.3%	2.6%	2.8%	2.0%	1.8%

The ASMBS total bariatric procedure numbers are based on the best estimation from available data (BOLD, ACS/MBSAQIP, National Inpatient Sample Data and outpatient estimates

**New methodology for estimating outpatient procedures done at non-accredited centers.*

ASMBS.org | info@asmbs.org | (352) 331-4900 | 14407 SW 2nd Place, Suite F-3, Newberry, FL 32669

ASMBS
METABOLIC & BARIATRIC SURGERY
THE AMERICAN SOCIETY FOR METABOLIC & BARIATRIC SURGERY

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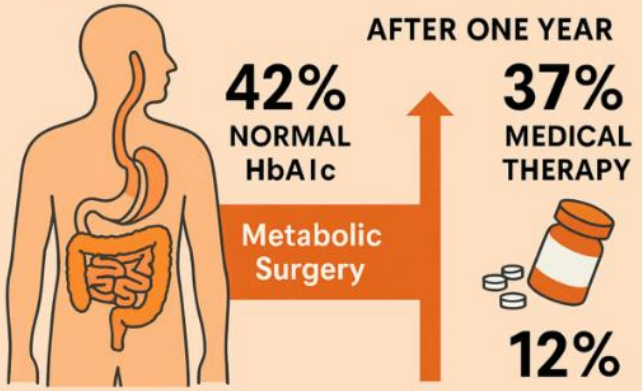
STAMPEDE Trial: diabetes remission superiority surgery vs intensive medical therapy

THE FUTURE OF BARIATRIC SURGERY IN TYPE 2 DIABETES CARE

The STAMPEDE trial helped shift clinical thinking: bariatric surgery for type 2 diabetes is not just about weight—it's a metabolic intervention.



Mechanisms of Type 2 Diabetes Remission

- Enhanced GLP-1 secretion and incretin response
- Reduced insulin resistance
- Altered bile acid flow and gut microbiota
- Early activation of the ileal brake

Leading diabetes organizations now endorse metabolic surgery even in patients with moderate obesity (BMI 30–35)

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New ASMBS / IFSO Guidelines on Indications for Metabolic and Bariatric Surgery 2022
Developed to Replace the NIH Consensus Guidelines from 1991

SURGERY FOR OBESITY AND RELATED DISEASES
ASMBS

Dan Eisenberg MD, MS, Scott A. Shikora MD, Edo Aarts MD, PhD, Ali Aminian MD, L
MD, Ricardo V. Cohen MD, PhD, Maurizio de Luca MD, Silvia L. Faria PhD, Kasey P.S.
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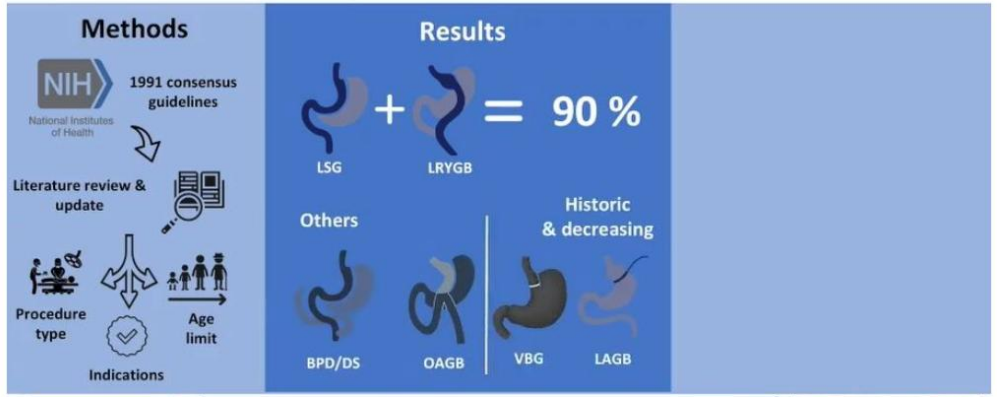

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OBESITY SURGERY
IFSO

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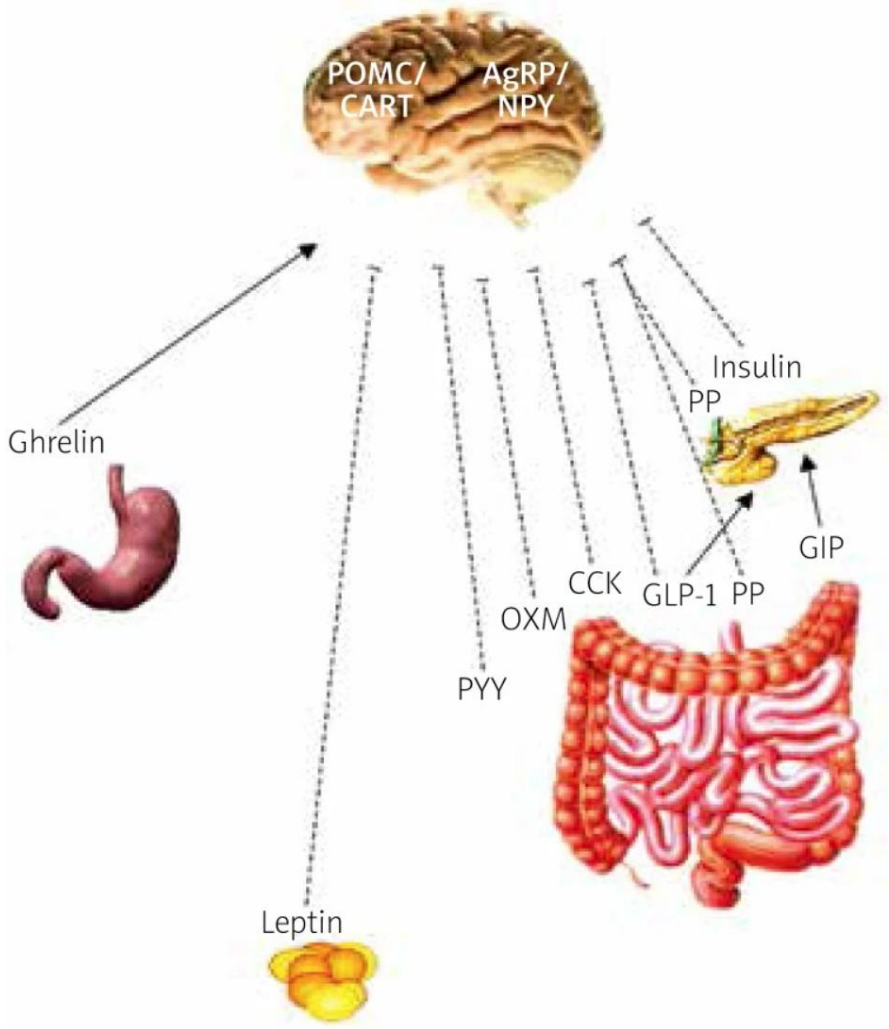
Surgery is More Than Restriction



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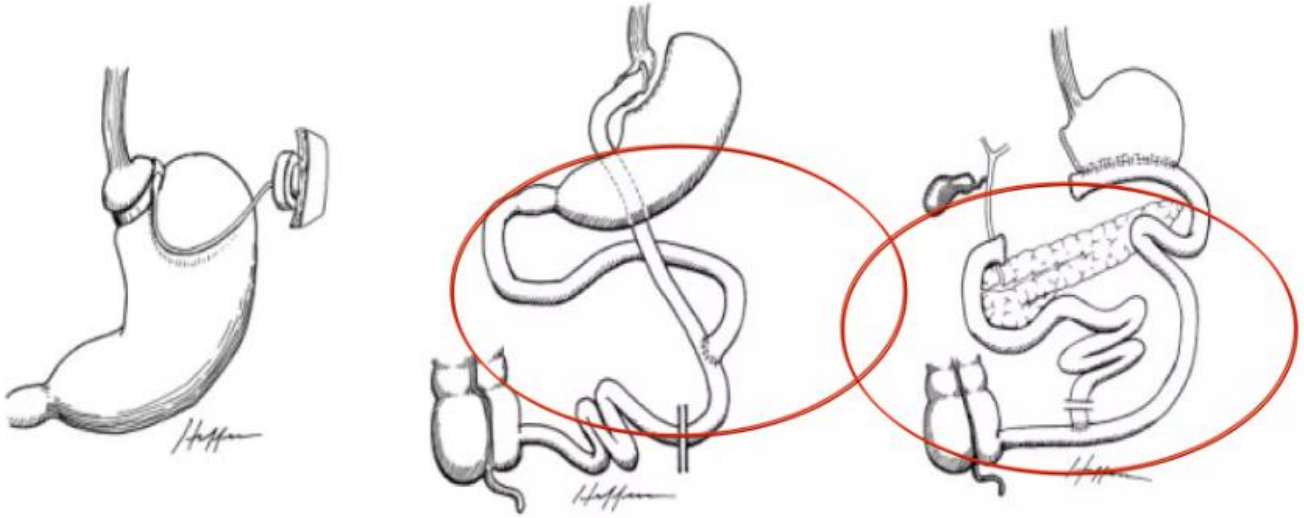
Rates of Remission of Diabetes



Adjustable Gastric Banding	Roux-en-Y Gastric Bypass	Biliopancreatic Diversion
48% (Slow)	84% (Immediate)	>95% (Immediate)

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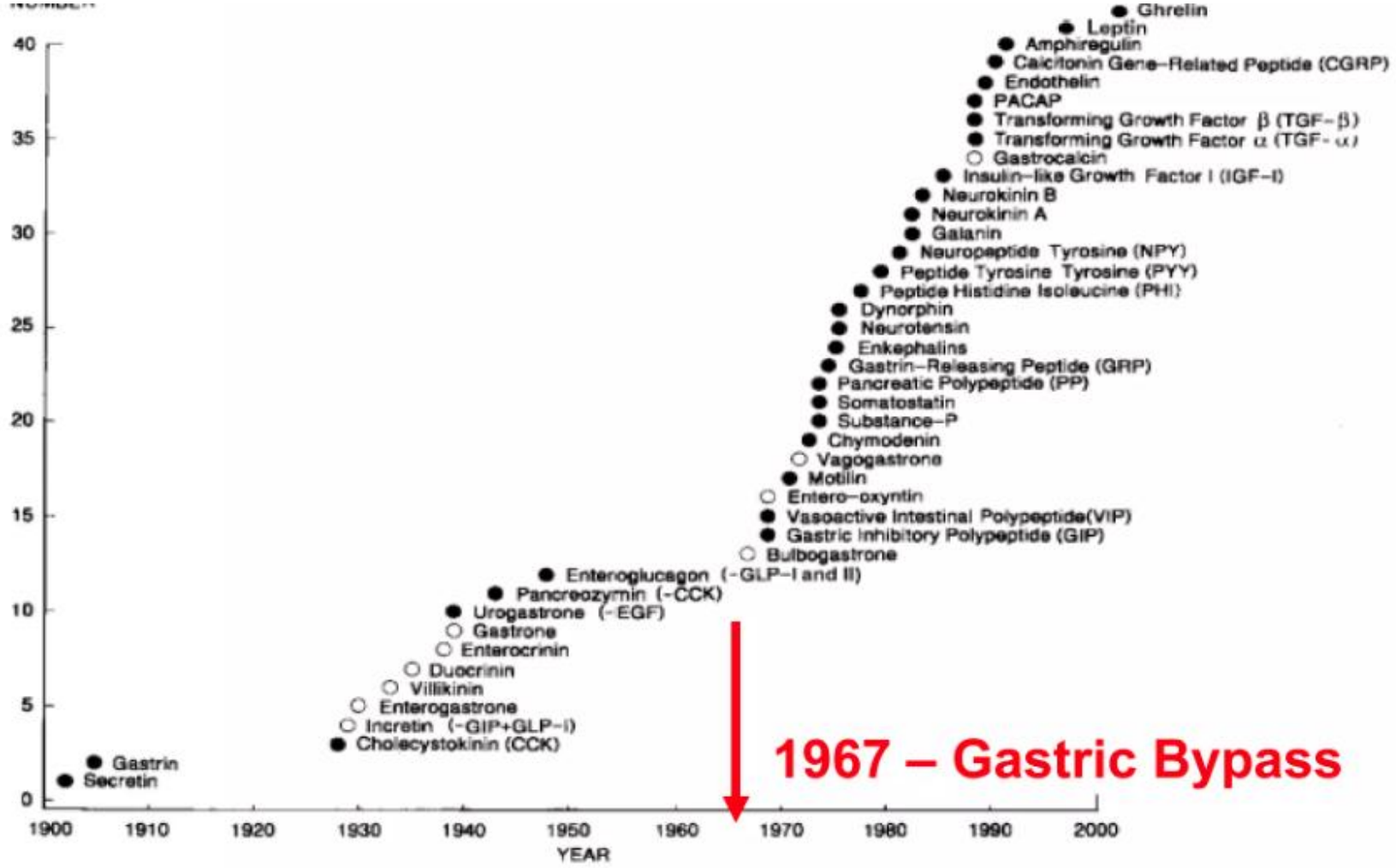

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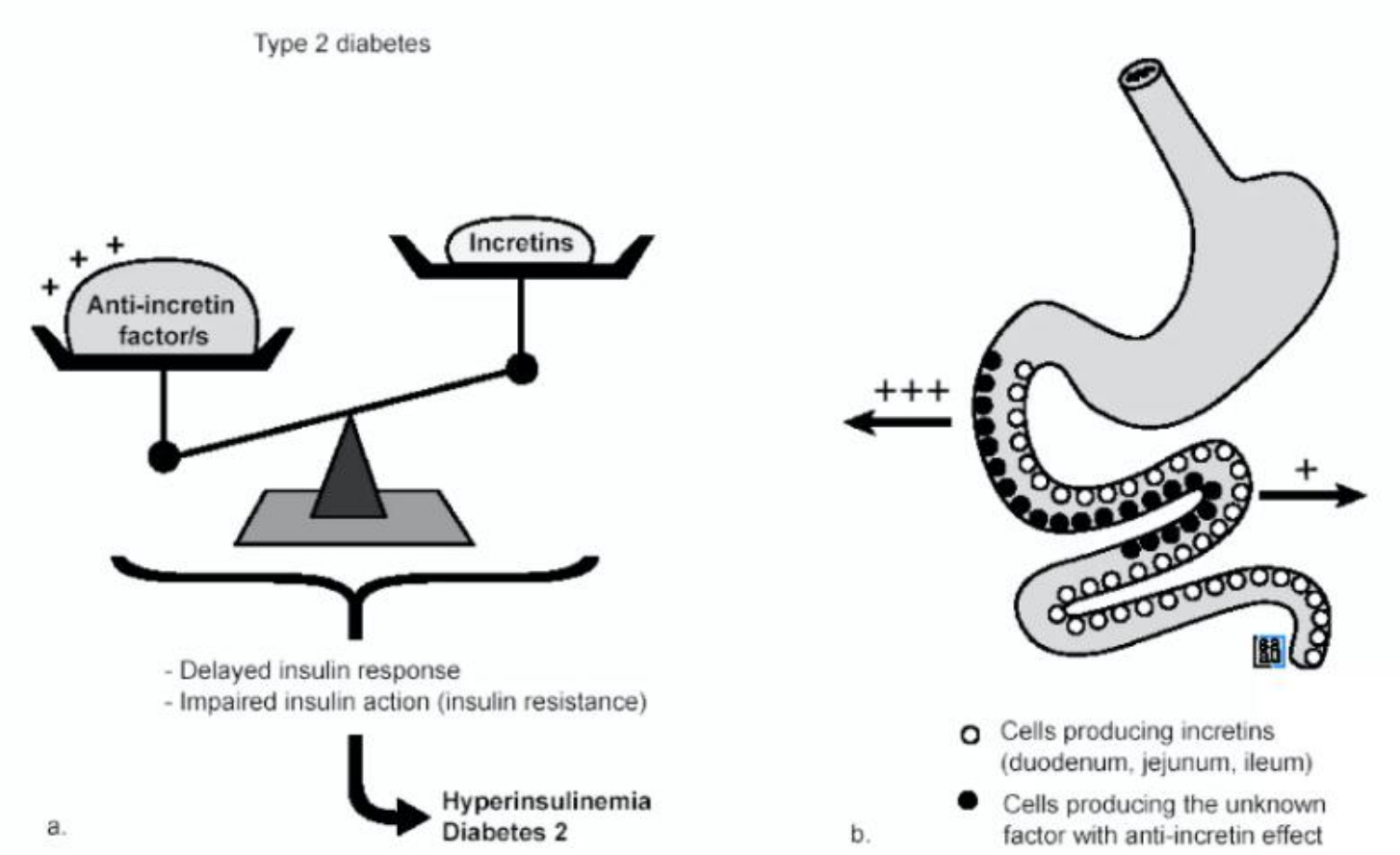

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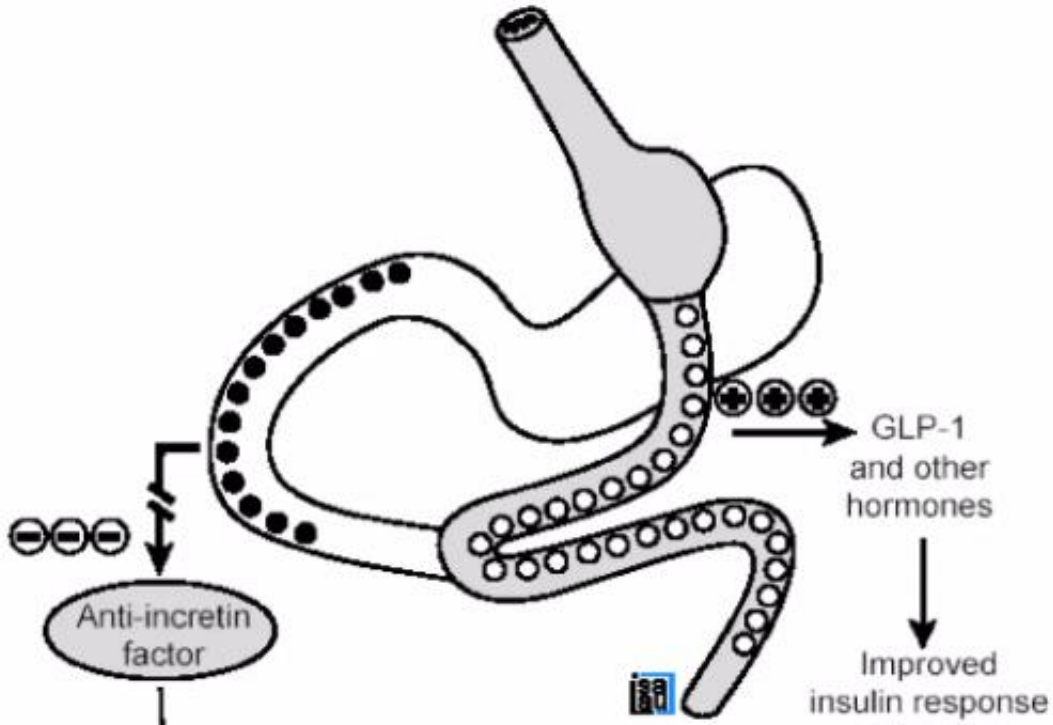
Gastric Bypass



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신비만치료제 등장, 위풍선, 위절제

Safety, Effectiveness, Result….

경구약/위고비/마운자로/위풍선/위절제 ?

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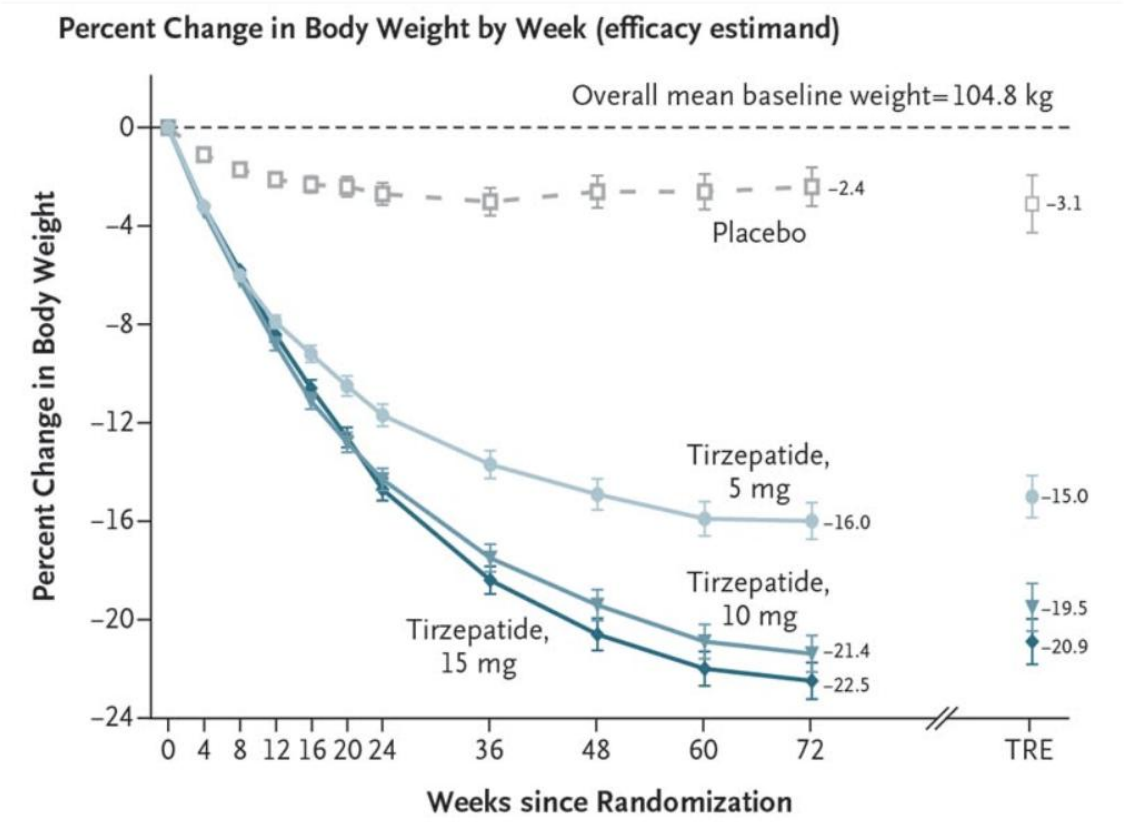
SURMOUNT-1
tirzepatide efficacy



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162kg,
BMI=64

Preoperative Weight Loss is Critical

- Shrinks the Liver
- Enables Minimally Invasive Approaches
- Shortens Surgery & Recovery Times

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Typical Pre-Op Weight Loss Timeline

- 3 to 6 Months Out (Insurance/Program Requirements)
- 2 Weeks Out (The Liver Reduction Diet)
- 1 Day Out (Clear Liquids Only):

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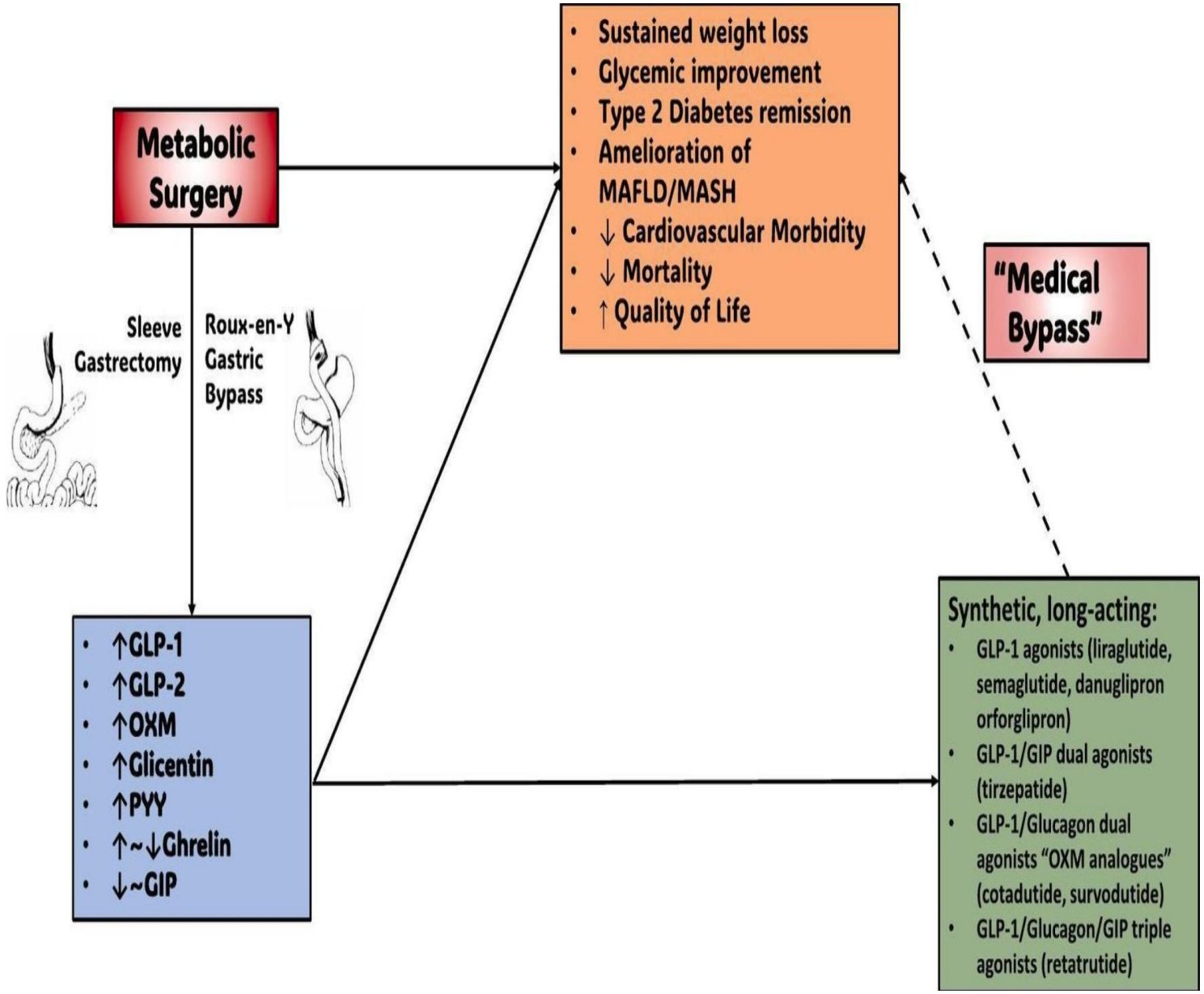
Metabolic Surgery
Sleeve Gastrectomy
Roux-en-Y Gastric Bypass
• Sustained weight loss
• Glycemic improvement
• Type 2 Diabetes remission
• Amelioration of MAFLD/MASH
• ↓ Cardiovascular Morbidity
• ↓ Mortality
• ↑ Quality of Life
"Medical Bypass"
• ↑GLP-1
• ↑GLP-2
• ↑OXM
• ↑Glicentin
• ↑PYY
• ↑~↓Ghrelin
• ↓~GIP
Synthetic, long-acting:
• GLP-1 agonists (liraglutide, semaglutide, danuglipron orforglipron)
• GLP-1/GIP dual agonists (tirzepatide)
• GLP-1/Glucagon dual agonists "OXM analogues" (cotadutide, survodutide)
• GLP-1/Glucagon/GIP triple agonists (retatrutide)

WEIGHT REGAIN AFTER BARIATRIC SURGERY

ANATOMICAL REASONS

Sleeve stretching, gastric outlet widening, etc.

PHYSIOLOGICAL REASONS

Altered fat metabolism, thyroid issues, changed hormone levels, pregnancy, menopause, etc.

BEHAVIOURAL REASONS

Overeating, snacking, counter-productive habits, lack of physical activity, etc.

PSYCHOLOGICAL REASONS

Llack of motivation, unrealistic expectations, failure to change unhealthy habits, stress, etc.

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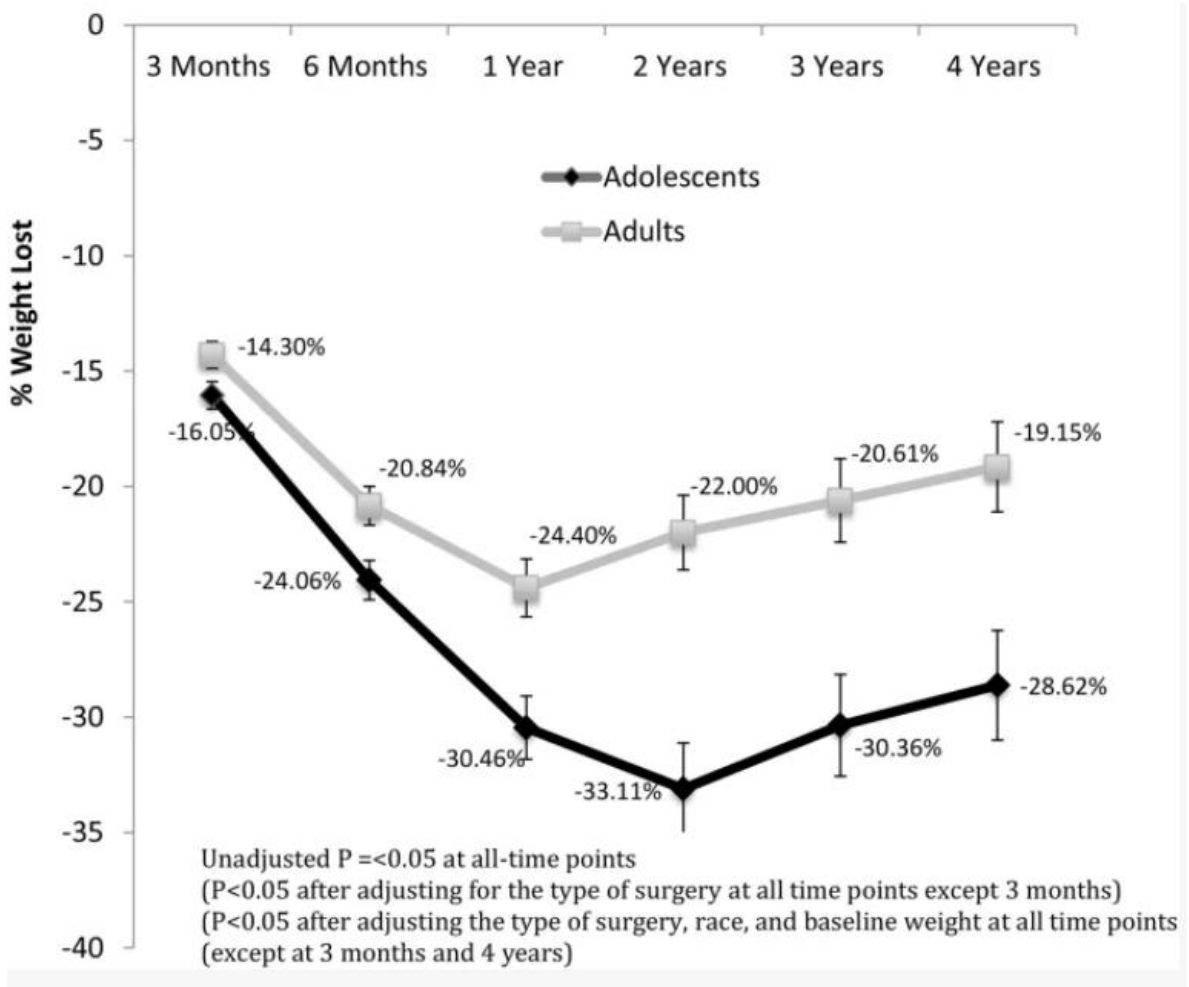

1 Neuroendocrine Unit, Massachusetts General Hospital and Harvard Medical School, Boston, MA, United States, 2 Pediatric Endocrinology, Massachusetts General Hospital and Harvard Medical School, Boston, MA, United States, 3 MGH Weight Center, Massachusetts General Hospital, Boston, MA, United States, 4 Weill Cornell Medicine, Education City

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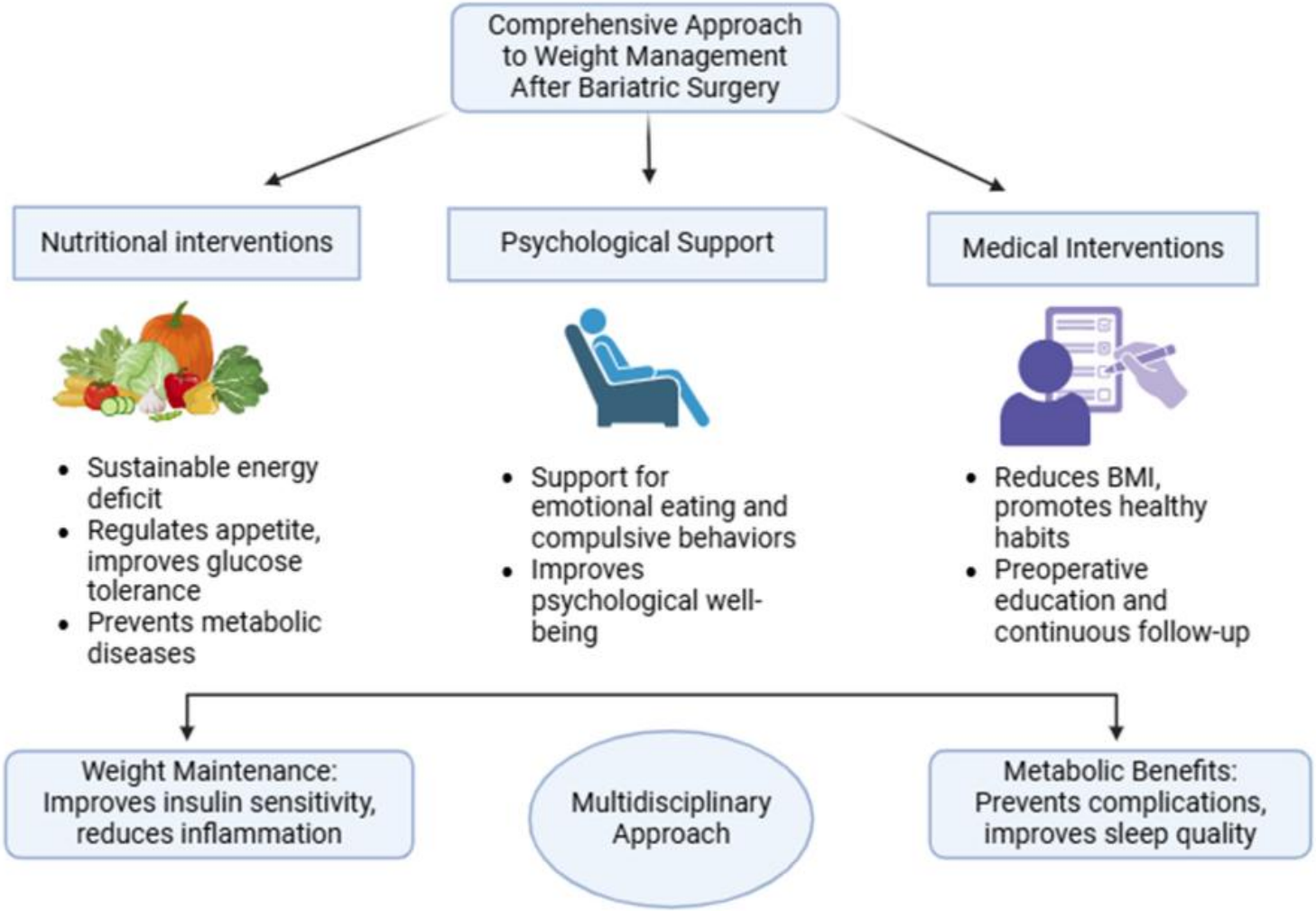

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파라다임 변화

TREATMENT PARADIGM SHIFT

수술 후 약물 유지요법

약물 → 수술 브리지 전략

Surgery + Drug Synergy

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Conclusions

- Obesity is a chronic relapsing disease
- Surgery remains the most effective metabolic therapy
- GLP-1 era is changing bariatric practice
- Postoperative medication is becoming standard care
- Lifelong multidisciplinary management is essential

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Thank You Very Much!!

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