Association of Bariatric Surgery with Cancer

IFSO Napoli 2023

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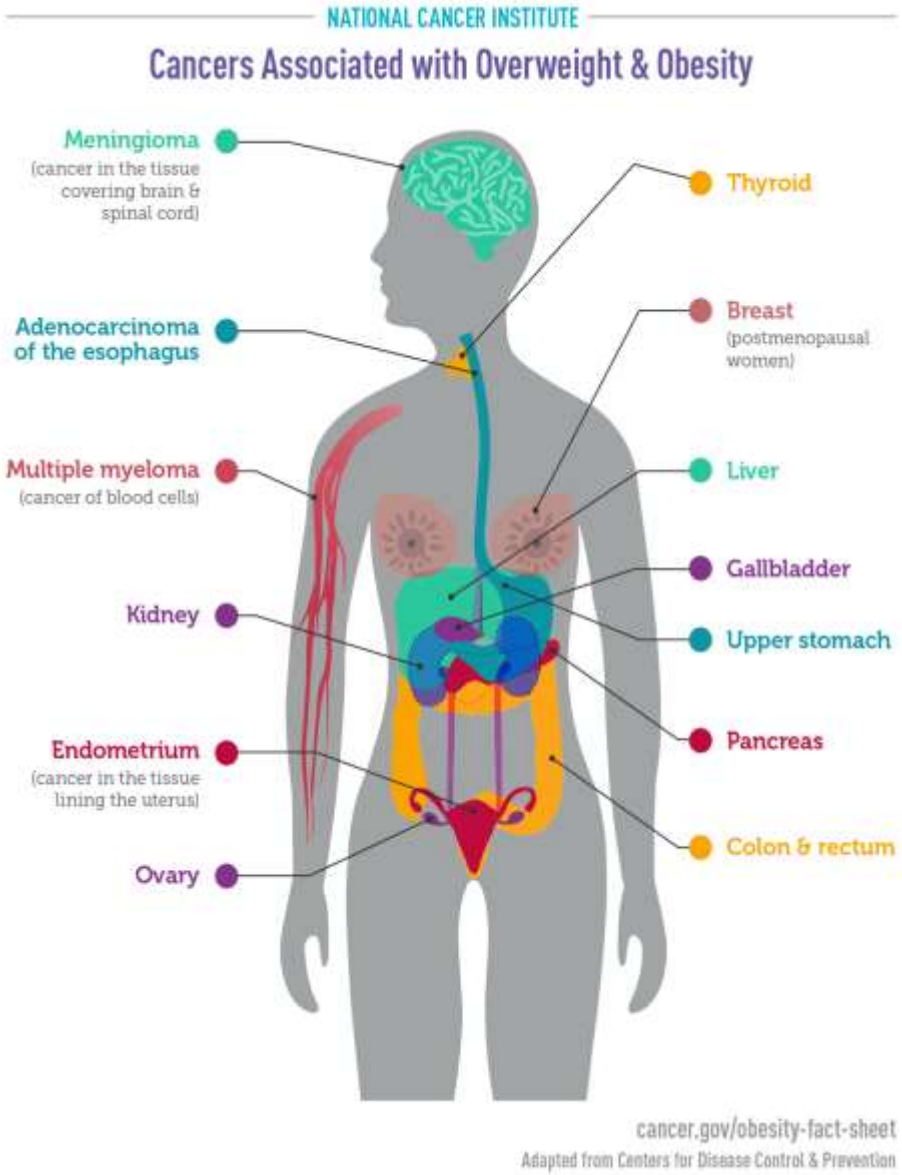
Disclosures

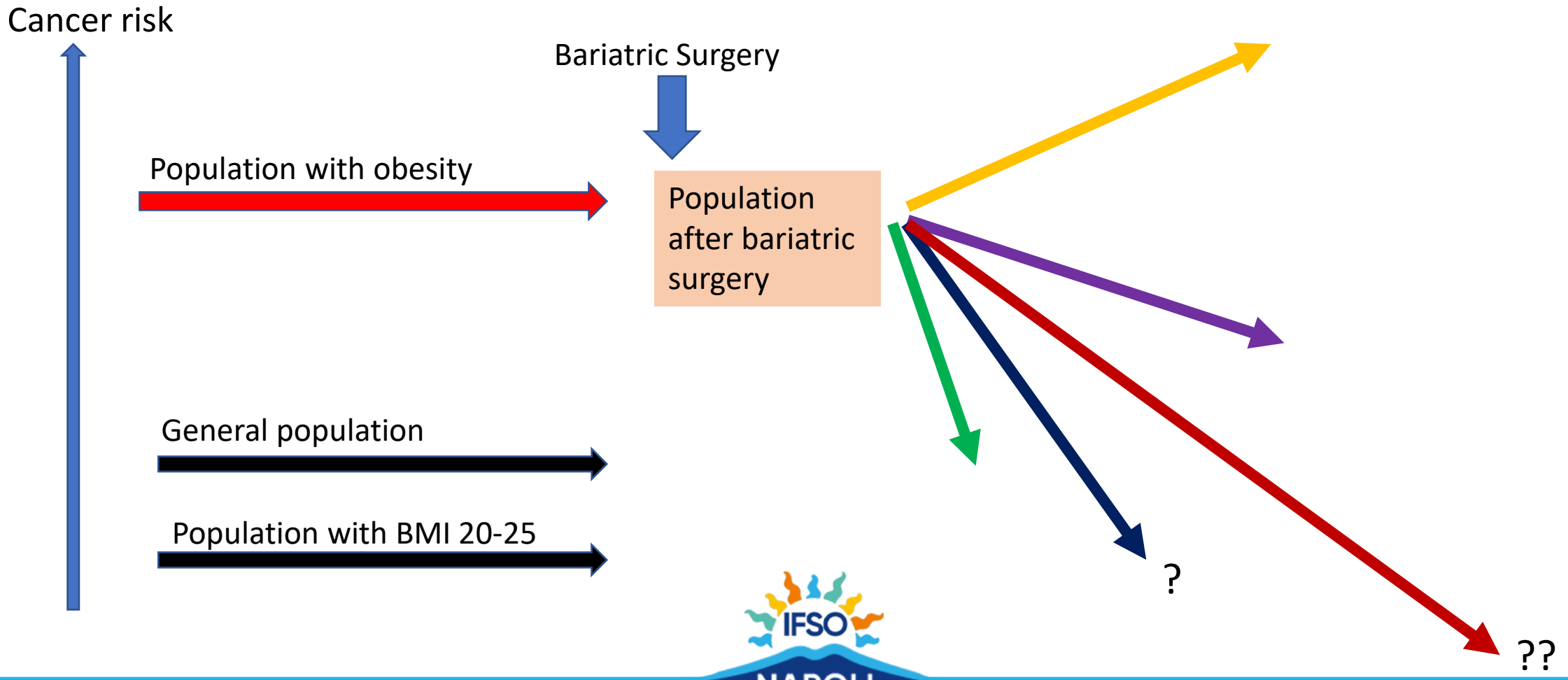
- Advisory board for Ethicon
- Advisory board for NovoNordisk
- Lecture for NovoNordisk

Obesity and associations with cancer

13 different cancers have been associated with obesity



Can Bariatric Surgery change the Cancer risk?

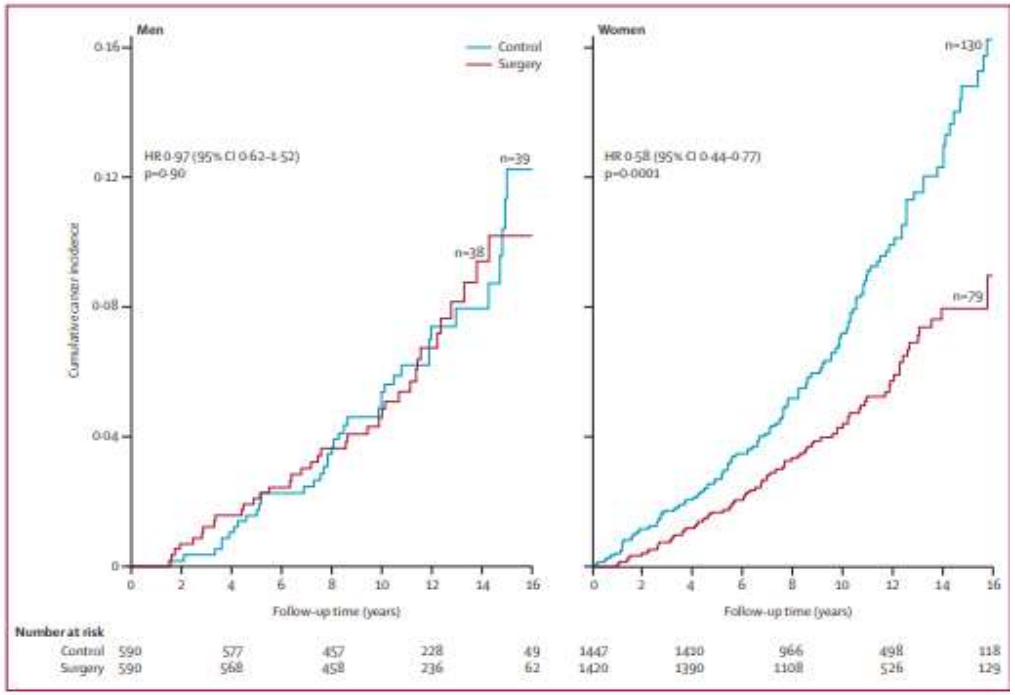


Effects of bariatric surgery on cancer incidence in obese patients in Sweden (Swedish Obese Subjects Study): a prospective, controlled intervention trial

Lars Sjöström, Anders Gummesson, C David Sjöström, Kristina Narbro, Markku Peltonen, Hans Wedel, Calle Bengtsson, Claude Bouchard, Björn Carlsson, Sven Dahlgren, Peter Jacobson, Kristjan Karason, Jan Karlsson, Bo Larsson, Anna-Karin Lindroos, Hans Lönroth, Ingmar Näslund, Torsten Olbers, Kaj Stenlöf, Jarl Torgerson, Lena M S Carlsson, for the Swedish Obese Subjects Study

The Lancet Oncology Vol 1 July 2009

Prospective cohort study with 2010 bariatric surgery patients and 2037 controls
Follow-up 16 years
Reduction of cancer among women
HR of 0.58 (95% CI 0,44 – 0,77)



Cancer Incidence and Mortality After Gastric Bypass Surgery

Ted D. Adams[1,2], Antoinette M. Stroup[3], Richard E. Gress[1], Kenneth F. Adams[4], Eugenia E. Calle[5], Sherman C. Smith[6], R. Chad Halverson[6], Steven C. Simper[6], Paul N. Hopkins[1] and Steven C. Hunt[1]

Obesity (2009) 17, 796-802

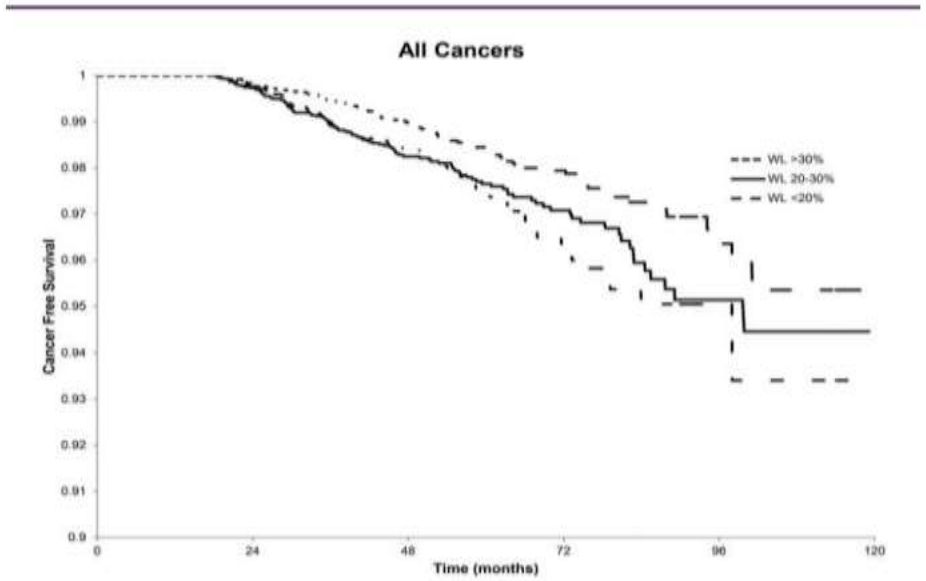
Retrospective cohort study with 6956 bariatric surgery patients and 9422 controls
Follow-up 12,5 years
Reduction of cancer among women HR of 0.76 (95% CI 0,65 – 0,89)

Association Between Weight Loss and the Risk of Cancer after Bariatric Surgery

Daniel P. Schauer[1], Heather Spencer Feigelson[2], Corinna Koebnick[3], Bette Caan[4], Sheila Weinmann[5], Anthony C. Leonard[6], J. David Powers[2], Panduranga R. Yenumula[4], and David E. Arterburn[7]

Obesity | VOLUME 25 | SUPPLEMENT 2 | NOVEMBER 2017

Retrospective cohort study with 18,355 bariatric surgery patients and 40,524 controls
Mean follow-up 4 years
Weight loss associated reduction of cancer among women HR of 0.67 (95% CI 0,60 – 0,74)



JOURNAL ARTICLE

Risk of non-hormonal cancer after bariatric surgery: meta-analysis of retrospective observational studies

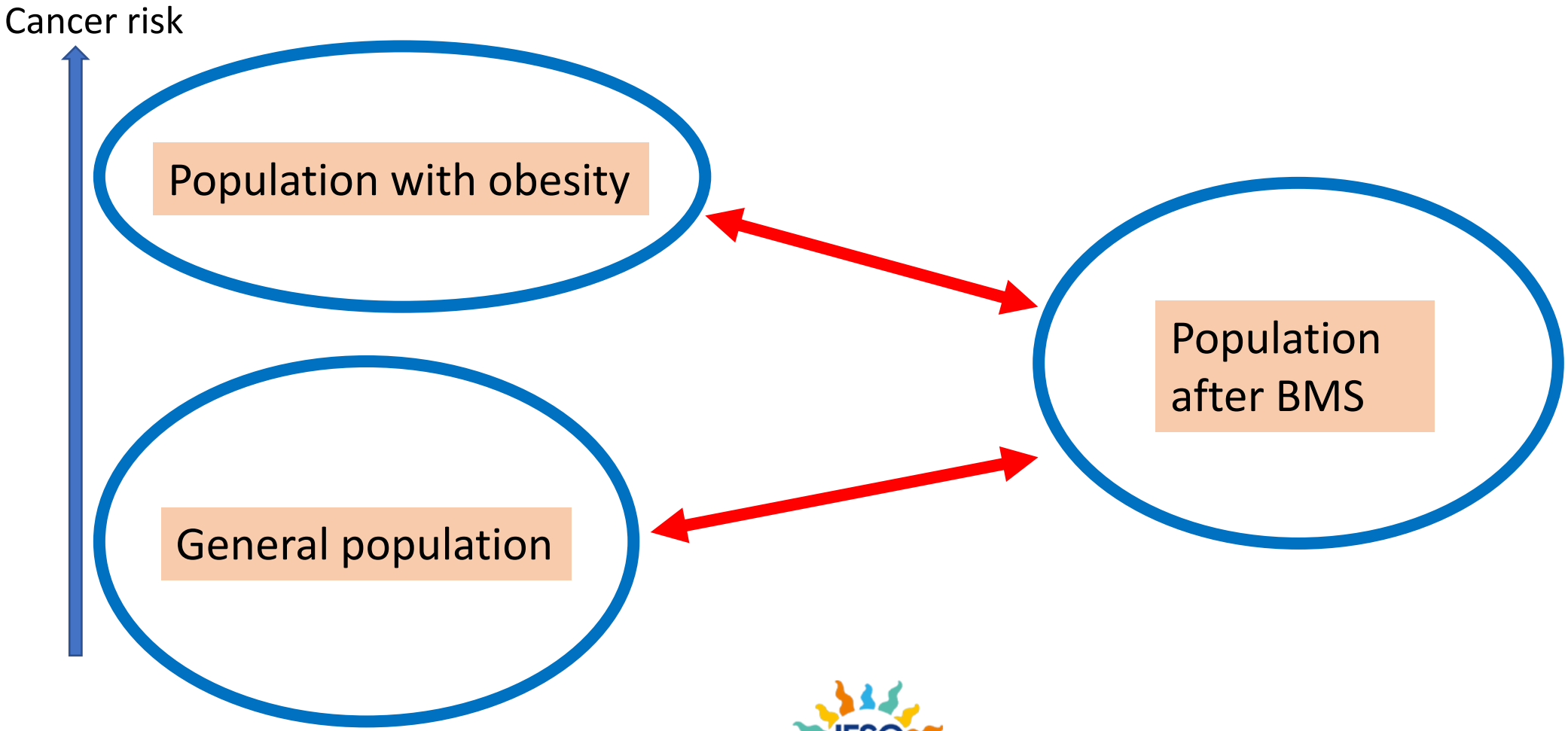
Benjamin Clapp, Ray Portela, Ishna Sharma, Hayato Nakanishi, Katie Marrero, Philip Schauer, Thorvardur R Halfdanarson, Barham Abu Dayyeh, Michael Kendrick, Omar M Ghanem

British Journal of Surgery, Volume 110, Issue 1, January 2023, Pages 24–33,

Total of 947 787 bariatric surgery patients and 17 635 690 controls

The bariatric surgery patients had lower incidencs of non-hormonal cancer
OR 0.65 (95% CI 0.53 – 0.80)

Different control groups



SOReg linked to the Swedish Population Registry and the Swedish Cancer Registry

- SOReg-Sweden (Scandinavian Obesity Surgery Registry) is a Swedish quality registry for bariatric surgery with over 89,000 operations
- Started 2007 and covers >98% of baristric surgery in Sweden
- Swedish population registry has data on age, sex and region of recidence (not BMI)
- Swedish Cancer registry covers >99% of all cancer in Sweden

Study design

- This is preliminary unpublished data
- 62,624 cases of primary GBP or SG operated 2007-2018
- Matched 1:10 to individuals from normal population (age, sex and region of recidence)
- Any case or control with previous cancer excluded
- Followed up to dec 31 2019

General population in Sweden

- 1,3 milj has BMI>30 = 16% of the adult population
- Regional differences

Baseline characteristics

	Case	Control
Age	41 ± 11.2	41 ± 11.2
Men	15193 (23.9%)	149634 (24.2%)
Women	48431 (76.1%)	467961 (75.8%)
Follow-up (mean)	6.44 years	6.49 years

Cancer of any type

12 cancers associated with obesity (not meningioma)

	Surgical group	Control group		
	Incidence rate/10.000 person-years	Incidence rate/10.000 person-years	HR (95%)	p
All cancer	67.96 (65.44-70.55)	67.37 (66.57-68.19)	1.01 95%CI 0.97-1.05	0.652

Gastrointestinal cancer (I)

	Surgical group		Control group			
	N	Incidence rate /10.000 person-years	N	Incidence rate /10.000 person-years	HR (95%)	p
Esophageal ca.	8	0.20 (0.08-0.38)	76	0.19 (0.15-0.24)	1.03 (0.50-2.14)	0.933
Gastric ca.	25	0.61 (0.40-0.90)	155	0.39 (0.33-0.45)	1,58(1.04-2.41)	0,034
Colorectal ca.	171	4.18 (2.57-4.85)	1597	3.99 (3.79-4.19)	1,05(0.90-1.23)	0,544

Gastrointestinal cancer (II)

	Surgical group		Control group			
	N	Incidence rate /10.000 person-years	N	Incidence rate /10.000 person-years	HR (95%)	p
Pancreatic ca.	58	1.41 (1.07-1.83)	323	0.81 (0.72-0.90)	1.76 (1.33-2.33)	<0.001
Liver ca.	21	0.51 (0.32-0.78)	170	0.42 (0.36-0.49)	1,21(0.77-1.91)	0.403
Gallbladder ca.	5	0.12 (0.04-0.28)	45	0.11 (0.08-0.15)	1,09(0.43-2.75)	0.852

Renal ca. Thyroid ca. and multiple myeloma

	Surgical group		Control group			
	N	Incidence rate /10.000 person-years	N	Incidence rate /10.000 person-years	HR (95%)	p
Renal ca.	98	2.39 (1.94-2.92)	306	0.76 (0.68-0.85)	3.14 (2.55-3.94)	<0.001
Thyroid ca.	54	1.32 (0.99-1.72)	364	0.91 (0.82-1.01)	1,45(1.09-1.93)	0.011
Multiple myeloma	16	0.39 (0.22-0.64)	161	0.40 (0.34-0.47)	0.97(0.58-1.63)	0.974

Female cancer

	Surgical group		Control group			
	N	Incidence rate /10.000 person-years	N	Incidence rate /10.000 person-years	HR (95%)	p
Ovarian ca.	49	1.57 (1.16-2.08)	508	1.68 (1.53-1.83)	0.94 (0.70-1.26)	0.673
Uterus ca.	87	2.80 (2.24-3.44)	495	1.63 (1.49-1.78)	1,71(1.37-2.15)	<0.001
Breast ca.	394	12.71 (11.48-14.03)	4948	16.42 (15.96-16.88)	0.77(0.70-0.86)	<0.001

Conclusion

- Substantial observational data related to reduced cancer risk after bariatric surgery
- These data are fairly consistent but not definitive
- Need for more knowledge with different type of control groups and different types of cancer
- Need for longer follow-up