SIMDO

SOCIETÀ
ITALIANA
METABOLISMO
DIABETE
OBESITÀ

XVI CONGRESSO NAZIONALE

29-31marzo 2017

NH Vittorio Veneto

Roma

Presidente del Congresso: ***Vincenzo Provenzano***

SIMDO
SOCIETÀ ITALIANA METABOLISMO DIABETE OBESITÀ

XVI CONGRESSO NAZIONALE

L'approccio bariatrico al cardiodiabete: quale tecnica e per quale paziente

Giovanni Casella

Dipartimento di Scienze Chirurgiche
'Sapienza' Università di Roma

Delegato Regionale
Lazio

S.I.C.OB.

Un po' di storia...

E' davvero necessaria la chirurgia?

Quale intervento?

Per Chi?

Come è cominciato?

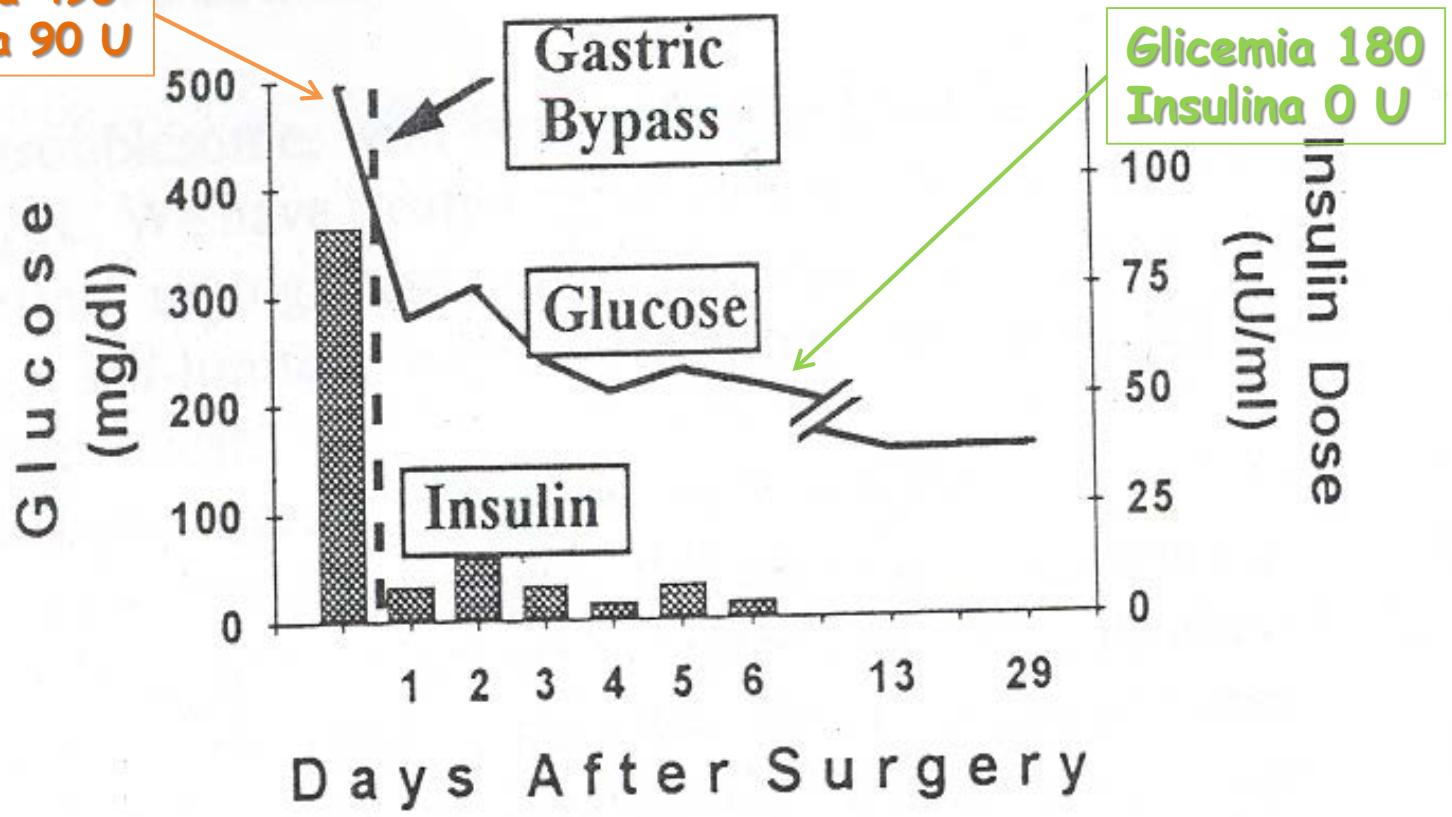
1995 Walter Pories

PAZIENTE n. 1

Vol. 222 • No. 3

Glicemia 495
Insulina 90 U

Glicemia 180
Insulina 0 U



C'era una volta...

1995

ANNALS OF SURGERY

Who Would Have Thought It?

An Operation Proves to Be the Most Effective Therapy for Adult-Onset Diabetes Mellitus

Walter J. Pories, M.D., Melvin S. Swanson, Ph.D., Kenneth G. MacDonald, M.D., Stuart B. Long, B.S., Patricia G. Morris, B.S.N., Brenda M. Brown, M.R.A., Hisham A. Barakat, Ph.D., Richard A. deRamon, M.D., Gay Israel, Ed.D., Jeanette M. Dolezal, Ph.D., and Lynis Dohm, Ph.D.

Studio retrospettivo (BPG n=608)

DMT2	*146 pts*
IGT	*152 pts*
FOLLOW-UP	*14 anni*

ANNALS OF SURGERY
Vol. 222, No. 3, 339–352

Who Would Have Thought It?

An Operation Proves to Be the Most Effective Therapy for Adult-Onset Diabetes Mellitus

Walter J. Pories, M.D., Melvin S. Swanson, Ph.D., Kenneth G. MacDonald, M.D., Stuart B. Long, B.S., Patricia G. Morris, B.S.N., Brenda M. Brown, M.R.A., Hisham A. Barakat, Ph.D., Richard A. deRamon, M.D., Gay Israel, Ed.D., Jeanette M. Dolezal, Ph.D., and Lynis Dohm, Ph.D.

1995

RISOLUZIONE:

DIABETE

IGT **98.7%**

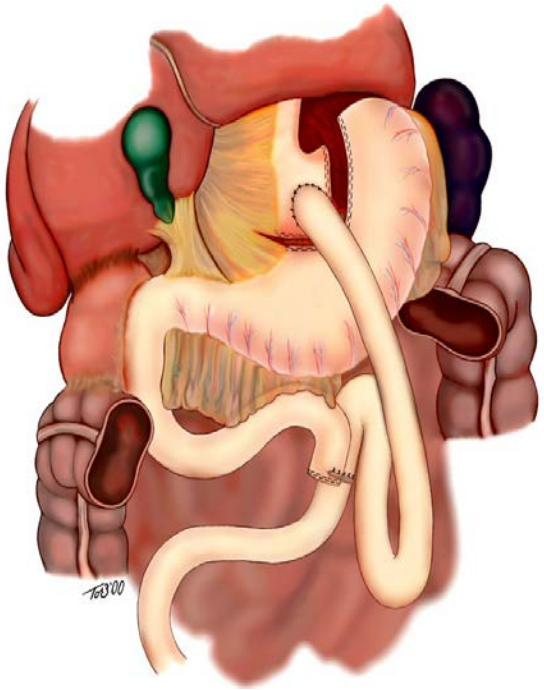
TIMING:

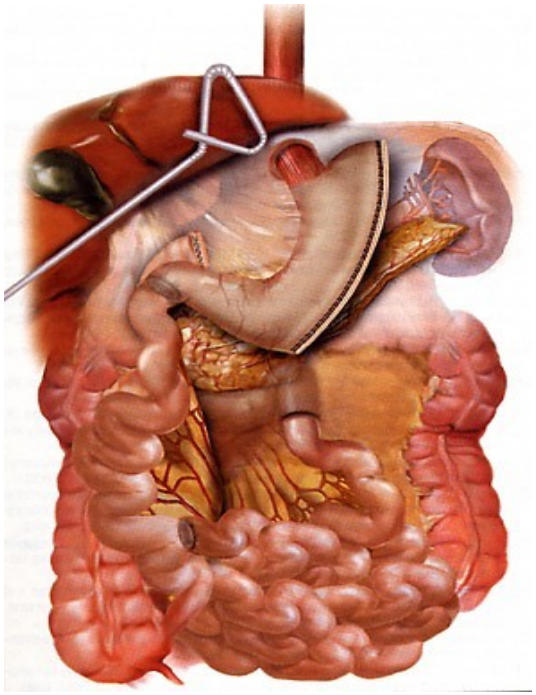
Miglioram **6 giorni**

Guarigion **3 mesi**

Prima di un significativo calo di peso!!!

Risoluzione Diabete:





Rapida
non
proporzionale a perdita di peso:

ORMONALE ?

Nasce la Chirurgia Metabolica

A New Paradigm for Type 2 Diabetes Mellitus

Could It Be a Disease of the Foregut?

Pories 1998, *Annals of Surgery*

GIP

GLP-1

IGF1

LEPTIN

?

World J. Surg. 25, 527–531, 2001
DOI: 10.1007/s002680020348

WORLD
Journal of
SURGERY

Pories 2001

Etiology of Type II Diabetes Mellitus: Role of the Foregut

Walter J. Pories, M.D., Robert J. Albrecht, M.D.

Department of Surgery, East Carolina University School of Medicine, Greenville, North Carolina 27858, USA

Published Online: April 18, 2001

Surgery as an Effective Early Intervention for Diabesity

Why the reluctance?

2005

John B. Dixon, mbbs, phd[1]
Walter J. Pories, md[2]
Paul E. O'Brien, md[1]
Philip R. S
Paul Zimmet

Diabetes Care

Diabete Tipo II

Malattia chirurgica ???

All'inizio chirurgia

SICOb

Società Italiana di Chirurgia dell'Obesità

e

delle MALATTIE METABOLICHE

E’ davvero necessaria la chirurgia?

The NEW ENGLAND JOURNAL of MEDICINE

Bariatric Surgery versus Conventional Medical Therapy for Type 2 Diabetes

Geltrude Mingrone, M.D., Simona Panunzi, Ph.D., Andrea De Gaetano, M.D., Ph.D., Caterina Guidone, M.D., Amerigo Iaconelli, M.D., Laura Leccesi, M.D., Giuseppe Nanni, M.D., Alfons Pomp, M.D., Marco Castagneto, M.D., Giovanni Ghirlanda, M.D., and Francesco Rubino, M.D.

2012

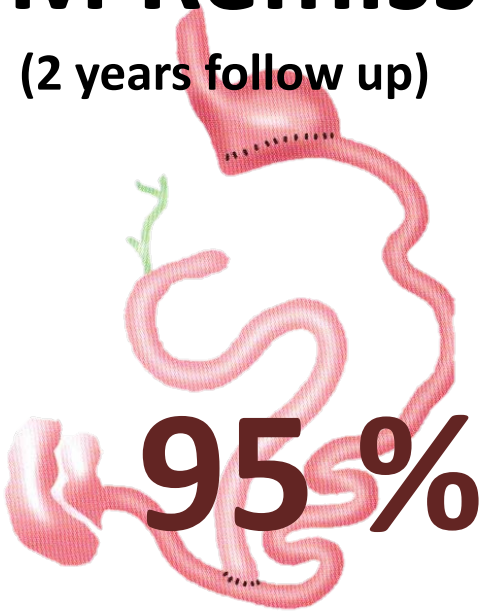
60 randomized

20 medical therapy	20 biliopancreatic diversion	20 gastric by-pass

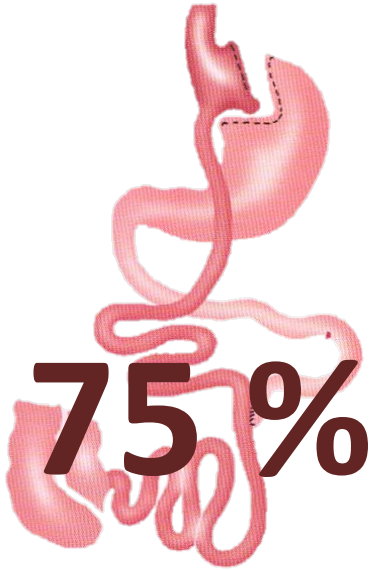
T2 DM Remission

(2 years follow up)

0 %

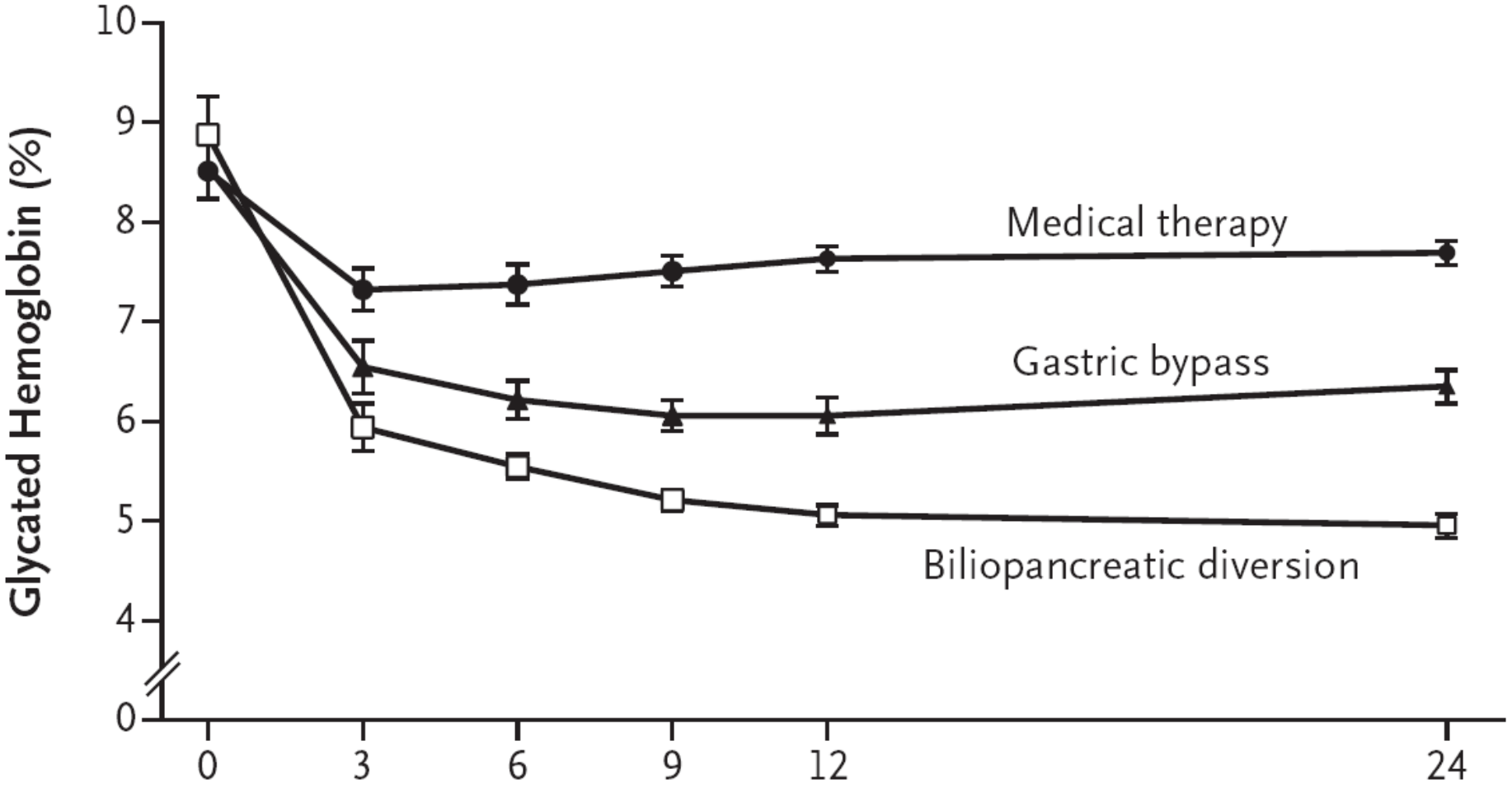


95 %



75 %

RESULTS



Diversione Biliopancreatica: tx più efficace

P<0.001

ARCHIVES OF SURGERY

Obesity, Type 2 Diabetes Mellitus, and Other Comorbidities

2012

A Prospective Cohort Study of Laparoscopic Sleeve Gastrectomy vs Medical Treatment

Frida Leonetti, MD, PhD; Danila Capoccia, MD; Federica Coccia, MD; Giovanni Casella, MD; Giovanni Baglio, MD, MSc; Francesca Paradiso, MD; Francesca Abbatini, MD; Angelo Iossa, MD; Emanuele Soricelli, MD; Nicola Basso, MD

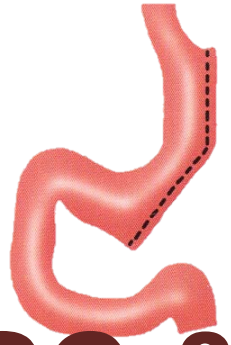
30
medical therapy

30
Sleeve gastrectomy

Remission T2 DM

(1.5 years follow up)

0 %



89 %

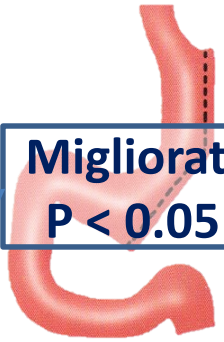
VALORI

Pre vs post:

HDL,OSAS,

Antihypertensive drugs

Hypolipemic drugs



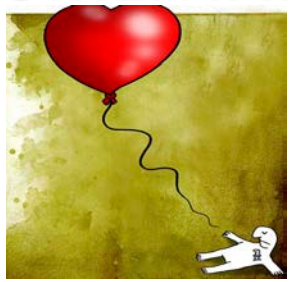
Migliorati

P < 0.05

DIMINUITO

Cardiac risk score

AUMENTATO



Invariati

Sleeve gastrectomy : al cuore si comanda !

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Bariatric Surgery versus Intensive Medical Therapy for Diabetes — 5-Year Outcomes

Philip R. Schauer, M.D., Deepak L. Bhatt, M.D., M.P.H., John P. Kirwan, Ph.D., Kathy Wolski, M.P.H., Ali Aminian, M.D., Stacy A. Brethauer, M.D., Sankar D. Navaneethan, M.D., M.P.H., Rishi P. Singh, M.D., Claire E. Pothier, M.P.H., Steven E. Nissen, M.D., and Sangeeta R. Kashyap, M.D., for the STAMPEDE Investigators*

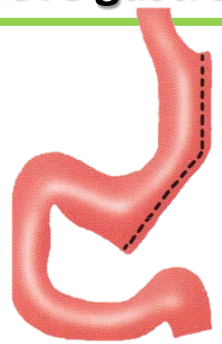
2017

- BMI 37±3.5
- 44% Insulin Treat.
- Mean age 49±8
- Hb1Ac 9.2±1.5%

150 randomized

134 → FU 5 y

38 medical therapy	49 gastric by-pass	47 Sleeve gastrectomy

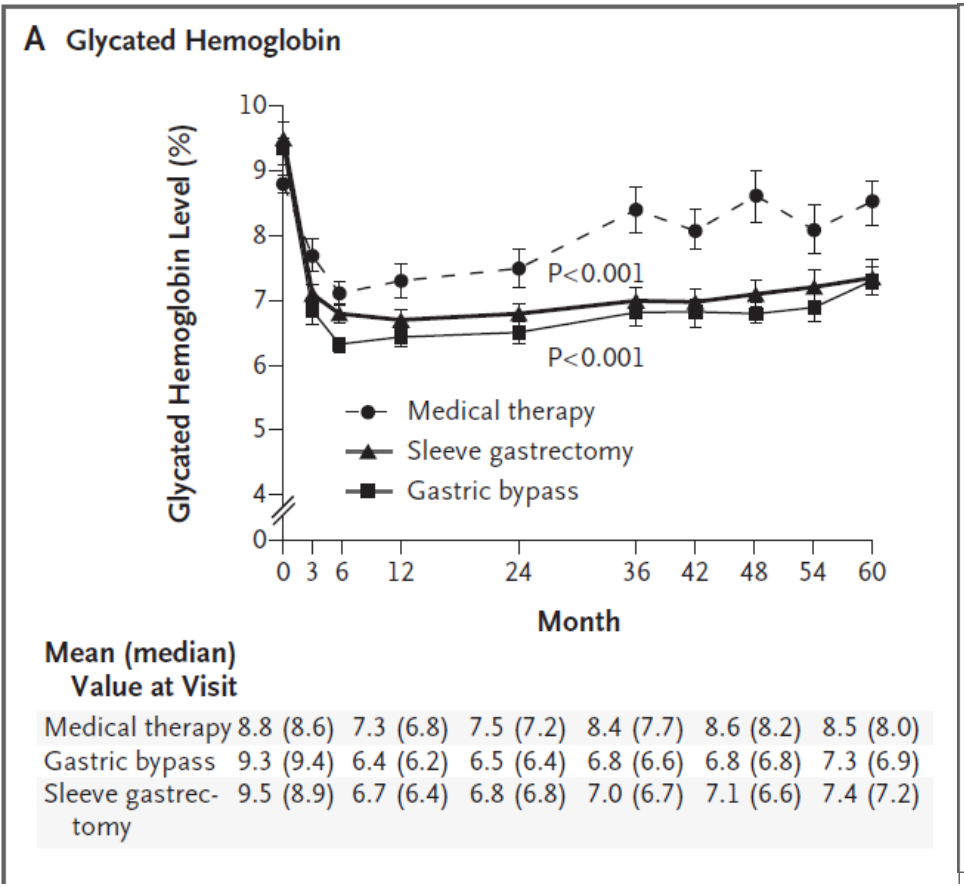


Primary End Point

Hb1Ac <6%

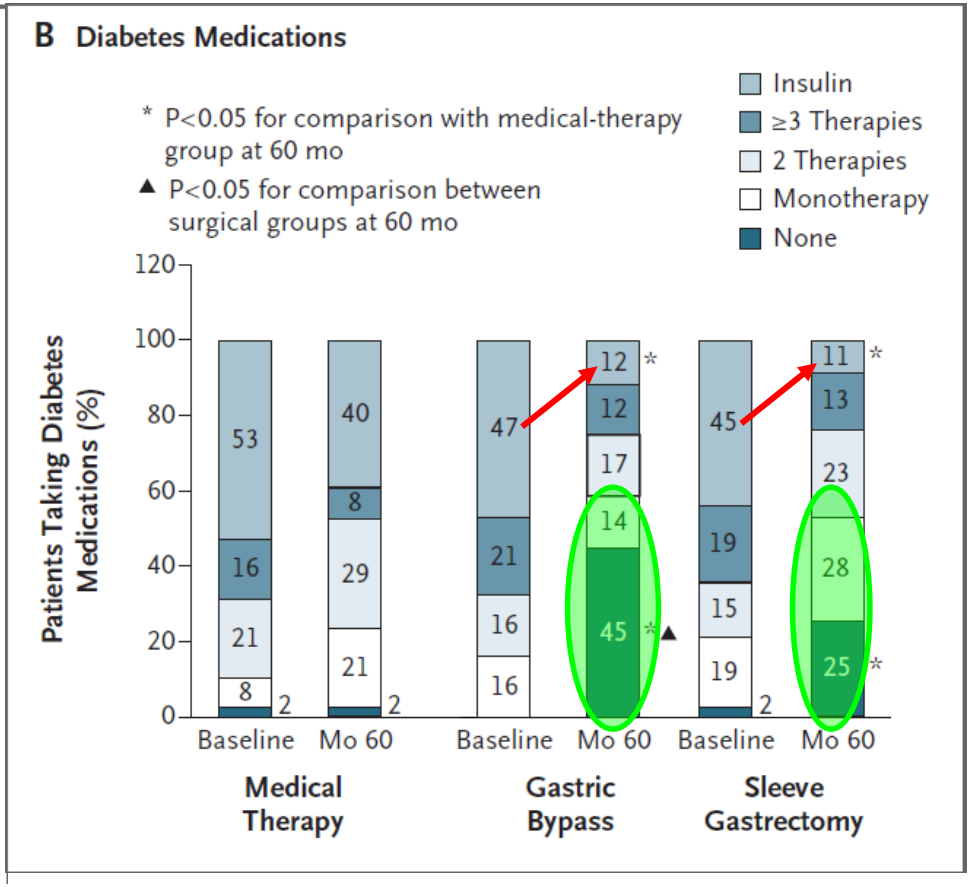
5% **29%** **27%**

RESULTS



Mean (median) Value at Visit

Medical therapy	8.8 (8.6)	7.3 (6.8)	7.5 (7.2)	8.4 (7.7)	8.6 (8.2)	8.5 (8.0)
Gastric bypass	9.3 (9.4)	6.4 (6.2)	6.5 (6.4)	6.8 (6.6)	6.8 (6.8)	7.3 (6.9)
Sleeve gastrectomy	9.5 (8.9)	6.7 (6.4)	6.8 (6.8)	7.0 (6.7)	7.1 (6.6)	7.4 (7.2)



Gastric bypass e Sleeve gastrectomy : ugualmente più efficaci

vs

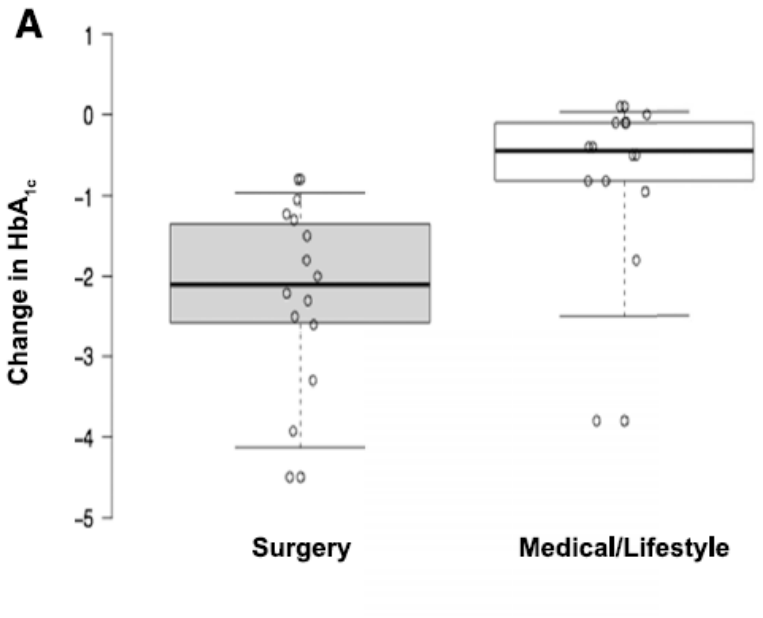
terapia medica

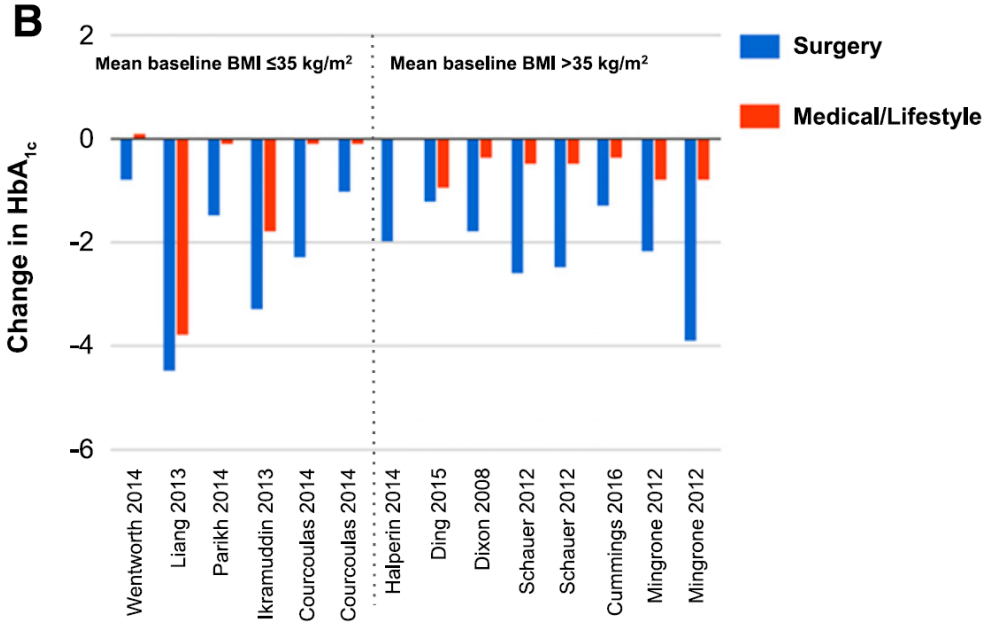
Metabolic Surgery in the Treatment Algorithm for Type 2 Diabetes: A Joint Statement by International Diabetes Organizations

Diabetes Care 2016;39:861–877 | DOI: 10.2337/dc16-0236

11 RCTs published

Surgery Vs Intensive Medical Treat





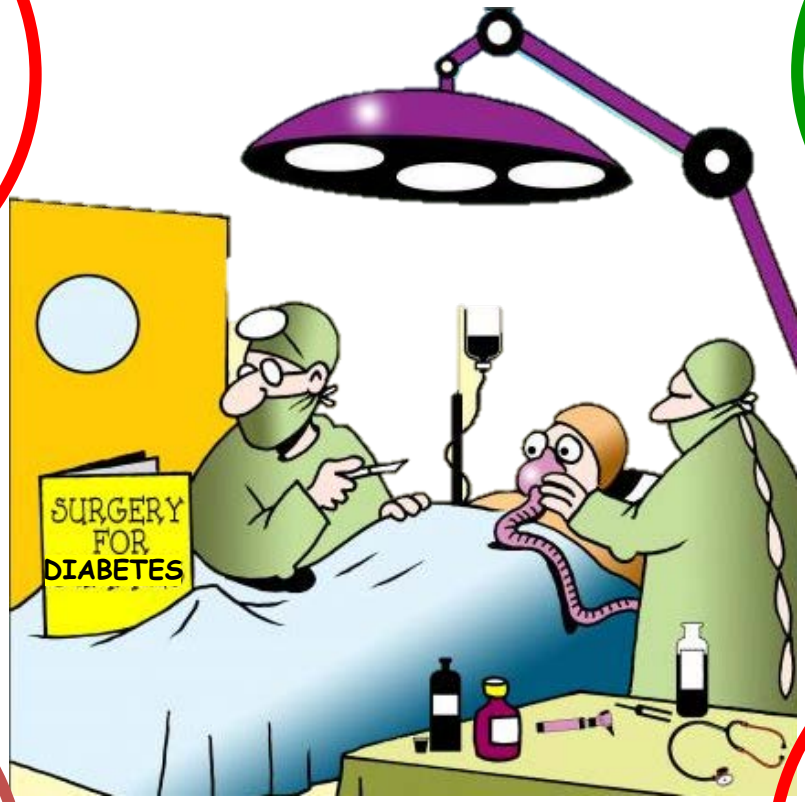
Quale intervento?

DIABESITA’

e Chirurgia

LAP Band
48 %

GBP
83.7%



SLEEVE
80%

BPD
98.9%

GUARIGIONE

LAP Band

48 % guarigione

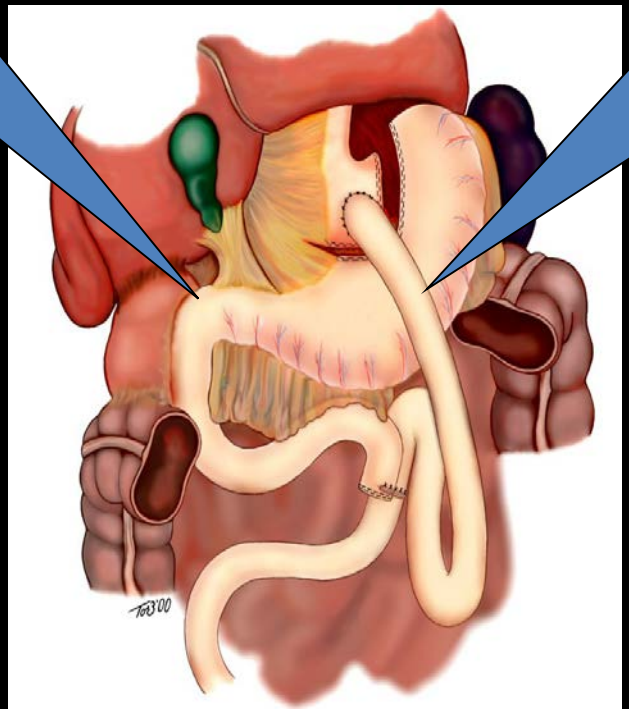
PESO dipendente

Bassa morbidità
Bassa mortalità
Facile reversibilità

Meccanismo Risoluzione Diabete:

Esclusione Duodeno-digiunale ?

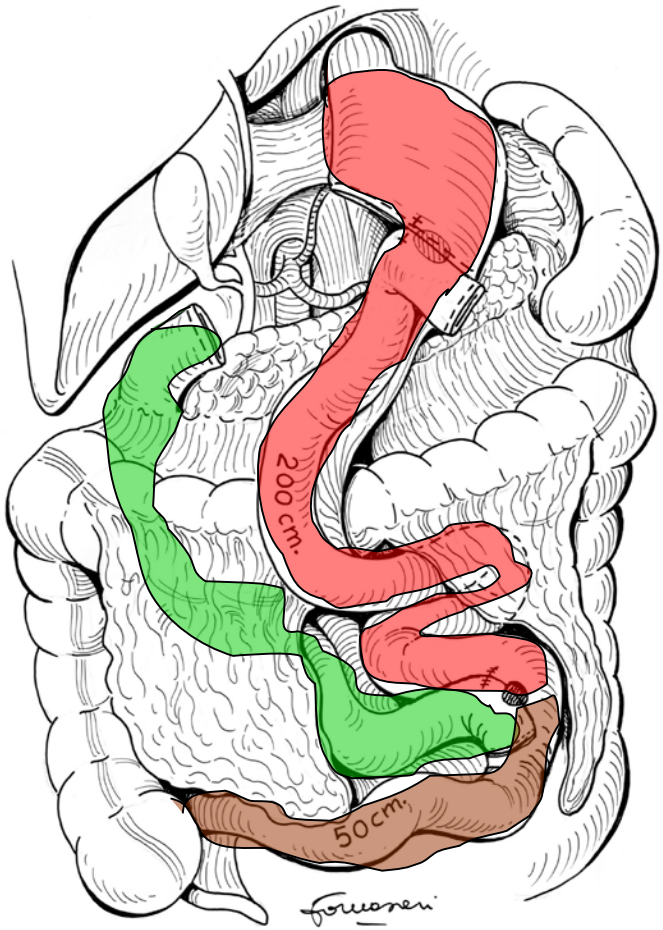
Precoce Stimolazione ileale?



« Foregut hypothesis »

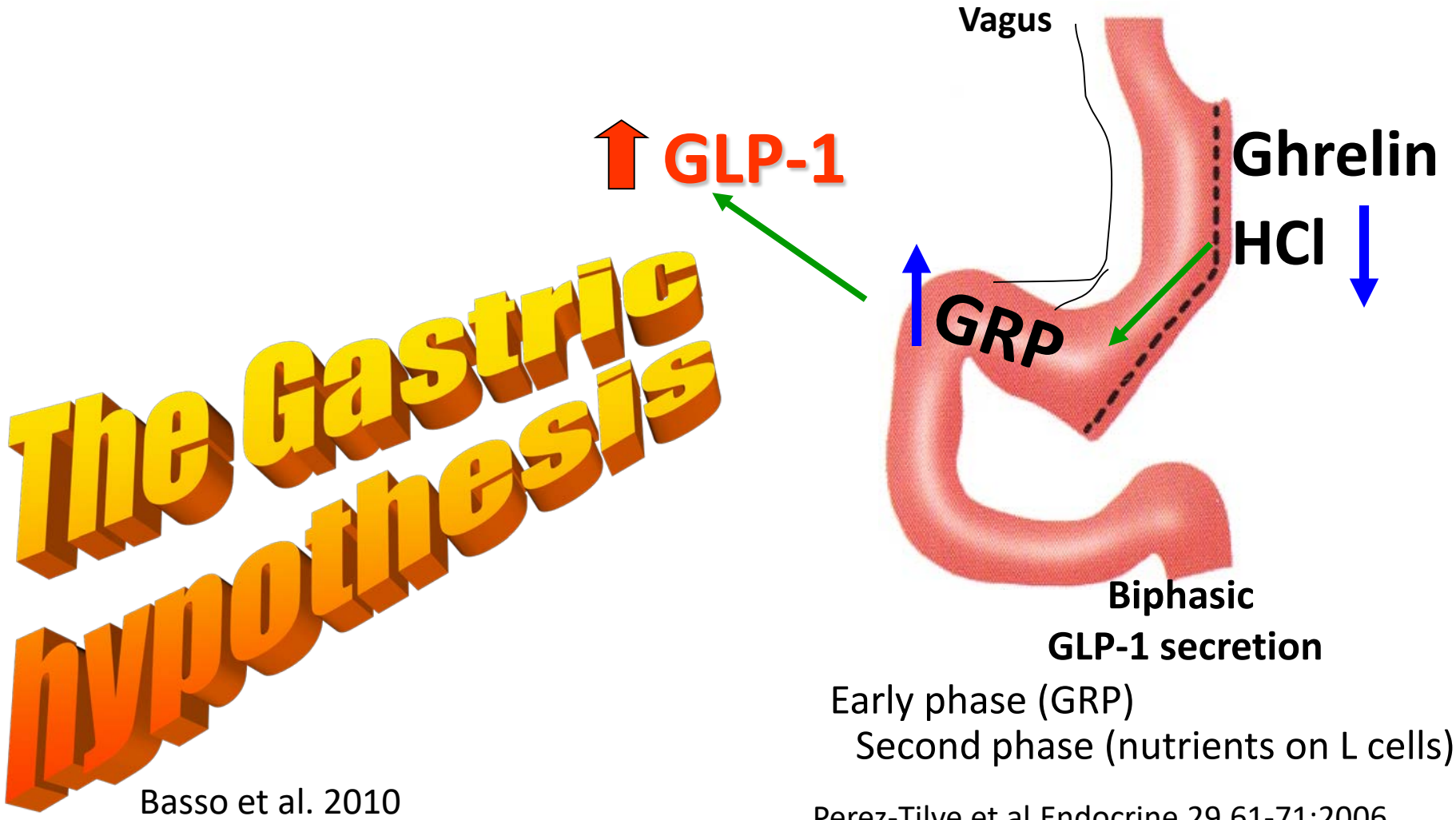
« Hindgut hypothesis »

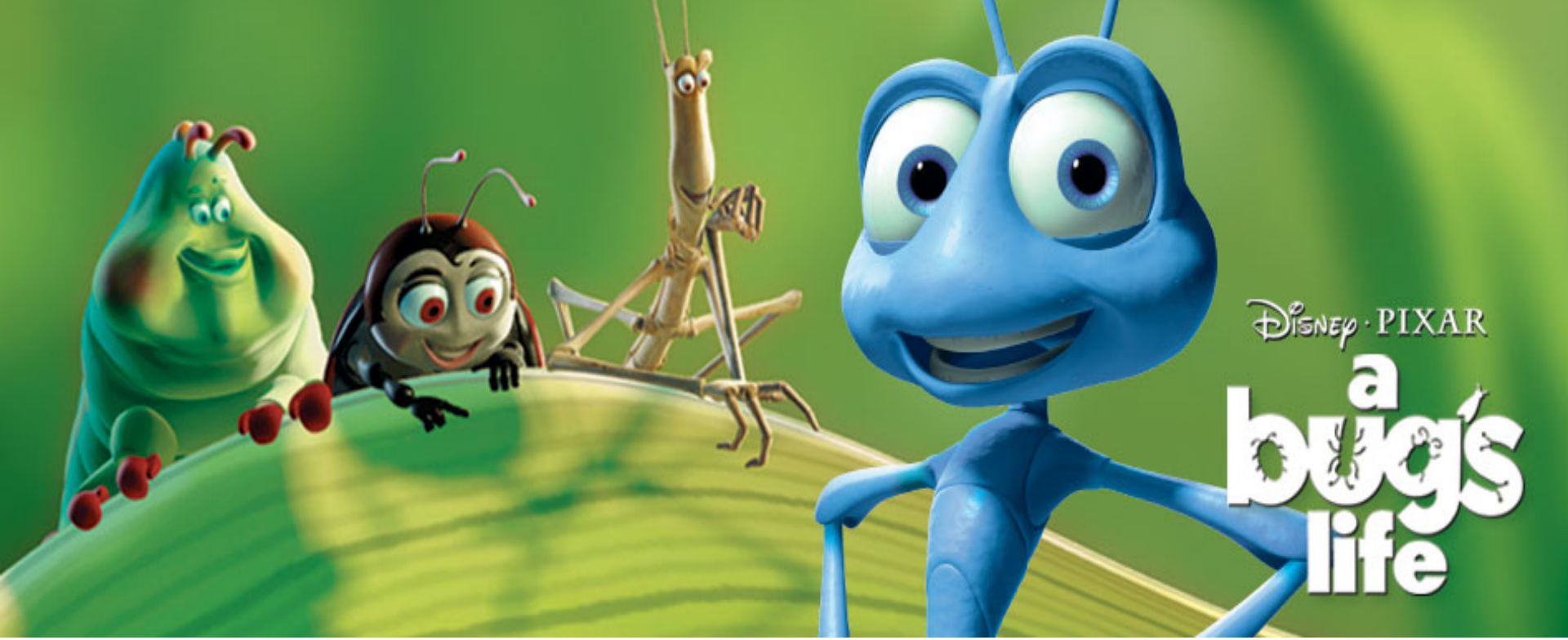
Bilio-Pancreatic Diversion



- Duodenal Bypass
- Limited Fat Absorption
- Bile Acids (enterohepatic cycle): farnesoid X receptor (FXR)

Sleeve Gastrectomy & Diabetes

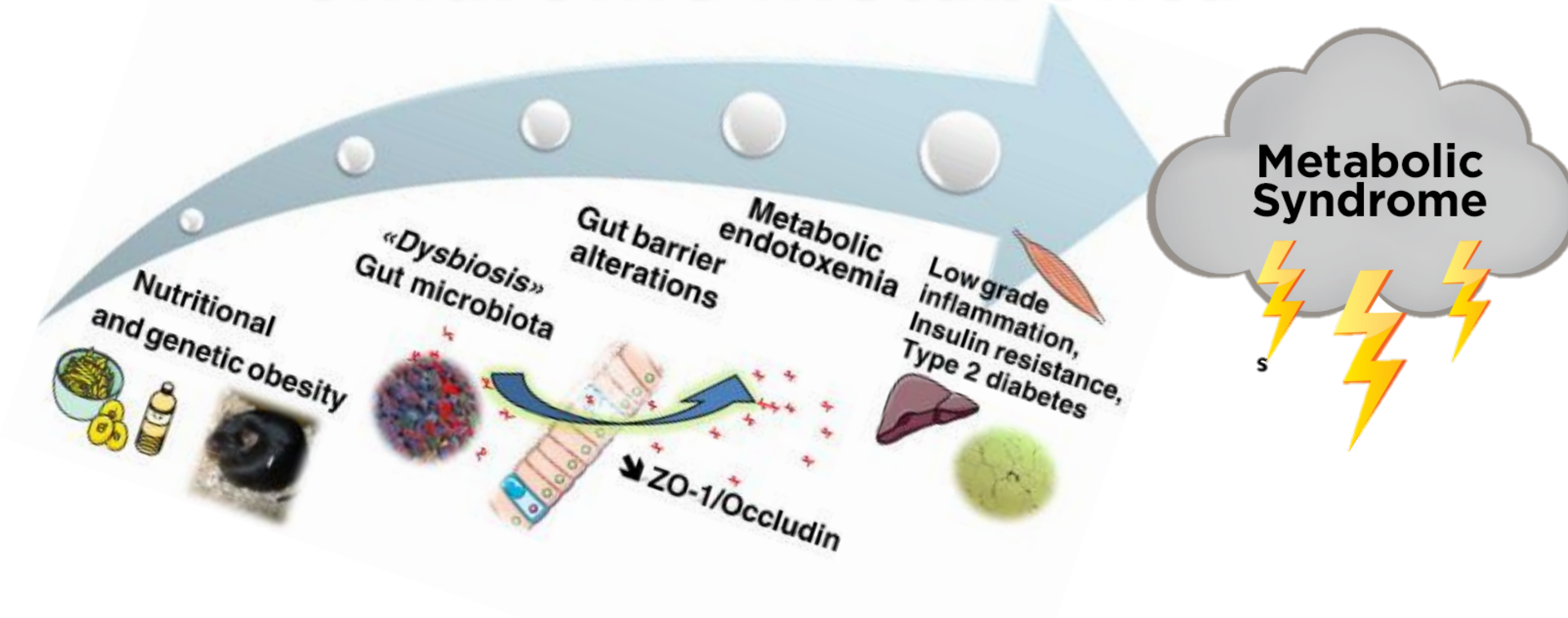




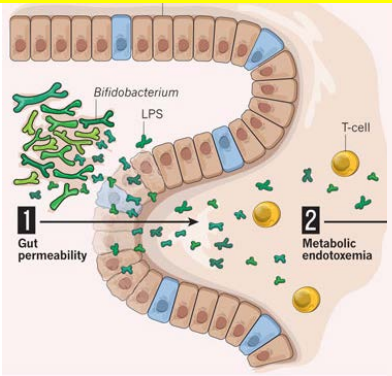
THE MICROBIOTA AND BARIATRIC SURGERY: IT'S A BUG'S LIFE

GASTROENTEROLOGY 2012;142:399–408

Sindrome metabolica



Microbiota ➡ Permeabilità intestinale ➡ endotoxemia



MICROBIAL INFLUENCE

Research by Patrice Cani, at the Université Catholique de Louvain in Brussels, has shown that, in mice, a decrease in the population of bifidobacteria species in the gut causes the tight junctions between the cells of the gut lining to loosen. The loose junctions increase the gut's permeability and allow lipopolysaccharide (LPS) from these microbes to leak through the gut wall. The resulting metabolic endotoxaemia causes a low-grade inflammation and can induce a number of metabolic disorders – including the insulin resistance that characterizes T2D.

Changes by

Bariatric Surgery

Gut Microbiota

✓	WEIGHT LOSS	✓
✓	T2DM IMPROVEMENT	✓
✓	↑GLP-1, GIP, PYY	✓
✓	↓ GHRELIN, LEPTIN	✓
✓	↑ ENERGY EXPENDITURE	✓
✓	↓INFLAMMATION	✓

Per Chi?

Metabolic Surgery in the Treatment Algorithm for Type 2 Diabetes: A Joint Statement by International Diabetes Organizations

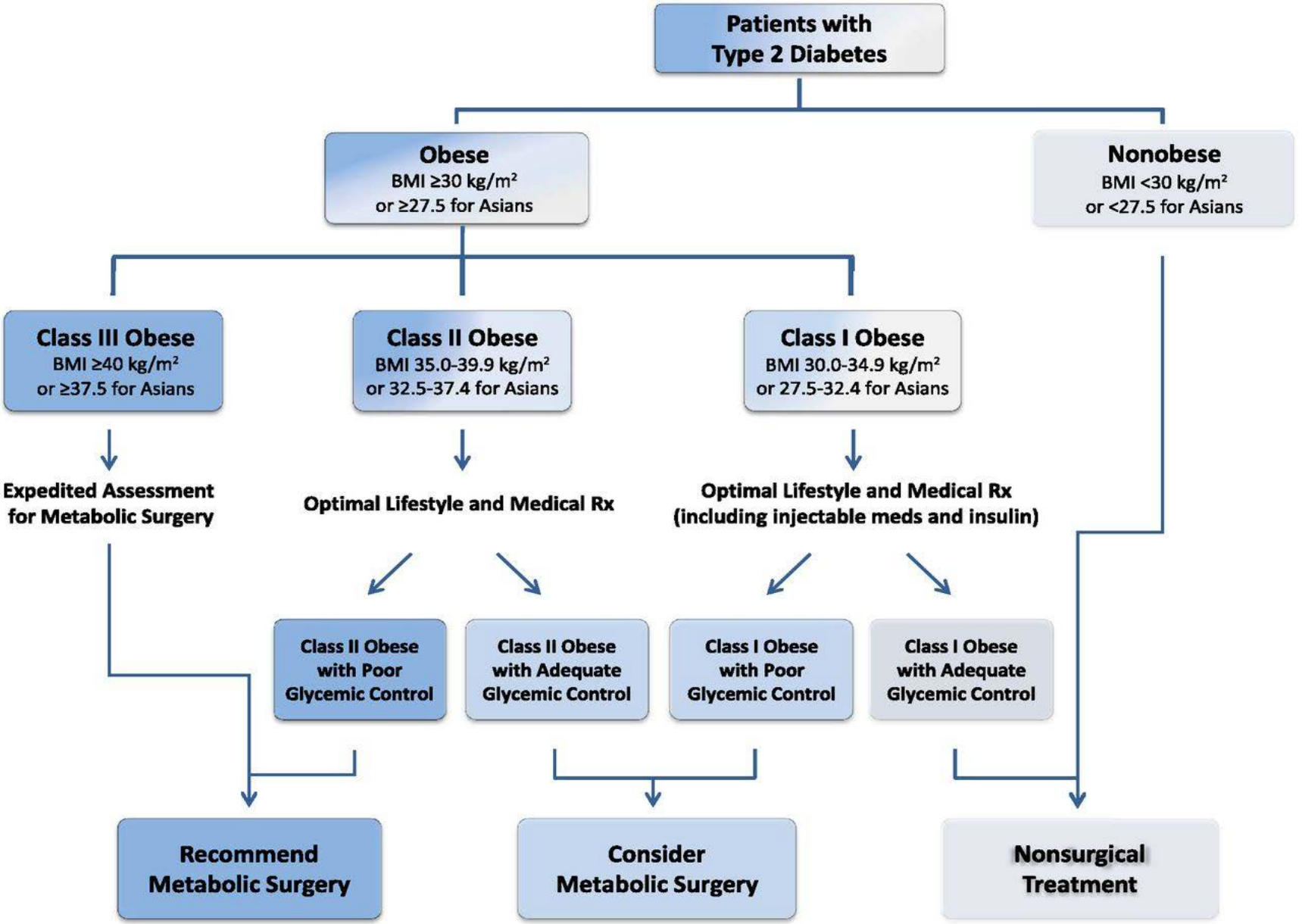
Diabetes Care 2016;39:861–877 | DOI: 10.2337/dc16-0236

Endorsed 45 scientific societies

American Diabetes Association®

S.I.C.OB.

SID Società Italiana di Diabetologia


Patients with Type 2 Diabetes
Obese
BMI ≥30 kg/m²
or ≥27.5 for Asians
Nonobese
BMI <30 kg/m²
or <27.5 for Asians
Class III Obese
BMI ≥40 kg/m²
or ≥37.5 for Asians
Class II Obese
BMI 35.0-39.9 kg/m²
or 32.5-37.4 for Asians
Class I Obese
BMI 30.0-34.9 kg/m²
or 27.5-32.4 for Asians
Expedited Assessment for Metabolic Surgery
Optimal Lifestyle and Medical Rx
Optimal Lifestyle and Medical Rx (including injectable meds and insulin)
Class II Obese with Poor Glycemic Control
Class II Obese with Adequate Glycemic Control
Class I Obese with Poor Glycemic Control
Class I Obese with Adequate Glycemic Control
Recommend Metabolic Surgery
Consider Metabolic Surgery
Nonsurgical Treatment

Fattori prognostici negativi

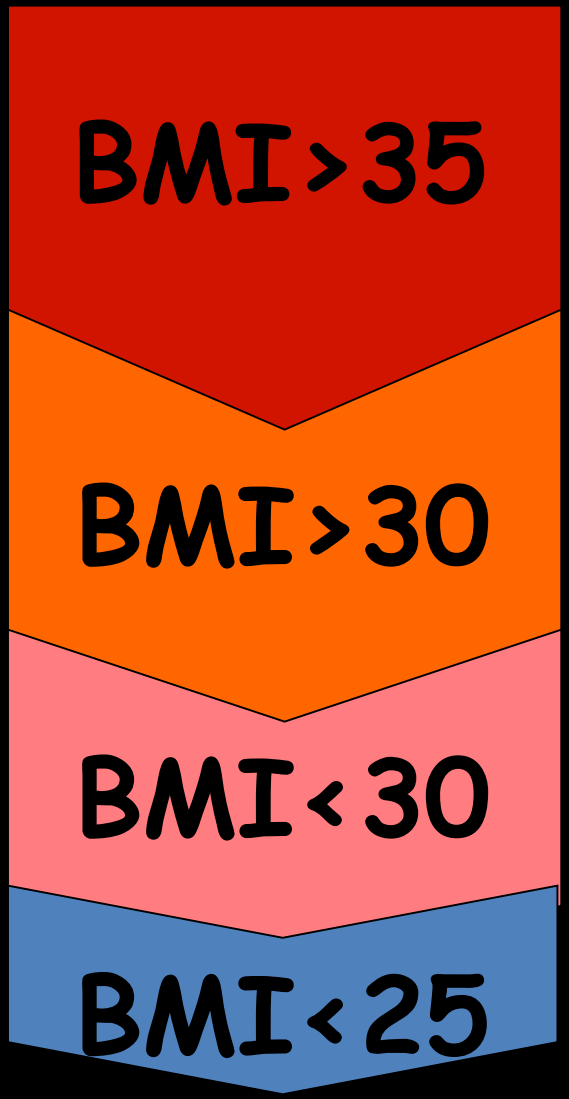
Durata >10 anni

-TERAPIA INSULINICA

-RIDOTTA FUNZIONE PANCREATICA RESIDUA

-DURATA MALATTIA >10 ANNI

...ed ora ?



Obesità patologica

Obesità+ diabete

Sovrappeso+ diabete

Normopeso+ Diabete

Fin dove la chirurgia

?

Per concludere

E’ davvero necessaria la chirurgia?

GLI RTC CI DICONO PROBABILMENTE SI

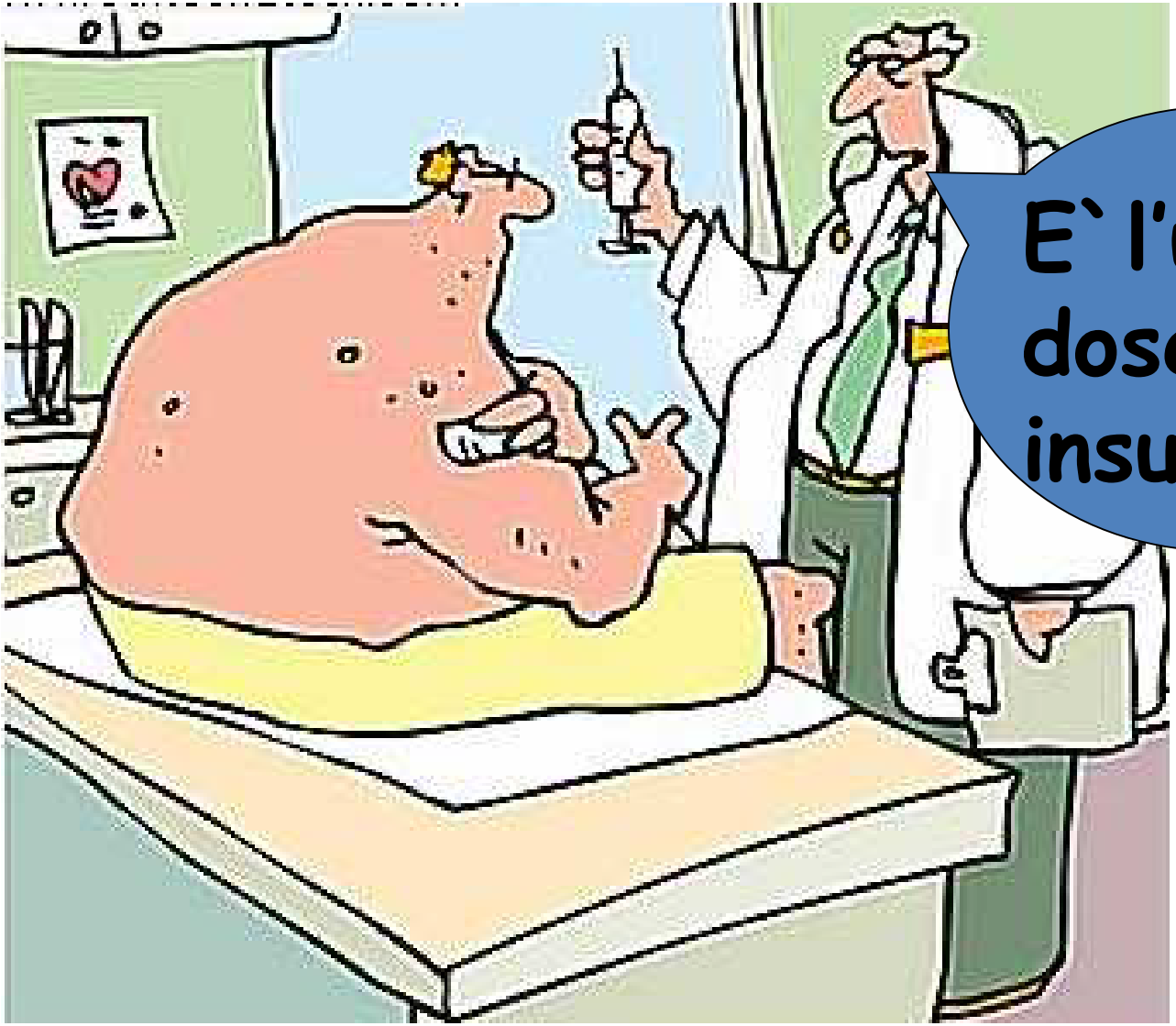
Quale intervento?

A CIASCUNO IL SUO

Per Chi?

ANCHE IN OBESI DI I TIPO

IL PRIMA POSSIBILE

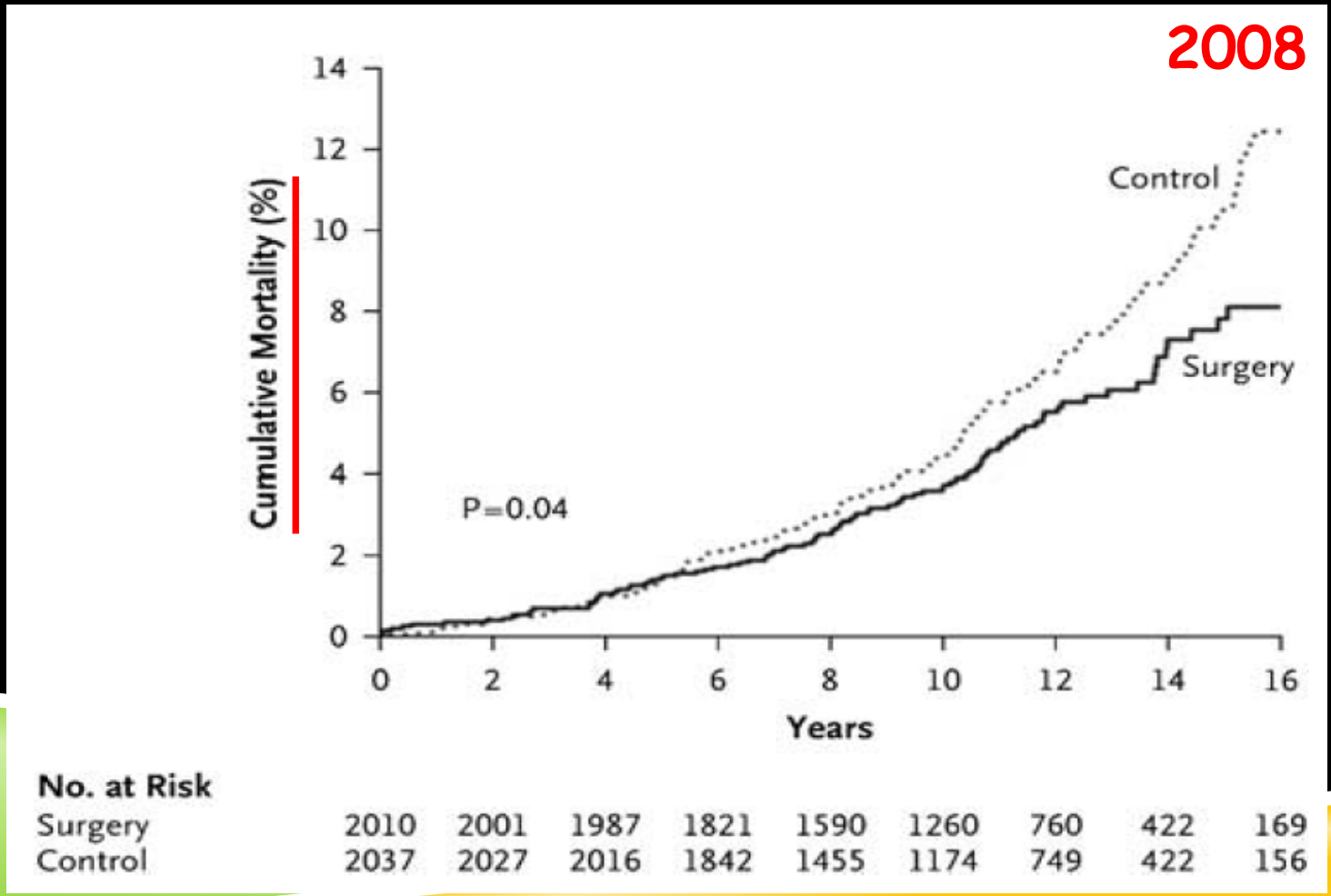

E` l'ultima dose di insulina !


Grazie
per
l'attenz

Bariatric surgery and reduction in morbidity and mortality: experiences from the SOS study

International Journal of Obesity

2008



L Sjöström

Long-Term Mortality after Gastric Bypass Surgery

Ted D. Adams, Ph.D., M.P.H., Richard E. Gress, M.A., Sherman C. Smith, M.D., R. Chad Halverson, M.D., Steven C. Simper, M.D., Wayne D. Rosamond, Ph.D., Michael J. LaMonte, Ph.D., M.P.H., Antoinette M. Stroup, Ph.D., and Steven C. Hunt, Ph.D.

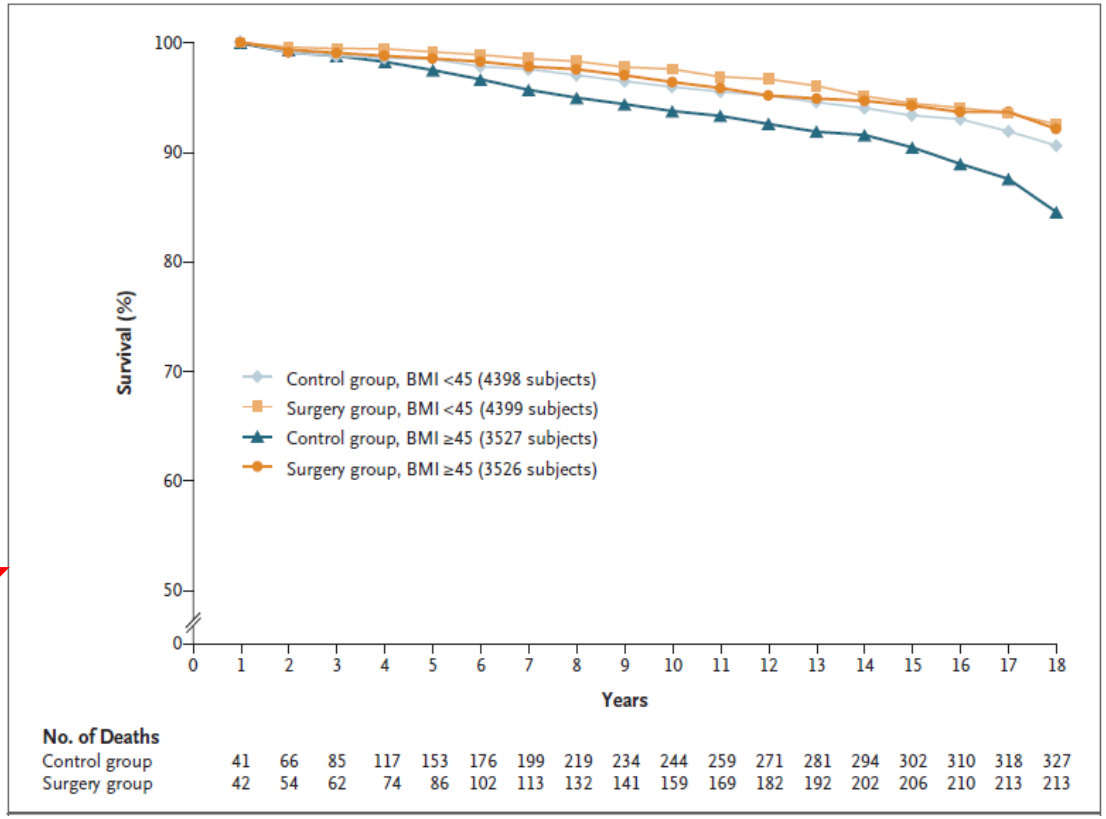
7925 pts Surgery (GBP)
Vs
7925 pts No surgery

Mean FU: 7.1 y

MORTI PER MALATTIA CORONARICA **- 52%**

MORTI PER DIABETE **- 96%**

MORTI PER CANCRO **- 60%**

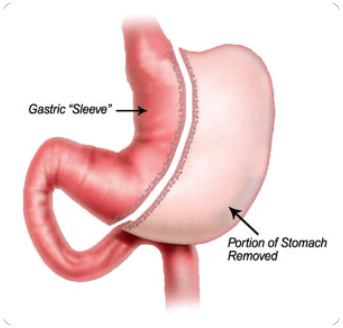


The NEW ENGLAND JOURNAL of MEDICINE

Cardiac remodeling in obese patients after sleeve gastrectomy

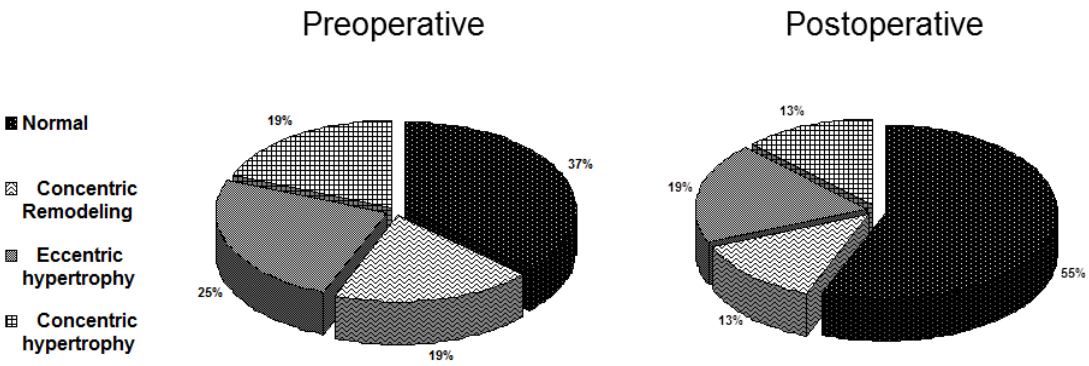
SAPIENZA UNIVERSITÀ DI ROMA

16 pts



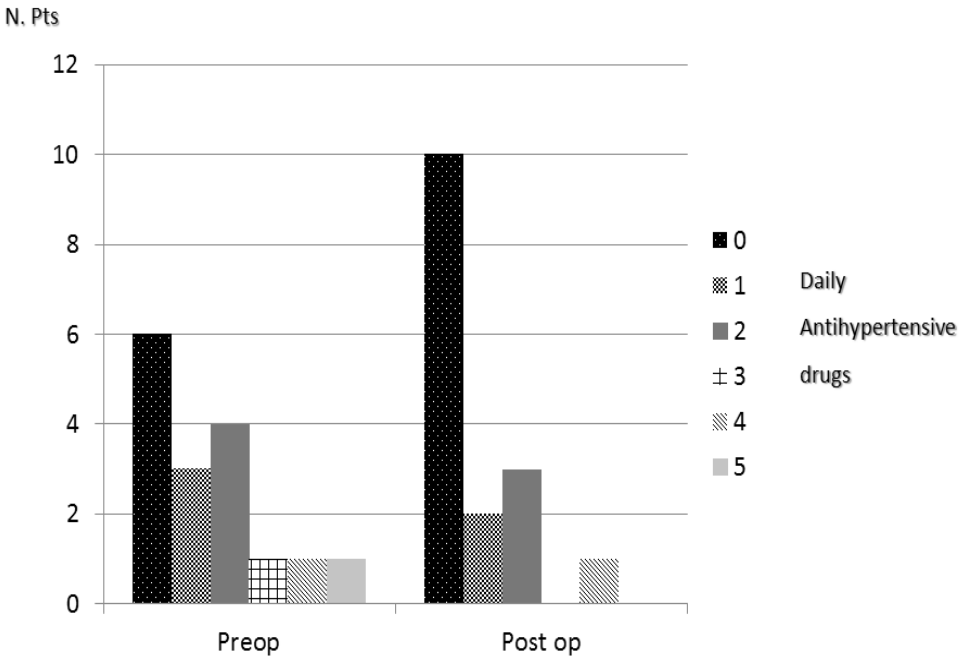
16 months mean FU

Left Ventricular Concentricity



LV Concentricity		
Normal	6 (37%)	9 (56%)
Concentric Remodeling	3 (19%)	2 (12.5%)
Eccentric hypertrophy	4 (25%)	3 (19%)
Concentric hypertrophy	3 (19%)	2 (12.5%)

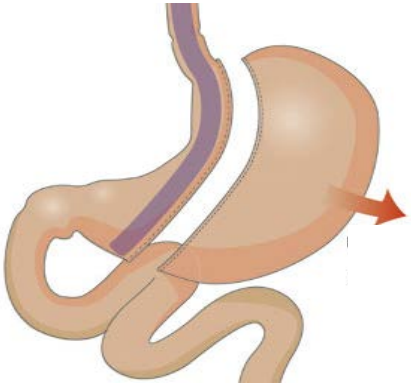
E. Cavarretta, G. Casella et al.



Risk Factors	Preoperative	Postoperative
Total Cholesterol	215.5±53.8 *	205.3±46.6 *
HDL	43.1±10.9 *	51.4±12.8 *
Systolic blood pressure	130.5±15.8 *	120.6±13.6 *
Diabetes mellitus	6 (37)	1 (6.2)
Smoking	8 (50)	7 (44)
Antihypertensive Treatment	10 (62)	6 (37)
Triglycerides (mg/dl)	184.9±109.3	116.1±49.8

10-year CHD risk (%) - Framingham risk score

14.2±9.3 → **8.3±9.5** **p<0.005**



E. Cavarretta, G. Casella et al.

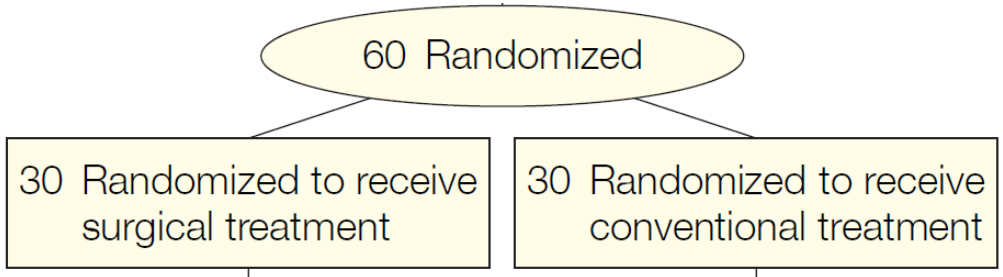

CHIRURGIA METABOLICA
CURA DEL DIABETE
In > 70% dei pazienti
Anche in BMI <35

Adjustable Gastric Banding and Conventional Therapy for Type 2 Diabetes

A Randomized Controlled Trial

JAMA. 2008

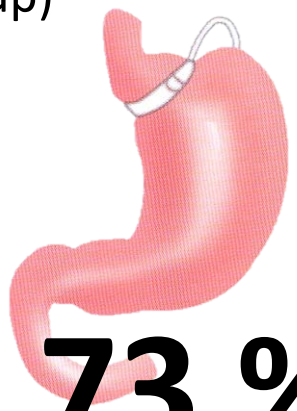
John B. Dixon, MBBS, PhD
Paul E. O'Brien, MD
Julie Playfair, RN
Leon Chapman, MBBS
Linda M. Schachter, MBBS, PhD
Stewart Skinner, MBBS, PhD
Joseph Proietto, MBBS, PhD
Michael Bailey, PhD, MSc(stats)
Margaret Anderson, BHealthMan



Remission T2 DM

(2 years follow up)

13 %



73 %

RESULTS

HbA_{1c}, %	6.00 (0.82)	7.21 (1.39)		
Change	−1.81 (1.24)	−0.38 (1.26)	−1.43 (−2.1 to −0.80)	<.001
Plasma glucose, mg/dL	105.6 (30.3)	139.6 (38.1)		
Change	−51.2 (37.6)	−18.4 (41.2)	−32.8 (−53.1 to −12.3)	.002
Plasma insulin, μIU/mL	9.8 (4.7)	24.1 (13.6)		
Change	−12.4 (8.4)	1.0 (14.8)	−13.4 (−19.6 to −7.3)	<.001
HOMA IR[b]	1.90 (0.73)	3.50 (0.97)		
Change, %	−45.5 (19.0)	−3.3 (35.4)	−42.2 (−57 to −26.8)[c]	<.001
Total cholesterol, mg/dL	205.4 (46.6)	197.8 (59.3)		
Change	3.6 (51.6)	−0.4 (31.4)	4.0 (−18.8 to 26.0)	.72
Triglycerides, mg/dL	118.9 (79.7)	186.7 (127.2)		
Change	−71.7 (92.9)	−2.1 (120.6)	−69.6 (−125.3 to −13.6)	.02
HDL-C, mg/dL	59.7 (13.6)	50.7 (12.1)		
Change	12.6 (9.8)	2.6 (6.1)	10.0 (5.8 to 14.2)	<.001

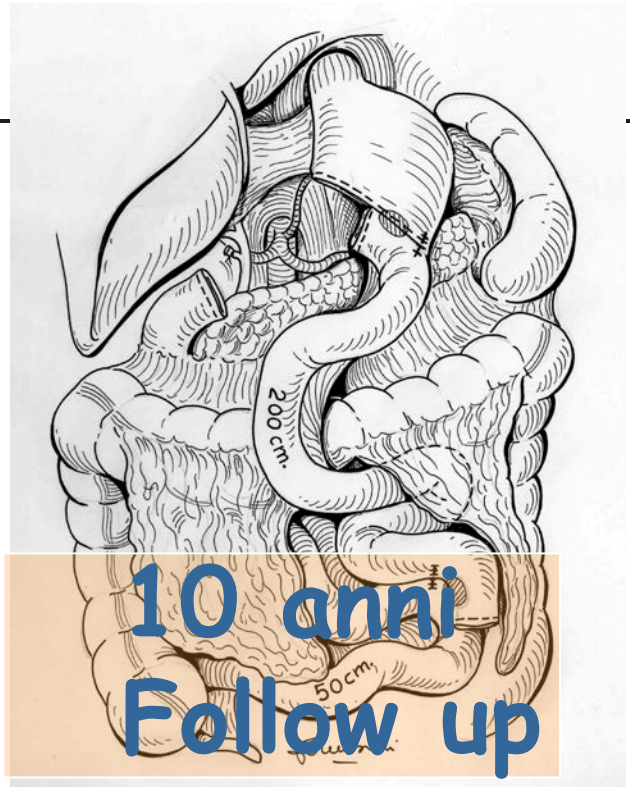
Parametri metabolismo glicidico: normali

Specific Effects of Biliopancreatic Diversion on the Major Components of Metabolic Syndrome

A long-term follow-up study

NICOLA SCOPINARO, MD
GIUSEPPE MARIA MARINARI, MD
GIOVANNI BRUNO CAMERINI, MD

BPD e Diabete 2



10 anni
Follow up

and glucose conc
into a normal rar
food intake and l
weight loss occur

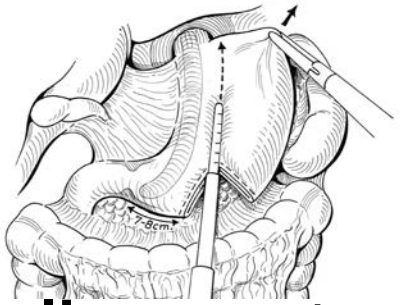
312 BPD
Obesi +
diabete 2

304
guarigione

La sleeve gastrectomy al test del tempo – LA NOSTRA ESPERIENZA

Overall series >650 SG

133 pazienti DMT2



Remissione

111 (83.4%) *

Miglioramento

22 (16.6%)

Recidiva

2 (1.9%)

* **In nessun caso il WR ha comportato la ripresa della terapia ipoglicemizzante**

SAPIENZA UNIVERSITÀ DI ROMA

FU Medio: 61 mesi (range 9-154)

ELSEVIER

Surgery for Obesity and Related Diseases 8 (2012) 20–24

SURGERY FOR OBESITY AND RELATED DISEASES

Original article

Type 2 diabetes in obese patients with body mass index of 30–35 kg/m^2: sleeve gastrectomy versus medical treatment

Francesca Abbatini, M.D.[a], Danila Capoccia, M.D.[b], Giovanni Casella, M.D.[a], Federica Coccia, M.D.[b], Frida Leonetti, M.D.[b], Nicola Basso, M.D.[a,*]

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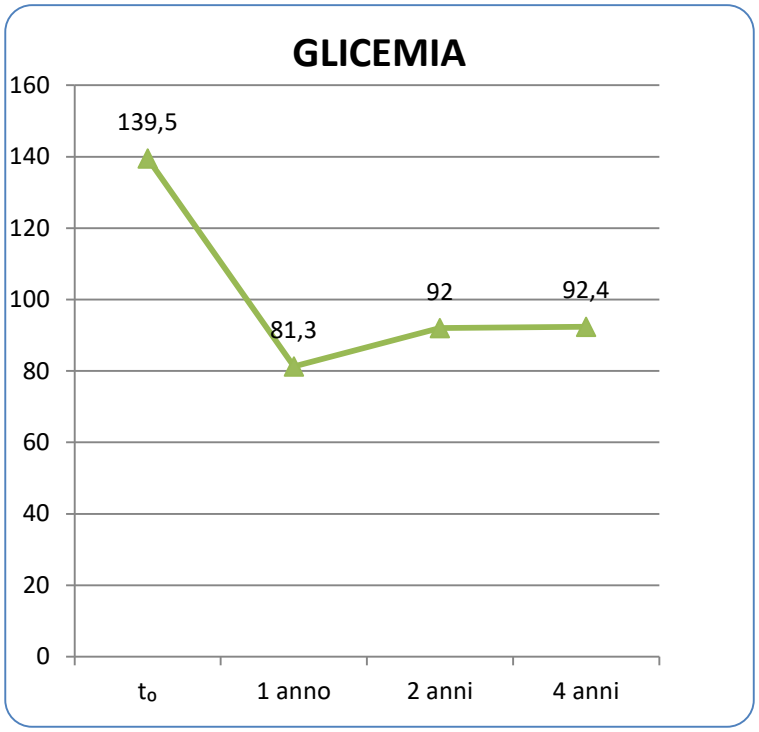
Received March 9, 2011; accepted June 30, 2011

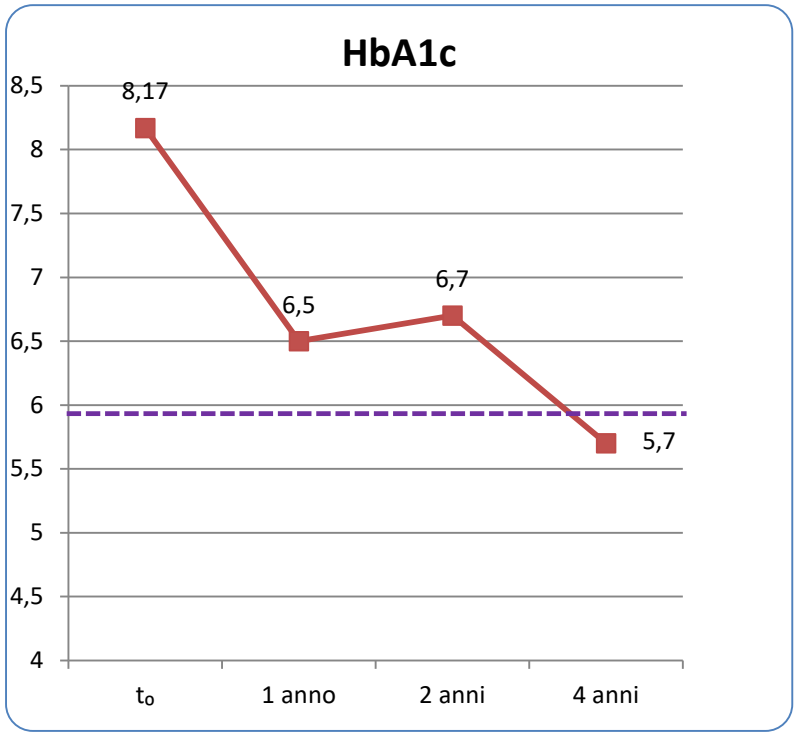
Characteristic	LSG (group A; n = 9)	Medical treatment (group B; n = 9)	*P* value
Age (yr)	45.5 ± 12	55.8 ± 6.4	.003
BMI (kg/m^2)	32.7 ± 3.2	32.9 ± 2.0	NS
Fasting glycemia (mg/dL)	139.5 ± 3.5	148.7 ± 40.1	NS
HbA1c (%)	8.1 ± .07	7.5 ± 1.6	NS
T2DM duration (yr)	7.1 ± 2.1	8.6 ± 7.1	NS
T2DM medication (n)			NS
Oral hypoglycemic agents	8	8	
Insulin	1	1	
C-peptide (ng/mL)	2.9 ± .4	2.9 ± 1.0	NS
Severe OSAS (n)	1	3	
Hypertension (n)	5	8	
Dyslipidemia (n)	1	6	

SLEEVE & BMI 30-35

Risultati: T2DM

Remissione completa in: 7/8 (87,5%)





Pz no responder: - T2DM > 20 anni

- miglioramento controllo glicemico (da 86 a 26 UI/die)