

DE LEESTAFEL

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Een Maandelijks Selectie van Wetenschappelijke GE- nieuws

Coloproctologie

Verminderde Quality Of Life na sigmoid resectie

Bowel dysfunction after sigmoid resection for cancer and its impact on quality of life. Elfeki et al. *BJS* Jan 2019; 106 (1); 142 – 151.

Pubmed ID: 30211443

BACKGROUND: Several studies have explored functional outcomes after rectal cancer surgery, but bowel dysfunction after sigmoid resection for cancer has hardly been considered. The aim of this study was to identify the prevalence and pattern of bowel dysfunction after resection for sigmoid cancer, and the impact of bowel function on quality of life (QoL) by comparison with patients who had polypectomy for cancer.

METHODS: This was a national cross-sectional study. Data were collected from the Danish Colorectal Cancer Group database, and a questionnaire regarding bowel function and European Organization for Research and Treatment of Cancer (EORTC) QLQ-C30 QoL questionnaire was sent to all Danish colonic cancer survivors treated with sigmoid resection or polypectomy between 2001 and 2014.

RESULTS: A total of 3295 patients (3061 sigmoid resection, 234 polypectomy) responded to the questionnaire (response rate 63.8 per cent). Twelve bowel symptoms were more prevalent after sigmoid resection, including: excessive straining, fragmentation, bloating, nocturnal defaecation, bowel false alarm, liquid stool incontinence, incomplete evacuation and sense of outlet obstruction. QoL impairment owing to bowel symptoms was reported in 16.6 per cent of patients in the resection group and 10.1 per cent after polypectomy ($P = 0.008$). Obstructed defaecation symptoms (ODS) were encountered significantly more often after sigmoid resection than following polypectomy (17.9 versus 7.3 per cent; $P < 0.001$). In the resection group, patients with ODS had substantial impairment on most aspects of QoL assessed by the EORTC QLQ-C30.

Table 3 Patterns of bowel dysfunction and impact on quality of life after sigmoid resection *versus* polypectomy

	Sigmoid resection (n = 3061)	Polypectomy (n = 234)	P†	Odds ratio*	Adjusted odds ratio*‡
Obstructed defaecation symptoms	546 of 3043 (17.9)	17 of 232 (7.3)	< 0.001	2.76 (1.67, 4.57)	2.57 (1.54, 4.26)
BSS score	n = 2951	n = 225			
1–2	619 (21.0)	40 (17.8)	0.254	1.19 (0.83, 1.70)	
3–5	2202 (74.6)	170 (75.6)	0.765	1.00 (reference)	
6–7	130 (4.4)	15 (6.7)	0.117	0.66 (0.38, 1.16)	
Wexner incontinence score > 9	173 of 3002 (5.8)	7 of 230 (3.0)	0.099	1.94 (0.99, 4.19)	1.75 (0.81, 3.81)
Major LARS	680 of 2993 (22.7)	35 of 226 (15.5)	0.011	1.61 (1.11, 2.33)	1.60 (1.09, 2.34)
Any change in lifestyle for incontinence	687 of 3038 (22.6)	27 of 232 (11.6)	< 0.001	2.21 (1.47, 3.34)	2.09 (1.38, 3.17)
Quality of life	n = 3014	n = 228	0.008		
Not impaired (no or little impact)	2515 (83.4)	205 (89.9)		1.00 (reference)	
Impaired (some or major impact)	499 (16.6)	23 (10.1)		1.77 (1.14, 2.75)	1.76 (1.13, 2.79)

Values in parentheses are percentages unless indicated otherwise; *values in parentheses are 95 per cent confidence intervals. BSS, Bristol stool scale; LARS, low anterior resection syndrome. † χ^2 test. ‡Adjusted for sex, age and time since treatment.

CONCLUSION: Sigmoid resection for cancer is associated with an increased risk of long-term bowel dysfunction; obstructed defaecation is prevalent and associated with substantial impairment of QoL.

Nederlands bevolkingsonderzoek darmkanker: verschil in post- operatieve uitkomsten

Postoperative Outcomes of Screen-Detected vs Non-Screen-Detected Colorectal Cancer in the Netherlands. De Neree tot Babberich et al. JAMA Surgery 2018; 153 (12); e183567.

Pubmed ID: 30285063

IMPORTANCE: The nationwide fecal immunochemical test–based screening program has influenced surgical care for patients with colorectal cancer (CRC) in the Netherlands, although these implications have not been studied in much detail so far.

OBJECTIVE: To compare surgical outcomes of patients diagnosed as having CRC through the fecal immunochemical test–based screening program (screen detected) and patients with non–screen-detected CRC.

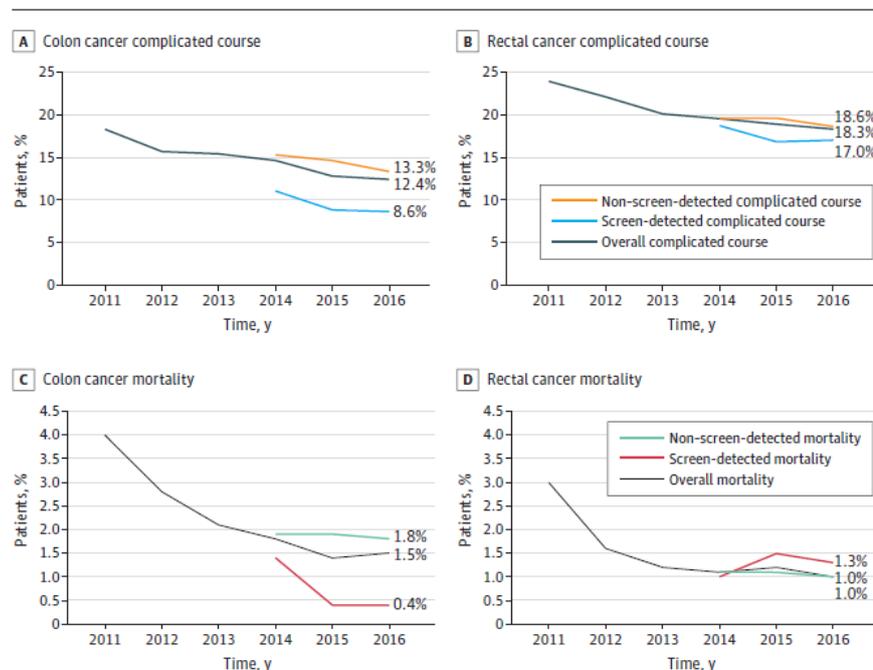
DESIGN, SETTING, AND PARTICIPANTS: This was a population-based comparative cohort study using the Dutch ColoRectal Audit and analyzed all Dutch hospitals performing CRC resections. Patients who underwent elective resection for CRC between January 2011 to December 2016 were included.

INTERVENTIONS: Colorectal cancer surgery.

MAIN OUTCOMES AND MEASURES: Postoperative nonsurgical complications, postoperative surgical complications, postoperative 30-day or in-hospital mortality, and complicated course (postoperative complication resulting in a hospital stay >14 days and/or a reintervention and/or mortality). A risk-stratified comparison was made for different postoperative outcomes based on screening status (screen detected vs not screen detected), cancer stage (I–IV), and for cancer stage I to III also on age (aged 70 years and >70 years) and American Society of Anesthesiologists score (I–II and III–IV). To determine any residual case-mix–corrected differences in outcomes between patients with screen-detected and non–screen-detected cancer, univariable and multivariable logistic regression analyses were performed.

RESULTS: In total, 36 242 patients with colon cancer and 17 416 patients with rectal cancer were included for analysis. Compared with patients with non–screen-detected CRC, screen-detected patients were younger (mean [SD] age, 68 [5] vs 70 [11] years), more often men (3777 [60%] vs 13 506 [57%]), and had lower American Society of Anesthesiologists score (American Society of Anesthesiologists score III+: 838 [13%] vs 5529 [23%]). Patients with stage I to III colon cancer who were screen detected had a significantly lower mortality and complicated course rate compared with non–screen-detected patients. For patients with rectal cancer, only a significant difference was found in mortality rate in patients with a cancer stage IV disease, which was higher in the screen-detected group. Compared with

Figure 1. Trends of Postoperative Adverse Outcomes for Non-Screen-Detected, Screen-Detected, and Overall Colorectal Cancer



non–screen-detected colon cancer, an independent association was found for screen-detected colon cancer on nonsurgical complications (adjusted odds ratio, 0.81; 95% CI, 0.73-0.91), surgical complications (adjusted odds ratio, 0.80; 95%CI, 0.72-0.89), and complicated course (adjusted odds ratio, 0.80; 95%CI, 0.71-0.90). Screen-detected rectal cancer had significantly higher odds on mortality.

CONCLUSION AND RELEVANCE: Postoperative outcomes were significantly better for patients with colon cancer referred through the fecal immunochemical test–based screening program compared with non–screen-detected patients. These differences were not found in patients with rectal cancer. The outcomes of patients with screen-detected colon cancer were still better after an extensive case-mix correction, implying additional underlying factors favoring patients referred for surgery through the screening program.

UPPER GI

10% extra naadlekkage tijdens leercurve van minimaal invasieve slokdarmresectie

Learning Curve and Associated Morbidity of Minimally Invasive Esophagectomy. A Retrospective Multicenter Study. Van Workum et al. *Ann Surg* 2019; 269 (1); 88 – 94.

Pubmed ID: 28857809

OBJECTIVE: To investigate the morbidity that is associated with the learning curve of minimally invasive esophagectomy.

BACKGROUND: Although learning curves have been described, it is currently unknown how much extra morbidity is associated with the learning curve of technically challenging surgical procedures.

METHODS: Prospectively collected data were retrospectively analyzed of all consecutive patients undergoing minimally invasive Ivor Lewis esophagectomy in 4 European expert centers. The primary outcome parameter was anastomotic leakage. Secondary outcome parameters were operative time and textbook outcome ("optimal outcome"). Learning curves were plotted using weighted moving average and CUSUM analysis was used to determine after how many cases the plateau was reached. Learning associated morbidity was calculated with area under the curve analysis.

RESULTS: This study included 646 patients. Three of the 4 hospitals reached the plateau of 8% anastomotic leakage. The length of the learning curve was 119 cases. The mean incidence of anastomotic leakage decreased from 18.8% during the learning phase to 4.5% after the plateau had been reached ($P < 0.001$). Thirty-six extra patients (10.1% of all patients operated on during the learning curve) experienced learning associated anastomotic leakage, that could have been avoided if patients were operated by surgeons who had completed the learning curve. The incidence of textbook outcome increased from 28% to 53% and the mean operative time decreased from 344 minutes to 270 minutes.

CONCLUSIONS: A considerable number of 36 extra patients (10.1%) experienced learning associated anastomotic leakage. More research is urgently needed to investigate how learning associated morbidity can be reduced to increase patient safety during learning curves.

Prehabilitatie effectief om fysieke conditie te optimaliseren rondom slokdarm/maag chirurgie.

Effect of Exercise and Nutrition Prehabilitation on Functional Capacity in Esophagogastric Cancer Surgery: A Randomized Clinical Trial. Minnella et al. JAMA Surgery 2018; 153 (12); 1081 – 1089. Pubmed ID: 30193337

IMPORTANCE: Preserving functional capacity is a key element in the care continuum for patients with esophagogastric cancer. Prehabilitation, a preoperative conditioning intervention aiming to optimize physical status, has not been tested in upper gastrointestinal surgery to date.

OBJECTIVE: To investigate whether prehabilitation is effective in improving functional status in patients undergoing esophagogastric cancer resection.

DESIGN, SETTING, AND PARTICIPANTS: A randomized clinical trial (available-case analysis based on completed assessments) was conducted at McGill University Health Centre (Montreal, Quebec, Canada) comparing prehabilitation with a control group.

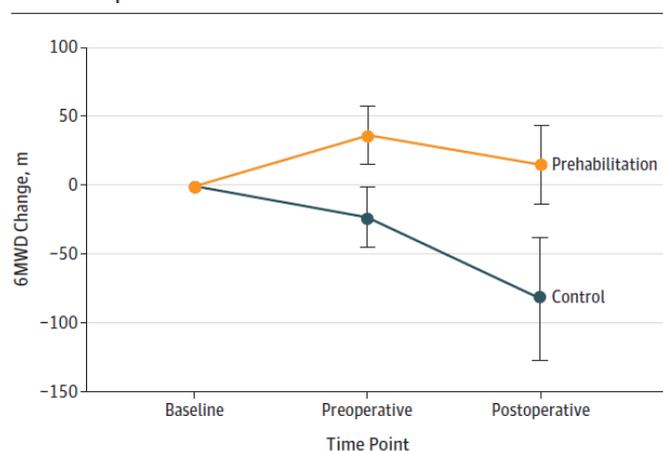
Intervention consisted of preoperative exercise and nutrition optimization. Participants were adults awaiting elective esophagogastric resection for cancer. The study dates were February 13, 2013, to February 10, 2017.

MAIN OUTCOMES AND MEASURES: The primary outcome was change in functional capacity, measured with absolute change in 6-minute walk distance (6MWD). Preoperative (end of the prehabilitation period) and postoperative (from 4 to 8 weeks after surgery) data were compared between groups.

RESULTS: Sixty-eight patients were randomized, and 51 were included in the primary analysis. The control group were a mean (SD) age, 68.0 (11.6) years and 20 (80%) men. Patients in the prehabilitation group were a mean (SD) age, 67.3 (7.4) years and 18 (69%) men. Compared with the control group, the prehabilitation group had improved functional capacity both before surgery (mean [SD] 6MWD change, 36.9 [51.4] vs -22.8 [52.5] m; $P < .001$) and after surgery (mean [SD] 6MWD change, 15.4 [65.6] vs -81.8 [87.0] m; $P < .001$).

CONCLUSIONS AND RELEVANCE: Prehabilitation improves perioperative functional capacity in esophagogastric surgery. Keeping patients from physical and nutritional status decline could have a significant effect on the cancer care continuum.

Figure 2. Trajectory of Change in Functional Capacity in the Perioperative Period



Data are means (95% CIs). 6MWD indicates 6-minute walking distance.

Pancreaschirurgie: steeds meer en betere RCTs

Systematic review of the quantity and quality of randomized clinical trials in pancreatic surgery.

Huttner et al; BJS 2019; 106 (1); 23-31.

Pubmed ID: 30582642

BACKGROUND: RCTs are considered the reference standard in clinical research. However, surgical RCTs pose specific challenges and therefore numbers have been lower than those for randomized trials of medical interventions. In addition, surgical trials have often been associated with poor methodological quality. The objective of this study was to evaluate the evolution of quantity and quality of RCTs in pancreatic surgery and to identify evidence gaps.

METHOD: PubMed, CENTRAL and Web of Science were searched systematically. Predefined data were extracted and organized in a database. Quantity and quality were compared for three intervals of the study period comprising more than three decades. Evidence maps were constructed to identify gaps in evidence.

RESULTS: The search yielded 8210 results, of which 246 trials containing data on 26 154 patients were finally included. The number of RCTs per year increased continuously from a mean of 2.8, to 5.7 and up to 13.1 per year over the three intervals of the study. Most trials were conducted in Europe (46.3 per cent), followed by Asia (35.0 per cent) and North America (14.2 per cent). Overall, the quality of RCTs was moderate; however, with the exception of blinding, all domains of the Cochrane risk - of - bias tool improved significantly in the later part of the study. Evidence maps showed lack of evidence from RCTs for operations other than pancreatoduodenectomy and for specific diseases such as neuroendocrine neoplasms or intraductal papillary mucinous neoplasms.

CONCLUSION: The quantity and quality of RCTs in pancreatic surgery have increased. Evidence mapping showed gaps for specific procedures and diseases, indicating priorities for future research.

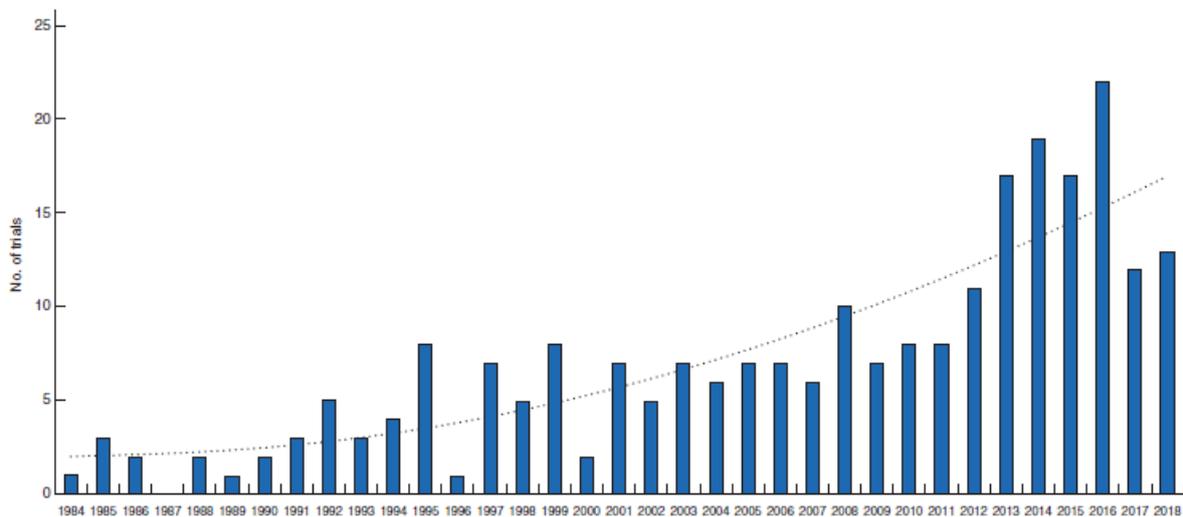


Fig. 3 Time trend of number of RCTs in pancreatic surgery. RCTs were divided by date of publication: before 1996 (PI), 1996-2007 (PII) and 2008 onwards (PIII)

Nederlandse RCT: Minimaal invasieve pancreasstaartresectie geeft kortere time-to-recovery

Minimally Invasive Versus Open Distal Pancreatectomy (LEOPARD): A Multicenter Patient-blinded Randomized Controlled Trial. De Rooij et al; *Ann Surg* 2019; 269 (1); 2-9.

Pubmed ID: 30080726

OBJECTIVE: This trial followed a structured nationwide training program in minimally invasive distal pancreatectomy (MIDP), according to the IDEAL framework for surgical innovation, and aimed to compare time to functional recovery after minimally invasive and open distal pancreatectomy (ODP).

SUMMARY OF BACKGROUND DATA: MIDP is increasingly used and may enhance postoperative recovery as compared with ODP, but randomized studies are lacking.

METHODS: A multicenter patient-blinded randomized controlled superiority trial was performed in 14 centers between April 2015 and March 2017. Adult patients with left-sided pancreatic tumors confined to the pancreas without vascular involvement were randomly assigned (1:1) to undergo MIDP or ODP. Patients were blinded for type of surgery using a large abdominal dressing. The primary endpoint was time to functional recovery. Analysis was by intention to treat. This trial was registered with the Netherlands Trial Register (NTR5689).

RESULTS: Time to functional recovery was 4 days [interquartile range (IQR) 3–6] in 51 patients after MIDP versus 6 days (IQR 5–8) in 57 patients after ODP ($P < 0.001$). The conversion rate of MIDP was 8%. Operative blood loss was less after MIDP (150 vs 400 mL; $P < 0.001$), whereas operative time was longer (217 vs 179 minutes; $P = 0.005$). The Clavien–Dindo grade \geq III complication rate was 25% versus 38% ($P = 0.21$). Delayed gastric emptying grade B/C was seen less often after MIDP (6% vs 20%; $P = 0.04$). Postoperative pancreatic fistulas grade B/C were seen in 39% after MIDP versus 23% after ODP ($P = 0.07$), without difference in percutaneous catheter drainage (22% vs 20%; $P = 0.77$). Quality of life (day 3–30) was better after MIDP as compared with ODP, and overall costs were non-significantly less after MIDP. No 90-day mortality was seen after MIDP versus 2% ($n = 1$) after ODP.

CONCLUSION: In patients with left-sided pancreatic tumors confined to the pancreas, MIDP reduces time to functional recovery compared with ODP. Although the overall rate of complications was not reduced, MIDP was associated with less delayed gastric emptying and better quality of life without increasing costs.

TABLE 2. Time to Functional Recovery (Primary Outcome)

	Minimally Invasive Distal Pancreatectomy (n = 51)	Open Distal Pancreatectomy (n = 57)	P
Time to functional recovery, median (IQR), d	4 (3–6)	6 (5–8)	<0.001
Restored mobility	4 (2–5)	5 (3–6)	0.01
Reached adequate pain control with oral medication	3 (2–3)	4 (3–5)	<0.001
Reached at least 50% required caloric intake	3 (2–5)	6 (4–7)	<0.001
No need for fluid administration	3 (2–5)	4 (3–6)	0.001
No signs of infection	4 (3–6)	6 (5–8)	<0.001

Analyzed according to intention-to-treat. All outcomes are expressed in days, as medians (IQR). IQR, interquartile range.

LEVERCHIRURGIE

Incidenteel galblaascarcinoom na cholecystectomie: een systematische review

Systematic review of management of incidental gallbladder cancer after cholecystectomy. Soreide et al; BJS 2019; 106 (1); 32-45.

Pubmed ID: 30582640

BACKGROUND: Gallbladder cancer is rare, but cancers detected incidentally after cholecystectomy are increasing. The aim of this study was to review the available data for current best practice for optimal management of incidental gallbladder cancer.

METHODS: systematic PubMed search of the English literature to May 2018 was conducted.

RESULTS: The search identified 12 systematic reviews and meta - analyses, in addition to several consensus reports, multi - institutional series and national audits. Some 0· 25-0· 89 per cent of all cholecystectomy specimens had incidental gallbladder cancer on pathological examination. Most patients were staged with pT2 (about half) or pT1 (about one - third) cancers. Patients with cancers confined to the mucosa (T1a or less) had 5 - year survival rates of up to 100 per cent after cholecystectomy alone. For cancers invading the muscle layer of the gallbladder wall (T1b or above), reresection is recommended. The type, extent and timing of reresection remain controversial. Observation time may be used for new cross - sectional imaging with CT and MRI. Perforation at initial surgery had a higher risk of disease dissemination. Gallbladder cancers are PET - avid, and PET may detect residual disease and thus prevent unnecessary surgery. Routine laparoscopic staging before reresection is not warranted for all stages. Risk of peritoneal carcinomatosis increases with each T category. The incidence of port - site metastases is about 10 per cent. Routine resection of port sites has no effect on survival. Adjuvant chemotherapy is poorly documented and probably underused.

CONCLUSION: Management of incidental gallbladder cancer continues to evolve, with more refined suggestions for subgroups at risk and a selective approach to reresection.

Calorie-arm dieet een week voor partiele hepatectomy verminderd peroperatief bloedverlies

Short-term Preoperative Diet Decreases Bleeding After Partial Hepatectomy: Results From a Multi-institutional Randomized Controlled Trial. Barth et al.; Ann Surg 2019; 269 (1); 48-52.

Pubmed ID: 29489484

BACKGROUND: Our previous case series suggested that a 1-week, low-calorie and low-fat diet was associated with decreased intraoperative blood loss in patients undergoing liver surgery.

OBJECTIVE: The current study evaluates the effect of this diet in a randomized controlled trial.

METHODS: We randomly assigned 60 patients with a body mass index ≥ 25 kg/m² to no special diet or an 800-kcal, 20 g fat, and 70 g protein diet for 1 week before liver resection. Surgeons were blinded to diet assignment. Hepatic glycogen stores were evaluated using periodic acid Schiff (PAS) stains.

RESULTS: Ninety four percent of the patients complied with the diet. The diet group consumed fewer daily total calories (807 vs 1968 kcal, $P < 0.001$) and fat (21 vs 86 g, $P < 0.001$) than the no diet group. Intraoperative blood loss was less in the diet group: mean blood loss 452 vs 863 mL ($P =$

TABLE 2. Clinical Outcomes

	Control Diet	Experimental Diet	<i>P</i>
Blood loss (mean), mL	863	452	0.02
Blood loss (median), mL	500	250	
Range, mL	25–3020	50–2500	
IQR, mL	150–1500	200–650	
Donor transfusion, %	7	0	
Autologous transfusion, %	53	33	
Volume transfused/patient, mL	322	138	0.06
Ease of mobility (1–5*)	2.9	1.8	0.004
Complications, %	17	20	NS
Mortality	0	0	NS
Length of stay, ds			
Median, IQR	4 (4–5)	(4–6)	NS

*1 (easy) to 5 (hard).
IQR indicates interquartile range.

0.021). There was a trend towards decreased transfusion in the diet group (138 vs 322 mL, $P = 0.06$). The surgeon judged the liver to be easier to manipulate in the diet group: 1.86 versus 2.90, $P = 0.004$. Complication rate (20% vs 17%), length of stay (median 5 vs 4 days) and mortality did not differ between groups. There was no difference in hepatic steatosis between groups. There was less glycogen in hepatocytes in the diet group (PAS stain score 1.61 vs 2.46, $P < 0.0001$).

CONCLUSIONS: A short-course, low-fat, and low-calorie diet significantly decreases bleeding and makes the liver easier to manipulate in hepatic surgery.

BARIATRISCHE CHIRURGIE

Bariatrische chirurgie geassocieerd met minder kans op kanker?

Bariatric Surgery and the Risk of Cancer in a Large Multisite Cohort. Schauer et al.; *Ann Surg* 2019; 269 (1); 95-101.

Pubmed ID: 28938270

OBJECTIVE: To determine whether bariatric surgery is associated with a lower risk of cancer.

BACKGROUND: Obesity is strongly associated with many types of cancer. Few studies have examined the relationship between bariatric surgery and cancer risk.

METHODS: We conducted a retrospective cohort study of patients undergoing bariatric surgery between 2005 and 2012 with follow-up through 2014 using data from a large integrated health insurance and care delivery systems with 5 study sites. The study included 22,198 subjects who had bariatric surgery and 66,427 nonsurgical subjects matched on sex, age, study site, body mass index, and Elixhauser comorbidity index. Multivariable Cox proportional-hazards models were used to examine incident cancer up to 10 years after bariatric surgery compared to the matched nonsurgical patients.

RESULTS: After a mean follow-up of 3.5 years, we identified 2543 incident cancers. Patients undergoing bariatric surgery had a 33% lower hazard of developing any cancer during follow-up [hazard ratio (HR) 0.67, 95% confidence interval (CI) 0.60, 0.74, $P < 0.001$] compared with matched patients with severe obesity who did not undergo bariatric surgery, and results were even stronger when the outcome was restricted to obesity-associated cancers (HR 0.59, 95% CI 0.51, 0.69, $P <$

0.001). Among the obesity-associated cancers, the risk of postmenopausal breast cancer (HR 0.58, 95% CI 0.44, 0.77, $P < 0.001$), colon cancer (HR 0.59, 95% CI 0.36, 0.97, $P = 0.04$), endometrial cancer (HR 0.50, 95% CI 0.37, 0.67, $P < 0.001$), and pancreatic cancer (HR 0.46, 95% CI 0.22, 0.97, $P = 0.04$) was each statistically significantly lower among those who had undergone bariatric surgery compared with matched nonsurgical patients.

CONCLUSIONS: In this large, multisite cohort of patients with severe obesity, bariatric surgery was associated with a lower risk of incident cancer, particularly obesity-associated cancers, such as postmenopausal breast cancer, endometrial cancer, and colon cancer. More research is needed to clarify the specific mechanisms through which bariatric surgery lowers cancer risk.

FIGURE 3. Forest plot of multivariable Cox proportional-hazards models for obesity-associated cancers. The box represents the hazard ratio and the error bars depict the 95% confidence interval. Matching occurred on age, sex, BMI, Elixhauser comorbidity index score, and study site. The models are adjusted for race, diabetes, hyperlipidemia, hypertension, coronary artery disease, peripheral vascular disease, nonalcoholic steatohepatitis, a history of smoking, alcohol use, and use of hormone replacement therapy.

