

16th International Congress of EAES



How I do It?

Adjustable Gastric Banding

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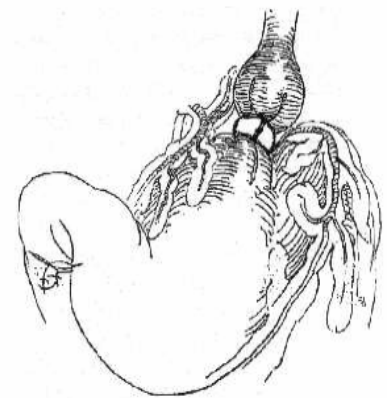
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HISTORICALLY

- GASTRIC BANDING - EARLY 80's
WITH FIXED BANDS

- MOLINA (MARLEX BAND)

- RAO (DACRON SILASTIC BAND)



HISTORICALLY

- ADJUSTABLE GASTRIC BANDS –
MIDDLE 80's
 - ❑ DAG HALLBERG (SWEDEN) 1984
 - ❑ KUZMAK (NY, USA) 1986
 - ❑ FORSELL (SAGB) 1987
-

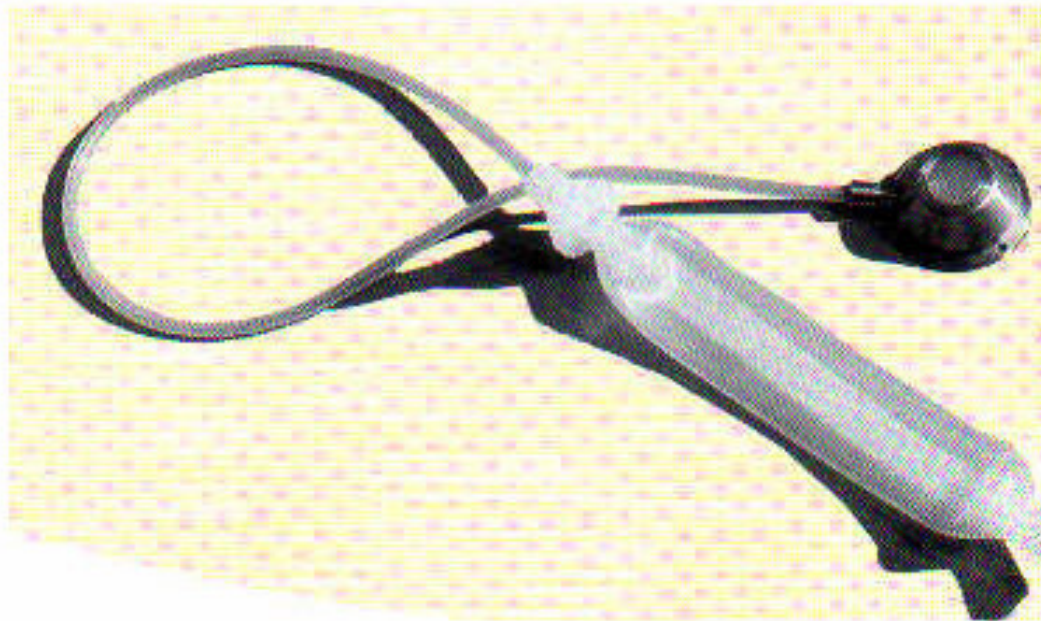
Gastric banding - history

- January of 1986 - **KUZMAK** first concept of adjustable gastric banding (ASGB) – “Lap-Band” first operation took place in June of 1986(USA)



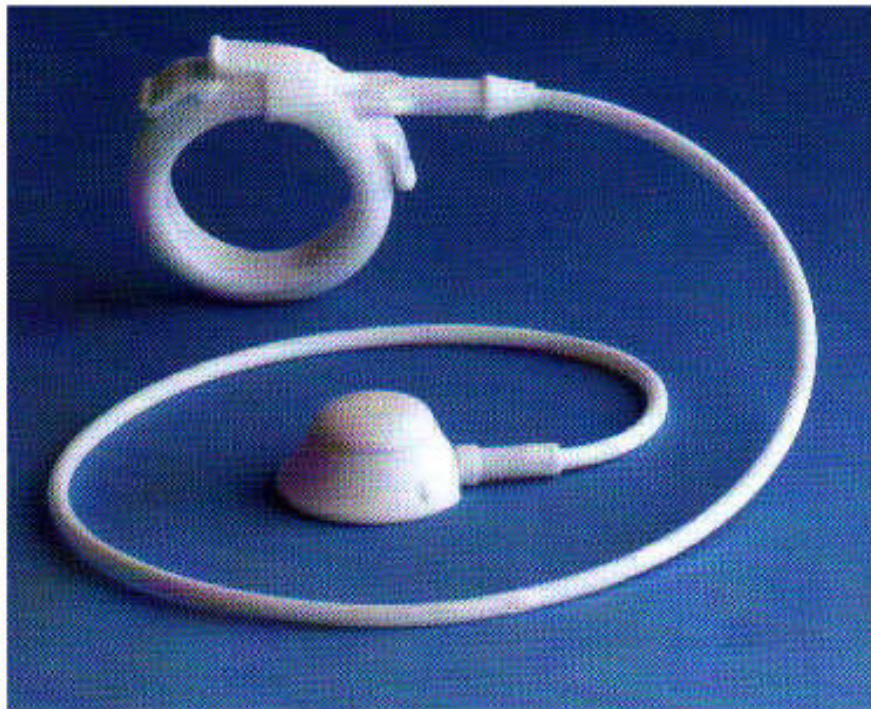
Gastric banding-history

➤ **January of 1987 PETER FORSEL on Sweden developed the Swedish band – “SAGB”**



Gastric banding-history

- **October of 2000 in France, Salmon Benschtrit developed – “Heliogast”**



HISTORICALLY

- LAPAROSCOPIC ADJUSTABLE GASTRIC BANDS
 - BELACHEW (VINCENT) – BIOENTERICS
 - EARLY 90's
 - FORSELL (OBTECH) – SIEGENTHALER
 - 90's
-

Consensus Conference ASBS 2004

about gastric banding

Indications for therapy

- **Appropriation of the NIH criteria**
- **There is clear evidence to support the safety and efficacy of LAGB in becoming the primary intervention for bariatric patients in appropriate centers with comprehensive , long term follow up**
- **At this time there is little good evidence that any specific group of patients will respond better to other types of obesity surgery**
- **Need of long-term care for their chronic disease**

Jaime Ponce,M.D., F.A.C.S., John B. Dixon, M.B.B.S., Ph.D., F.R.A.C.G.P.

Surgery for obesity and Related diseases 1 (2005) 310 - 316

Adjustable gastric banding

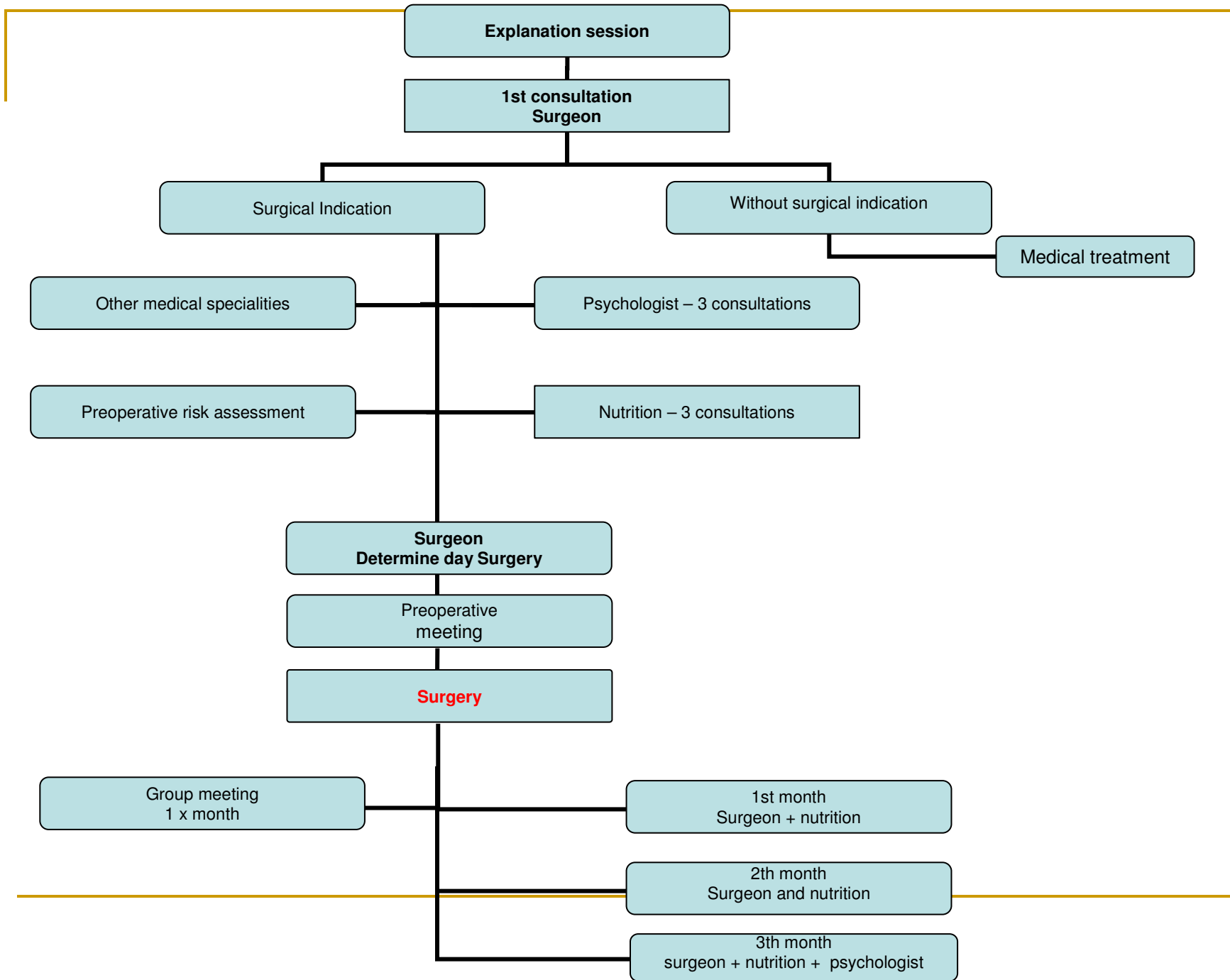
ADVANTAGES

- ✿ Laparoscopic surgery
 - ✿ Stomach is not violated
 - ✿ Stoma is adjustable
 - ✿ Reconversion whenever needed
-

How I do it?

- Préoperative assessment
- Surgical Technique
- Follow up





PATIENT MEETINGS

Open meetings

Adressed to:

Patients waitting for surgery

Patients in follow-up after surgery

We invite «good» and «not so good» patients

Family patients are invited to participate

PATIENT MEETINGS

Initial presentation explaining in simple words:

Obesity causes

Indications and contraindications for surgery

Surgical procedures

Protocols for surgery

Follow-up after surgery

and last but not the least ...

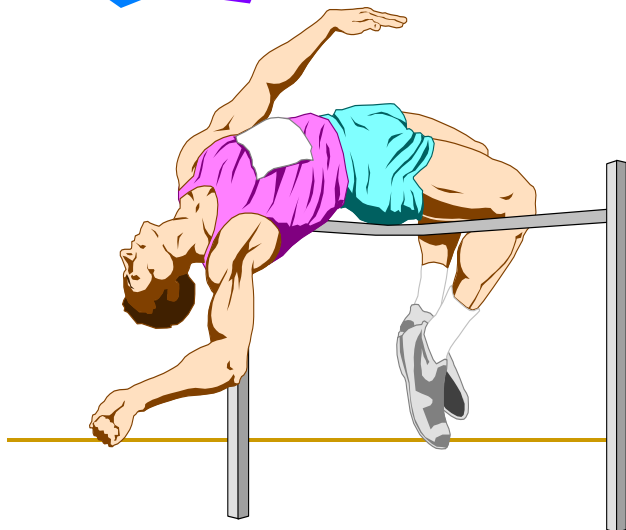
PATIENT MEETINGS

... and last but not the least:

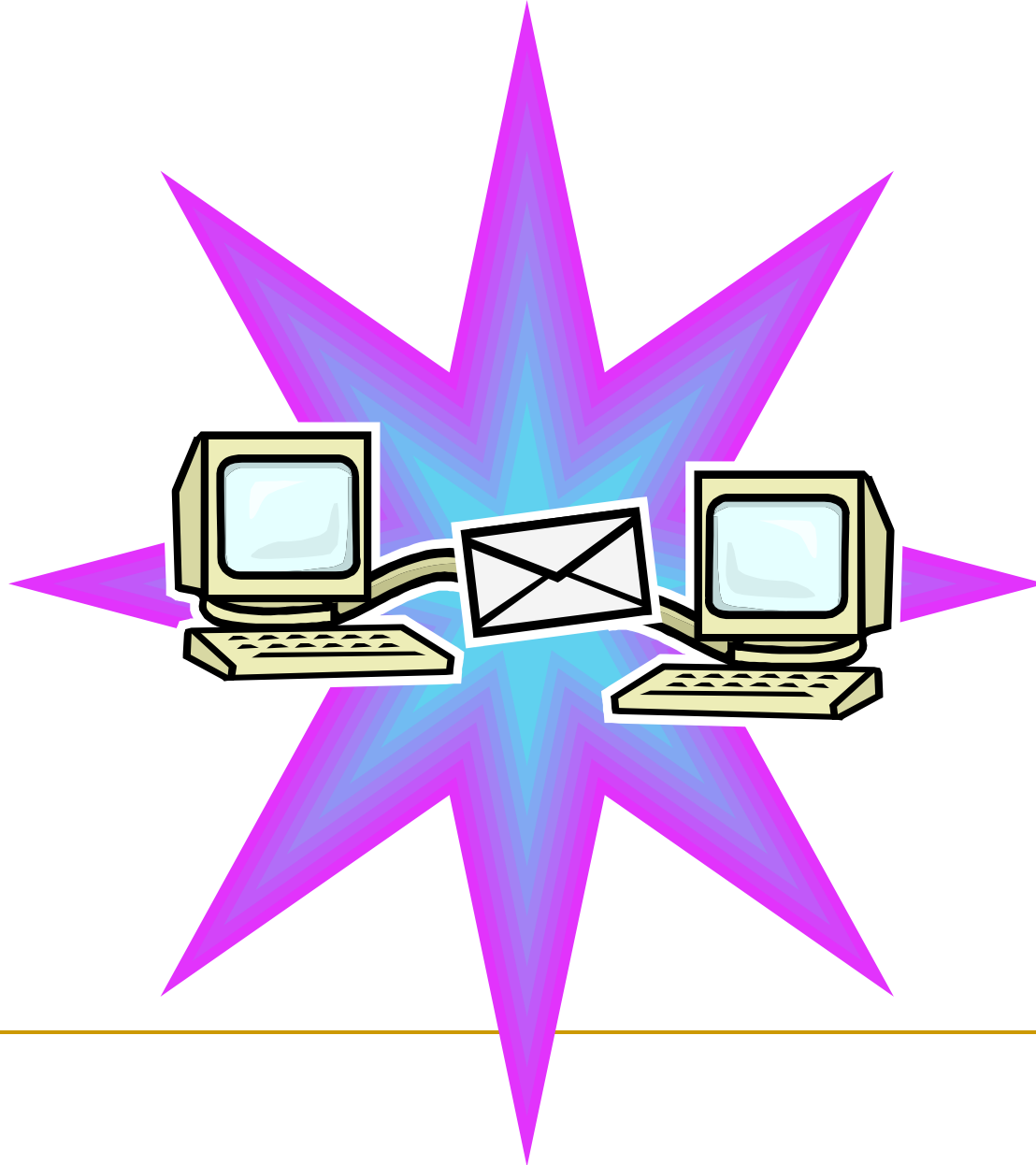
**The importance of
changing food habits
changing life style**

in order to get good results with restrictive procedures

Physical Activity



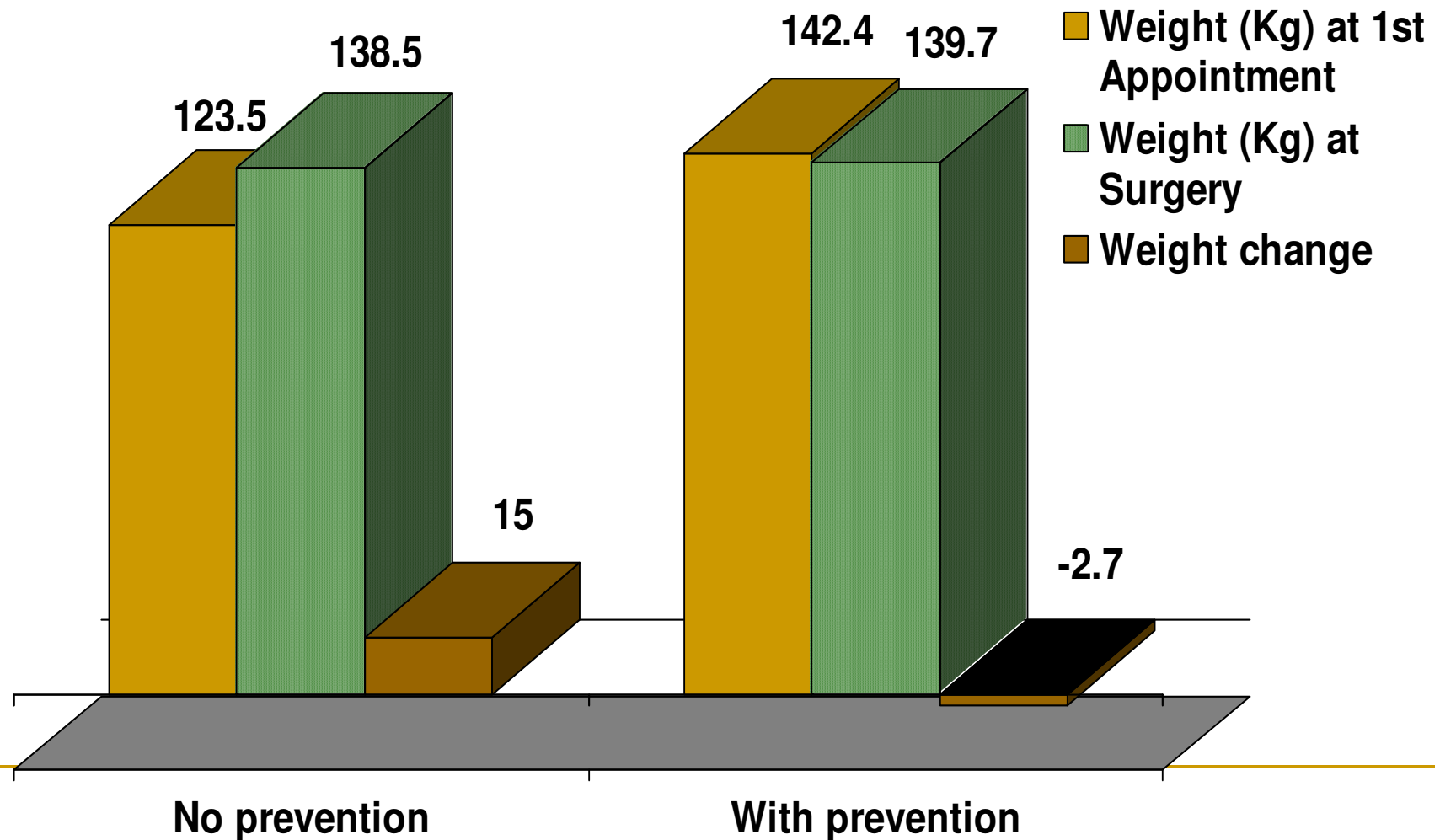
E-mails



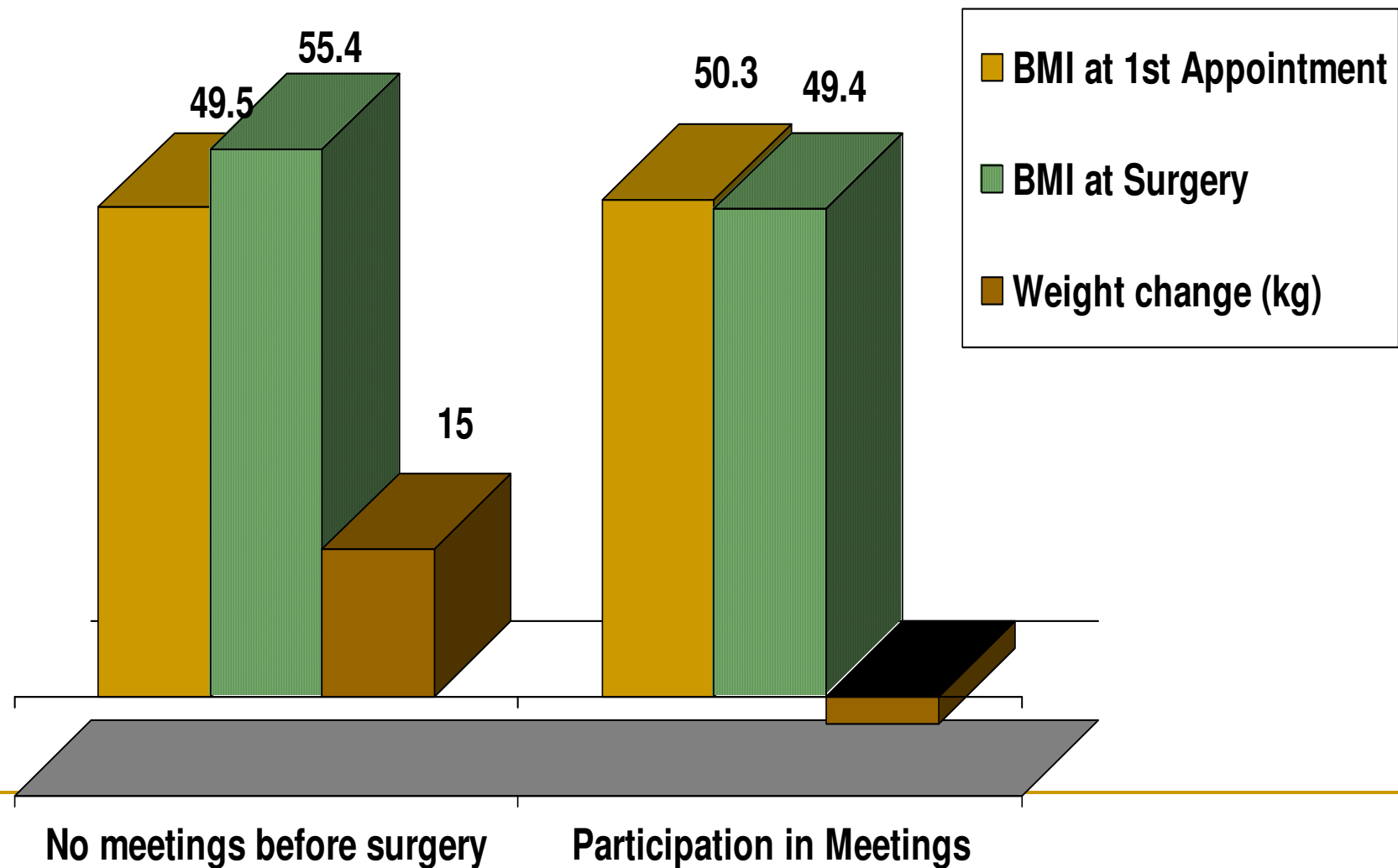
Weight evolution before surgery

Participation In Meetings	n	Weight At 1 st Appointmen t	BMI At 1 st Appointment	Weight At surgery	BMI At surgery
No	10	123,5	49,5	138,5	55,4
Yes	10	142,4	50,3	139,8	49,4

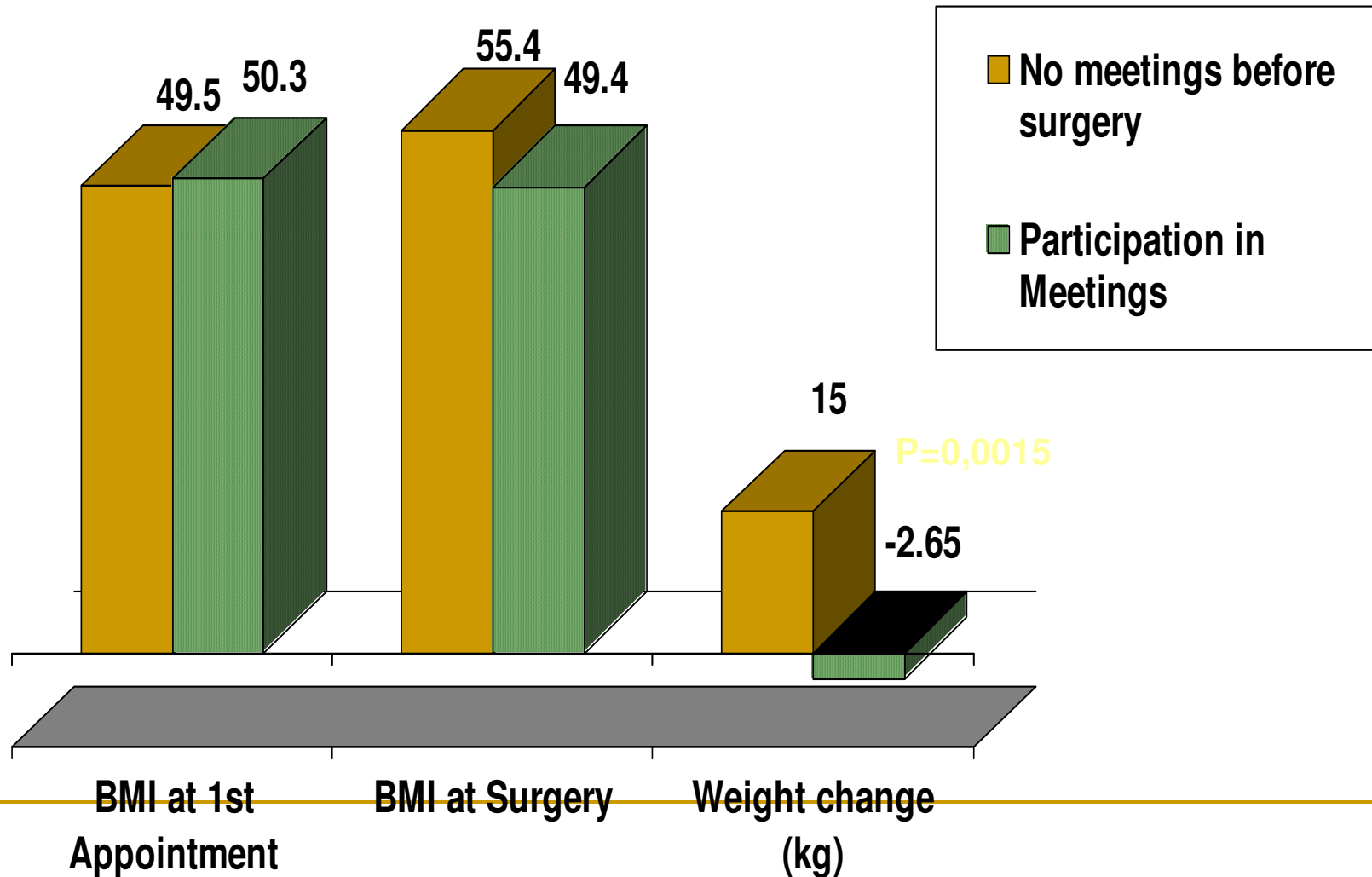
Weight Evolution Before and After Surgery



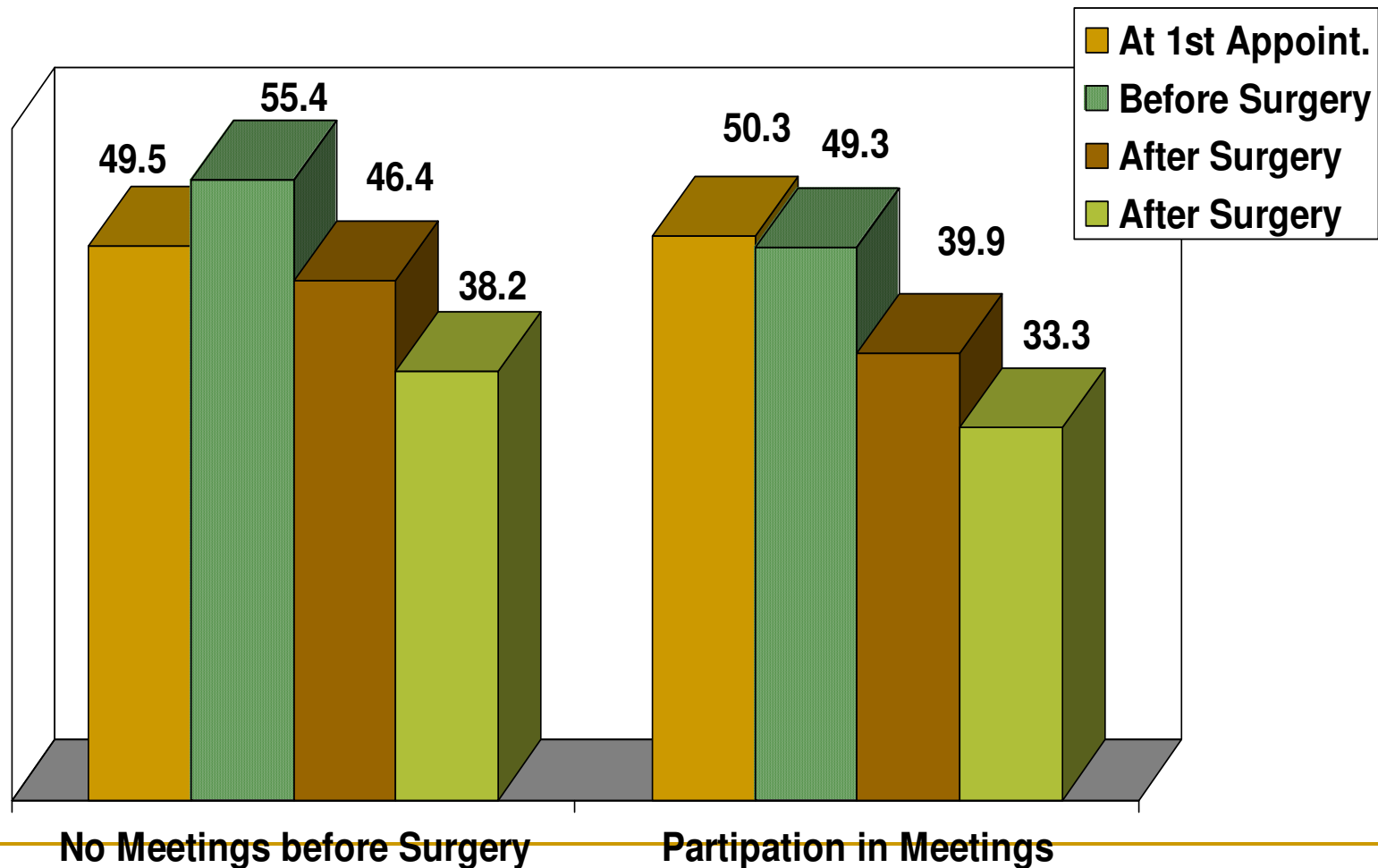
Weight changes before surgery



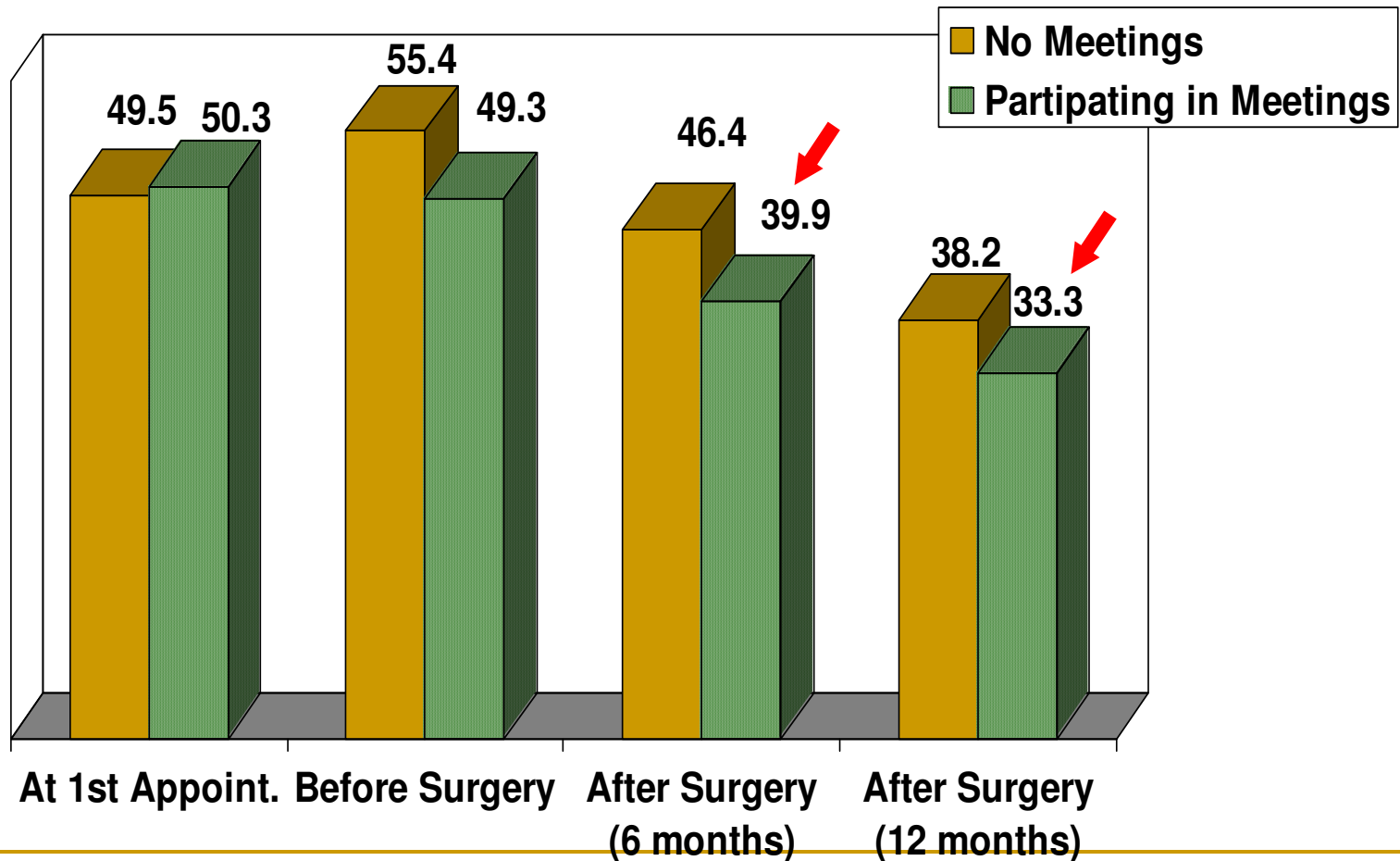
Weight changes before surgery



BMI Evolution Before and After Gastric Banding

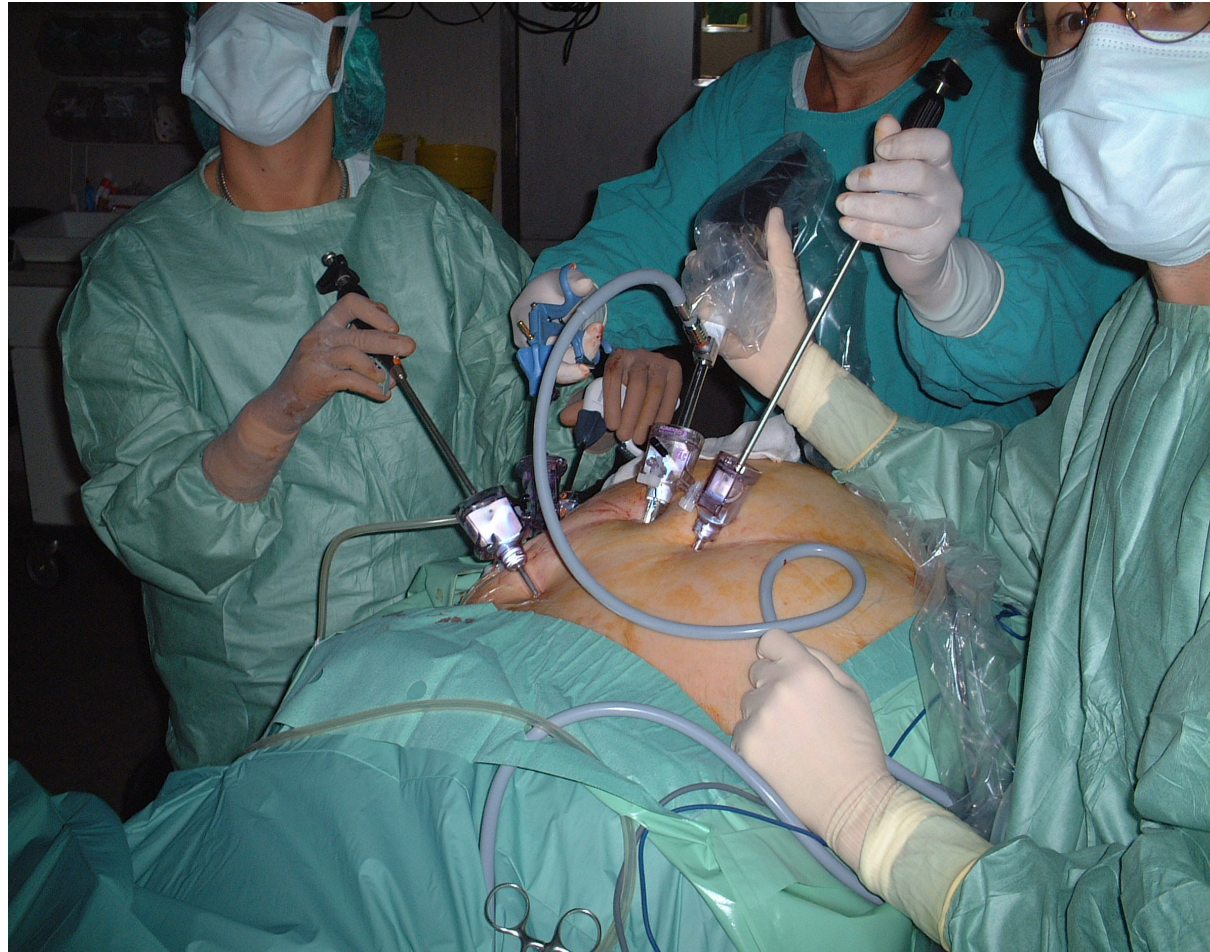


BMI Evolution Before and After Gastric Banding



-
- Surgery is a tool that we can use to help you loose weight - we are gona help you to use it well
 - Changing Your behaviour after surgery is the most important to obtain good results
 - You will have to change your style of life
 - But you´ll have a team allways available to hear and help you
-

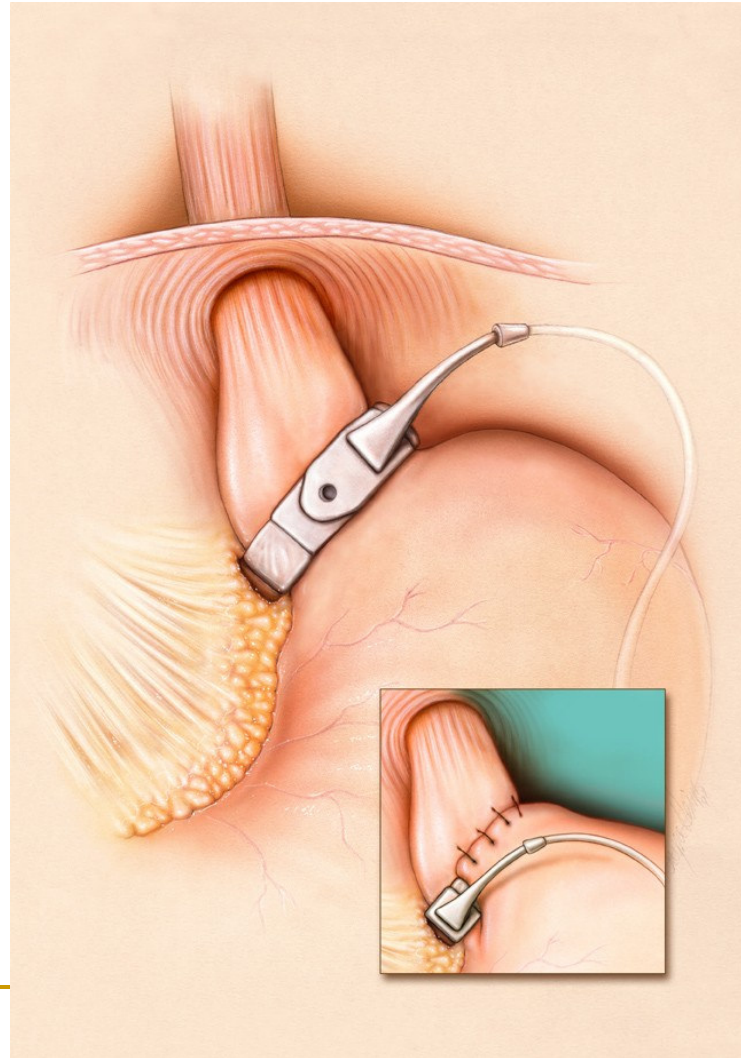
Surgical Approach



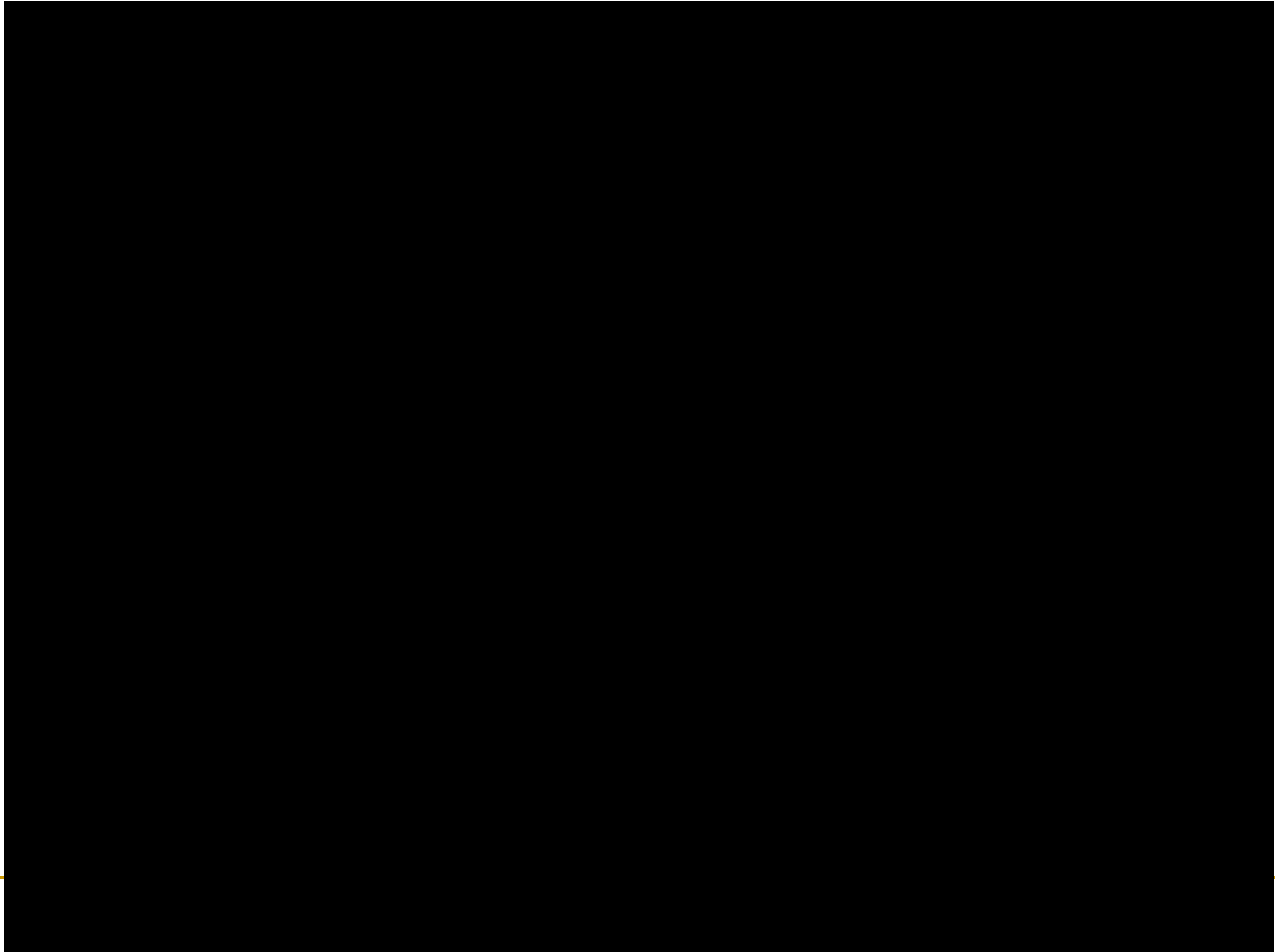
Surgical approach

- Via pars flacida
 - ❑ Band placed 1cm below the gastroesophageal junction
 - ❑ Greater curve dissection at the diaphragm level onto the left crus
 - ❑ Lesser curve dissection via pars flacida above the lesser sac
 - ❑ Band left empty at surgery
 - ❑ Anterior fixation more extensive (3 to 4 stitches)
 - ❑ Gastro-gastric sutures placed to fix the band below a “virtual pouch” just below EG junction
 - ❑ Access port placed on the rectus muscle
-

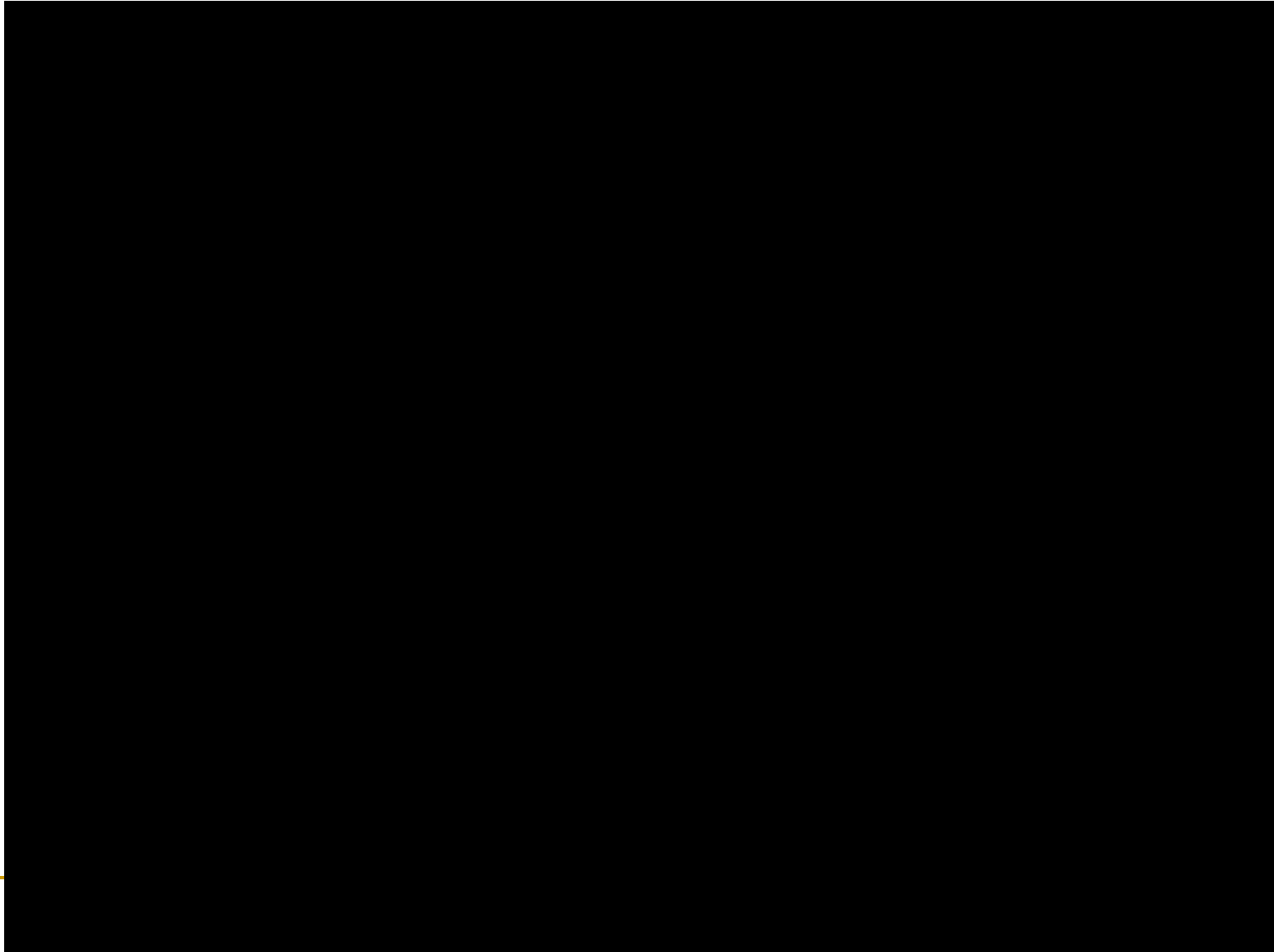
Gastric Banding



Approach to the His Angle

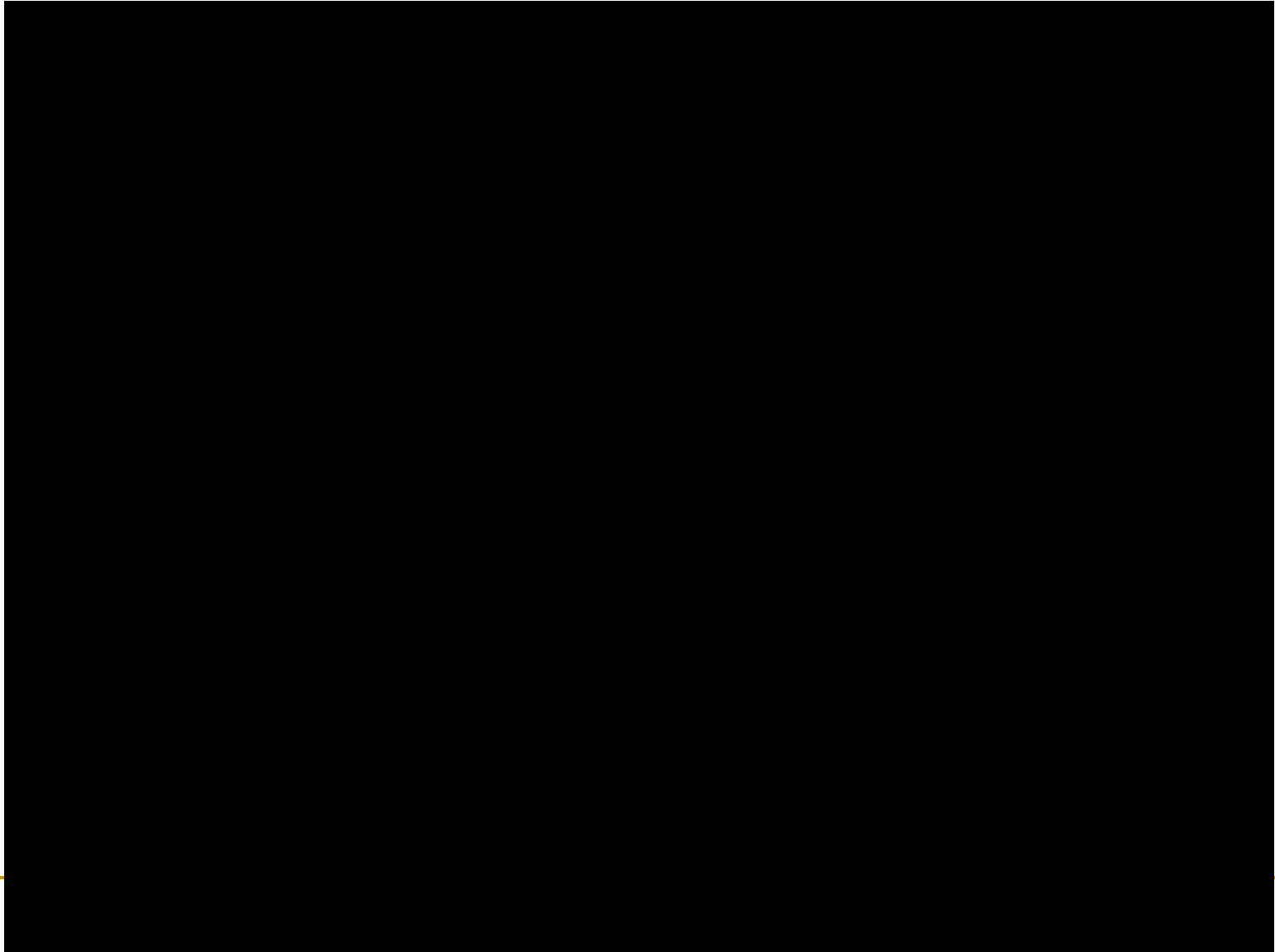


Dissection of the right crus



Pars flacida

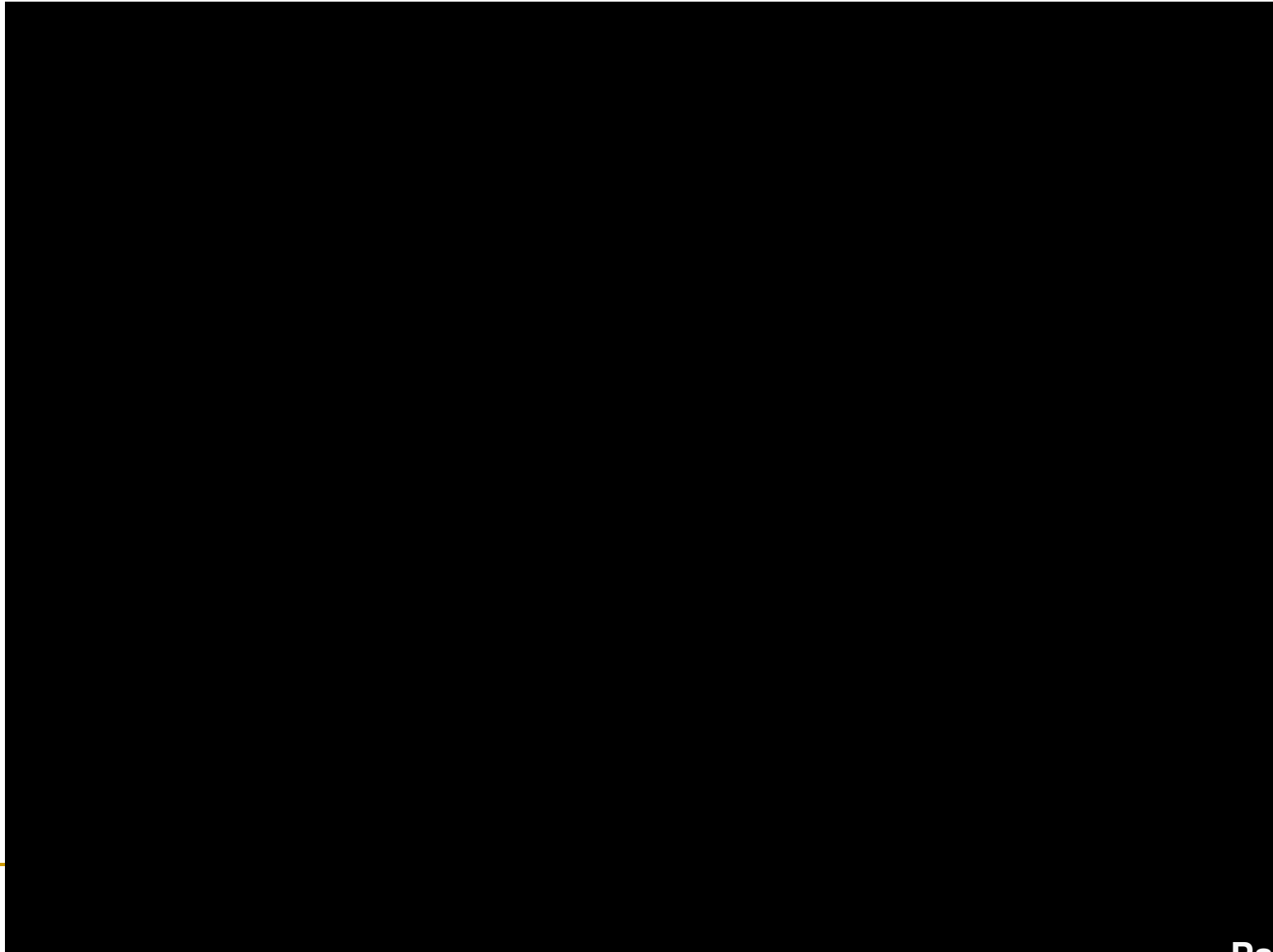
Passing the band through the posterior tunnel



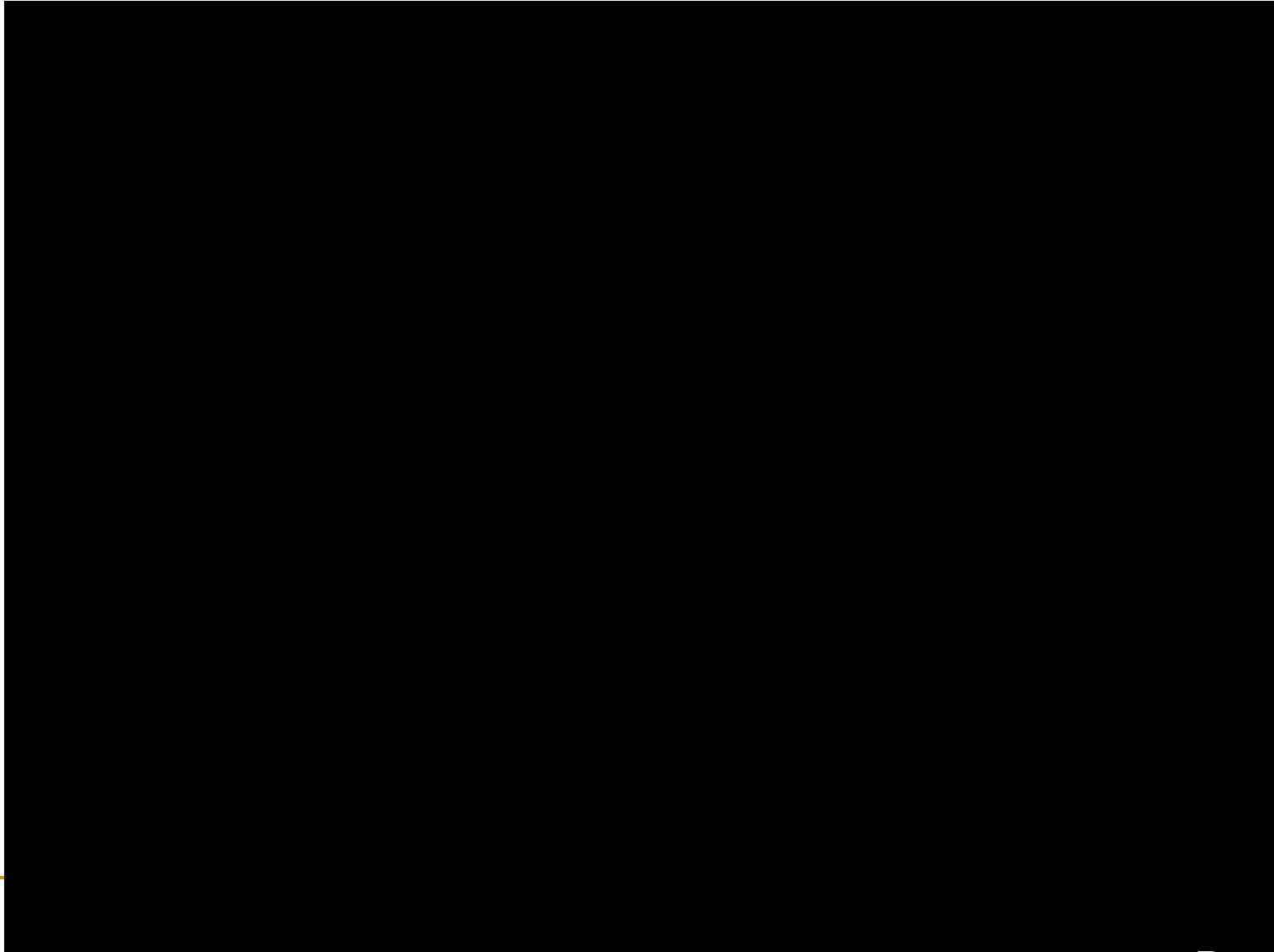
Calibration tube



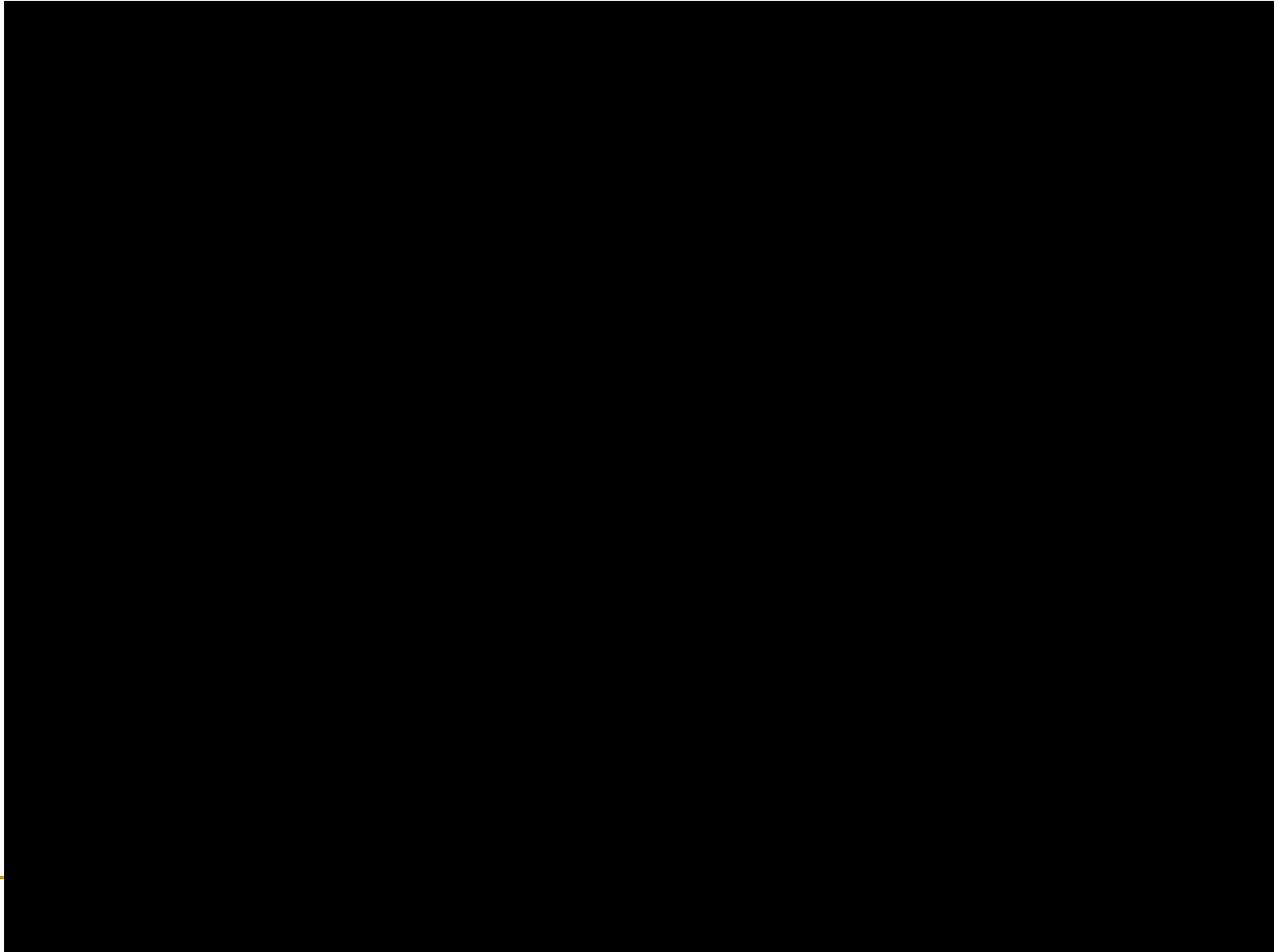
Closing the band and gastrogastic sutures



Gastrogastic sutures



Virtual pouch



Pars flacida

TOTAL --- 1388 patients

between 15/11/1996 - 28/02/2008

MORTALITY -- 1 (0,07%)

98/03/01 – 08/02/28

85,7%

1.190 patients



LapBand

88 patients



SAGB (11/96 – 12/1999)

77 patients



HAGA (03/02 – (03/2005)

33 patients

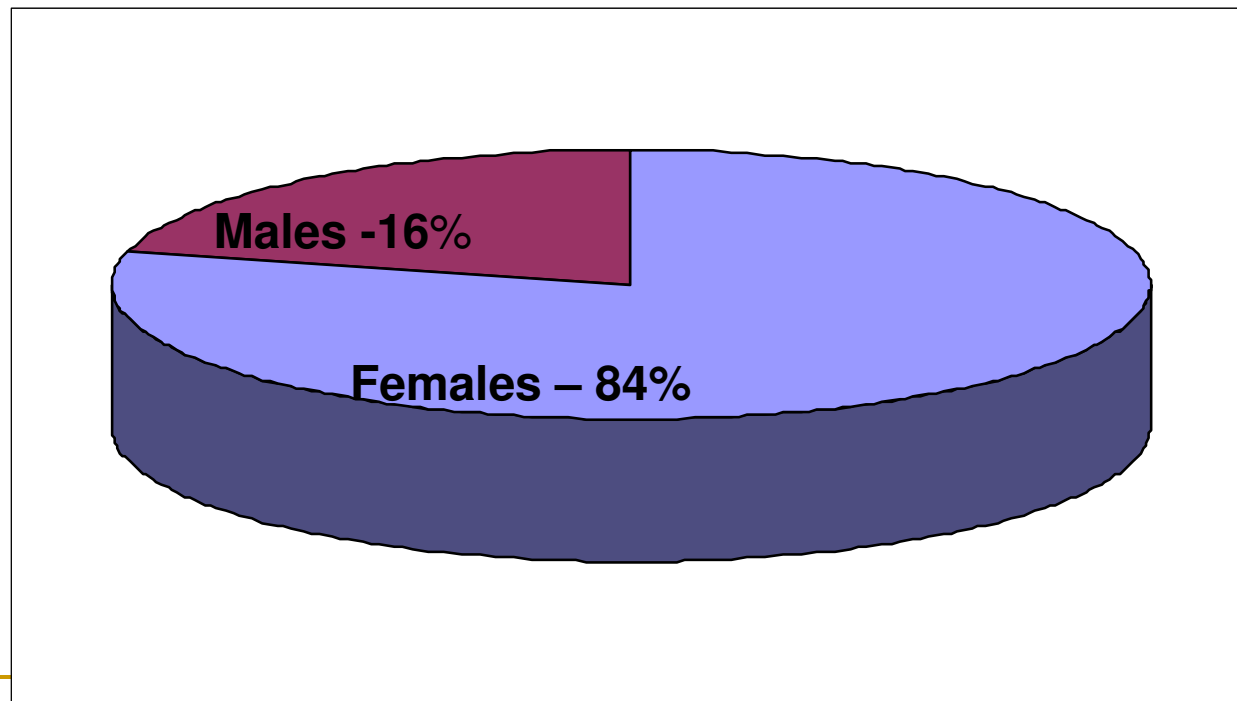


AMI (02/02 – 05/2003)

Average Age ----- 38 years

min. ----- 13 years

max. ----- 72 years



Average weight ----- 121,9 Kg

minimal  86 Kg

maximum  243 Kg

Average Body Mass Index (BMI)----46,8Kg/m²

minimal  33 Kg/m²

maximum  77,3 Kg/m²

COMORBIDITIES

666 patients – (56%)

•Osteoartropaty (joint pain) -----	60%
•HTA -----	40%
•Type II Diabetes mellitus -----	24%
•Roncophatie -----	30%
•Sleep Apnea -----	14%
•Hipotiroidism -----	0,8%
•Hiatal Hernia -----	6%
•Gastroesophageal Reflux -----	8%
•Gerd + Hiatal hernia -----	2%
•Colelithiases -----	10%

CONVERSION

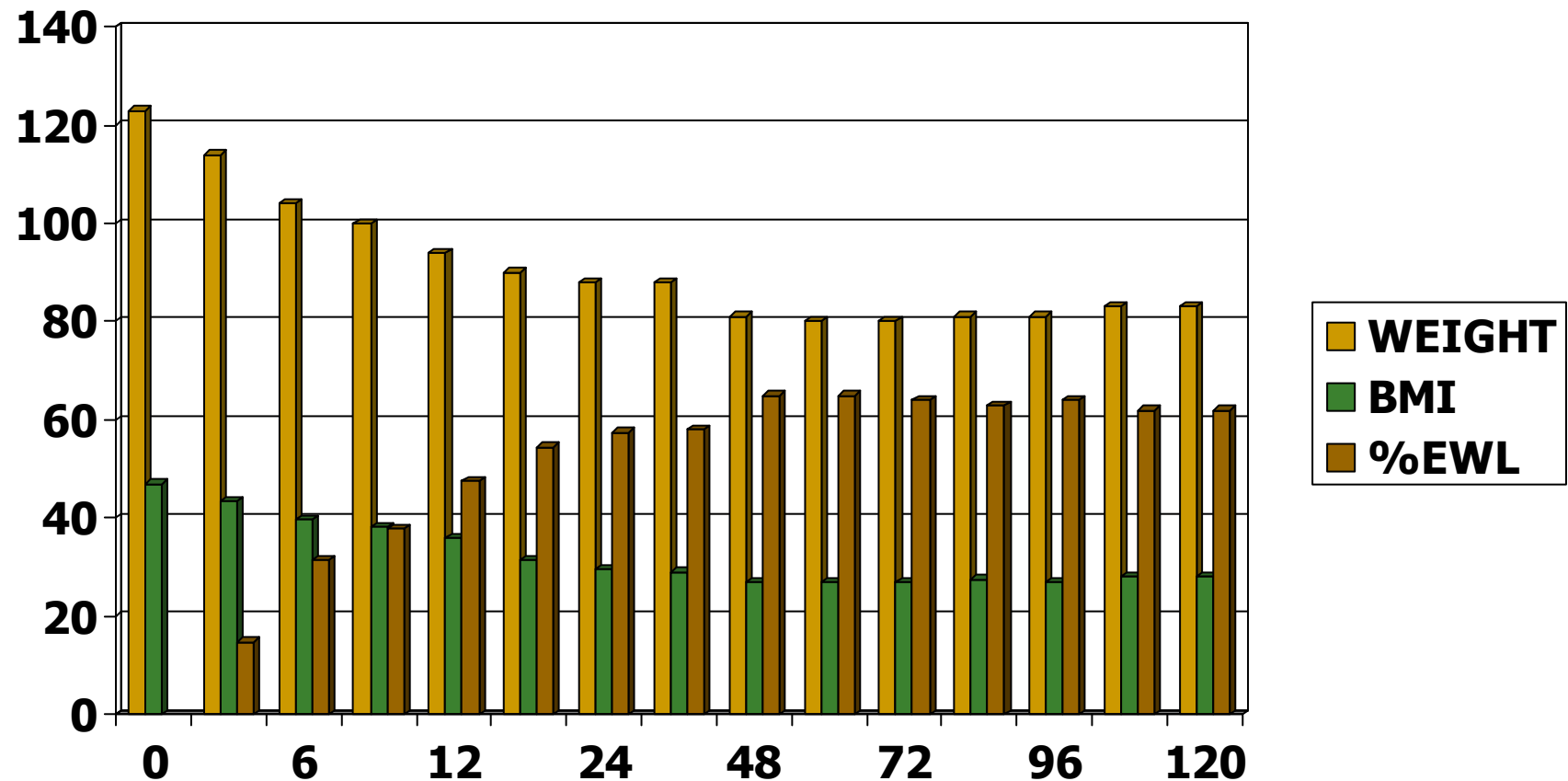
1 Patient ----- 0,1%

Gastric Perforation

Follow-up --- 94%

Time	Nº Patients	%EWL
1 YR	1100	47,54
2 YRS	940	54,5
3 YRS	736	57,4
4 YRS	438	58,2
5 YRS	238	65,4
6 YRS	140	64
7 YRS	80	63,6
8 YRS	46	64,2
9 YRS	22	62
10 YRS	10	62.2

Evolution from weight, BMI and %EWL



Evolution from weight, BMI and %EWL

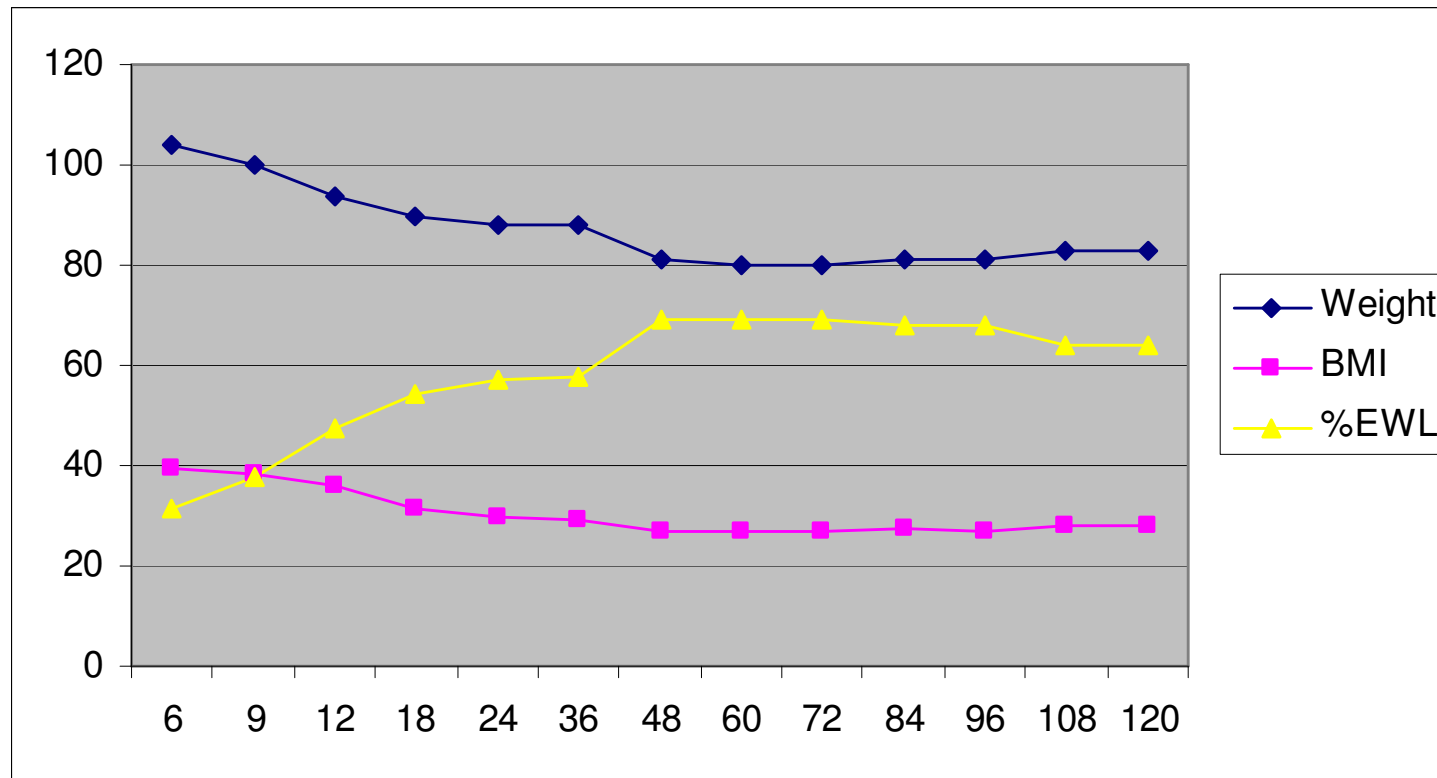


Table 2
Percent excess weight loss

Study	<i>n</i>	Months after surgery							
		12	18	24	36	48	60	72	84
International									
Weiner 2003 [9]	984								59.3*
Zinzindohoue 2003 [10]	500	42.8		52	54.8				
Rubin 2003 [11]	250	42.1		51.4	55.5				
Fielding (2003) [12]	76	46.7			59.1		61		
Belachew 2002 [13]	763						50–60†		
O’Brien 2002 [14]	706	47	51	52	53	52	54	57	
Cadiere 2002 [15]	652	38		62					
Vertruyen et al. 2002 [16]	543	38		61	62	58	53		52‡
Dargent 1999 [17]	500	56		65	64				
Toppino et al. 1999 [18]	361	42							
Fielding et al. 1999 [19]	335	52	62						
Paganelli et al. 2000 [20]	156	43							
Niville and Dams 1999 [21]	126	48	58						
Berrevoet et al. 1999 [22]	120	46	53						
U.S.									
Hewitt 2004 [23]	500	36		47§					
Ren and Allen 2003 [24]	445	44.3							
Spivak 2003 [25]	271	40		43					
Fox 2003 [7]	105	61		75	72				
Rubenstein 2002 [8]	63	38.3		46.6	56.3				
Ren, Horgan and Ponce 2002 [26]	43	41.6							

* Percentage at 96 months.

† Percentage reduction of excess weight for patients with >5-year follow-up.

‡ Percentage at 86 months.

§ Percentage at 30 months.

WEIGHT LOSS RESULTS

- % XCESS WEIGHT LOSS

■ 1 YR	4456	42.6
■ 2 YRS	3383	52.9
■ 3 YRS	3104	57.5
■ 4 YRS	1435	57.9
■ 5 YRS	640	54.0
■ 6 YRS	96	53.0
■ 7 YRS	29	51.0
■ 8 YRS	100	59.3

n

PERCENT OF EXCESS WEIGHT LOST OVER EXTENDED FOLLOW-UP ASERNIPS 2004

Study	n	Follow-up in months						
Weight loss kg/lb/%		Base	6	12	18	24	36	48
LAGB								
O'Brien <i>et al.</i>	302			51±17		58±20	62±2	68±21
De Maria <i>et al.</i>	36			35±20		36±23	38±27	44
Dargent <i>et al.</i>	500		45 (6-72)	56 (7-121)		65 (6-121)	64 (6-122)	
De Luca <i>et al.</i> Lap	17			43		50	59	
Converted	5			41		48	52	
(10) Suter <i>et al.</i> some♠	150			≈55	≈55	≈55	≈55	
Morino <i>et al.</i>	15		49	66		67		
Cadiere <i>et al.</i>	652		28	38		62		
Victorzon & Tolonen	60		♣35	♣51		♣51		
Fielding <i>et al.</i>	335			52	62			

♣ Median ♠ Swedish Adjustable Gastric Band

WEIGHT LOSS OVER EXTENDED FOLLOW-UP — ASERNIPS 2004

Study	n	Follow-up in months					
Weight loss kg/lb/%		Base	6	12	18	24	36
LAGB							
De Luca <i>et al.</i> Lap	17	124		25		39	44
Converted	5	125		25		39	43
Fried <i>et al.</i>	♠11	140					38
Miller & Hell	102	136	≈120			≈98	≈90
	54♠	134	≈120			≈105	≈88
Weiner <i>et al.</i>	178		28	54		58	
(5) Fried <i>et al.</i>	♠15	140				37	
Hallerback <i>et al.</i>	♠57			25		32	
Victorzon & Tolonen	60		20	30		31	
Fielding <i>et al.</i>	335	♣138	37 ± 10		41 ± 18		

A SYSTEMATIC REVIEW AND META-ANALYSIS

Buchwald et al. (JAMA, Oct 13, 2004)

Gastric Banding

Absolute weight loss,	482	13	-28.64 (-32.77 to -24.51)
BMI decrease	1959	25	-10.43 (-11.52 to -9.33)
Excess weight loss	1848	12	-47.45% (-54.23% to -40.68%)

n1 = No of treatment groups

USA LAPBAND EXPERIENCE

				Complications	
Author Year Mortality	#pts	Length of Follow-up	Weight Loss (%EWL unless otherwise noted)	Early	Late
Rubenstein ³ 2002 Mortality: 0	63	36 mos. (n = 13)	56.3 %EWL	1 intra-op gastric perforation	5 port problems 9 gastric slippage
Fox ⁷ 2003 Mortality: 0	105	48 mos. (n = 7)	60 %EWL		3 dilatation/slippage 3 erosion 4 port infections
Jan ¹⁰ 2005 Mortality: 1	154	36 mos.	57 %EWL	3 gastric perforation	1 band infection 2 gastric prolapse
Holloway ¹¹ 2004 Mortality: 0	504	36 mos. (n = 40)	65 %EWL		1 late mortality 26 tubing separations 4 port migrations 28 slippage 1 erosion
Ponce ¹⁴ 2004 Mortality: 0	189	36 mos.	68.4 %EWL		5 gastric prolapse 1 band erosion

US LAPBAND EXPERIENCE

				Complications	
Author Year Mortality	#pts	Length of Follow-up	Weight Loss (%EWL unless otherwise noted)	Early	Late
Ponce ¹⁷ 2005 Mortality: 0	1,014	48 mos.	64.3 %EWL	6 port infections	2 erosions 9/44 perigastric prolapse 14/970 pars flaccida prolapse
Parikh ¹⁹ 2005 Mortality: 0	192 (super- obese)	36 mos.	49.5 %EWL	2 port infections	NR
Sarker ²²	409	> 3 years	53.3 %		22 slippages 1 erosion
Parikh ²⁴ 2005 Mortality: 0	749	36 mos.	52%	2 port infection	22 slippage 1 band leak 1 erosion 18 port/tubing problems 6 port leaks 4 tubing breaks
Cottom ²⁷ 2006 Mortality: 0	181	36 mos.	51% ± 23	NR	NR

US LAPBAND EXPERIENCE

				Complications	
Author Year Mortality	#pts	Length of Follow-up	Weight Loss (%EWL unless otherwise noted)	Early	Late
Galvani ²⁹ 2006 Mortality: 0	470	36 mos.	55% ± 20		12 slippage 1 erosion 13 port/tubing problems
Parikh ³⁴ 2006 Mortality: 0	65 Caucasian	36 mos.	52%	<u>NR</u>	NR
	58 African- American	36 mos.	41%	<u>NR</u>	NR
Jan ² 2007 Mortality: 1	406	60 mos.	49%	6 band obstructions 2 band infections	6 acute slippages 3 erosions 27 chronic slippages 11 port rotations 9 port/tubing breaks
Cottam ⁶³ 2005 Mortality: NR	210	36 mos.	BMI reduced from 42.1 to 31	<u>NR</u>	NR
Bardaro ⁶⁷ 2006 Mortality: 1	422	60 mos.	58%	<u>NR</u>	NR
Fielding ⁶⁸ 2006 Mortality: 0	93 BMI ≥ 35	36 mos.	53.8%	<u>NR</u>	NR

Total Complications

Kind	Nº pts	%	Min. Sur	Maj.Sur
Early infection from port	4	0.3%	0,3%	
Desconnexion/rupture tub/port	82	5.9%	5,9%	
Early infection from band	3	0,23%		0,23%
Slippage	25	1,8%		1,8%
Pouch dilatation	32	2,3%		2,3%
Skin erosion by the tube	1	0,07%		0,07%
Gastric erosion	21	1,5%		1,5%
Locker rupture	2	0,14		0,15%
Band rupture	31	2,2%		2,2%
Pouch necrosis	1	0,07%		0,07%
Late infection of the port	3	0,21%		0,21%
Rupture connexion tube/band	1	0,07%		0,07%
	206	14,79%	6,2%	8,6%

Complications with LapBand

Kind	Nº pat.	%	Min.Sur	Maj. Sur
Pouch dilatation	26	2.3		2.3%
Slippage	15	1.3		1.3%
Pouch necrosis	1	0.1		0.1%
Band infection	1	0.1		0.1%
Band rupture	4	0.35		0.35%
Break/desc port-tube	46	4.1	4.1%	
Port infection	3	0.26	0.26%	
TOTAL	96	8.51	4.36%	4.15%

REINTERVENTIONS LapBand

➤ **47 major- 4,15%**

4 – Replacements

39 – Band reposition

1 - Removal

**3 – Removals and conversion to
gastric bypass / Scopinaro**

49 minor – 4,36%

Replacement of the port in 26 patients

reconnexion tube / port -23 patients

COMPLICATIONS PERFORATION

❑ ANGRISANI	0% (27)
❑ GARRIDO	0.7% (140)
❑ ASERNIPS	0.8% (8504)
❑ ITALIAN STUDY	0.05% (5624)
❑ A. Sérgio	0.07% (1190)

COMPLICATIONS

SLIPPAGE/DILATATION

❑	ANGRISANI (SOARD)	7.6%	(26)		
❑	COTTAM	6.0%	(181)		
❑	FAVRETTI 93-05	3.9%	(1791)		
❑	GARRIDO	2.8%	(140)		
❑	FRIED	0.41%	(724)	- SAGB	
❑	ASERNIPS SLIPPAGE	1.62%	(8504)		
	DILATATION	3.9%			
❑	ITALIAN STUDY	7.2%	(5624)	96-00	14.2%
				01-05	2.6%
❑	A. Sérgio	3.6%	(1.118)		

COMPLICATIONS

EROSION/MIGRATION

❑ FAVRETTI	0.9% (1791)
❑ GARRIDO	2.1% (140)
❑ FRIED	0.27% (724)
❑ ASERNIPS	0.59% (8504)
❑ ITALIAN STUDY	1.6% (5624)
	96-00 2.6%
	01-05 0.6%
❑ A. Sérgio	0

COMPLICATIONS

PORT/BAND/TUBING INFECTION

- ❑ COTTAM 9% (181)
 - ❑ GARRIDO 2.1% (140)
 - ❑ ASERNIPS 0.53% (8504)
 - 0.87% PORT ROTATION
 - 0.8% CATHETER RUPTURE,
DISCONNECTION OR LEAK
 - 0.36% PORT AND BAND
INFECTION
 - 0.09% DEFECTIVE/LEAKING
/DAMAGED BAND
 - ❑ A. SÉRGIO 4.36% (1.118)
-

COMPLICATIONS

RE-OPERATION/CONVERSION

❑ ITALIAN STUDY	5.4%	(5624)
❑ BELACHEW	13.1%	(350)
❑ ANGRISANI	4.9%	(1265)
❑ A. SÉRGIO	4.15%	(1118)

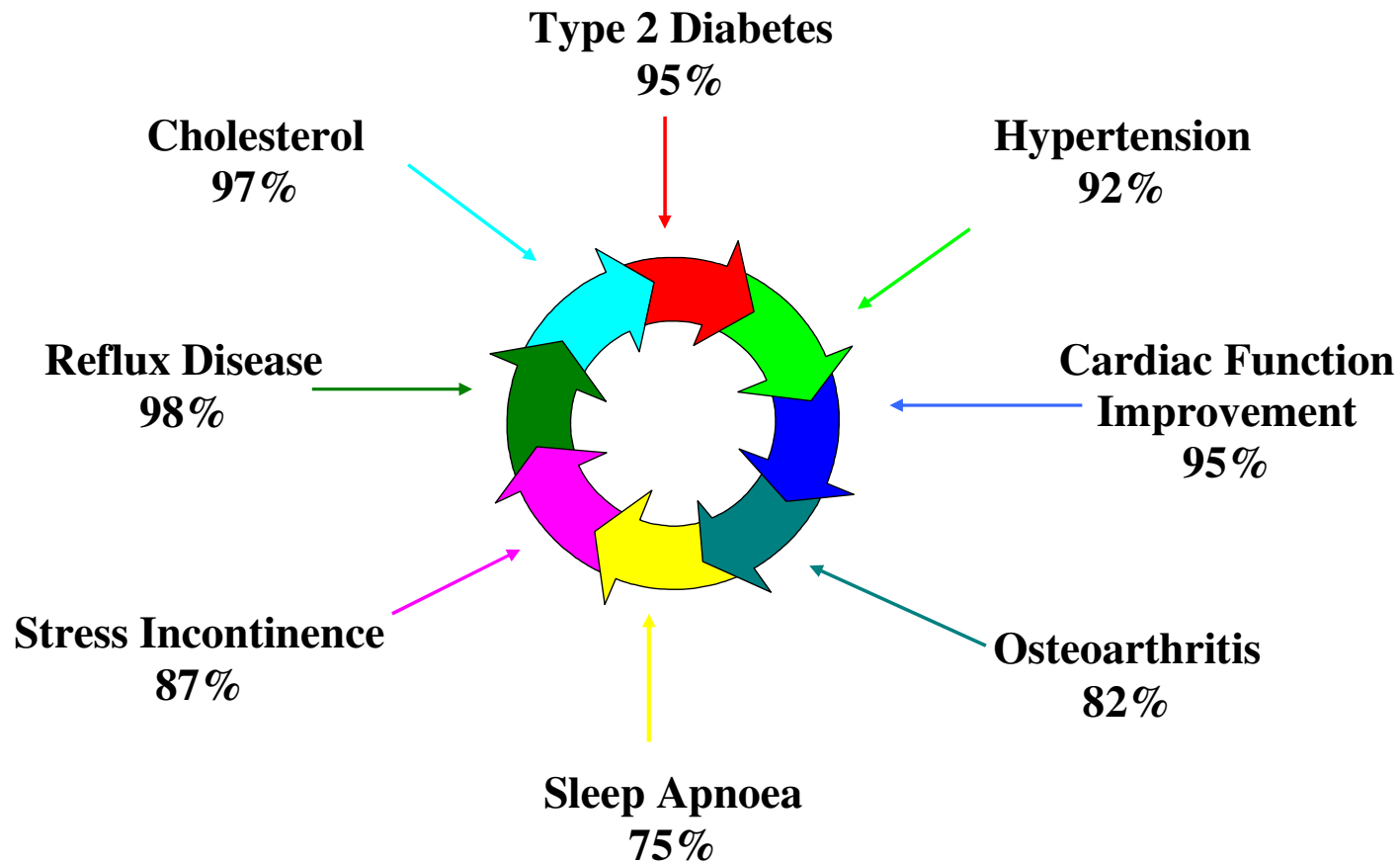
REVISION

❑ FIELDING	1.5%	(335)
❑ O'BRIEN	2%	(302)
❑ ABU-ABEID	1.3%	(391)

WEIGHT LOSS RESULTS

- WHAT WE ACHIEVE WITH WEIGHT LOSS
 - IMPROVEMENT CO-MORBIDITIES
 - DIABETES
 - HYPERTENSION
 - PCOS
 - SLEEP APNEA
 - HYPERLIPIDAEMIA
-

MEDICAL CO-MORBIDITIES RESOLVED



Wittgrove AC, Clark GW. Laparoscopic Gastric bypass roux-n-y-500 patients. Obes Surg 2000.

Comorbidities Evolution

Comorbidities	N° patients	Without disease	Improved	Unchanged
Osteoarthropaty	400	214(53.5%)	146(36.5%)	40(10%)
Roncopaty	200	111(55.5%)	77(38.5%)	12(6%)
Arterial Hypertension	266	133(50%)	80(30%)	53(20%)
Sleep Apnea Sind.	93	57(61.3%)	36(38.7%)	
Type II Diabetes	160	104(65%)	56(35%)	

Gastric banding - mortality

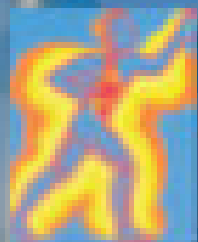
1 patient - 0,07%

COMPLICATIONS MORTALITY

- ASERNIPS 0.05% (5780)
0.17% (Long Term)
 - BUCHWALD 0.1% (2297)
 - ITALIAN STUDY 0.2% (5624) (30 DAY)
0.03% (> 30 DAY)
 - A. SÉRGIO 0.07% (1190)
-

CONCLUSION

- Obesity is a chronic, multidimensional problem that needs a lifelong treatment
 - Results at long term shows that treatment can begin in most cases with the least invasive , restrictive procedure adjustable gastric banding, allowing if necessary any other kind of surgical treatment either gastric bypass or biliopancreatic diversion.
-



IFSO

International Federation
for the Surgery of Obesity



XIII World Congress

September 24 - 27, 2008

Hilton Buenos Aires Hotel
BUENOS AIRES, ARGENTINA

Main Topic:

"Multidisciplinary Approach of the Severe Obesity"

www.ifso2008.org

**Deadline for
abstract submission:
April 18th., 2008**

