

# Resultados

## Enfermedades asociadas

	Banda ajustable	By-pass gástrico	Scopinaro
DBT	80.8%	93.2%	76.7%
COLESTEROL	78%	94%	87.2%
TRIGLICERIDOS	77%	91.2%	98%
HTA	70.8%	87.2%	75.1%

Apnea del sueño: resuelta en un 83%

# Bariatric Surgery

A Systematic Review and Meta-analysis JAMA, October 13, 2004—Vol 292, No. 14

**Table 4.** Efficacy Outcomes for Weight Reduction\*

Outcome Measure	No. of Patients Evaluated	No. of Treatment Groups	Mean Change (95% Confidence Interval)†	Weighted Mean Change (Range of Mean Change)
Total population‡				
Absolute weight loss, kg	7588	83	-39.71 (-42.23 to -37.19)	-40.53 (-70.0 to -9.0)
BMI decrease	8232	96	-14.20 (-15.13 to -13.27)	-14.01 (-27.0 to -4.10)
Initial weight loss	1386	9	-32.64% (-36.39% to -28.89%)	-35.58% (-39.0% to -20.90%)
Excess weight loss	10 172	67	-61.23% (-64.40% to -58.06%)	-64.67% (-93.0% to -32.0%)
Gastric banding				
Absolute weight loss, kg	482	13	-28.64 (-32.77 to -24.51)	-32.36 (-45.40 to -13.10)
BMI decrease	1959	25	-10.43 (-11.52 to -9.33)	-10.83 (-16.40 to -4.70)
Excess weight loss	1848	12	-47.45% (-54.23% to -40.68%)	-49.59% (-70.0% to -32.0%)
Gastric bypass§				
Absolute weight loss, kg	2742	20	-43.48 (-48.14 to -38.82)	-47.06 (-62.70 to -21.0)
BMI decrease	2705	22	-16.70 (-18.43 to -14.98)	-17.10 (-25.0 to -8.0)
Initial weight loss	969	4	-34.93% (-35.61% to -34.26%)	-34.97% (-36.20% to -31.40%)
Excess weight loss	4204	22	-61.56% (-66.45% to -56.68%)	-68.11% (-77.0% to -33.0%)

**Table 5.** Efficacy for Improvement in Diabetes-Related Outcomes for All Patients

	Diabetes Course			Chemistry Level		
	Resolved	Resolved or Improved	New or Worse	HbA <sub>1c</sub>	Fasting Glucose, mmol/L	Fasting Insulin, pmol/L
	<b>Gastric Banding</b>					
Patients evaluated	205	217	521	237	289	166
No. (%) with improvement in characteristic	98 (47.8)	174 (80.2)	1 (0.2)			
No. of treatment groups	9	9	2	2	14	10
Mean (95% CI)	47.9% (29.1% to 66.7%)	80.8% (72.2% to 89.4%)		-0.27% (-0.36% to -0.19%)	-0.78 (-1.05 to -0.51)	-79.72 (-99.57 to -59.87)
P Value for heterogeneity	<.01	<.10		NS†	<.01	<.01
Weighted mean change (range)				-0.29% (-0.40% to -0.26%)	-0.71 (-1.80 to -0.20)	-77.07 (-171.50 to -46.40)
	<b>Gastric Bypass‡</b>					
Patients evaluated	989	127	1142	20	196	93
No. (%) with improvement in characteristic	829 (83.8)	115 (90.6)	6 (0.5)			
No. of treatment groups	26	6	3	2	9	6
Mean (95% CI)	83.7% (77.3% to 90.1%)	93.2% (79.3% to 100.0%)		-0.59% (-0.82% to -0.37%)	-1.25 (-1.52 to -0.97)	-121.26 (-137.31 to -105.20)
P Value for heterogeneity	<.01	<.01		NS†	<.01	
Weighted mean change (range)				-0.42% (-0.60% to 0)	-1.43 (-1.80 to -0.70)	-118.32 (-173.60 to -107.60)

**Table 7.** Efficacy for Improvement in Hyperlipidemia by Surgical Procedure

	Patients Improved*		
	Hyperlipidemia	Hypercholesterolemia	Hypertriglyceridemia
	<b>Gastric Banding</b>		
Patients evaluated	426	23	13
No. (%) with improvement in characteristic	303 (71.1)	18 (78.3)	10 (76.9)
No. of treatment groups	6	1	1
Mean (95% CI)	58.9% (28.2% to 89.6%)	78.0% (61.1% to 94.9%)	77.0% (54.1% to 99.9%)
P Value for heterogeneity	<.01	NS‡	NS‡
Weighted mean change (range)			
	<b>Gastric Bypass§</b>		
Patients evaluated	125	439	271
No. (%) with improvement in characteristic	117 (93.6)	417 (95.0)	255 (94.1)
No. of treatment groups	6	5	4
Mean (95% CI)	96.9% (93.6% to 100.0%)	94.9% (90.7% to 99.1%)	91.2% (83.6% to 98.8%)
P Value for heterogeneity	NS‡	<.10	<.01
Weighted mean change (range of mean change)			

**Table 8.** Efficacy for Improvement in Hypertension and Obstructive Sleep Apnea by Surgical Procedure

	Hypertension		Obstructive Sleep Apnea		Decrease in Apneas or Hypopneas per Hour
	Resolved	Resolved or Improved	Resolved	Resolved or Improved	
<b>Gastric Banding</b>					
Patients evaluated	604	685	56	18	
No. (%) with improvement in characteristic	232 (38.4)	490 (71.5)	53 (94.6)	10 (55.6)	
No. of treatment groups	12	10	5	3	
Mean (95% CI)	43.2% (30.4% to 55.9%)	70.8% (61.9% to 79.6%)	95.0% (88.8% to 100.0%)	68.0% (26.2% to 100.0%)	
<i>P</i> Value for heterogeneity	<.01	<.01	NS†	<.10	
<b>Gastric Bypass‡</b>					
Patients evaluated	2115	435	896	176	31
No. (%) with improvement in characteristic	1594 (75.4)	379 (87.1)	776 (86.6)	167 (94.9)	
No. of treatment groups	20	11	13	6	2
Mean (95% CI)	67.5% (58.4% to 76.5%)	87.2% (78.4% to 95.9%)	80.4% (68.4% to 92.3%)	94.8% (91.5% to 98.1%)	-31.64 (-44.15 to -19.13)
<i>P</i> Value for heterogeneity	<.01	<.01	<.01	NS†	NS†
Weighted mean change (range)					-31.71 (-33.0 to -31.0)

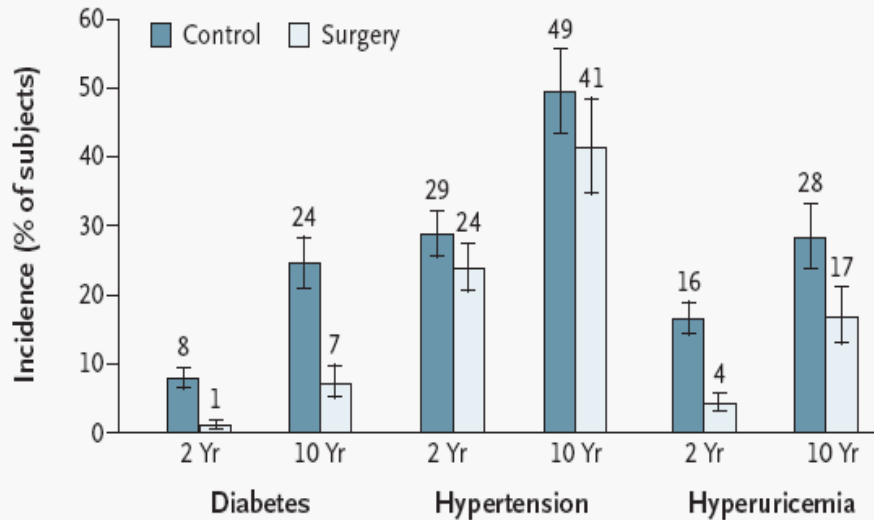
# The NEW ENGLAND JOURNAL of MEDICINE

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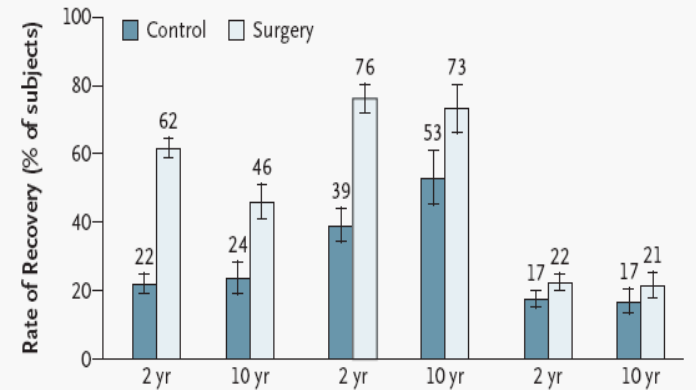
DECEMBER 23, 2004

VOL. 351 NO. 26

## Lifestyle, Diabetes, and Cardiovascular Risk Factors 10 Years after Bariatric Surgery

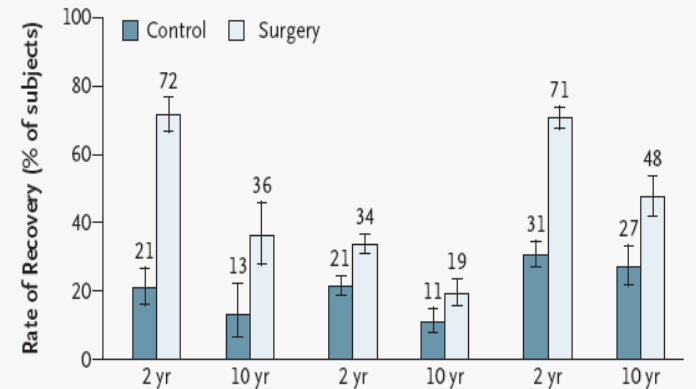


No. of subjects	Diabetes		Hypertension		Hyperuricemia	
Control	1402	539	770	279	1017	382
Surgery	1489	517	623	215	1044	342
Odds ratio	0.14	0.25	0.78	0.75	0.22	0.49
95% CI	0.08–0.24	0.17–0.38	0.60–1.01	0.52–1.08	0.15–0.31	0.34–0.71
P value	<0.001	<0.001	0.06	0.13	<0.001	<0.001



Hypertriglyceridemia Low HDL Cholesterol Hypercholesterolemia

No. of subjects	Hypertriglyceridemia		Low HDL Cholesterol		Hypercholesterolemia	
Control	850	331	396	166	1048	435
Surgery	1102	402	445	169	1327	498
Odds ratio	5.28	2.57	5.28	2.35	1.22	1.30
95% CI	4.29–6.49	1.85–3.57	3.85–7.23	1.44–3.84	0.98–1.51	0.92–1.83
P value	<0.001	<0.001	<0.001	0.001	0.07	0.14



No. of subjects	Diabetes		Hypertension		Hyperuricemia	
Control	248	84	880	342	637	243
Surgery	342	118	1204	424	792	292
Odds ratio	8.42	3.45	1.72	1.68	5.36	2.37
95% CI	5.68–12.5	1.64–7.28	1.40–2.12	1.09–2.58	4.23–6.78	1.61–3.47
P value	<0.001	0.001	<0.001	0.02	<0.001	<0.001

# Surgery Decreases Long-term Mortality, Morbidity, and Health Care Use in Morbidly Obese Patients

*Annals of Surgery* • Volume 240, Number 3, September 2004

TABLE 4. Five-Year Morbidity and Mortality

Condition/disease	Cohort				Relative Risk Reduction			P Value
	Bariatric Surgery		Controls		Estimate	95%	CI	
	n	%	n	%				
Blood and blood-forming organs	4	0.39	41	0.72	0.54	0.19	1.50	0.230
Cancer	21	2.03	487	8.49	0.24	0.17	0.39	0.001
Cardiovascular and circulatory	49	4.73	1530	26.69	0.18	0.12	0.22	0.001
Digestive	377	36.43	1414	24.66	1.48	1.42	1.78	0.001
Endocrinological	98	9.47	1566	27.25	0.35	0.32	0.38	0.001
Genitourinary	77	7.44	551	9.61	0.77	0.63	0.97	0.027
Infectious diseases	90	8.70	2140	37.33	0.23	0.17	0.25	0.001
Musculoskeletal	50	4.83	682	11.90	0.41	0.32	0.55	0.001
Nervous system	25	2.42	228	3.98	0.61	0.44	0.93	0.010
Psychiatric and mental	45	4.35	470	8.20	0.53	0.41	0.73	0.001
Respiratory	28	2.71	651	11.36	0.24	0.17	0.36	0.001
Skin	38	3.67	305	5.32	0.69	0.48	0.96	0.027
Mortality	7	0.68	354	6.17	0.11	0.04	0.27	0.001

# Surgery Decreases Long-term Mortality, Morbidity, and Health Care Use in Morbidly Obese Patients

*Annals of Surgery* • Volume 240, Number 3, September 2004

TABLE 5. Five-Year Health Care Use

Parameter	Cohort		P Value
	Bariatric	Controls	
	Mean (SD) [95% CI]		
Hospitalizations	2.75 (3.44) [2.53–2.95]	3.17 (3.22) [3.08–3.25]	0.001
Hospital stay (days)	21.05 (38.97) [18.67–23.43]	36.59 (25.41) [33.33–39.83]	0.001
Physician visits	9.62 (15.8) [8.66–10.59]	17.00 (21.74) [16.53–17.67]	0.001
Total direct costs* (1996 Canadian \$)	8,813 (2,344) [7623–8743]	11,854 (2,1220) [9,948–12,758]	0.001

\*Includes costs for surgery and postsurgical care

# Surgery Decreases Long-term Mortality, Morbidity, and Health Care Use in Morbidly Obese Patients

*Annals of Surgery* • Volume 240, Number 3, September 2004

TABLE 6. Five-Year Hospitalization Rates

Condition/disease	COHORT				Rate Ratio			P Value
	Bariatric Surgery		Controls		Estimate	95% CI		
	n	Rate	n	Rate				
Blood and blood-forming organs	4	1.69	51	3.40	0.49	0.13	1.35	0.225
Cancers	28	11.80	823	54.94	0.21	0.14	0.30	0.001
Cardiovascular and circulatory	83	34.99	2576	171.96	0.20	0.16	0.25	0.001
Digestive	641	270.24	2007	133.98	2.07	1.84	2.20	0.001
Endocrinological	953	401.77	12210	815.09	0.49	0.46	0.53	0.001
Genitourinary	96	40.47	688	45.93	0.88	0.70	1.08	0.266
Infections	148	62.39	4015	268.02	0.23	0.19	0.27	0.001
Musculoskeletal	64	26.98	1088	72.63	0.37	0.28	0.47	0.001
Nervous system	45	18.97	310	20.69	0.92	0.65	1.29	0.651
Psychiatric and mental	89	37.52	1273	84.98	0.44	0.35	0.54	0.001
Respiratory	41	17.28	1198	79.97	0.22	0.15	0.29	0.001
Skin	48	20.24	402	26.84	0.75	0.54	0.98	0.034
Total hospitalizations	2840	1197.30	35411	2363.89	0.50	0.49	0.53	0.001

N, the number of events; Rate, incidence: events/1000 person years.

# The Impact of Weight Reduction Surgery on Health-Care Costs in Morbidly Obese Patients



**Table 4.** Average total cost per 1,000 patients for hospitalization by group, year of follow-up

Year of Follow Up	Bariatric	Control	Absolute Difference	Cost Ratio; Control/Bariatric
1	\$12,461,938	\$3,609,680	\$-8,852,258	0.29
2	\$3,398,835	\$4,846,794	\$1,447,959	1.43
3	\$1,362,408	\$5,831,456	\$4,469,048	4.28
4	\$1,318,323	\$5,895,988	\$4,577,666	4.47
5	\$975,163	\$5,080,690	\$4,105,526	5.21
Total:	\$19,516,667	\$25,264,608	\$5,747,941	1.29

# Resultados

## Calidad de Vida

Gran mejoría	58%
Mejoría	37%
Sin cambios	5%
Empeoró	0%

# ¿Cómo decidirse por una técnica operatoria?

- ❖ Padrón y grado de Obesidad
- ❖ Evaluación de los riesgos vs. Necesidad de pérdida
- ❖ Perfil alimentar
- ❖ Antecedentes quirúrgicos
- ❖ Experiencia quirúrgica
- ❖ Elección por el paciente

ADECUAR TÉCNICA AL PACIENTE

# No olvidarse...

- ❖ Resultados no se miden por pérdida ponderal, sino por la mejora de la calidad de vida.
- ❖ Pérdida de peso: sexo, edad, peso inicial, IMC, raza, status socioeconómico, etc.

**GRACIAS**



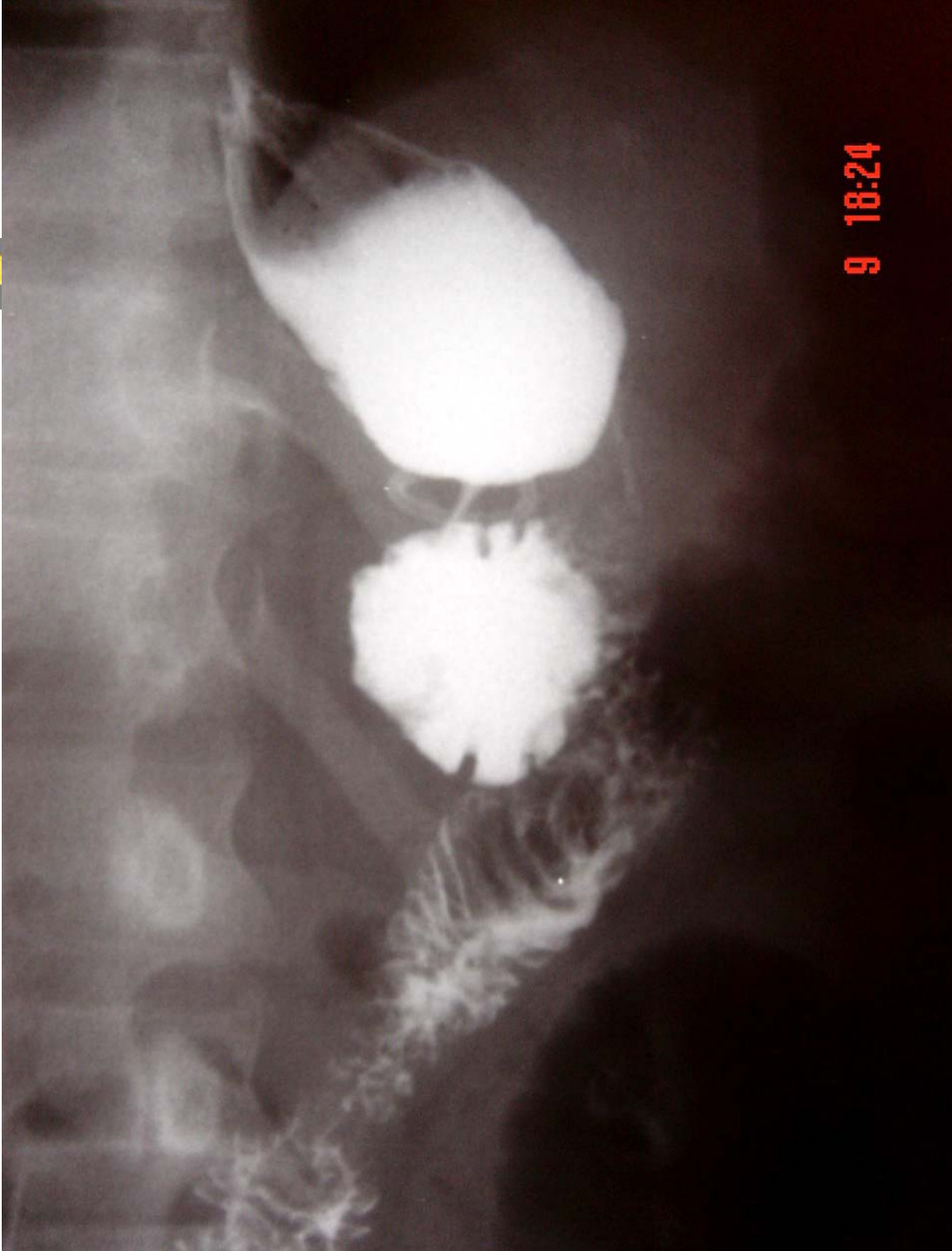




# Silas y Priscila



9 18:24



# BANDA AJUSTABLE

## Mitiko Belachew - 1995

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# Banda Gástrica Ajustable

⌘ **Clasificación IFSO:  
restrictiva.**

⌘ **Limitaciones semejantes a  
la de Mason.**

⌘ **Menor mortalidad entre las  
técnicas.**

# Cirugía de Capella

- ⌘ Clasificación IFSO: tipo mixto (restrictivo/desabsortivo).
- ⌘ Reservatorio gástrico 20ml con sutura mecánica.
- ⌘ Colocación de anillo de silastic o bandage con polipropileno – diámetro: 12mm
- ⌘ Y de Roux con 150 cm (200cm en los superobesos), a 40cm del ángulo de Treitz.



# Banda gástrica ajustable



# Banda gástrica ajustable



Of those physicians who have not referred their patients for surgery, 51.5% do not know of a surgeon in their area who performs bariatric surgery

<u>Reason for Not Referring</u>	<u>% of Respondents</u>
⌘ I do not know of a surgeon in my area who performs bariatric surgery	51.5%
⌘ None of my morbidly / severely obese patients are interested in bariatric surgery	27.3%
⌘ Too much "leg work" associated (for example: finding a surgeon, filling out forms, insurance, etc.)	15.2%
⌘ I do not believe in bariatric surgery and prefer not to refer patients for this procedure	15.2%
⌘ None of my morbidly / severely obese patients meet the NIH criteria	9.1%
⌘ Most patients who meet the NIH criteria are still not going to benefit from the procedure long term	3.0%
⌘ I prefer to manage these patients myself	0.0%
⌘ Other (not familiar w/ NIH, MD's do this, never considered)	12.1%

Question: From the list below, please check all of the items that represent the reasons why you have not referred any of your morbidly or severely obese



# Type II Diabetes is the #1 ranked co-morbidity that prompts IMs to advise their patients to lose weight

<u>Co-morbidities</u>	<u>Mean Ranking</u>		
	<u>Total</u>	<u>Have Referred</u>	<u>Have Not Referred</u>
⌘ Type II Diabetes	<b>1.6</b>	1.6	1.5
⌘ Cardiovascular disease	1.9	1.9	1.8
⌘ Obstructive sleep apnea	2.1	2.0	2.2
⌘ Hypertension	2.5	2.5	2.3
⌘ Stress urinary incontinence	1.0	1.0	0.0
⌘ Asthma	2.0	2.0	0.0
⌘ GERD	2.3	3.0	2.0
⌘ Degenerative joint disease	2.8	2.8	3.0
⌘ Hyperlipidemia	2.8	2.7	2.9
⌘ Depression	3.0	3.0	3.0
⌘ Other (transplant)	3.0	0.0	3.0

n=109

Question: Which of the following obesity-related co-morbidities are most likely to prompt you to advise your morbidly or severely obese patients to lose weight and recommend / prescribe weight loss treatment? Rank 1=Most Likely to 3=Least Likely



## Prevalencia (%)

País	Renta per Cápita	Hombres	Mujeres
China	370	1,2	1,6
Tanzania	100	0,6	3,6
Brasil	2.940	5,9	13,3
Rusia	3.220	10,8	27,9
EE.UU.	22.240	19,7	24,7
Japón	26.930	1,7	2,7

# Antecedentes

Aumenta el riesgo de:

- ⌘ Hipertensión
- ⌘ Diabetes tipo 2
- ⌘ Enfermedad coronaria...
- ⌘ Litiasis vesicular
- ⌘ Ciertos tipos de cáncer
- ⌘ Dislipidemia
- ⌘ Derrame
- ⌘ Osteoartritis
- ⌘ Apnea

# Cuál es la solución?



# Bypass jejun-ileal

## ⌘ Fenómeno de la Adaptación Intestinal:

- aumento de la capacidad de absorción tras hipertrofia de las vilosidades intestinales inducida por el GLP1.
- aumento del gasto energético basal.

# By-pass gástrico

