Risk of esophageal cancer after bariatric surgery: Comparison between sleeve gastrectomy and gastric bypass at 10 years

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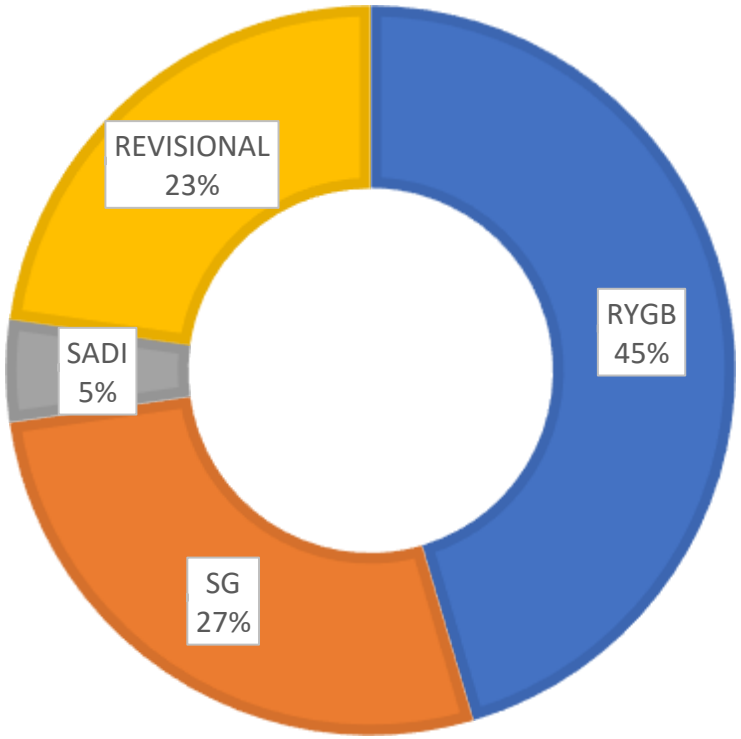
I have the following potential conflict(s) of interest to report:

Receipt of honoraria or consultation fees: Gore Medtronic, Johnson & Johnson


REVISIONAL
23%
RYGB
45%
SADI
5%
SG
27%

Context

Obésity & cancer esophagus

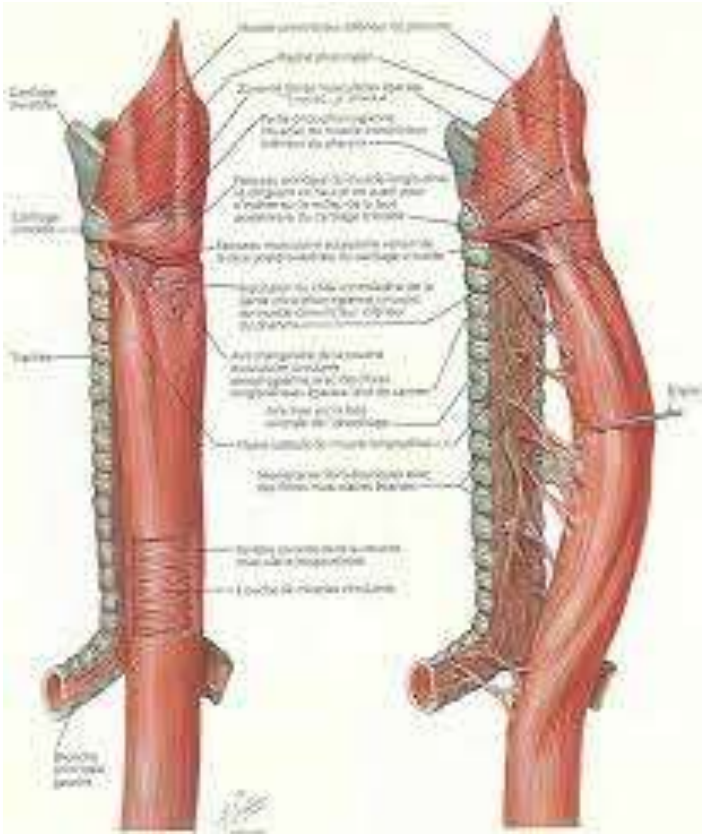
Relative risk : 4,8

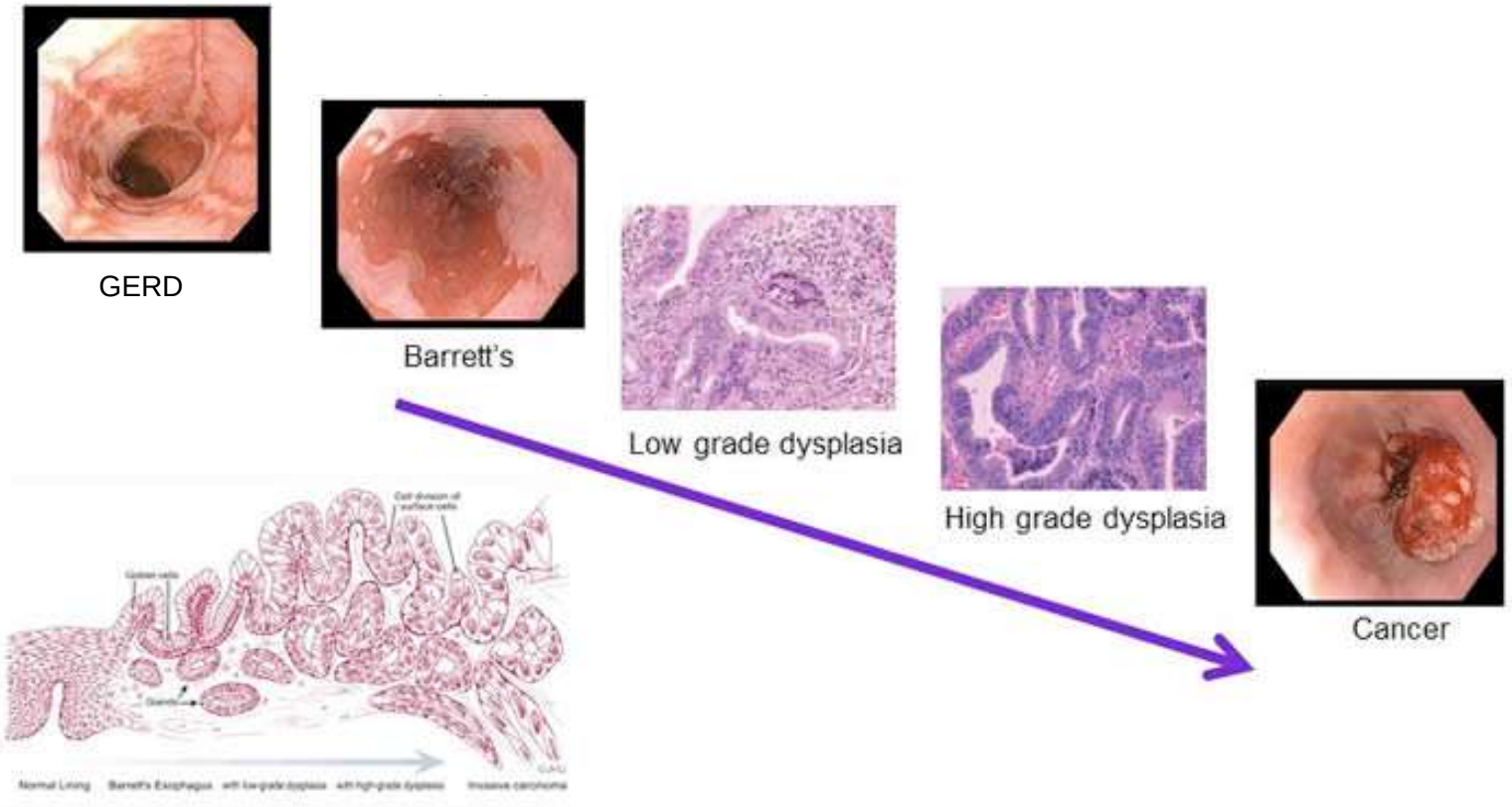
Table 2. Strength of the Evidence for a Cancer-Preventive Effect of the Absence of Excess Body Fatness, According to Cancer Site or Type.*

Cancer Site or Type	Strength of the Evidence in Humans†	Relative Risk of the Highest BMI Category Evaluated versus Normal BMI (95% CI)‡
Esophagus: adenocarcinoma	Sufficient	4.8 (3.0–7.7)
Gastric cardia	Sufficient	1.8 (1.3–2.5)
Colon and rectum	Sufficient	1.3 (1.3–1.4)
Liver	Sufficient	1.8 (1.6–2.1)
Gallbladder	Sufficient	1.3 (1.2–1.4)
Pancreas	Sufficient	1.5 (1.2–1.8)
Breast: postmenopausal	Sufficient	1.1 (1.1–1.2)§
Corpus uteri	Sufficient	7.1 (6.3–8.1)
Ovary	Sufficient	1.1 (1.1–1.2)
Kidney: renal-cell	Sufficient	1.8 (1.7–1.9)
Meningioma	Sufficient	1.5 (1.3–1.8)
Thyroid	Sufficient	1.1 (1.0–1.1)§
Multiple myeloma	Sufficient	1.5 (1.2–2.0)
Male breast cancer	Limited	NA
Fatal prostate cancer	Limited	NA
Diffuse large B-cell lymphoma	Limited	NA
Esophagus: squamous-cell carcinoma	Inadequate	NA
Gastric noncardia	Inadequate	NA
Extrahepatic biliary tract	Inadequate	NA
Lung	Inadequate	NA
Skin: cutaneous melanoma	Inadequate	NA
Testis	Inadequate	NA
Urinary bladder	Inadequate	NA
Brain or spinal cord: glioma	Inadequate	NA

Lauby-Secretan B, Scoccianti C, Loomis D, et al. Body Fatness and Cancer — Viewpoint of the IARC Working Group. N Engl J Med. 2016;375:794–798.

Cancer of esophagus and cardia





Hvid-Jensen F, Pedersen L, Drewes AM, et al. Incidence of Adenocarcinoma among Patients with Barrett's Esophagus. N Engl J Med. 2011;365:1375–1383.

Does bariatric surgery increase the risk of esophageal cancer?

JAMA Surgery | Original Investigation

Risk of Esophageal and Gastric Cancer After Bariatric Surgery

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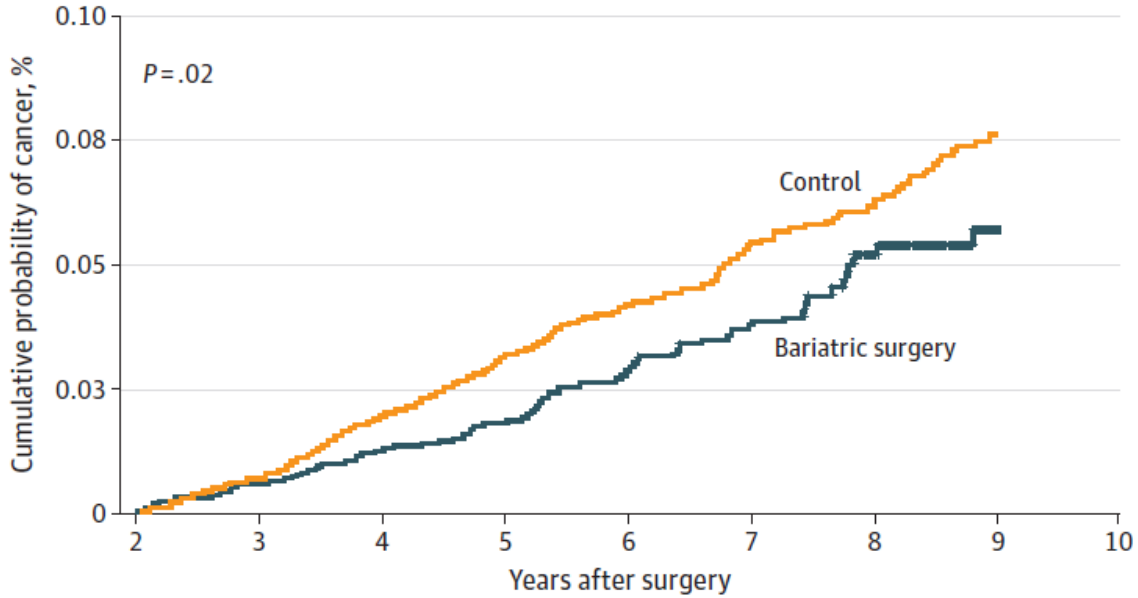
Cumulative Incidence of Esophagogastric Cancer by Group



No. at risk

Control	605140	530527	451518	374256	298378	222953	146612	74705
Bariatric surgery	303709	258599	210907	167159	124525	85680	51551	23825

Multivariate Analysis

HR 0.76, 95% CI, 0.59-0.98, p = 0.03

→ **Decrease of esophageal and gastric cancer**

Incidence:

- Non-surgical group 6,9 per 100,000 pers/y
- Bariatric group 4,5 per 100,000 pers/y

Is there a difference between sleeve gastrectomy and gastric bypass?

Methods

- National discharge database
- Adults (≥18 ans)
- Bariatric Surgery between 2007 and 2020
- Techniques: sleeve gastrectomy and gastric bypass
- Follow-up until 31/12/2022

Methods

- Main outcome
  - Esophageal and cardias cancer incidence
  - ICD-10 classification to identify cancers

- Survival analysis
  - « Standard » Cox regression with inverse propensity treatment weighting
  - « Standard » Cox regression with control for propensity score
  - Marginal Cox model after nearest neighbour matching

Population

Included patients, ***n= 370 271***

Sleeve, n= 253 303 (68%)

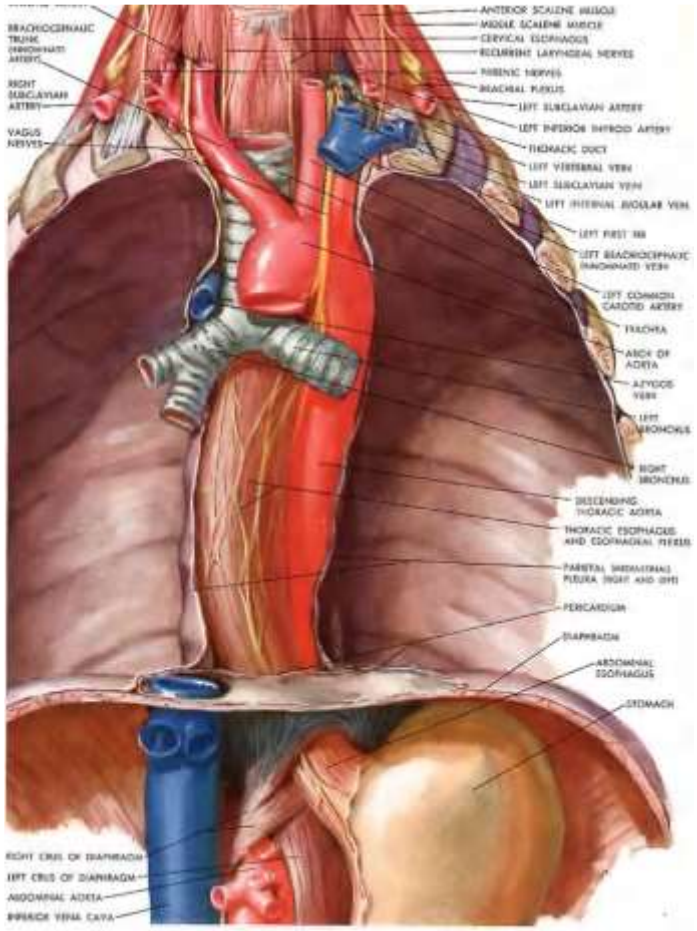
Bypass, n= 116 968 (32%)

Mean Follow up: **7.5 y**

Follow-up >10y for 80,000

	Bypass (N=116,968)	Sleeve (N=253,303)
Gender		
Femme	95,396 (81.6%)	199,411 (78.7%)
Homme	21,572 (18.4%)	53,892 (21.3%)
Age (years)		
Mean (SD)	41.9 (11.5)	40.1(12.0)
BMI (kg/m²)		
30-40	31,729 (27.1%)	82,510 (32.6%)
40-50	68,596 (58.6%)	140,999 (55.7%)
>50	11,583 (9.9%)	26,104 (10.3%)
Charlson index		
0	105,458 (90.2%)	226,876 (89.6%)
1	5981 (5.1%)	11780 (4.7%)
≥ 2	5529 (4.7%)	14647 (5.8%)

Cancers, n= 96



- Upper esophagus → 7%
- Middle third → 4%
- Lower third → 25%
- Cardia → 33%
- Unspecified → 29%

Model 1: HR: 1.6 [0.9 ; 2.5] ; p = 0.06

Model 2: HR: 1.4 [0.8 ; 2.4] ; p =0.21

Model 3: HR: 1.6 [0.9-2.5]; p = 0.05

Incidence:

- **Sleeve group 3,9 per 100,000 person/y**
- **Bypass group 2,6 per 100,000 person/y**

- *Non-surgical group 6,9 per 100,000 person/y*

Limitations

No hystological type information

Young population

Duration of follow-up

Conclusions

Bariatric surgery is associated with a **decrease** of esophageal cancer

No significant difference between sleeve and bypass

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