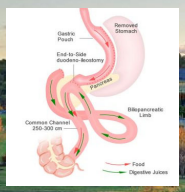
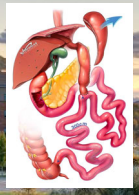
Embracing The SADI-S

Optimizing Results for Our Patients





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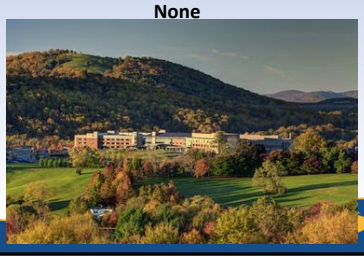
Embracing The SADI-S

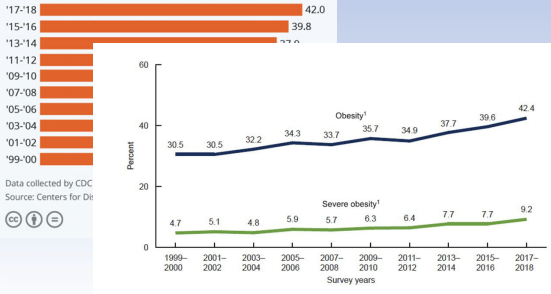
Optimizing Results for Our Patients

Timothy S. Snow, DO, FACS, FASMBS
As previously disclosed, these are the companies with which I have a financial or other relationship(s):
None



Obesity Rates Continue to Trend Up in U.S.

Percentage of U.S. adults who are obese based on height and weight survey



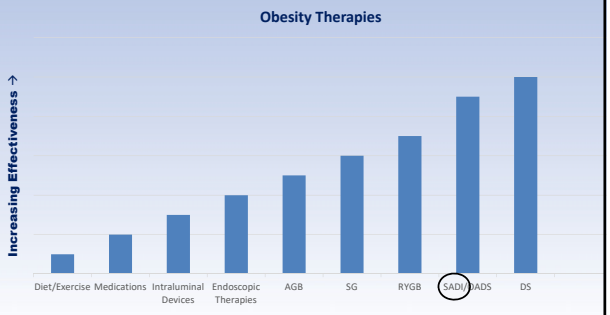
Estimate of Bariatric Surgery Numbers, 2011-2020

Published June 2022

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sleeve	28,124	57,090	75,359	99,781	105,448	125,318	135,401	154,976	152,413	122,056
RYGB	57,986	64,875	61,218	51,724	45,276	40,316	40,574	42,945	45,744	41,280
Band	55,932	34,946	25,060	18,335	11,172	7,310	6,318	2,660	2,375	2,393
BPD-DS	1,422	1,730	1,790	772	1,176	1,236	1,588	2,123	2,272	3,555
Revision	9,480	10,380	10,740	22,195	26,656	30,077	32,238	38,971	42,881	22,022
SADI	–	–	–	–	–	–	–	–	–	488
OAGB	–	–	–	–	–	–	–	–	–	1,338
Other	5,056	3,979	4,833	193	6,272	5,665	5,606	5,847	6,060	1,221
ESG	–	–	–	–	–	–	–	–	–	1,500
Balloons	–	–	–	–	700	5,744	6,280	5,042	4,655	2,800
Total	158,000	173,000	179,000	193,000	196,700	215,666	228,005	252,564	256,000	198,651

The ASMBS total bariatric procedure numbers are based on the best estimation from available data (BOLD,ACS/MBSAQIP, National Inpatient Sample Data and outpatient estimations).

Obesity Treatment Options



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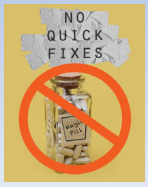
The Challenge of Bariatric Surgery

- Concerns about obesity:
  - Chronic Disease
  - Recurrence can be expected?
  - Genetics/Biology play a major role
    - More than Calories In/Out
    - Disruption of homeostasis (Hypothalamus)
  - Variability in disease cause → variability of treatment effectiveness



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What do we want to achieve…

- Weight Loss
- Reverse Pathophysiology
- Co-Morbidity Resolution
- Improve Behaviors
- Durability
- Low Complication Profile

*Patients can respond differently to different therapies

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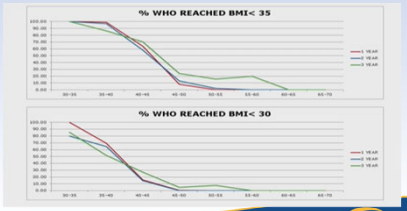
Meaningful Results Sleeve in Patients BMI>45

- Perez-Quirante et al. SOARD 2019
  - 1700 sleeves
    - Only 10-30% chance of getting to a BMI<30



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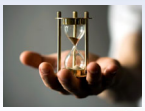
SADI

Achieving a Better Outcome

- SADI benefits compared to sleeve/rygb
  - Outperforms in weight loss
  - Better/more reliable diabetes control/management
  - longevity



Bariatric Metabolic Benefits

- Exclusion of proximal intestine
  - Downregulating anti-incretin
- Increased Insulin Sensitivity
  - Hindgut Hypothesis
- Increased Adiponections→glucose and fatty acid metabolism & decreased intramuscular and intrahepatic lipids

Peptide hormones and neuropeptides that regulate feeding[32]

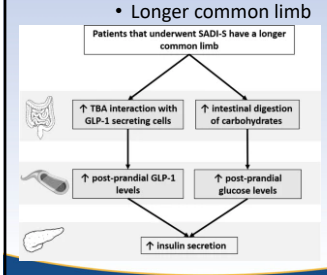
Peptides that increase feeding behavior	Peptides that decrease feeding behavior
Ghrelin	Leptin
Neuropeptide Y	(α,β,γ)-Melanocyte-stimulating hormones
Agouti-related peptide	Cocaine- and amphetamine-regulated transcript peptides
Orexins (A,B)	Corticotropin-releasing hormone
Melanin-concentrating hormone	Cholecystokinin
Galanin	Insulin
	Glucagon-like peptide 1

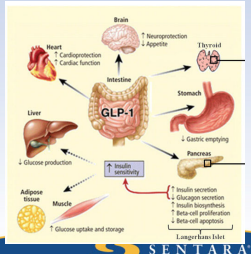
SADI-S Metabolic Profile

- Combination Metabolic Stomach and Intestinal Procedure
  - Euglycemia
    - More than just restriction and malabsorption
  - **Incretin** → separates bile →reduces Sodium/ Glucose(SGLT 1) receptors in proximal intestine

SADI-S Metabolic Profile

- BPD-DS vs SADI-S
  - SADI
    - Longer common limb



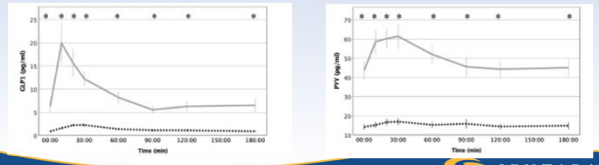


Surgery for Obesity and Related Diseases
Volume 18, Issue 12, December 2022, Pages 1392-1398

Original article

Impact of biliopancreatic diversion with duodenal switch on glucose homeostasis and gut hormones and their correlations with appetite

Khalid Elias M.D., Ph.D. [a], Dominic-Luc Webb B.S., Ph.D. [b], Hetzel O. Diaz Tartera M.D. [b], Per M. Hellström M.D., Ph.D. [b], Magnus Sundbom M.D., Ph.D. [a]



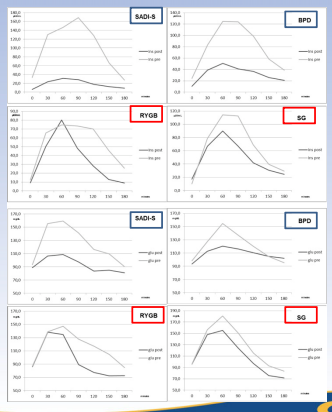
Original article

Effect of single anastomosis duodenal-ileal bypass with sleeve gastrectomy on glucose tolerance test: comparison with other bariatric procedures

Presented at the 35th annual meeting of ASMBS ObesityWeek 2018, Nashville, Tennessee, November 11th to 15th, 2018.

Luca Sessa M.D. [a], Caterina Guidone M.D. [b], Pierpaolo Gallucci M.D. [a], Esmeralda Capristo M.D. [b, c], Geltrude Mingrone M.D. [b, c], Marco Raffaelli M.D. [a, c]

- Oral Glucose Tolerance Test 75g
  - Non-diabetics
    - Matched age/sex/BMI
  - 35 patients
    - 9 SADI-S, 11 RYGB, 7 SG, and 8 BPD
  - 9 month follow up
    - Plasma Insulin and Glucose
      - Measured @: baseline / 30 /60 / 90 /120/ 150 / 180 Min



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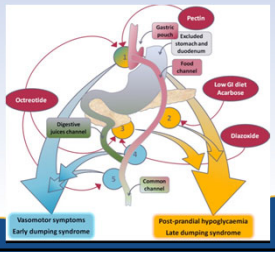
- SADI-S is able to restore insulin sensitivity similarly to BPD-DS
- SADI-S/BPD-DS results in a *better glycemic control compared to RYGB and SG*
- The risk of reactive *hypoglycemia after SADI-S is lower than RYGB and SG*
- Bypassed duodenum and jejunum results in reversal of insulin sensitivity

Issues w Bypass

- Dumping (19-42%)
  - –→weight recurrence
- Postprandial hyperinsulinemia hypoglycemia
  - – 12-72%

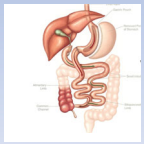


Loop vs BPD-DS Physiology

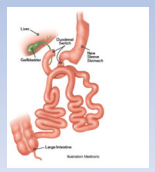
- Sleeve Size
  - – BPD: 52-60F
  - – Loop: 40-60F
- TALL (Total Alimentary Limb Length)/Common Channel
  - – BPD: Variable (CC 100-200cm)
  - – Loop: 250-300 cm

Malnutrition

RYGB
TALL <400cm, up to 30%



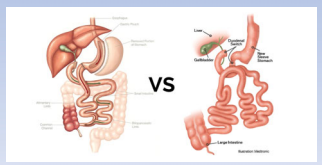
BPD-DS
TALL 300cm, 3%



SADI-S
TALL 250cm, 3-5%,
TALL 300cm, 0-1%

- Sleeve anatomy and Pyloric Preservation
  - – Allows shorter TALL to have less risk

Malnutrition



- SADI>BPD-DS
  - – Decreased malabsorption
    - Longer contact with mucosa/bile acids
    - Greater GLP-1 & TGR5 receptor stimulation
  - – Less BM's
  - – Better quality of life

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> JSLS. Jan-Mar 2018;22(1):e2017.00063. doi: 10.4293/JSLS.2017.00063.

Stomach Intestinal Pylorus-Sparing Surgery for Morbid Obesity

Bo T Neichoy [1], Bleu Schniederjan [1], Daniel R Cottam [2], Amit K Surve [2], Hinali M Zaveri [2], Austin Cottam [2], Samuel Cottam [2]

Affiliations + expand

PMID: 29398898 PMCID: PMC5779797 DOI: 10.4293/JSLS.2017.00063

- Among 225 patients undergoing SADI-S with a 40-Fr SG and a 300-cm absorptive limb, 30 patients were available for follow-up at 24 months; among these patients, the percent excess body mass index loss was 88.8 +/- 20.2%

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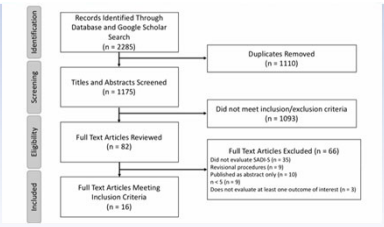
Meta-Analysis > Obes Surg. 2022 Apr;32(4):1049-1063. doi: 10.1007/s11695-021-05824-w. Epub 2022 Jan 10.

Evaluation of Metabolic Outcomes Following SADI-S: a Systematic Review and Meta-analysis

Kevin Verhoeff [1], Valentin Mocanu [2], Aiden Zalasky [3], Jerry Dang [2], Janice Y Kung [4], Noah J Switzer [2], Daniel W Birch [5], Shahzeer Karmali [5]



- Comparing SADI to other metabolic procedures

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Meta-Analysis > Obes Surg. 2022 Apr;32(4):1049-1063. doi: 10.1007/s11695-021-05824-w. Epub 2022 Jan 10.

Evaluation of Metabolic Outcomes Following SADI-S: a Systematic Review and Meta-analysis

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- Weight Loss (TWL)
  - SADI 37.3% / 35.6%
- HTN Remission:
  - SADI 63.2 % / MP's 60.3%
- Dyslipidemia Resolution
  - SADI 73% / MPs 74.3%
- OSA
  - SADI 64% . MPs 74.3%
- SADI-S
  - **shorter operative duration** than MPs (MD - 36.74, p < 0.001)
  - 0.85-day shorter post-operative stay (p < 0.001)
  - trended **towards fewer complications** (OR 0.69, p = 0.06)
  - Rate of reoperation (OR 0.83, p = 0.59) was similar and DM remission was similar (OR 0.07, p = 0.1).
    - Subgroup analysis suggested **greater DM remission than Roux-en-Y gastric bypass** (OR 4.42, p = 0.04).
  - **Fewer malabsorptive complications**, though follow-up was shorter.

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What About Long Term?

Surg Obes Relat Dis. 2020 Nov;16(11):1638-1646. doi: 10.1016/j.soard.2020.07.019. Epub 2020 Jul 31.

Long-term outcomes of primary single-anastomosis duodeno-ileal bypass with sleeve gastrectomy (SADI-S)

Amit Surve [1], Daniel Cottam [2], Walter Medlin [1], Christina Richards [1], Legrand Belnap [1], Benjamin Horsley [1], Samuel Cottam [1], Austin Cottam [1]

- 750 patients from 2013-2019

Weight loss outcomes

	Baseline	1 yr	2 yr	3 yr	4 yr	5 yr	6 yr
Eligible patient, n	750	601	464	356	319	179	87
Data available, n	750	442	268	177	146	109	46
F/U, %	100	74	58	50	46	61	53
BMI, kg/m^2*	50 ± 12.6 (49.4)	32.6 + 6.7 (31.7)	29.9 + 6.5 (28.3)	31.1 + 7.9 (29.4)	31.5 + 7.6 (30.1)	32.1 + 7.5 (30.4)	30.5 + 6.7 (28.9)
Change in BMI, kg/m^2*	-	17.8 + 5.3 (17.4)	19.7 + 7.1 (18.4)	18.4 + 8.1 (17.7)	18 + 7.2 (17.4)	17.5 + 6.9 (17.7)	17.6 + 6.4 (17.4)
%EWL*	-	74.5 + 21.6 (72.4)	84.5 + 25.3 (84.7)	79 + 28.1 (79)	77.6 + 25.6 (78.2)	75.1 + 26.5 (77.1)	80.7 + 27.9 (83.9)
%TWL*	-	35.2 + 7.7 (35.6)	39.2 + 10.1 (39.1)	36.6 + 12.3 (37.6)	36 + 11.1 (35.4)	34.9 + 10.9 (34.9)	36.2 + 10.8 (37.8)

F/U = follow-up; BMI = body mass index; %EWL = percent excess weight loss; %TWL = percent total weight loss.
* Value expressed as mean ± standard deviation (median).

- The 30-day emergency room visit, readmission, and reoperation rates
  - .4%, 1.1%, and 1.1%, respectively
  - The mortality rate was .5%.
- Post Op Comorbidity impact…

Remission of co-existing conditions through 6 years

Obesity-related co-existing condition	Preoperative, %	Postoperative			
		R, %	I, %	N, %	W, %
T2D*	40	77	19.3	3.2	0
HLD	35	66.4	25	7.8	0
HTN	50.2	60	31	9	0
GERD	29.3	53.7	22.6	15	8.4
OSA	46.2	52.9	20.5	25.7	.7

R = resolved; I = improved; N = neutral; W = worsened; T2D = type 2 diabetes; HLD = hyperlipidemia; HTN = hypertension; GERD = gastroesophageal reflux disease; OSA = obstructive sleep apnea.

What About Long Term?

Obes Surg. 2022 Mar;32(3):682-689. doi: 10.1007/s11695-021-05879-9. Epub 2022 Jan 15.

Long-Term Results of Single-Anastomosis Duodeno-ileal Bypass with Sleeve Gastrectomy (SADI-S)

Andrés Sánchez-Pernaute [1], Miguel Ángel Rubio Herrera [2], Natalia Pérez Ferré [2], Carlos Sáez Rodríguez [3], Clara Marcuello [2], Clara Pañella [3], Leyre Lopez Antoñanzas [3], Antonio Torres [3], Elia Pérez-Aguirre [3]

- 164 patients
  - 2007-2015
  - 10 year follow up

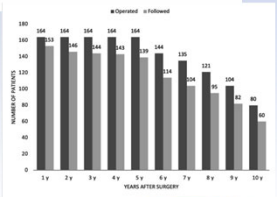

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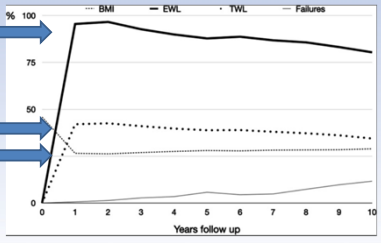
Table 1 Weight loss

Time	BMI	EWL (%)	TWL (%)	*
Basal	45.8	0	0	0
1 year	26.5	95.5	42	1/153–0.6
2 years	26.2	96.6	42.5	2/146–1.3
3 years	26.9	92.7	41	4/144–2.7
4 years	27.5	89.9	39.7	5/143–3.4
5 years	28	87.8	38.8	8/139–5.7
6 years	27.8	88.7	38.9	5/114–4.4
7 years	28.2	86.8	38	3/[illegible]
8 years	28.3	85.7	37.2	7/[illegible]
9 years	28.4	83.2	36.1	8/82–9.7
10 years	28.9	80.4	34.4	*

BMI, body mass index; *EWL*, excess weight loss; *TWL*, total weight loss



- Weight Loss (BMIΔ, EWL, & TWL)

What About Long Term?

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Table 3 Evolution of type 2 diabetes, hypertension, and obstructive apnea

	Preoperative	5 years	10 years
Insulin (*n*)	41	7	12
Oral (*n*)	47	17	27
Diet/no. therapy (*n*)	13	77	62
Glycemia (mg/dL)	169.8 (88–408)	104.16	118.2 (74–207)
HbA1c (%)	7.69 (5.4–14)	5.51	5.86 (4.6–7.9)
Arterial hypertension (%)	56	25.7	14
Obstructive apnea (%)	54	5.8	2.1

- Comorbidity Resolution

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What About Long Term?

Obes Surg. 2021 Dec;31(12):5117-5126. doi: 10.1007/s11695-021-05709-y. Epub 2021 Sep 14.

Long-Term (> 6 Years) Outcomes of Duodenal Switch (DS) Versus Single-Anastomosis Duodeno-Ileostomy with Sleeve Gastrectomy (SADI-S): a Matched Cohort Study

Amit Surve [1], Daniel Cottam [2], Legrand Belnap [1], Christina Richards [1], Walter Medlin [1]

- 266 patients from 2011-2015
- Matched cohort of 30 patients from each group
- Need to be 5 years post op and have 5 years follow up

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What About Long Term?

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Table 1 Characteristics and operative outcomes of patients in the study groups

Variable	DS	SADI-S	*p* value
Subject (no.)	30	30	-
M/F (no.)	8/22	8/22	1.000
Age (yr.)*	51.5 ± 12.4	55.6 ± 14.3	0.240
Preoperative BMI (kg/m^2)*	47.8 ± 8.9	47.9 ± 8.7	0.965
Preoperative weight (lbs.)*	296.4 ± 59.9	303 ± 80.8	0.721
IBW (lbs.)*	135 ± 22.3	142.1 ± 19.3	0.192
EBW (lbs.)*	161.4 ± 51.2	161.8 ± 67.4	0.979
High risk (no.)	9	17	0.068
Baseline obesity-related comorbidity	**DS**	**SADI-S**	***p* value**
OSA (no.)	19	17	0.792
T2D (no.)	18	15	0.604
GERD (no.)	15	14	1.000
HTN (no.)	15	20	0.295
Operative outcomes	**DS**	**SADI-S**	***p* value**
Operative time (min) [skin-to-skin] *	134.8 ± 26.7	66.4 ± 13.2	**< 0.001**
Intraoperative complication (no.)	0	0	-
Length of stay (day)*	3 ± 1.4	1.9 ± .7	**< 0.001**

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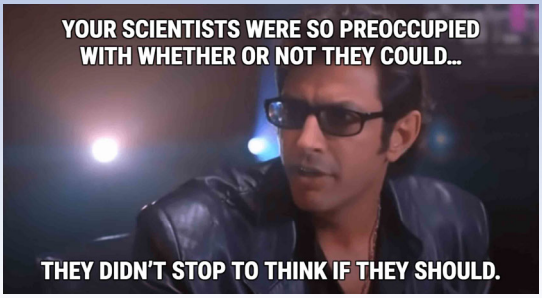
Safety/Complications?



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Observational Study > Obes Surg. 2021 Feb;31(2):570-579. doi: 10.1007/s11695-020-05031-z. Epub 2020 Oct 12.

SADI-S 250 vs Roux-en-Y Duodenal Switch (RY-DS): Results of 5-Year Observational Study

Yury Yashkov [1], Natalya Bordan [2], Antonio Torres [3], Alexandra Malykhina [4], Dmitry Bekuzarov [4]

- 226 SADI-S with 250cm common limb and 528 BPD-DS
  - Early complication rate was less (2.65%) in the SADI-S group vs 5.1% in the RY-DS
  - Protein deficiency and small bowel obstruction rates were also lower after SADI-S
  - 7.5% of patients in the SADI-S group had symptoms of bile reflux, which was a main indication for revisions
  - **Weight loss and antidiabetic effects after the third year were marginally lower after SADI-S compared to RY-DS**

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Multicenter Study > Surg Obes Relat Dis. 2018 May;14(5):594-601. doi: 10.1016/j.soard.2018.01.020. Epub 2018 Feb 2.

The incidence of complications associated with loop duodeno-ileostomy after single-anastomosis duodenal switch procedures among 1328 patients: a multicenter experience

Amit Surve [1], Daniel Cottam [2], Andres Sanchez-Pernaute [3], Antonio Torres [3], Joshua Roller [4], Yong Kwon [4], Joshua Mourot [4], Bleu Schniederjan [5], Bo Neichoy [5], Paul Enochs [6], Michael Tyner [6], Jon Bruce [6], Scott Bovard [6], Mitchell Roslin [7], Muhammad Jawad [8], Andre Teixeira [8], Myur Srikanth [9], Jason Free [10], Hinali Zaveri [1], David Pilati [11], Jamie Bull [12], LeGrand Belnap [1], Christina Richards [1], Walter Medlin [1], Rena Moon [8], Austin Cottam [1], Sarah Sabrudin [7], Samuel Cottam [1], Aneesh Dhorepatil [1]

- 17 surgeons from 3 countries (United States, Spain, and Australia) at 9 centers
- 6-year period were retrospectively reviewed
- Mean preoperative body mass index was 51.6 kg/m^2.
- Of 1328 patients:
  - 123 patients received a linear stapled duodeno-ileostomy (DI)
  - 1205 patients a hand-sewn DI

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Multicenter Study > Surg Obes Relat Dis. 2018 May;14(5):594-601. doi: 10.1016/j.soard.2018.01.020. Epub 2018 Feb 2.

The incidence of complications associated with loop duodeno-ileostomy after single-anastomosis duodenal switch procedures among 1328 patients: a multicenter experience

Amit Surve [1], Daniel Cottam [2], Andres Sanchez-Pernaute [3], Antonio Torres [3], Joshua Roller [4],

- Anastomotic leak: 0.6% (9/1328),
- Ulcer: 0.1% (2/1328)
- Bile reflux: 0.1% (2/1328)
- Stricture: 0.4% (5/1328)
- Early DVT/PE 0.5%
- *Bleeding: 4-5%

Lower than the reported incidence of anastomotic complications after Roux-en-Y gastric bypass and biliopancreatic diversion with duodenal switch

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Other Operations

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~~Sleeve'em and Leave'em~~

Sleeve'em and Operate Again

Review > Surg Obes Relat Dis. 2018 Jun;14(6):741-747. doi: 10.1016/j.soard.2018.02.027. Epub 2018 Mar 6.

Long term (7 or more years) outcomes of the sleeve gastrectomy: a meta-analysis

Benjamin Clapp [1], Matthew Wynn [2], Colin Martyn [2], Chase Foster [2], Montana O'Dell [2], Alan Tyroch [2]

- Increasing need for revisions the longer patients are followed

Table 2
Pooled estimates of various outcomes.

	n	N	I^2	Incidence	95% CI	*P* value
Recidivism rate at ≥7 yr	8	652	.6%	.278	.228–.327	<.001
Overall revision rate	7	2053	93.8%	.199	.113–.285	<.001
Revision rate due to weight regain	5	1976	92.8%	.131	.056–.206	.001
Revision rate due to GERD	5	1976	60.8%	.029	.010–.049	.004
Recidivism rate at ≥7 yr (N ≥30)	4	535	7.5%	.285	.229–.342	<.001
Recidivism rate at ≥7 yr (FU >50%)	4	241	.0%	.294	.234–.354	<.001
Recidivism rate at ≥7 yr (FU <50%)	4	104	14.7%	.244	.157–.330	<.001

n = number of studies; I^2 = heterogeneity index; CI = confidence interval; GERD = gastroesophageal reflux disease; FU = follow-up.

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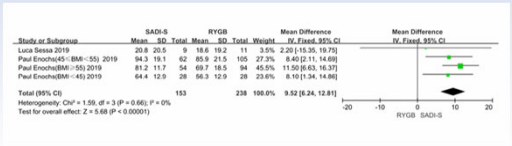
Review > Obes Surg. 2021 Jul;31(7):3303-3311. doi: 10.1007/s11695-021-05456-0. Epub 2021 May 6.

Roux-En-Y Gastric Bypass Versus Sleeve Gastrectomy Plus Procedures for Treatment of Morbid Obesity: Systematic Review and Meta-Analysis

Gang Chen [# 1], Gui-Xiang Zhang [# 1], Bo-Qiang Peng [2], Zhong Cheng [1], Xiao Du [3 4]

- Meta analysis with 4 papers on SADI-S



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SADI vs RYGB

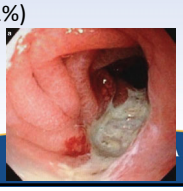
Published: 22 December 2015

A matched cohort analysis of single anastomosis loop duodenal switch versus Roux-en-Y gastric bypass with 18-month follow-up

Austin Cottam, Daniel Cottam, Walter Medlin, Christina Richards, Samuel Cottam, Hinali Zaveri & Amit Surve

Surgical Endoscopy 30, 3958–3964 (2016) | Cite this article

- Retrospective
- 54 RYGB patients and 54 SADI-S patients with 300-cm absorptive limbs (all with a 40-Fr SG)
  - Similar weight loss (39.6% vs 41%)
  - RYGB had higher:
    - Nausea (26 vs 5)
    - Need for Dx EGD (21 vs 3)
    - Ulcers (6 vs 0)



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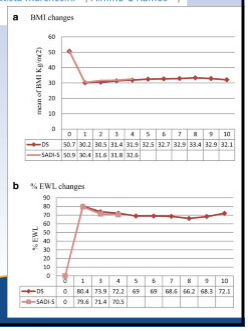
Obes Surg. 2020 Sep;30(9):3309-3316. doi: 10.1007/s11695-020-04566-5.

Single Versus Double-Anastomosis Duodenal Switch: Single-Site Comparative Cohort Study in 440 Consecutive Patients

Pablo Finno [1], Javier Osorio [2], Amador García-Ruiz-de-Gordejuela [1], Anna Casajoana [1], María Sorribas [1], Víctor Admella [1], Mónica Serrano [1], Joao Batista Marchesini [3], Almino C Ramos [4], Jordi Pujol-Gebellí [1]

- 259 BPD-DS and 181 SADI-S
  - Mean excess weight loss:
    - 70.5% at 4 years for SADI-S
    - 72.1% at 10 years after BPD-DS
  - Complication rate similar
    - 18.9% vs 13.3%
  - **long-term complications and vitamin and micronutrient deficiencies were increased after BPD-DS**



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Weight Loss: SADI-S vs BPD-DS

Long-Term (> 6 Years) Outcomes of Duodenal Switch (DS) Versus Single-Anastomosis Duodeno-Ileostomy with Sleeve Gastrectomy (SADI-S): a Matched Cohort Study

Single Versus Double Anastomosis Duodenal Swi... in the Management of Obesity: A Meta-analysis ... Systematic Review

A Matched Cohort Analysis of Stomach Intestinal Pylorus Saving (SIPS) Surgery Versus Biliopancreatic Diversion with Duodenal Switch with Two-Year Follow-up

%EWL	3 months	6 months	9 months	12 months	18 months	24 months
SIPS	41.8 ± 14.6	58.3 ± 16.5	69.5 ± 17.8	78.7 ± 19.2	85 ± 16.5	83.7 ± 17.3
N	57/61 (93 %)	54/58 (93 %)	43/56 (77 %)	40/51 (78 %)	30/43 (70 %)	19/27 (70 %)
BPDDS	45.7 ± 17.4	63.7 ± 20.7	75 ± 22.7	82.7 ± 24.3	91 ± 23.8	95.3 ± 23
N	49/60 (82 %)	49/60 (82 %)	47/60 (78 %)	47/60 (78 %)	46/60 (77 %)	43/60 (72 %)
P value	.212	.145	.207	.403	.233	.054

- BDP-DS w better EWL but at expense of micronutrient deficiencies

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Review > Curr Atheroscler Rep. 2017 Nov 7;19(12):58. doi: 10.1007/s11883-017-0688-4.

Cardiovascular Risk Factors After Single Anastomosis Duodeno-Ileal Bypass with Sleeve Gastrectomy (SADI-S): a New Effective Therapeutic Approach?

Antonio Torres [1], Miguel A Rubio [2], Ana M Ramos-Levi [3], Andrés Sánchez-Pernaute [4]

- Comparing SADI-S with BPD-DS and RYGB.
  - Of 106 **SADI-S** patients seen at 3 years, the mean percentage of total weight loss (%TWL) was 38.7 +/- 10.7
  - 149 **RYGB** patients seen at the same time point, %TWL was 28.7 +/- 9.7, a statistically significant difference
- type 2 diabetes,
  - 97 **RYGB** patients lost 30.3 +/- 7.1%TWL
  - 97 **SADI-S** patients lost 35.5 +/- 6.7 %TWL
  - 77 **BPD-DS** patients lost 35.2 +/- 10.5 %TWL
- SADI-S
  - easier to perform, easier to dismantle, and having a lower rate of internal herniation than BPD-DS

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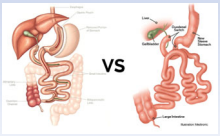
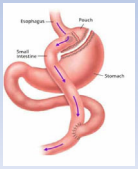
REVISIONS: Options after Sleeve

- Dilated sleeve
  - Re-sleeve
  - ESG
- GERD
  - RYGB
- SADI/BPD-DS
  - Initial BMI>50 ; Residual BMI>40
  - Recurrent DM/HTN/HLD/OSA





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Obes Surg. 2018; 28(12): 3834–3842. PMCID: PMC6223754
Published online 2018 Jul 31. doi: 10.1007/s11695-018-3429-z PMID: 30066245

Failed Sleeve Gastrectomy: Single Anastomosis Duodenoileal Bypass or Roux-en-Y Gastric Bypass? A Multicenter Cohort Study

Phillip J. Dijkhorst,[81,2] Abel B. Boerboom,[2] Ignace M. C. Janssen,[1] Dingeman J. Swank,[3] René M. J. Wiezer,[4] Eric J. Hazebroek,[2] Frits J. Berends,[2] and Edo O. Aarts[2]

SG to SADI in 66 patients

SG to RYGB in 74 patients.

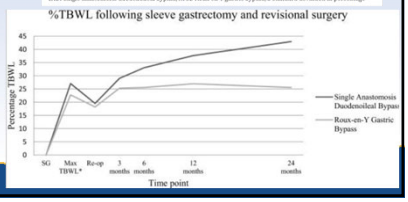
- weight loss was the main indication for surgery
- **SADI achieved 8.7%, 12.4%, and 19.4% more total body weight loss** at 6, 12, and 24 months compared to RYGB (all $p < .001$)

Table 2

Percentage total body weight loss (%TBWL) following secondary surgery

	%TBWL at 3 months	%TBWL at 6 months	%TBWL at 12 months	%TBWL at 24 months
SADI	11.3% (± 4.1)	16.5% (± 5.8)	21.5% (± 8.1)	26.4% (± 10.4)
RYGB	5.9% (± 5.3)	7.8% (± 6.8)	8.9% (± 8.7)	6.9% (± 11.3)
P value	< .001	< .001	< .001	< .001

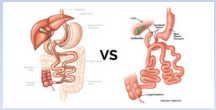
SADI single anastomosis duodenoileal bypass, RYGB Roux-en-Y gastric bypass, ± standard deviation in percentage



Obes Surg. 2021 Aug;31(8):3667-3674. doi: 10.1007/s11695-021-05469-9. Epub 2021 May 12.

Revisional Laparoscopic SADI-S vs. Duodenal Switch Following Failed Primary Sleeve Gastrectomy: a Single-Center Comparison of 101 Consecutive Cases

Javier Osorio [1], Claudio Lazzara [2], Victor Admella [2], Sofia Franci-León [2], Jordi Pujol-Gebellí [2]



- 46 patients Sleeve to SADI
- 55 patients Sleeve to BPD-DS
- Complication rate 6.5 vs 10.9
  - Favoring SADI
- total weight loss of 35.3% vs. 41.7% (p = 0.009), and excess weight loss 64.1% vs. 75.3%
  - Both great, favoring BPD-DS
  - at the expense of higher supplementation needs

Observational Study > Surg Obes Relat Dis. 2020 Aug;16(8):1060-1066. doi: 10.1016/j.soard.2020.04.014. Epub 2020 Apr 21.

Short- to medium-term results of single-anastomosis duodeno-ileal bypass compared with one-anastomosis gastric bypass for weight recidivism after laparoscopic sleeve gastrectomy

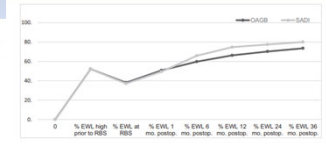
Marlon de la Cruz [1], Martin Büsing [1], Radostina Dukovska [1], Antonio José Torres [2], Markus Reiser [3]

What about OAGB???

Table 4
Adverse events grade I-II after SADI and OAGB according to the Clavien-Dindo classification

	SADI (n = 42)	OAGB (n = 42)
Wound infection/healing disorder	2/42 (4.8%)	2/42 (4.8%)
Lower GI symptoms		
Obstipation	1/42 (2.4%)	6/42 (14.3%)
Flatulence	4/42 (9.5%)	2/42 (4.8%)
Diarrhea	5/42 (11.9%)	5/42 (11.9%)
Steatorrhea	3/42 (7.1%)	2/42 (4.8%)
Upper GI symptoms (pain,nausea,bloatedness)	7/42 (16.7%)	8/42 (19%)
Symptomatic bile reflux	2/42 (4.8%)	11/42 (26.7%)
Anemia	2/42 (4.8%)	5/42 (11.9%)
Anastomotic ulcers	0/42 (0%)	1/42 (2.4%)
Massive malabsorption syndrome*	1/42 (2.4%)	2/42 (4.8%)
Dumping syndrome	1/42 (2.4%)	5/42 (11.9%)
Neurologic symptoms	1/42 (2.4%)	1/42 (2.4%)
Edemas	2/42 (4.8%)	1/42 (2.4%)
Fatigue	1/42 (2.4%)	2/42 (4.8%)
Hair loss	2/42 (4.8%)	3/42 (7.1%)
Readmission	10/42 (23.8%)	18/42 (42.9%)

SADI = single-anastomosis duodeno-ileal bypass; OAGB = one-anastomosis gastric bypass.
* Grade 3b.



	Peak post LSG	At RBS	1 mo. postop.	6 mo. postop.	12 mo. postop.	24 mo. postop.	36 mo. postop.
%EWL OAGB	52.1±19.2	38±20.3	50.7±16.8	59.8±15.8	66.3±18.5	70.3±17.9	73.6±17.9
%EWL SADI	52.1±15.9	37.1±15.4	49.4±13.9	65.9±16.5	74.8±15.3	77.5±16.8	80.1±16.3
BMI OAGB	55.6±9.1	43.4±9.2	39.5±8.1	36.6±7.4	34.7±7.9	32.9±6.3	31.6±5.9
BMI SADI	55.1±12	42.8±7.9	39.1±7.2	34.2±6.9	31.2±5.8	30.2±5.3	29.3±5.1

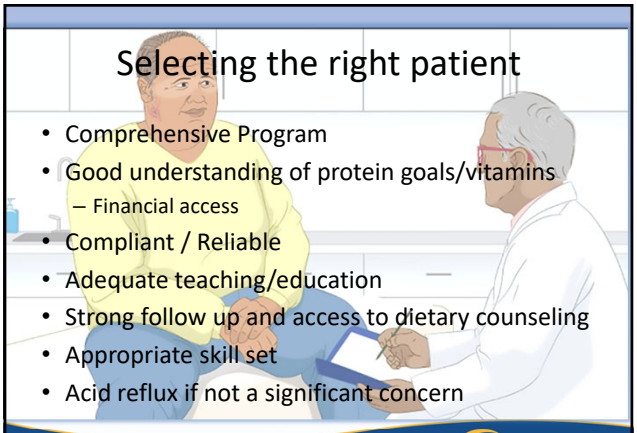
Obes Surg. 2020 Dec;30(12):4715-4723. doi: 10.1007/s11695-020-04933-2. Epub 2020 Aug 26.

Single Anastomosis Duodeno-ileostomy (SADI-S) Versus One Anastomosis Gastric Bypass (OAGB-MGB) as Revisional Procedures for Patients with Weight Recidivism After Sleeve Gastrectomy: a Comparative Analysis of Efficacy and Outcomes

Moataz Bashah [1, 2], Ammar Aleter [1], Jawher Baazaoui [1], Ayman El-Menyar [3, 4], Antonio Torres [5], Asaad Salama [1]

- Retrospective analysis
- 91 patients were included in the study (42 SADI-S and 49 OAGB-MGB)
  - TWL% at 1-year:
    - SADI-S 23.7 vs OAGB-MGB 18.7 (p = 0.02)
    - However, 18 months 26.4 vs 21.2 (p = 0.25)
  - *OAGB-MGB had higher complication rate* than SADI-S, the difference was not statistically significant (p = 0.39)
    - **SADI-S is associated with less upper gastrointestinal complications and could be a better option for patients suffering from GERD post-LSG.**
      - Underlying bile reflux may get worse with OAGB-MGB.

Selecting the right patient



- Comprehensive Program
- Good understanding of protein goals/vitamins
  - Financial access
- Compliant / Reliable
- Adequate teaching/education
- Strong follow up and access to dietary counseling
- Appropriate skill set
- Acid reflux if not a significant concern

Right for the patient

- Improved weight loss and comorbidity resolution
  - Decrease the need for revisions/conversions
  - Higher BMI patients particularly
- Limitations due to insurance "one & done" policies
  - Give them a better surgery!
- Don't need to reserve SADI/DS for the sickest/heaviest patients
- Patients don't know to ask for it

What's the limitation?

- If you can do a bypass, you can do a SADI/Switch
  - Sleeve + a bypass
  - Lap or robot
- Time-wise: not significantly longer than bypass
- Typically shorter than standard RNY DS
- Duodenal dissection not as scary as it seems
  - Skillset is there ; learn technique and watch for pitfalls
  - Watch another surgeon ; 5-10 case learning curve
- Vitamin deficiency concerns less with SADI compared to standard DS
  - Compliance
- NSAID "friendly"
- Complications are not higher compared to bypass

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Post Op

- More frequent assessment of nutrition
  - Labs 3/6/9/12 months
  - Annually
- Ensure bariatric vitamin adherence and supplementation
- Reassess patient stressors & food security
- Reassess mental health

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SUMMARY

- SADI-S
  - Superior:
    - Weight Loss
    - DM Resolution
      - Euglycemia
    - HTN/HLD Resolution
    - Revision option after sleeve
    - Low Complications
    - Improved QoL
  - SADI>BPD
    - Malnutrition
    - Diarrhea
  - More long term data
  - Patient Selection!

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THANK YOU!

QUESTIONS?

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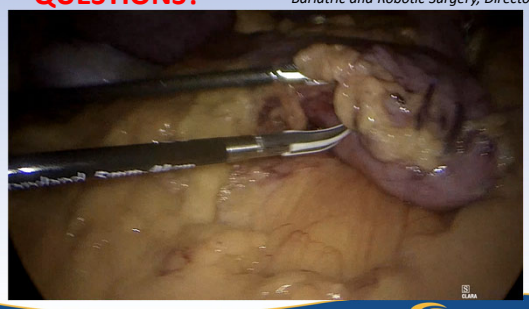
Bariatric and Robotic Surgery, Director



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