2 Simposio Sochidiab

Viña del Mar, 2024

Tratamiento Endoscópico y Quirúrgico
Obesidad-Diabetes-Sd Metabólico-Hígado Graso

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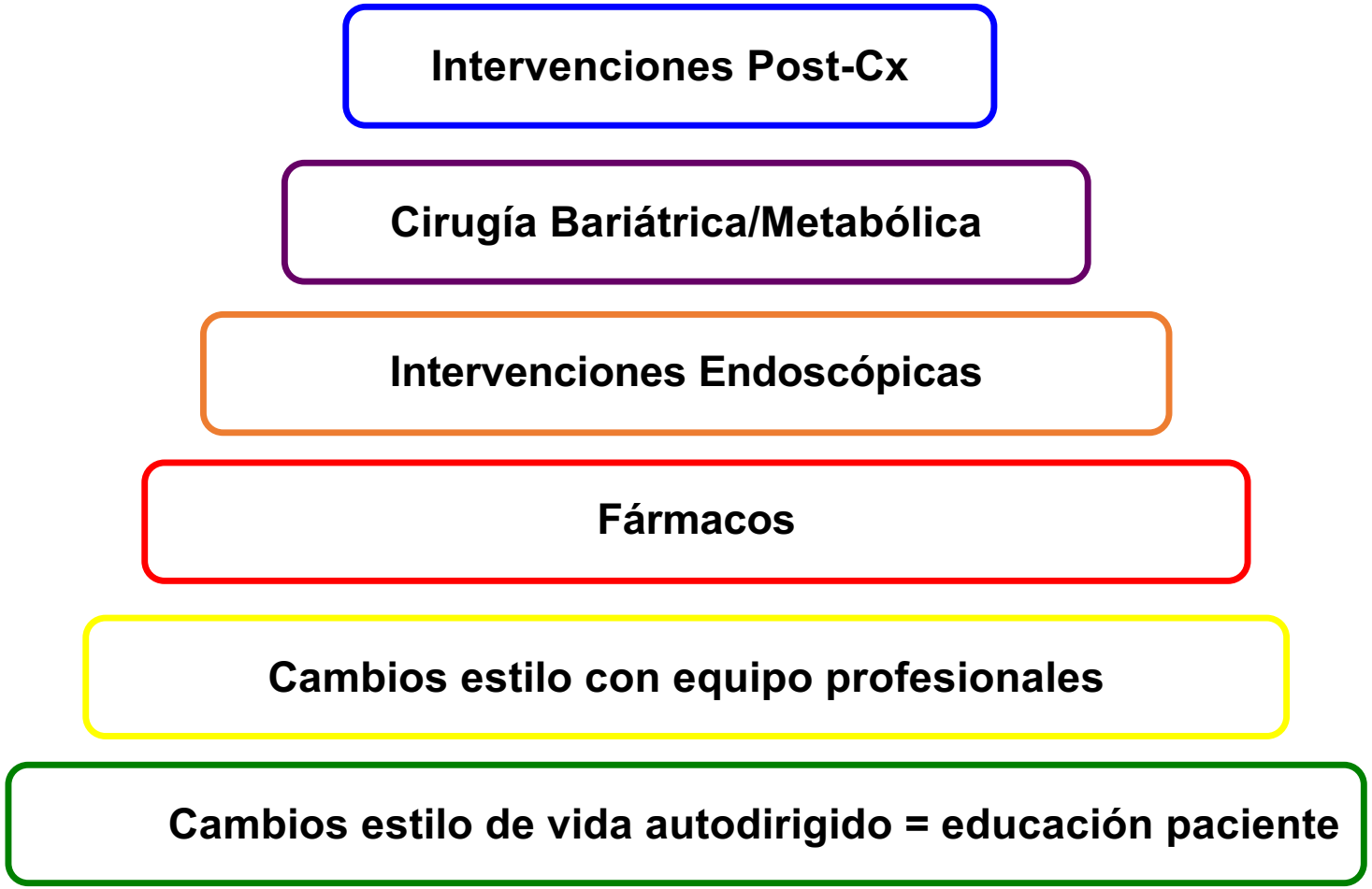
Complejo Asistencial Dr. Sótero del Río
Juntos para una mejor salud

SCCBM Sociedad Chilena de Cirugía Bariátrica y Metabólica

Conflicto Interés

- Sin conflicto

Tratamiento progresivo obesidad



Gentileza Dr. Scott Butsh, CCF

Selección Opción Terapéutica

- Edad
- Severidad obesidad
- Comorbilidades asociadas
- Preferencia paciente
- Resultado exámenes
- Evaluación equipo multidisciplinario

Tratamiento Endoscópico vs Quirúrgico

Endoscópico

Sobrepeso

Obesidad

Sin indicación Cirugía Bariátrica

Contraindicación CB

No interesado en CB

Quirúrgico

Obesidad

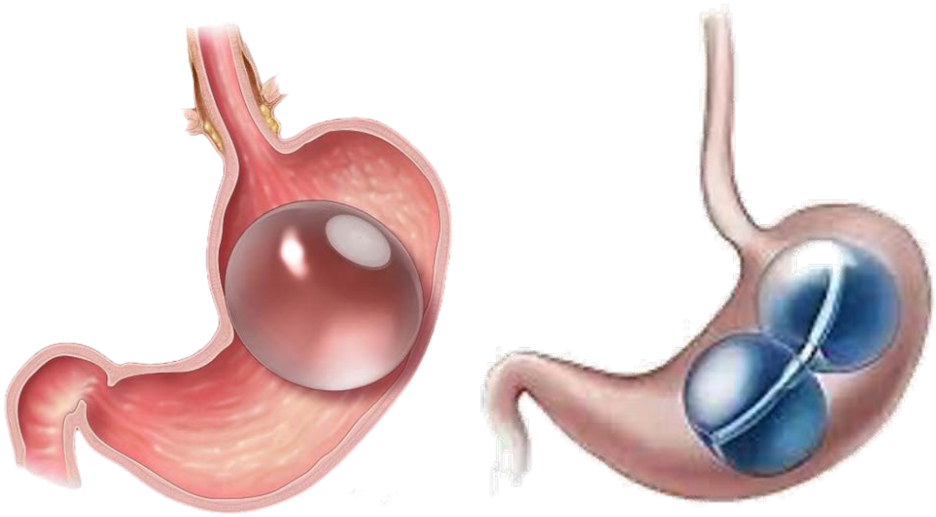
Fallo tratamientos previos

Candidatos Tratamientos Endoscópicos

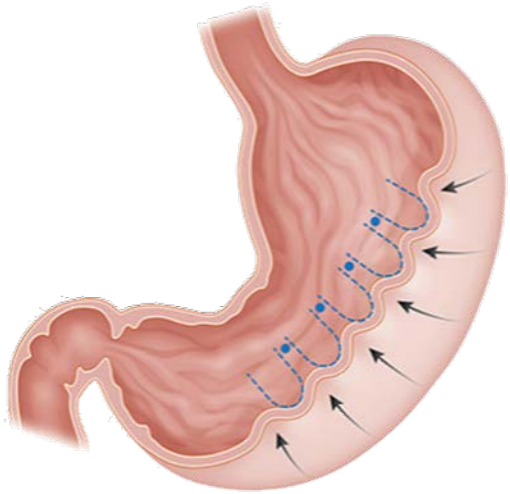
- **Pacientes con sobrepeso (IMC 27 - 29)**
  - intentos fallidos previos (médicos, farmacológicos)
  - enfermedades asociadas (ej., patología osteoarticular asociada, dolor crónico)
- **Pacientes con obesidad (IMC > 30)**
  - sin indicación de cirugía bariátrica
  - contraindicación de cirugía bariátrica
  - no interesados en cirugía bariátrica

Procedimientos Endoscópicos

Balón Intragástrico

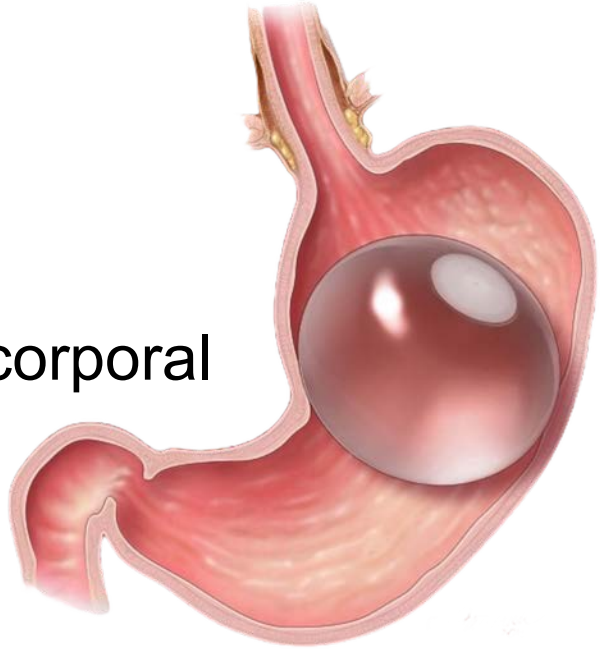


Gastroplastía Endoscópica



Balón Intragástrico

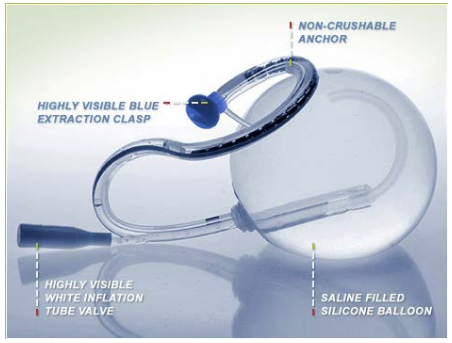
- Dispositivo mínimamente invasivo, temporal.
- Múltiples sucesivos.
- Genera saciedad, enlentece vaciamiento gástrico.
- Durabilidad (4 meses a 12 meses)
- Volumen 500 – 700 cc aprox
- Pérdida peso promedio 10-15% peso corporal
- Seguro < 1% complicaciones graves



Balón Intragástrico - Alternativas

- Orbera ® (6 -12 meses, 500-700 ml, endoscopia)
- Spatz® (6 -12meses, 500-700 ml, endoscopia, ajustable)
- Allurion® (16 semanas, 550 ml, sin endoscopia)

Orbera



Spatz

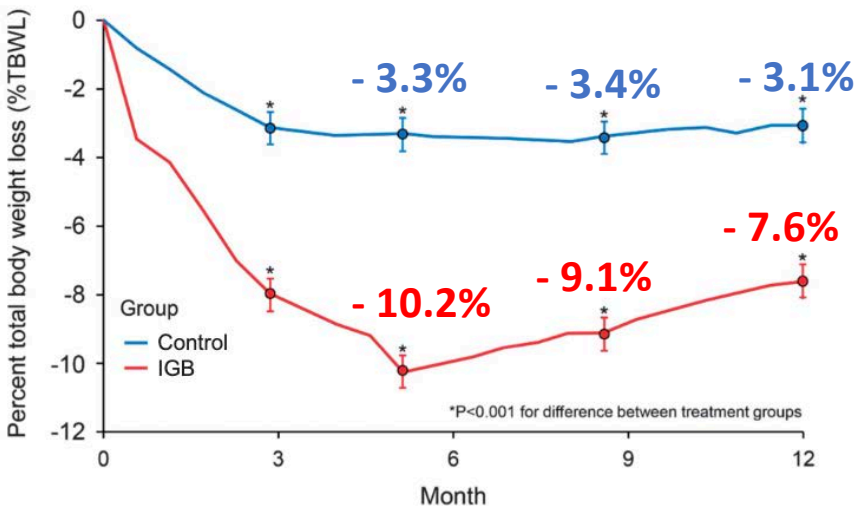
Allurion

Balón Intragástrico - Resultados

Original Article

Intragastric balloon as an adjunct to lifestyle intervention: a randomized controlled trial

	Grupo BIG (n=125)	Grupo Control (n=130)
Mujeres **Hombres**	112 (89.6%) 13 (10.4%)	117 (90%) 13 (10%)
Peso (kilos)	98 ± 15	98 ± 12
DMT2 (n,%)	9 (7%)	8 (6%)
HTA (n,%)	33 (26%)	37 (28%)
Dislipidemia (n,%)	49 (39%)	39 (30%)



Courcoulas, A. *et al.* Intragastric balloon as an adjunct to lifestyle intervention: a randomized controlled trial. *Int J Obesity* **41**, 427–433 (2017).

Balón Intragástrico - Resultados

Original Article

Intragastric balloon as an adjunct to lifestyle intervention: a randomized controlled trial

Comorbilidad	Grupo	Base	9 meses	Valor p
DMT2	BIG	9 (7.2%)	5 (4.0%)	0.44
	Control	8 (6.1%)	3 (2.3%)	
Hipertensión	BIG	33 (26.4%)	14 (11.2%)	0.33
	Control	37 (28.5%)	20 (15.4%)	
Dislipidemia	BIG	49 (39.2%)	29 (23.2%)	0.64
	Control	39 (30.0%)	27 (20.8%)	

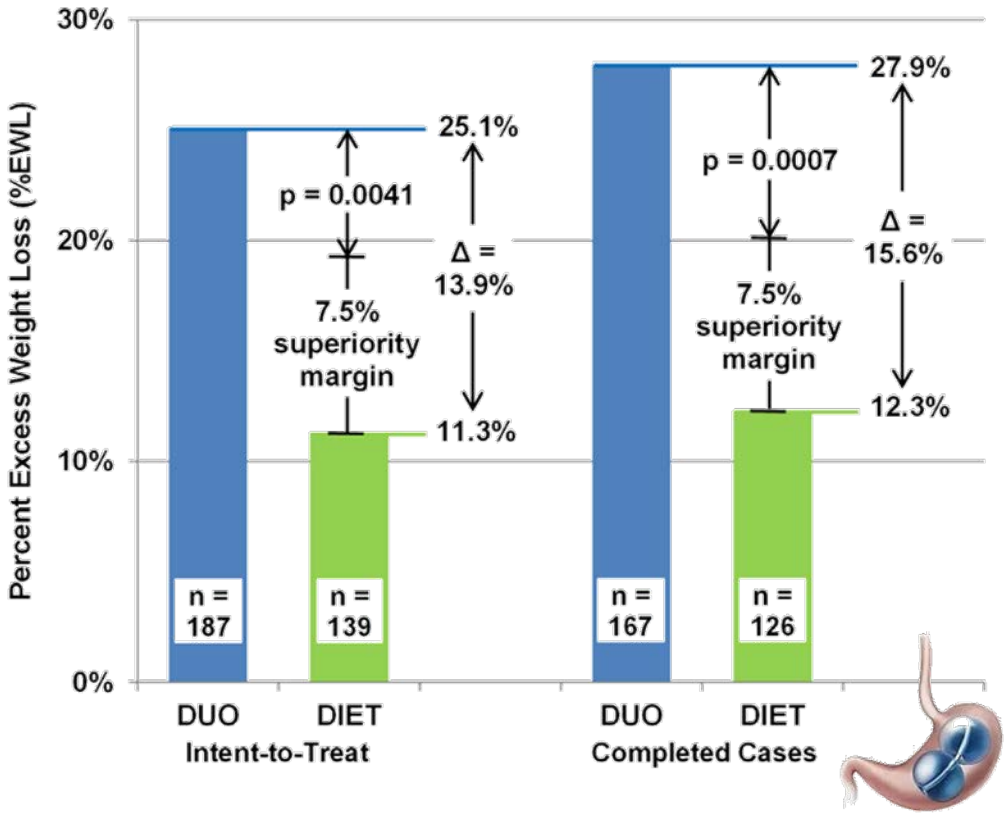
Courcoulas, A. *et al.* Intragastric balloon as an adjunct to lifestyle intervention: a randomized controlled trial. *Int J Obesity* **41**, 427–433 (2017).

Balón Intragástrico - Resultados

Original Article

The REDUCE pivotal trial: a prospective, randomized controlled pivotal trial of a dual intragastric balloon for the treatment of obesity

	Grupo BIG (n=187)	Grupo Control (n=139)
Mujeres	95.2%	95%
IMC	35.3 ± 2.8	35.4 ± 2.6
DMT2	7%	7.2%
HTA	28.9%	35.3%
Dislipidemia	29.4%	28.1%



Ponce, J. *et al.* The REDUCE pivotal trial_ a prospective, randomized controlled pivotal trial of a dual intragastric balloon for the treatment of obesity. *SOARD* **11**, 874–881 (2015).

Articulo Original

The REDUCE pivotal trial: a prospective, randomized controlled pivotal trial of a dual intragastric balloon for the treatment of obesity

Table 3
Change in Co-morbidity Laboratory Tests

DUO Patients Laboratory Values	Value at Baseline	Change from Baseline at:			
		Week 12	Week 24	Week 36	Week 48
		During DBS Treatment		After DBS Treatment	
Glucose	93.2	−1.0	0.3	−1.5	0.9
Insulin	17.8	**−4.8**	**−3.8**	−0.7	−1.0
HbA1 c	5.7	**−0.1**	**−0.2**	**−0.3**	**−0.2**
TG	140.9	**−17.9**	**−15.7**	−6.7	−9.0
HDL	52.0	−0.9	1.0	**1.6**	**1.9**
LDL	121.0	−3.0	**−4.1**	**−6.8**	**−4.6**
Systolic BP	130.4	**−8.2**	**−8.3**	**−9.3**	**−6.6**
Diastolic BP	81.8	**−2.7**	**−4.3**	**−4.3**	**−4.4**
Waist (inches)	42.3		**−2.9**		**−2.2**
Hip (inches)	47.1		**−2.2**		**−1.5**

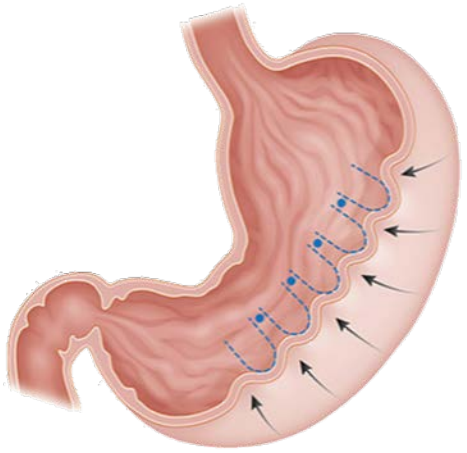
BP = Blood pressure; DBS = dual balloon system; DIET = Sham endoscopy plus diet and exercise alone; DUO = Diet and exercise; HbA1 c = hemoglobin A1 c; HDL = high density lipoproteins; LDL = low density lipoproteins; TG = Triglycerides.

Figures in bold $P < .05$. Number of patients varied slightly among tests: baseline, 184–187; Week 12, 168–173; Week 24, 166–169; Week 36, 115–123; and Week 48, 131–136.

Ponce, J. *et al.* The REDUCE pivotal trial_ a prospective, randomized controlled pivotal trial of a dual intragastric balloon for the treatment of obesity. *SOARD* **11**, 874–881 (2015).

Gastroplastía Endoscópica

- Procedimiento endoscópico reversible.
- Reducción volumen gástrico desde ángulo hasta cardias plicando la pared gástrica
- Efecto sería aumentar la saciedad al restringir el volumen gástrico.

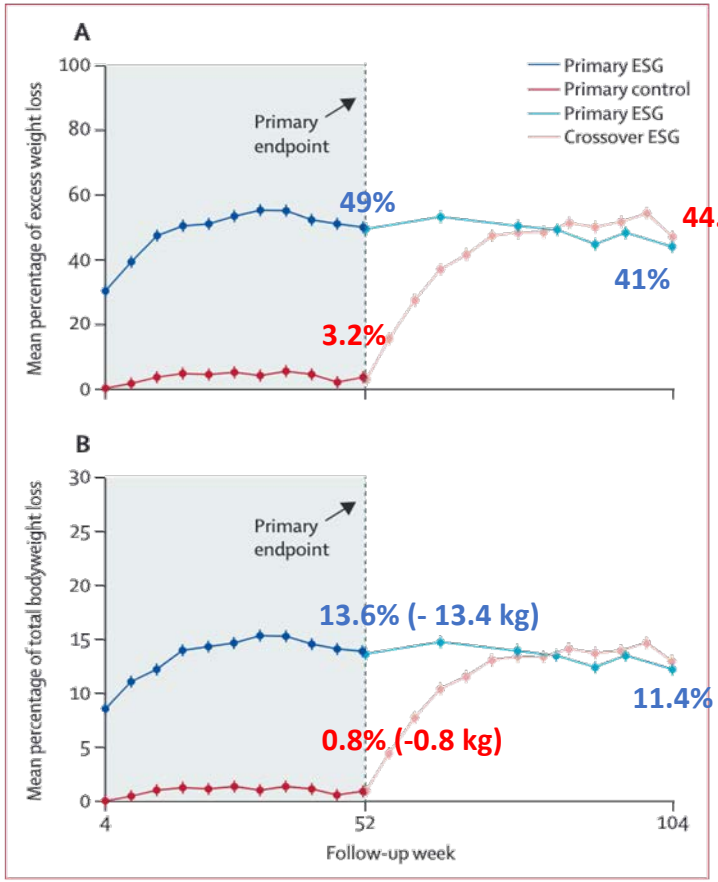


Gastroplastía Endoscópica

Original Article

Endoscopic sleeve gastroplasty for treatment of class 1 and 2 obesity (MERIT): a prospective, multicentre, randomised trial

	Grupo Control (n=110)	Grupo ESG (n=77)
Mujeres **Hombres**	92 (84%) 18 (16%)	68 (88%) 9 (12%)
IMC (kg/mts²)	35.7 ± 2.6	35.5 ± 2.6
DMT2 (n,%)	36 (33%)	18 (23%)
HTA (n,%)	58 (53%)	38 (49%)
Dislipidemia (n,%)	49 (39%)	39 (30%)



Dayyeh, B. K. A. *et al.* Endoscopic sleeve gastroplasty for treatment of class 1 and 2 obesity (MERIT): a prospective, multicentre, randomised trial. *Lancet* **400**, 441–451 (2022).

Endoscopic sleeve gastroplasty for treatment of class 1 and 2 obesity (MERIT): a prospective, multicentre, randomised trial

	ESG (primary)	Control	Rate difference*	p value†	ESG (primary and crossover)
Diabetes					
Improving	92% (12/13; 65 to 100)	15% (4/27; 5 to 33)	−77·5 (10·1; −91·4 to −47·4)	<0·0001	93% (25/27; 76 to 99)
Worsening	0% (0/13; 0 to 27)	44% (12/27; 28 to 63)	44·4 (9·6; 16·1 to 60·2)	0·0041	0% (0/27; 0 to 15)
Hyperlipidaemia					
Improving	40% (6/15; 20 to 64)	32% (8/25; 17 to 52)	8·0 (15·7; −37 to −22)	0·61	30% (7/23; 10 to 15)
Worsening	27% (4/15; 11 to 52)	28% (7/25; 14 to 48)	1·3 (14·9; −28 to 28)	0·93	30% (7/23; 10 to 15)
Hypertension					
Improving	67% (24/36; 50 to 80)	40% (19/48; 27 to 54)	−27·1 (10·6; −46·1 to 5·5)	0·014	60% (39/65; 48 to 71)
Worsening	6% (2/36; 1 to 19)	23% (11/48; 13 to 37)	17·4 (7·2; 1·5 to 30·7)	0·029	9% (6/65; 4 to 19)
Metabolic syndrome					
Improving	83% (24/29; 65 to 93)	35% (10/29; 20 to 53)	−48·3 (11·3; −67·0 to −23·3)	0·0002	83% (35/42; 69 to 92)
Worsening	0% (0/29; 0 to 14)	38% (11/29; 23 to 56)	37·9 (9·0; 17·2 to 53·7)	0·0002	5% (2/42; 1 to 17)
Effect on multiple comorbid conditions					
Improved at least 1 condition	41 (80%; n=51)	28 (45%; n=62)	..	..	70 (78%; n=90)
Worsened at least 1 condition	6 (12%; n=51)	31 (50%; n=62)	..	..	15 (17%; n=90)

Data are rate (n/N; 95% CI), rate difference (SE; 95% CI) or n (%; N). ESG=endoscopic sleeve gastroplasty. A negative rate difference indicates that the ESG rate was greater than the control rate. *Mean difference was calculated as the difference between the rate for the control group minus ESG group. †The p value was determined with an independent samples proportions test to evaluate differences between two rates.

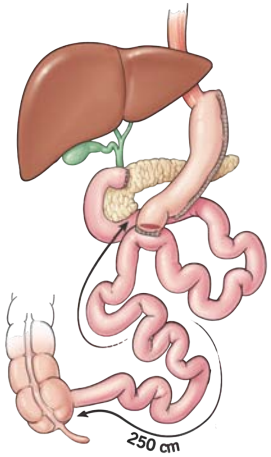
Table 2: **Comorbidity 52-week change from baseline for randomly assigned participants**

Dayyeh, B. K. A. *et al.* Endoscopic sleeve gastroplasty for treatment of class 1 and 2 obesity (MERIT): a prospective, multicentre, randomised trial. *Lancet* **400**, 441–451 (2022).

Alternativas Quirúrgicas

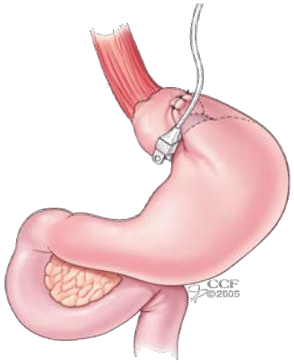
Procedimientos Mixtos

Bypass Gástrico (BPG)

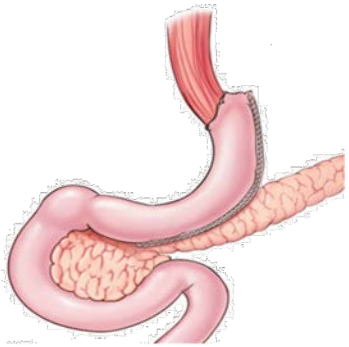


SADI-S

Procedimientos Restrictivos



Banda Gástrica Ajustable (BGA)



Gastrectomía en Manga (GM)

Procedimientos Malabsortivos

Bypass Yeyunoileal (BPYI)

¿Quiénes se benefician cirugía bariátrica?

- IMC ≥ 40
- IMC 35 – 40 comorbilidad asociada
- IMC 30 –35
  - DMT2 control subóptimo
  - sin respuesta a tratamiento médico

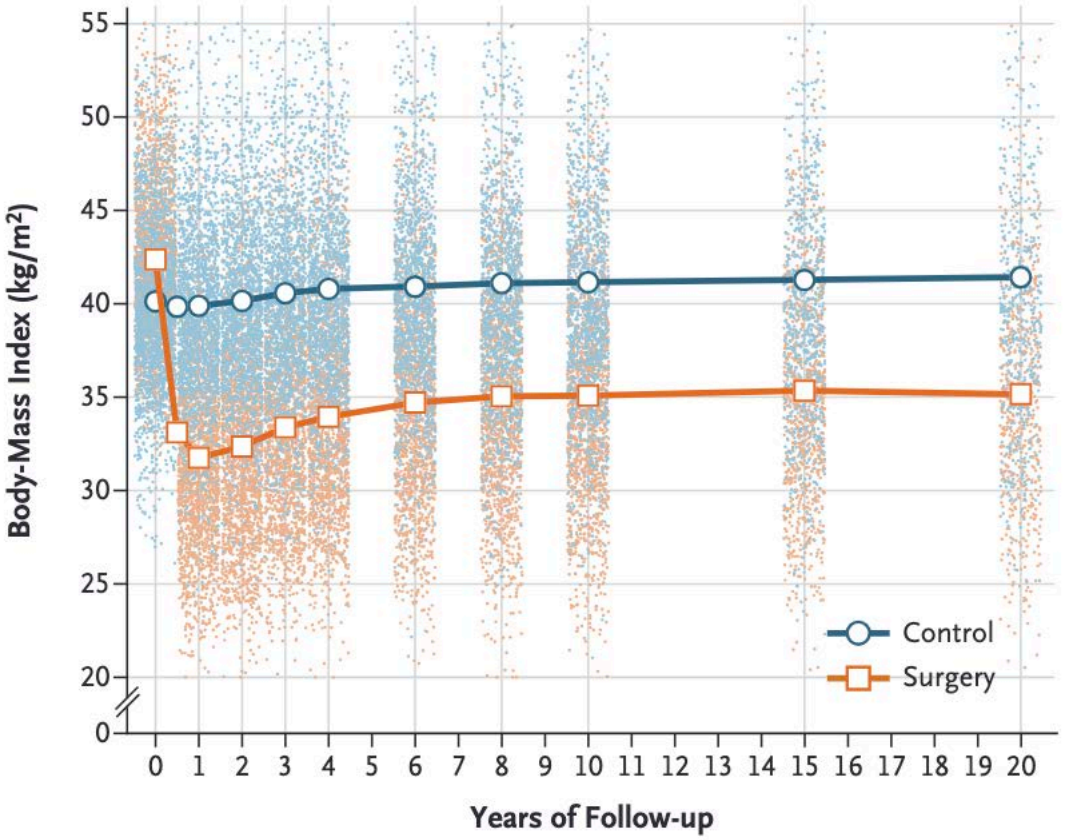
Cirugía Bariátrica - Beneficios

- Pérdida de peso
- Remisión de comorbilidades (DMT2,HTA,NASH, Fibrosis hepática, etc)
- Prevención comorbilidades
- Reducción riesgo cáncer
- Calidad de vida
- Sobrevida

Cirugía Bariátrica - resultados a 20 años

Original Article

Life Expectancy after Bariatric Surgery in the Swedish Obese Subjects Study

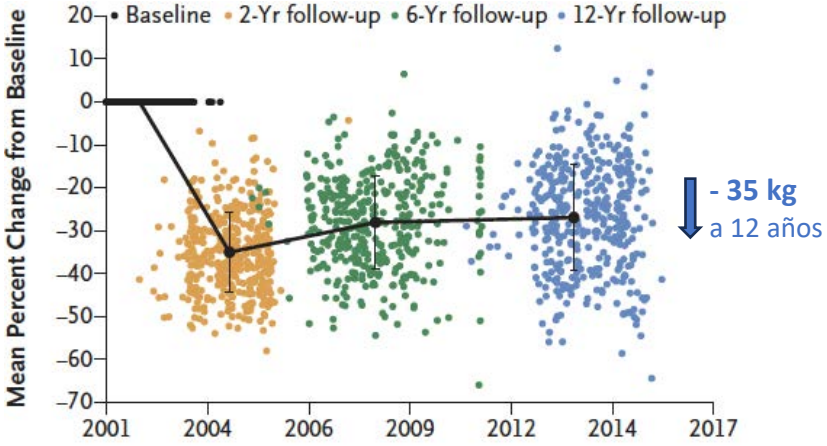


Adams, T. D., Davidson, L. E., Litwin, S. E., Kim, J., Kolotkin, R. L., Nanjee, M. N., et al. (2017). Weight and Metabolic Outcomes 12 Years after Gastric Bypass. *The New England Journal of Medicine*, *377*(12), 1143–1155.

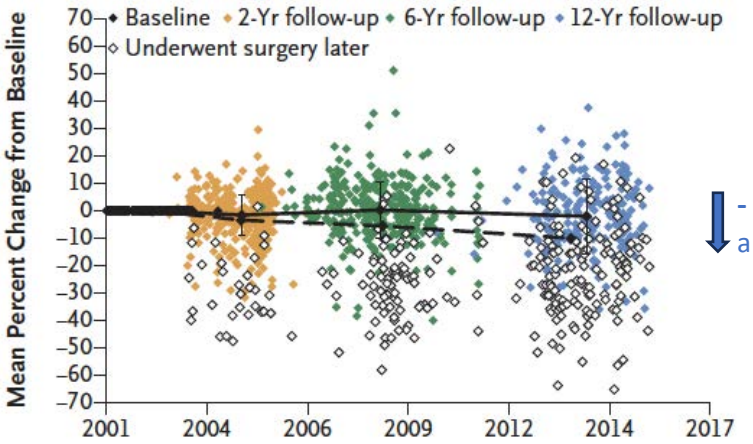
Bypass Gástrico – Resultados

Original Article

Weight and Metabolic Outcomes 12 Years after Gastric Bypass

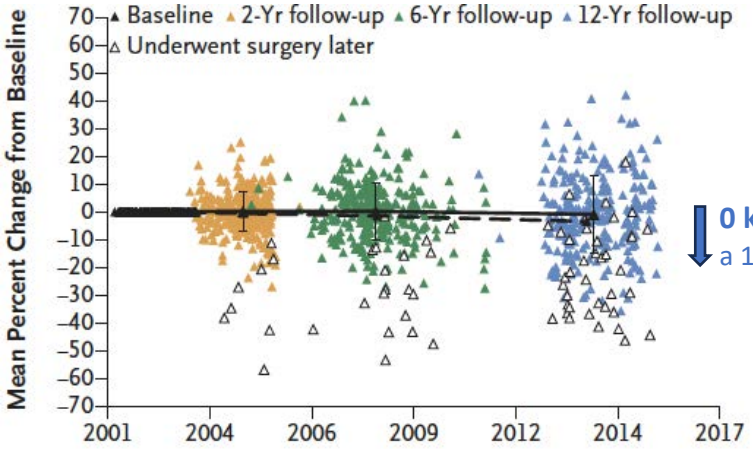


- 35 kg
a 12 años



- 2.9 kg
a 12 años

*** 147/417 35%**
Cirugía en
12 años



0 kg
a 12 años

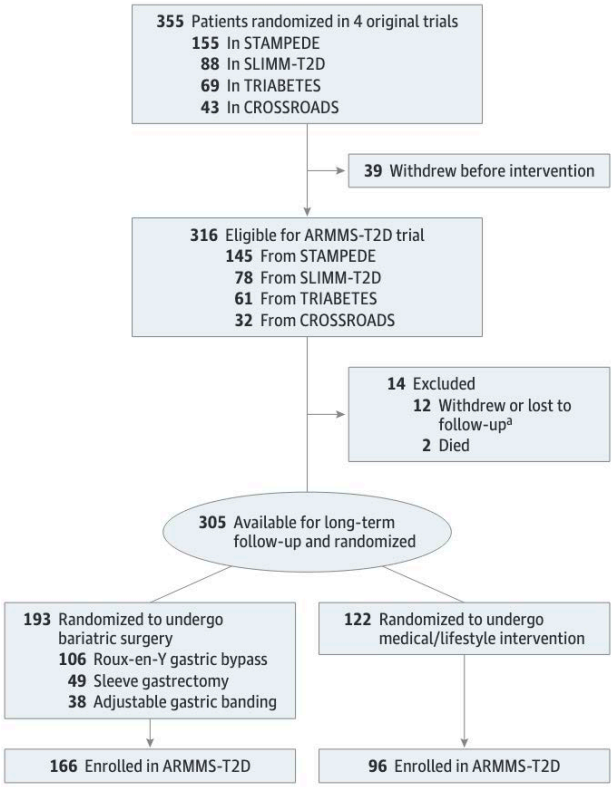
*** 39/321 12%**
Cirugía en
12 años

Adams, T. D., Davidson, L. E., Litwin, S. E., Kim, J., Kolotkin, R. L., Nanjee, M. N., et al. (2017). Weight and Metabolic Outcomes 12 Years after Gastric Bypass. *The New England Journal of Medicine*, *377*(12), 1143–1155.

Cirugía Bariátrica vs Manejo Médico en DMT2

Original Article

Long-Term Outcomes of Medical Management vs Bariatric Surgery in Type 2 Diabetes Mellitus



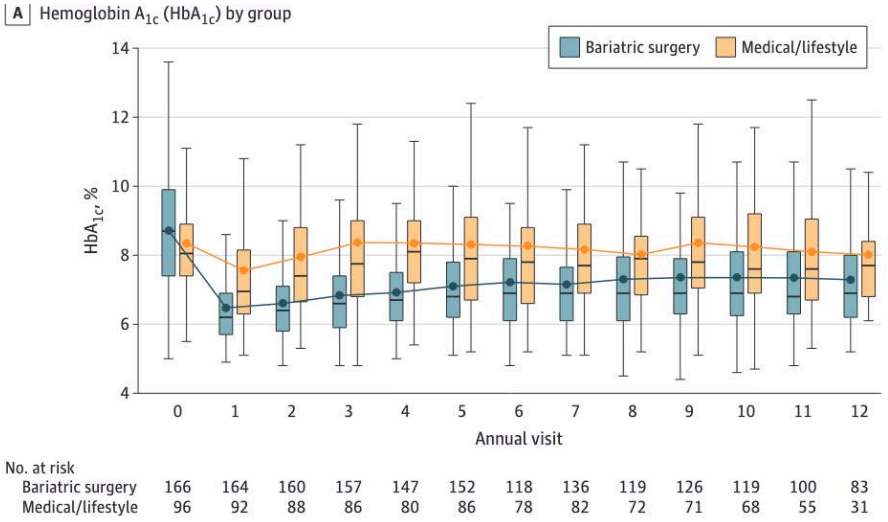
Characteristic	Medical/lifestyle (n = 96)	Bariatric surgery (n = 166)	Bariatric surgery type		
			Roux-en-Y gastric bypass (n = 89)	Sleeve gastrectomy (n = 41)	Adjustable gastric banding (n = 36)
Demographics, No. (%)					
Age, y	51.4 (6.8)	49.0 (9.0)	49.1 (9.0)	48.3 (7.7)	49.6 (10.3)
Sex					
Women	62 (64.6)	117 (70.5)	61 (68.5)	32 (78.0)	24 (66.7)
Men	34 (35.4)	49 (29.5)	28 (31.5)	9 (22.0)	12 (33.3)
Race					
Black	35 (36.5)	46 (27.7)	23 (25.8)	13 (31.7)	10 (27.8)
White	59 (61.5)	118 (71.1)	64 (71.9)	28 (68.3)	26 (72.2)
Other[a]	2 (2.1)	2 (1.2)	2 (2.3)	0	0
Anthropometrics, mean (SD)					
Waist, cm	113.7 (9.6) [n = 95]	115.0 (9.9)	116.1 (9.9)	113.3 (10.2)	114.5 (9.7)
Weight, kg	105.6 (15.5)	103.5 (15.3)	105.2 (15.3)	100.2 (16.7)	103.1 (13.0)
BMI	36.2 (3.4)	36.6 (3.6)	37.0 (3.4)	36.3 (4.2)	35.9 (3.2)
BMI <35	40 (41.7)	56 (33.7)	26 (29.2)	15 (36.6)	15 (41.7)
Systolic BP, mm Hg	129.7 (15.8)	134.4 (17.7)	135.0 (18.4)	135.8 (19.9)	131.6 (12.7)
Diastolic BP, mm Hg	79.5 (9.6)	80.4 (10.0)	80.7 (9.8)	81.9 (12.2)	78.2 (7.2)
Diabetes duration, y	8.8 (5.2)	8.3 (5.5)	8.8 (5.9)	7.8 (4.6)	7.5 (5.1)
Laboratory					
HbA_{1c}, mean (SD), %	8.2 (1.2)	8.7 (1.7)	8.7 (1.6)	9.4 (1.6)	8.2 (1.8)
HbA_{1c} <7.0%, No. (%)	11 (11.5)	20 (12.0)	9 (10.1)	0	11 (30.6)
Fasting glucose, mean (SD), mg/dL	156.5 (50.0) [n = 95]	172.0 (69.7)	171.0 (69.5)	172.1 (66.1)	174.6 (75.9)

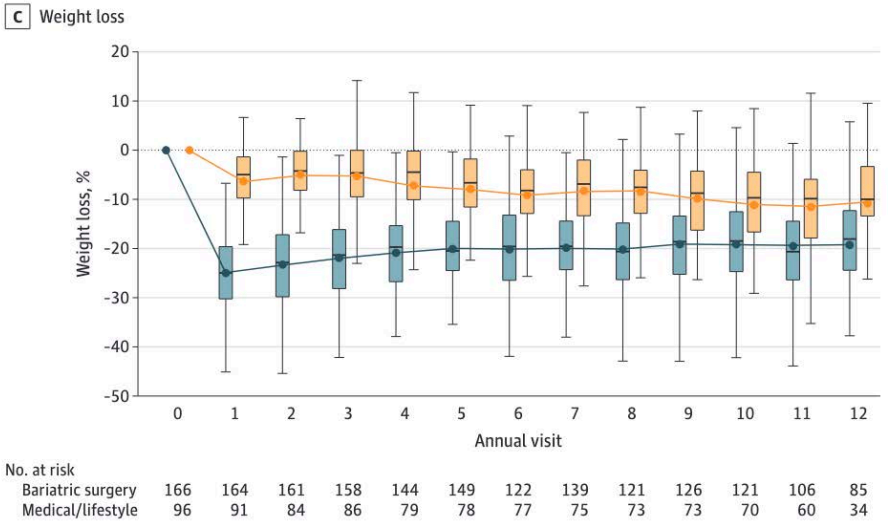
Courcoulas, A. P. *et al.* Long-Term Outcomes of Medical Management vs Bariatric Surgery in Type 2 Diabetes. *JAMA* **331**, 654–664 (2024).

Cirugía Bariátrica vs Manejo Médico en DMT2

Original Article

Long-Term Outcomes of Medical Management vs Bariatric Surgery in Type 2 Diabetes Mellitus



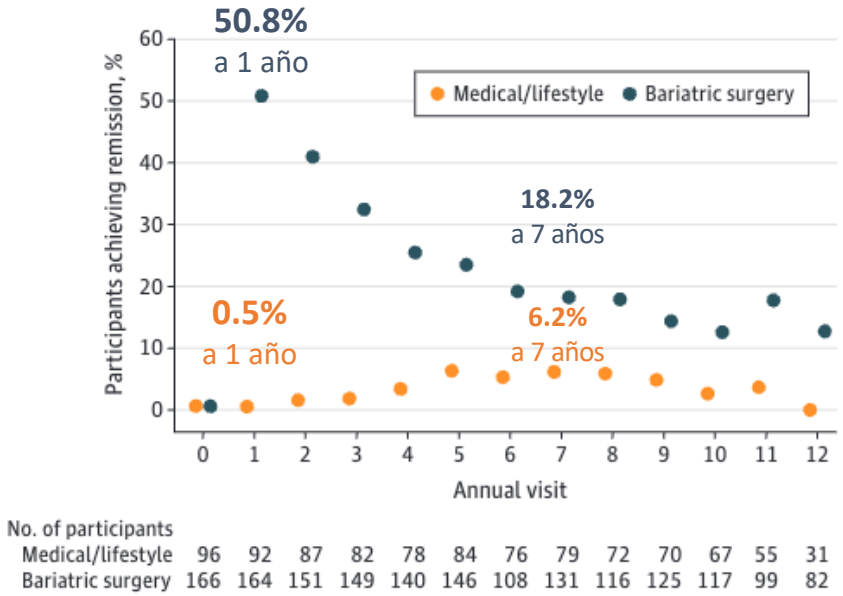


Courcoulas, A. P. *et al.* Long-Term Outcomes of Medical Management vs Bariatric Surgery in Type 2 Diabetes. *JAMA* **331**, 654–664 (2024).

Cirugía Bariátrica vs Manejo Médico en DMT2

Original Article

Long-Term Outcomes of Medical Management vs Bariatric Surgery in Type 2 Diabetes Mellitus



Remisión hb glic < 6.5
BPG 24.5%
MG 15.2%
BGA 8.9%
a 12 años

Courcoulas, A. P. *et al.* Long-Term Outcomes of Medical Management vs Bariatric Surgery in Type 2 Diabetes. *JAMA* **331**, 654–664 (2024).

Prevención Enfermedades– Resultados

Original Article

Weight and Metabolic Outcomes 12 Years after Gastric Bypass

Table 3. Incidence and Remission Rates at 12 Years for Type 2 Diabetes, Hypertension, and Dyslipidemia, According to Study Group.*

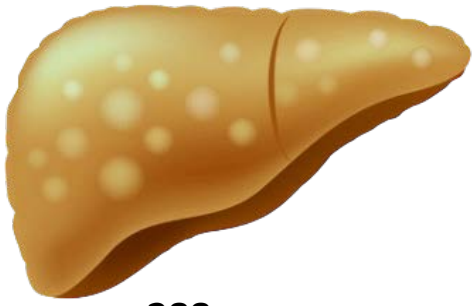
End Point	Surgery Group		Nonsurgery Group 1		Nonsurgery Group 2		Surgery Group vs. Nonsurgery Group 1	Surgery Group vs. Nonsurgery Group 2
	No./Total No.	% (95% CI)	No./Total No.	% (95% CI)	No./Total No.	% (95% CI)	Adjusted Odds Ratio (95% CI)†	Adjusted Odds Ratio (95% CI)†
Incidence at 12 years								
Type 2 diabetes	8/303	3 (0 to 5)	42/164	26 (16 to 35)	47/184	26 (17 to 35)	0.08 (0.03 to 0.24)‡	0.09 (0.03 to 0.29)‡
Hypertension	37/226	16 (9 to 23)	51/123	41 (29 to 54)	61/131	47 (34 to 59)	0.23 (0.11 to 0.49)‡	0.23 (0.11 to 0.51)‡
Low HDL cholesterol	7/234	3 (0 to 6)	22/130	17 (8 to 26)	28/170	16 (8 to 24)	0.12 (0.03 to 0.46)‡	0.16 (0.04 to 0.6)‡
High LDL cholesterol	53/312	17 (11 to 23)	93/185	50 (40 to 61)	119/213	56 (46 to 65)	0.17 (0.09 to 0.31)‡	0.19 (0.1 to 0.36)‡
High triglycerides	3/225	1 (–1 to 3)	11/137	8 (2 to 15)	12/153	8 (2 to 14)	0.15 (0.02 to 0.97)§	0.17 (0.02 to 1.15)
Remission at 12 years								
Type 2 diabetes	43/84	51 (36 to 67)	5/52	10 (–2 to 21)	4/76	5 (–2 to 12)	8.9 (2.0 to 40.0)‡	14.8 (2.9 to 75.5)‡
Hypertension	59/162	36 (26 to 47)	9/93	10 (1 to 18)	18/130	14 (5 to 22)	5.1 (1.7 to 15.6)‡	2.4 (0.9 to 5.9)
Low HDL cholesterol	127/154	82 (74 to 91)	48/87	55 (40 to 70)	49/92	53 (39 to 68)	3.8 (1.6 to 9.3)‡	3.3 (1.3 to 8.1)¶
High LDL cholesterol	45/76	59 (43 to 75)	6/32	19 (–1 to 38)	3/49	6 (–4 to 16)	7.1 (1.6 to 31.7)¶	18.6 (2.8 to 124.2)‡
High triglycerides	154/163	94 (89 to 100)	44/80	55 (39 to 71)	78/109	72 (59 to 84)	14.7 (4.5 to 48.4)‡	7.0 (2.1 to 23.4)‡

Adams, T. D., Davidson, L. E., Litwin, S. E., Kim, J., Kolotkin, R. L., Nanjee, M. N., et al. (2017). Weight and Metabolic Outcomes 12 Years after Gastric Bypass. *The New England Journal of Medicine*, *377*(12), 1143–1155.

Cirugía Bariátrica vs Manejo Médico en NASH

Original Article

Bariatric–metabolic surgery versus lifestyle intervention plus best medical care in non-alcoholic steatohepatitis (BRAVES): a multicentre, open-label, randomised trial



288
pacientes NASH

BPG
96 (33%)

MG
96 (33%)

LFS
96 (33%)

Objetivo primario

resolución histológica del NASH

Objetivo secundario

mejoría histológica de fibrosis

Verrastro, O. *et al.* Bariatric–metabolic surgery versus lifestyle intervention plus best medical care in non-alcoholic steatohepatitis (BRAVES): a multicentre, open-label, randomised trial. *Lancet* **401**, 1786–1797 (2023).

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		LFS	BPG	SG	p
edad		45.9	46.4	46.8	0.57
IMC		41.2	43.4	40.7	0.0018
Score NASH	**Basal**	4.21	4.21	4.18	0.97
	% cambio 1 año	-5.4%	-31.5%	-23.9%	<0.0001
Etapa Fibrosis F0 Basal		0	1.3%	1.3%	0.6
	1 año	2.5%	9.1%	11.4%	0.09
	F1 Basal	42.5%	49.3%	51.9%	0.47
	1 año	51.2%	75.3%	68.3%	0.0049
	F2 Basal	38.8%	42.8%	35.4%	0.63
	1 año	32.5%	14.5%	15.2%	0.0062
	F3 Basal	18.8%	6.5%	11.4%	0.06
	1 año	13.8%	1.3%	3.8%	0.003

Verrastro, O. *et al.* Bariatric–metabolic surgery versus lifestyle intervention plus best medical care in non-alcoholic steatohepatitis (BRAVES): a multicentre, open-label, randomised trial. *Lancet* **401**, 1786–1797 (2023).

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Original Article

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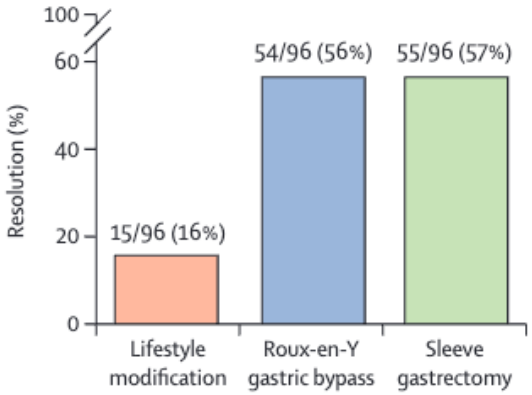
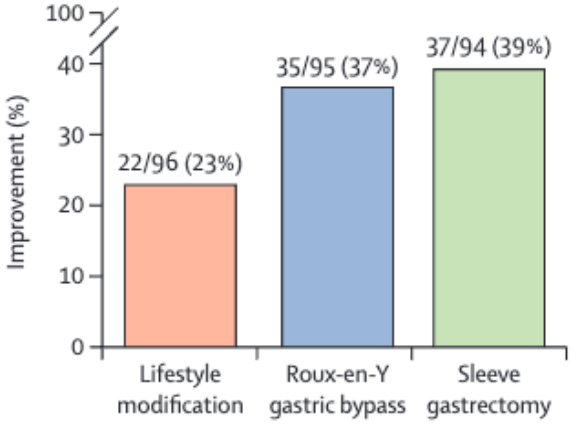
Objetivo primario

resolución histológica del NASH



Objetivo secundario

mejoría histológica de fibrosis

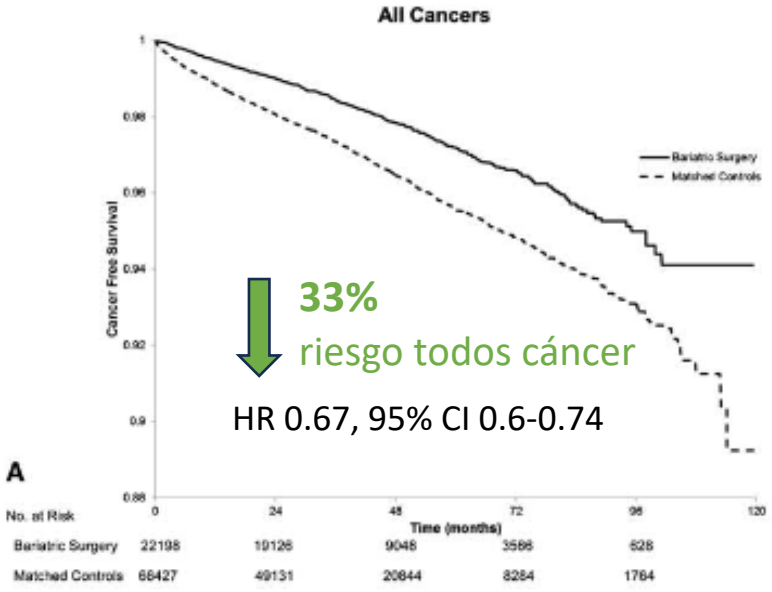


Verrastro, O. *et al.* Bariatric–metabolic surgery versus lifestyle intervention plus best medical care in non-alcoholic steatohepatitis (BRAVES): a multicentre, open-label, randomised trial. *Lancet* **401**, 1786–1797 (2023).

CB Disminuye Riesgo Cáncer

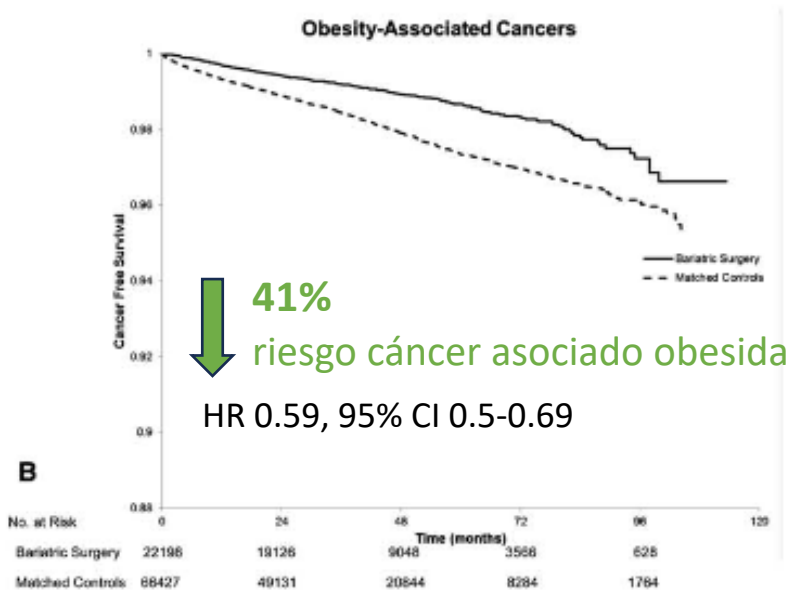
Original Article

Bariatric Surgery and the Risk of Cancer in a Large Multisite Cohort



33%
riesgo todos cáncer

HR 0.67, 95% CI 0.6-0.74



41%
riesgo cáncer asociado obesidad

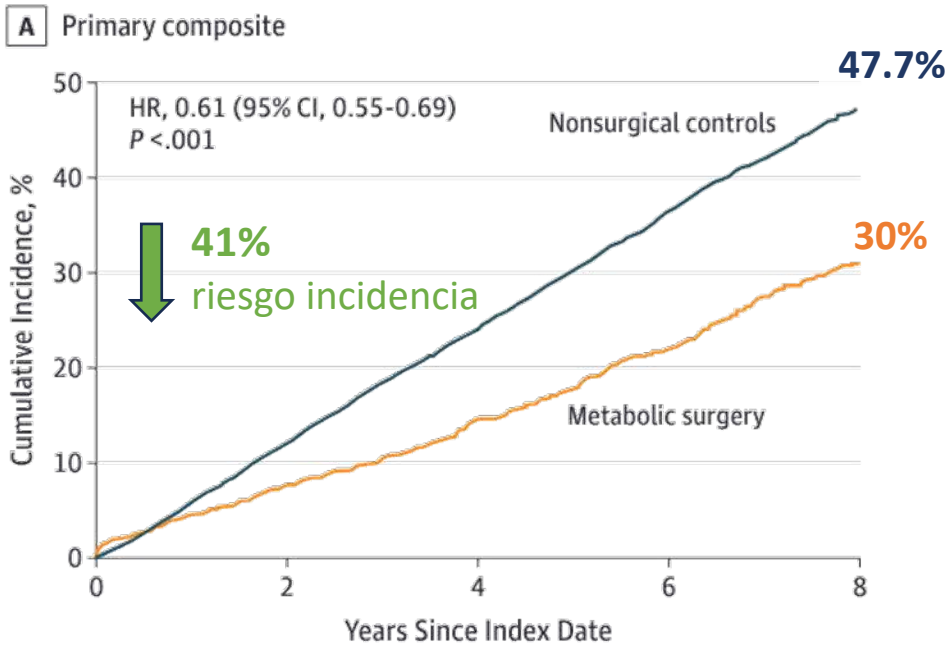
HR 0.59, 95% CI 0.5-0.69

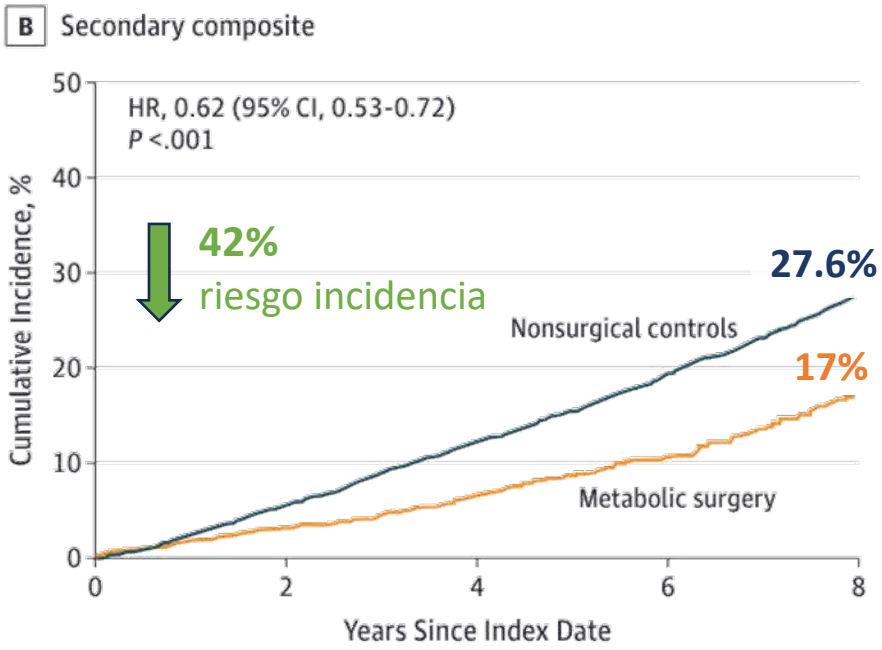
Schauer, D. P. *et al.* Bariatric Surgery and the Risk of Cancer in a Large Multisite Cohort. *Annals of Surgery* **269**, 95–101 (2019).

Riesgo Cardiovascular

Original Article

Association of Metabolic Surgery With Major Adverse Cardiovascular Outcomes in Patients With Type 2 Diabetes and Obesity



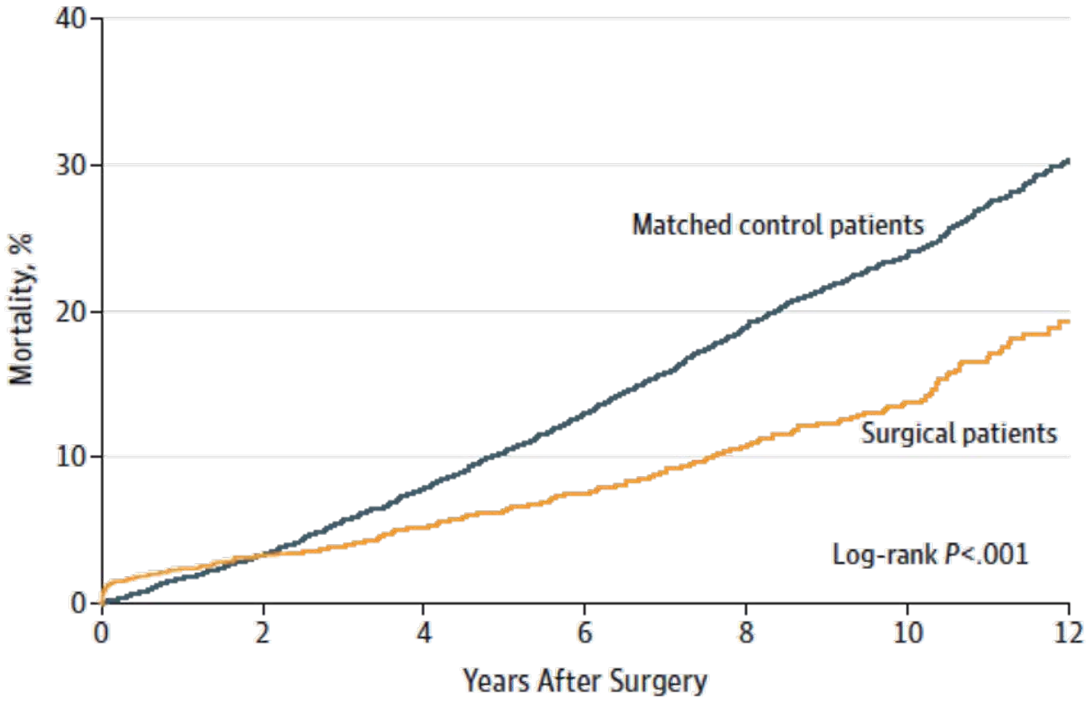


Aminian, A. *et al.* Association of Bariatric Surgery With Cancer Risk and Mortality in Adults With Obesity. *JAMA* **327**, 2423–2433 (2022).

Sobrevida Global - Resultados

Original Article

Association Between Bariatric Surgery and Lom-term Survival



23.9%
A 10 años

13.8%
A 10 años

(HR, 0.47 [95% CI, 0.39-0.58]

33%
riesgo mortalidad

Arterburn, D. E., Olsen, M. K., Smith, V. A., Livingston, E. H., Van Scoyoc, L., Yancy, W. S., Jr, et al. (2015). Association Between Bariatric Surgery and Long-term Survival. *Jama*, *313*(1), 62.

Conclusiones

- Tratamiento endoscópico es eficaz en conseguir pérdidas de peso significativas, con mejoría asociadas en parámetros metabólicos comparado con cambios estilo de vida.
- La cirugía bariátrica logra pérdidas de peso significativas, duraderas, logrando prevención y control de enfermedades comúnmente asociadas a la obesidad.
- La cirugía bariátrica aumenta la expactiva de vida, reduce la mortalidad por todas las causas incluyendo oncológicas

INVITACION

9 – 12 Septiembre

Santiago

2 Simposio Sochidiab

Viña del Mar, 2024

Tratamiento Endoscópico y Quirúrgico
Obesidad-Diabetes-Sd Metabólico-Hígado Graso

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Clínica Universidad de los Andes

Complejo Asistencial Dr. Sótero del Río
Juntos para una mejor salud

SCCBM Sociedad Chilena de Cirugía Bariátrica y Metabólica