

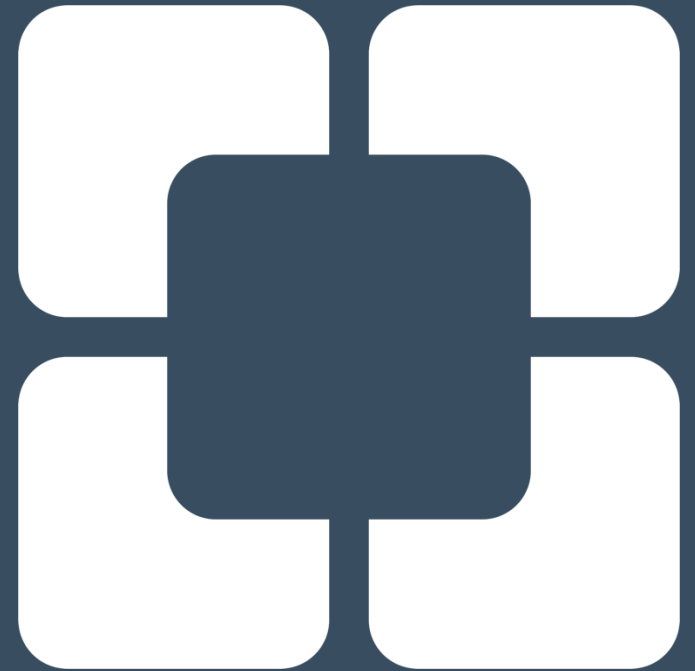
Preoperative optimization: Are we overstating the value of smoking cessation and weight control?

Benjamin T. Miller, MD

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Lerner College of Medicine of the Case
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 **Cleveland Clinic**



Disclosures

- Boston Scientific—consultant
- Medtronic—consultant
- American Hernia Society research grant



MARCH 29, 2023

No Downside to Delaying Surgery to Prehab Hernia Patients, Study Shows

By Monica J. Smith

- Ventral hernia optimization program at an academic center
- 100 patients enrolled: obesity, diabetes smoking
- After > 6 months:
 - 33% achieved optimization
 - 30% had elective hernia repair
 - 3 patients needed emergency surgery

"Our study showed that it is safe to work toward optimization with patients. Very few had emergency complications, and a large proportion achieved optimization while another third progressed toward better optimization," Dr. Nikolian said.

GENERAL SURGERY NEWS

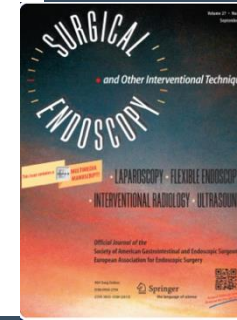
JANUARY 4, 2024

Are There Really No Downsides to Delaying Surgery to Prehab Hernia Patients?

Mazen R. Al-Mansour, MBBS

- Ineffective
 - 70% of patients did not undergo hernia repair
- Disparities
 - 66% of patients in the program were female
- The rate of emergency surgery may not be acceptable

Based on this, it is my opinion that this study has indeed demonstrated a number of downsides to preoperative optimization programs, and the title of the index article and its conclusions are simply inaccurate. Even more



Gender, racial, and socioeconomic disparity of preoperative optimization goals in ventral hernia repair

Mazen R. Al-Mansour^{1,3}  · Khal-Hentz Gabriel² · Dan Neal¹

Total n = 5,638



1 of 5 VH patients failed to meet preoperative optimization cut-offs



BMI < 40 Kg/m²

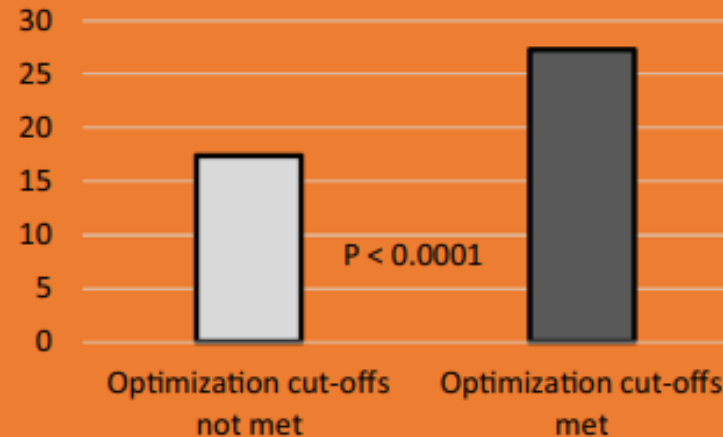


No active smoking



HBA1c < 8%

% Received Subsequent Hernia Repair



Patients who failed to meet optimization cut-offs had 50% lower odds of receiving subsequent hernia repair



Females, Blacks & socioeconomically distressed patients are less likely to meet optimization cut-offs

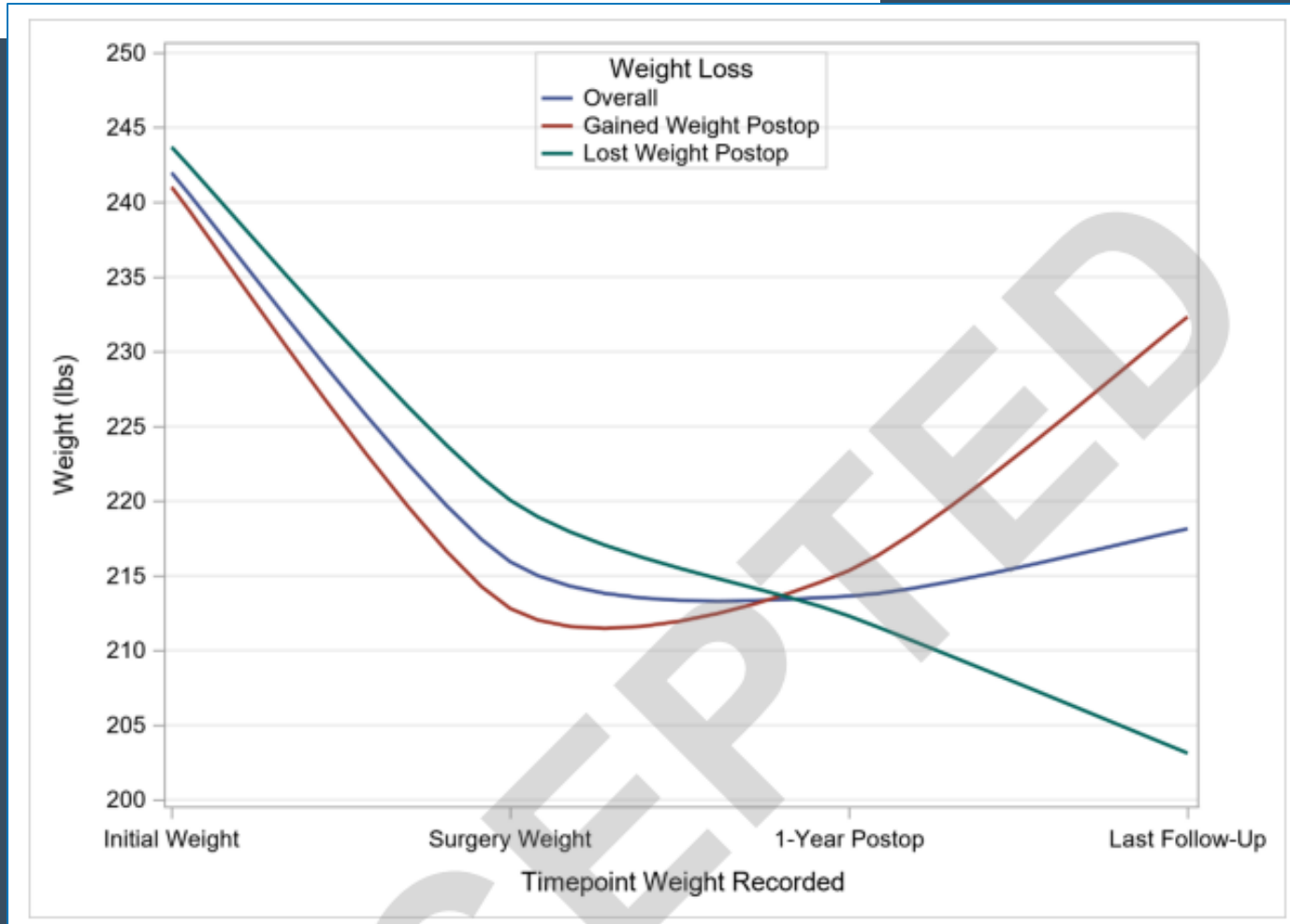
Optimization protocols need to address these disparities to ensure equitable access to hernia care



Limited or Lasting: Is Preoperative Weight Loss as Part of Prehabilitation Maintained after Open Ventral Hernia Repair?

Holland, Alexis M MD^a; Lorenz, William R MD^a; Ayuso, Sullivan A MD^a; Katzen, Michael M MD^a; Kundu, Souma MD MPH^a; Rosas, David A MD MBA^a; Mead, Brittany S MD^a; Scarola, Gregory T MS^a; Augenstein, Vedra A MD FACS^a; Heniford, B Todd MD FACS^a

2025



Limited or Lasting: Is Preoperative Weight Loss as Part of Prehabilitation Maintained after Open Ventral Hernia Repair?

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socioeconomic areas. (60) Obesity, diabetes, and tobacco use, themselves, are distributed unequally amidst the population, disproportionately affecting low-income, minority patients in the United States. (61) Thus, it is not surprising that Al Mansour and colleagues found that women, Black patients, and those with socioeconomic distress were less likely to meet preoptimization cut-offs at the time of diagnosis. (62) These populations did not meet criteria for surgery at the date of consultation, but the study cannot conclude that preoptimization is a barrier for marginalized patients because they did not evaluate the subsequent ability to achieve the cut-offs and ultimately undergo AWR. Indeed, the arguments that low-income or minority patients

You are biased if you think socially vulnerable populations cannot be preoptimized!

face a greater challenge to undergo prehabilitation stand, and therefore if prehabilitation should not be pursued, this may demonstrate significant bias. Liang et al. found that a thorough,

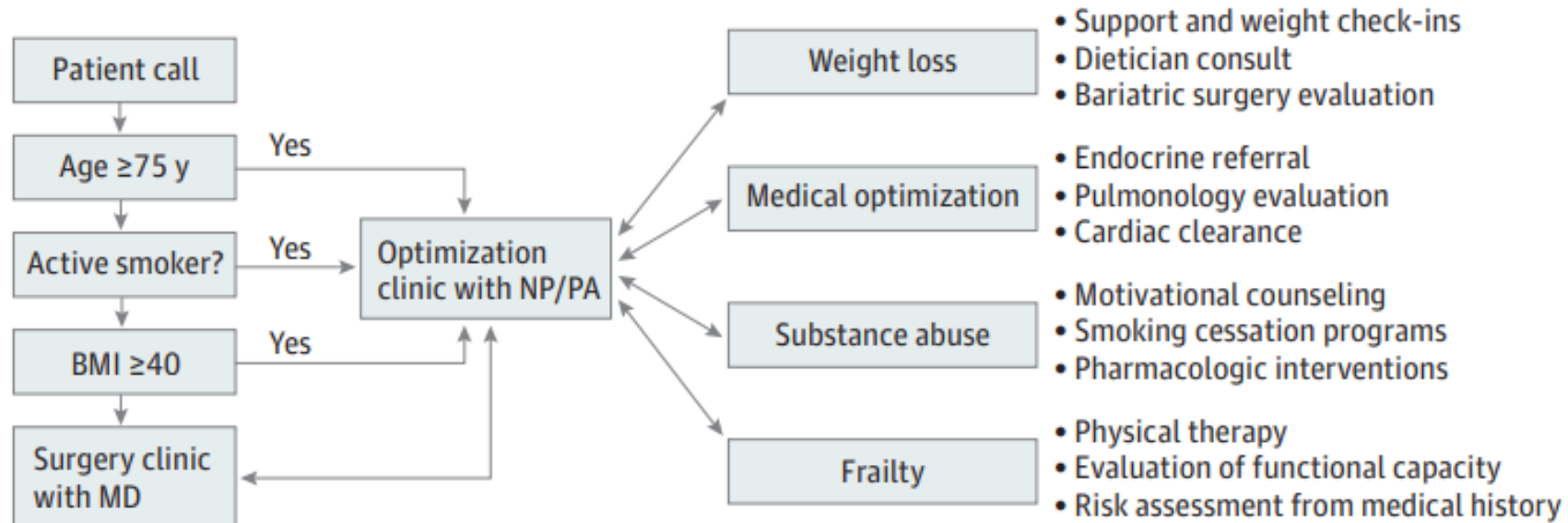
Outcomes of a Presurgical Optimization Program for Elective Hernia Repairs Among High-risk Patients

2021

Lia D. Delaney, MS; Ryan Howard, MD; Krisinda Palazzolo, MS, PA-C; Anne P. Ehlers, MD, MPH; Shawna Smith, MPhil, PhD; Michael Englesbe, MD; Justin B. Dimick, MD, MPH; Dana A. Telem, MD, MPH

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Figure. Optimization Clinic Decision Tree



Outcomes of a Presurgical Optimization Program for Elective Hernia Repairs Among High-risk Patients

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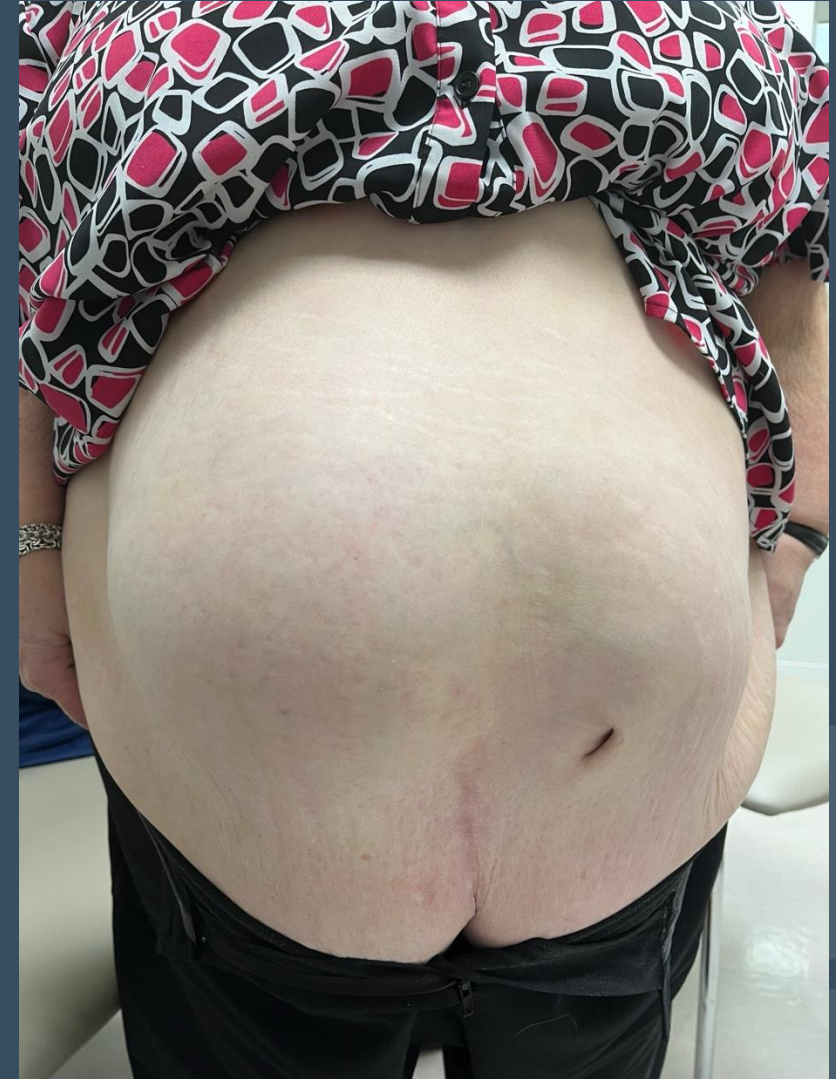


Table 3. Optimization Outcome Stratified by Risk Factor

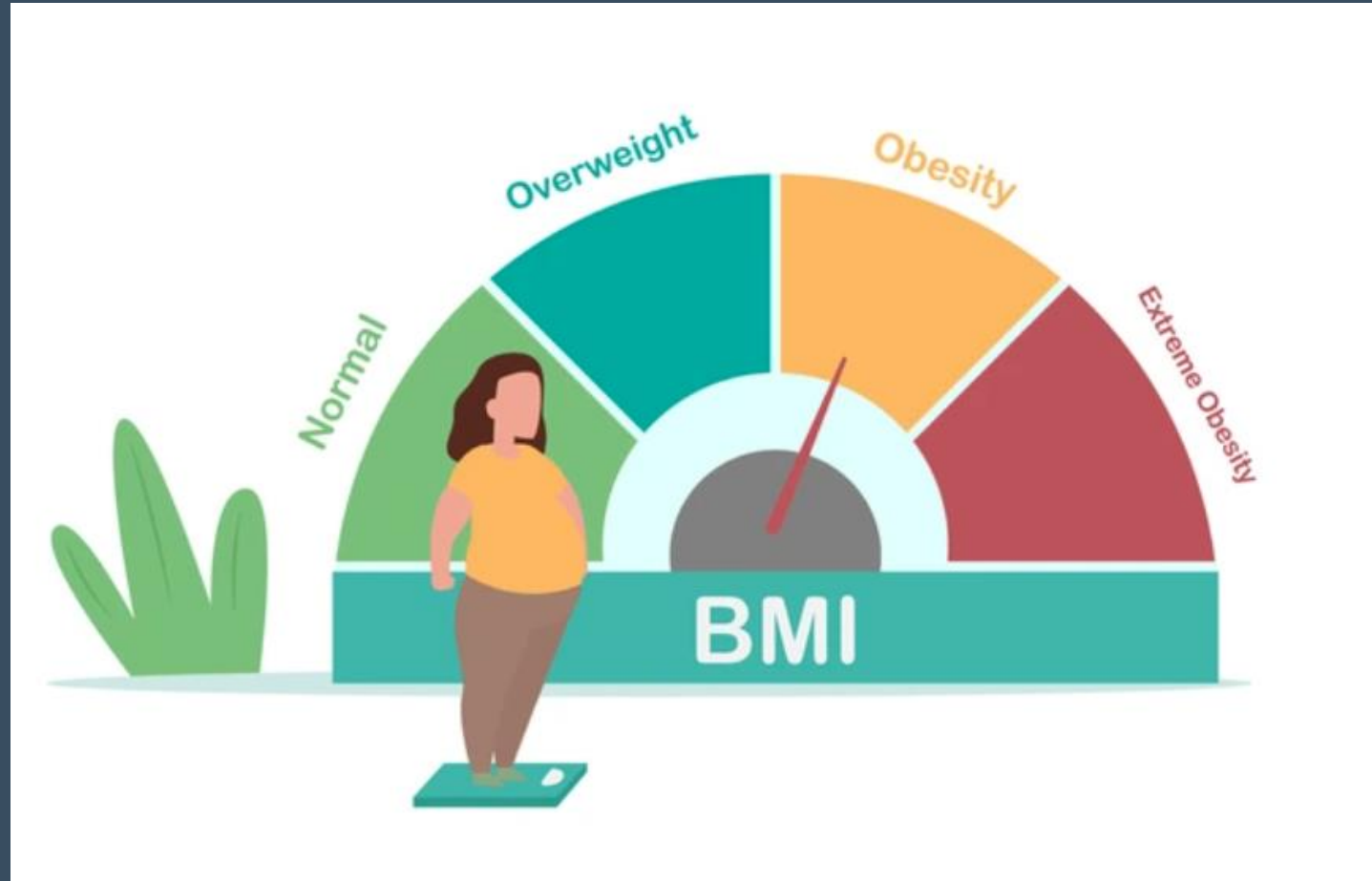
Risk factor	Patients, No.	Patients, No. (%)	
		Qualified for surgery	Enrollment risk factor optimized
All patients ^a	165	15 (9.1)	12 (7.3)
Body mass index	63	3 (4.7)	3 (4.7)
Age ^b	39	3 (7.6)	0
Tobacco use	58	8 (13.8)	8 (13.8)
Medical history ^b	5	1 (20.0)	0

CONCLUSIONS AND RELEVANCE In this quality improvement study, a hernia optimization clinic safely improved management of high-risk patients and increased operative yield for the institution.

Obesity



What is your BMI cut-off?



How I talk myself out of hernia repair in obese patients:

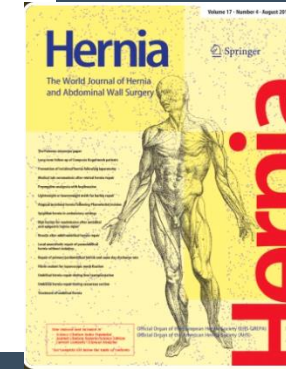
- “Wound morbidity is probably higher”
- “Hernia recurrences may be higher”
- “The operation is harder for me to do”



Wound risk assessment in ventral hernia repair: generation and internal validation of a risk stratification system using the ACS-NSQIP

J. P. Fischer · J. D. Wink · C. T. Tuggle ·
J. A. Nelson · S. J. Kovach

2015



27,024 patients had open VHR Predictors of SSO

BMI	Odds ratio	P value
< 30	-	
30-34.9	1.25	0.001
35-39.9	1.42	<0.001
>40	1.66	<0.001

The effect of increasing body mass index on wound complications in open ventral hernia repair with mesh

Luciano Tastaldi ^{a,*}, David M. Krpata ^a, Ajita S. Prab
Steven Rosenblatt ^a, Ivy N. Haskins ^a, Molly A. Olson
Michael J. Rosen ^a, Jacob A. Greenberg ^c



2019

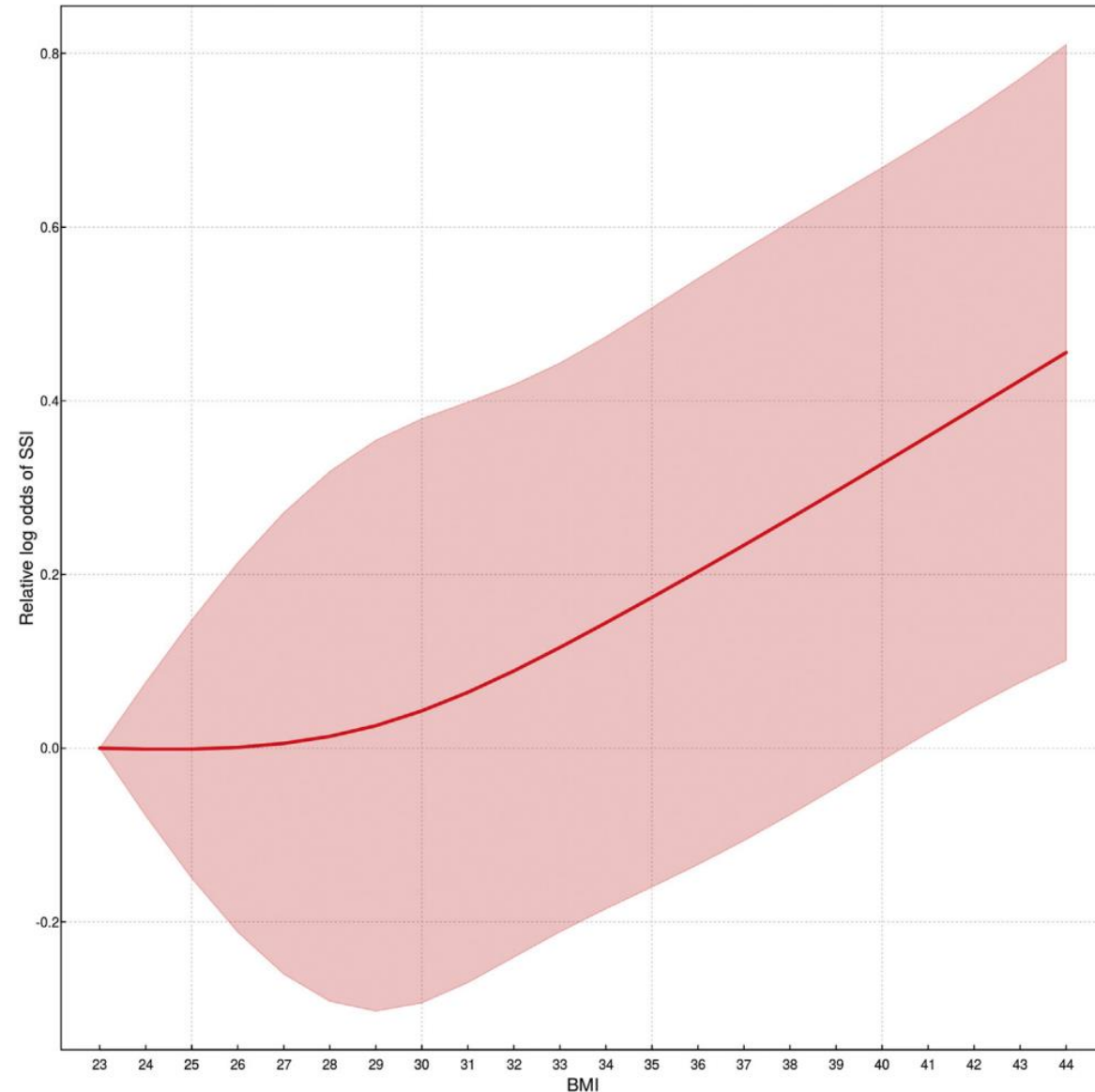
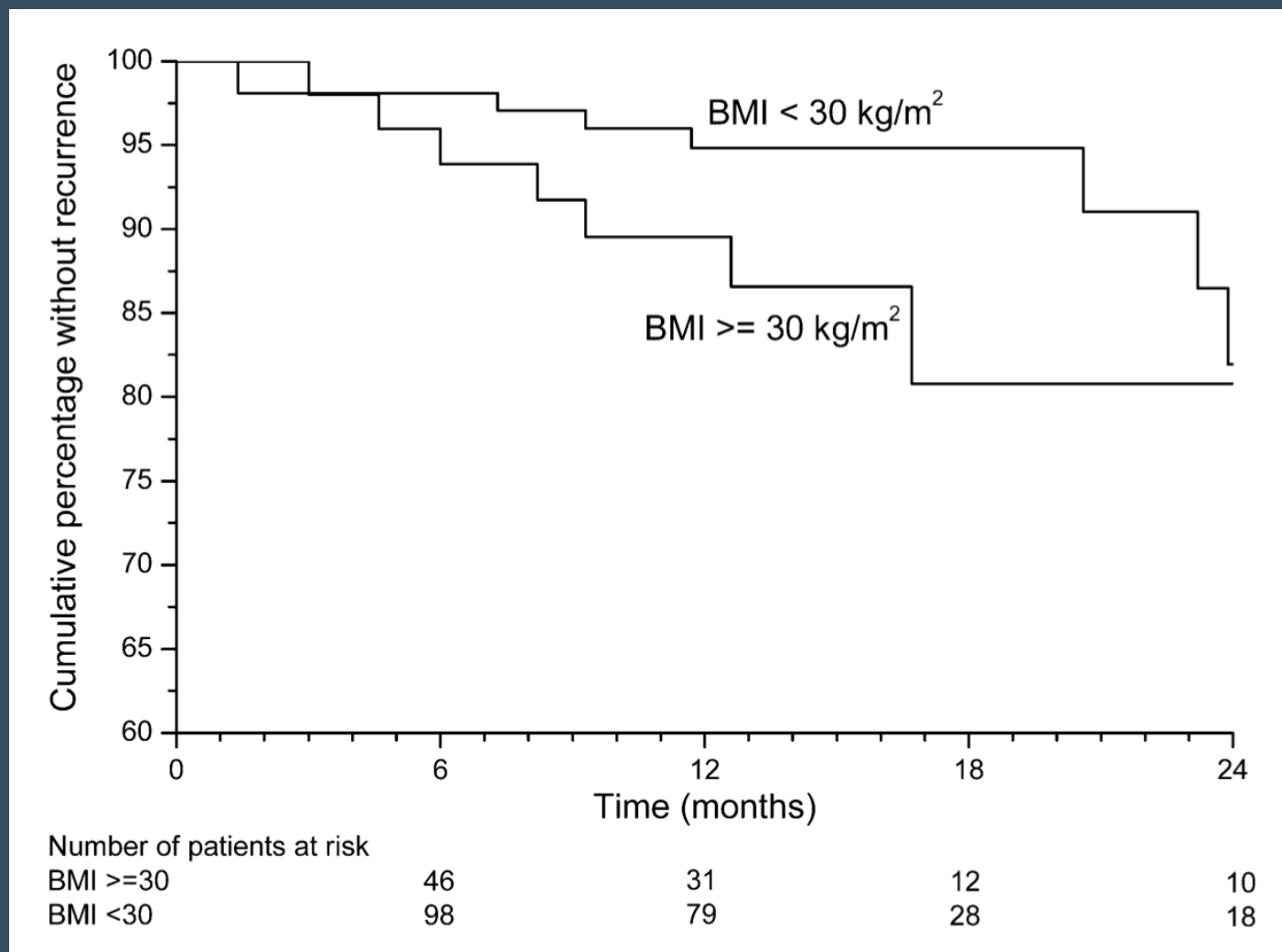


Fig. 2. Relationship between BMI (x-axis) and relative log-odds for SSI (y-axis). Shading represents 95% bootstrap confidence intervals.

S. Sauerland · M. Korenkov · T. Kleinen
M. Arndt · A. Paul

Obesity is a risk factor for recurrence after incisional hernia repair

2004



The Effect of BMI on Outcomes Following Complex Abdominal Wall Reconstructions

*Karan A. Desai, MD, Seyed Amirhossein Razavi, MD, Alexandra M. Hart, MD,
Peter W. Thompson, MD, and Albert Losken, MD*

2016



	BMI 15-25 N=59	BMI 25-30 N=85	BMI 30-35 N=84	BMI > 35 N=87	P value
Recurrence	8.3%	12.5%	30%	27%	< 0.01
Reoperation	25%	22.5%	42%	35%	0.03

Tipping the scale in abdominal wall reconstruction: An analysis of short- and long-term outcomes by body mass index

2023



Sara M. Maskal, MD^{a,*}, Megan Melland-Smith, MD^a, Ryan C. Ellis, MD^a,
 Li-Ching Huang, PhD^b, Jianing Ma, MS^c, Lucas R.A. Beffa, MD^a, Clayton
 Ajita S. Prabhu, MD^a, David M. Krpata, MD^a, Michael J. Rosen, MD^a,
 Benjamin T. Miller, MD^a

Open clean retromuscular VHR

Recurrence Rates at 1 year

Recurrence	N	BMI < 35 N=749	BMI > 35 N=340	P value
Clinical	631	5%	3%	0.3
Radiographic	497	6%	3%	0.2
Consensus	1089	12%	7%	0.02

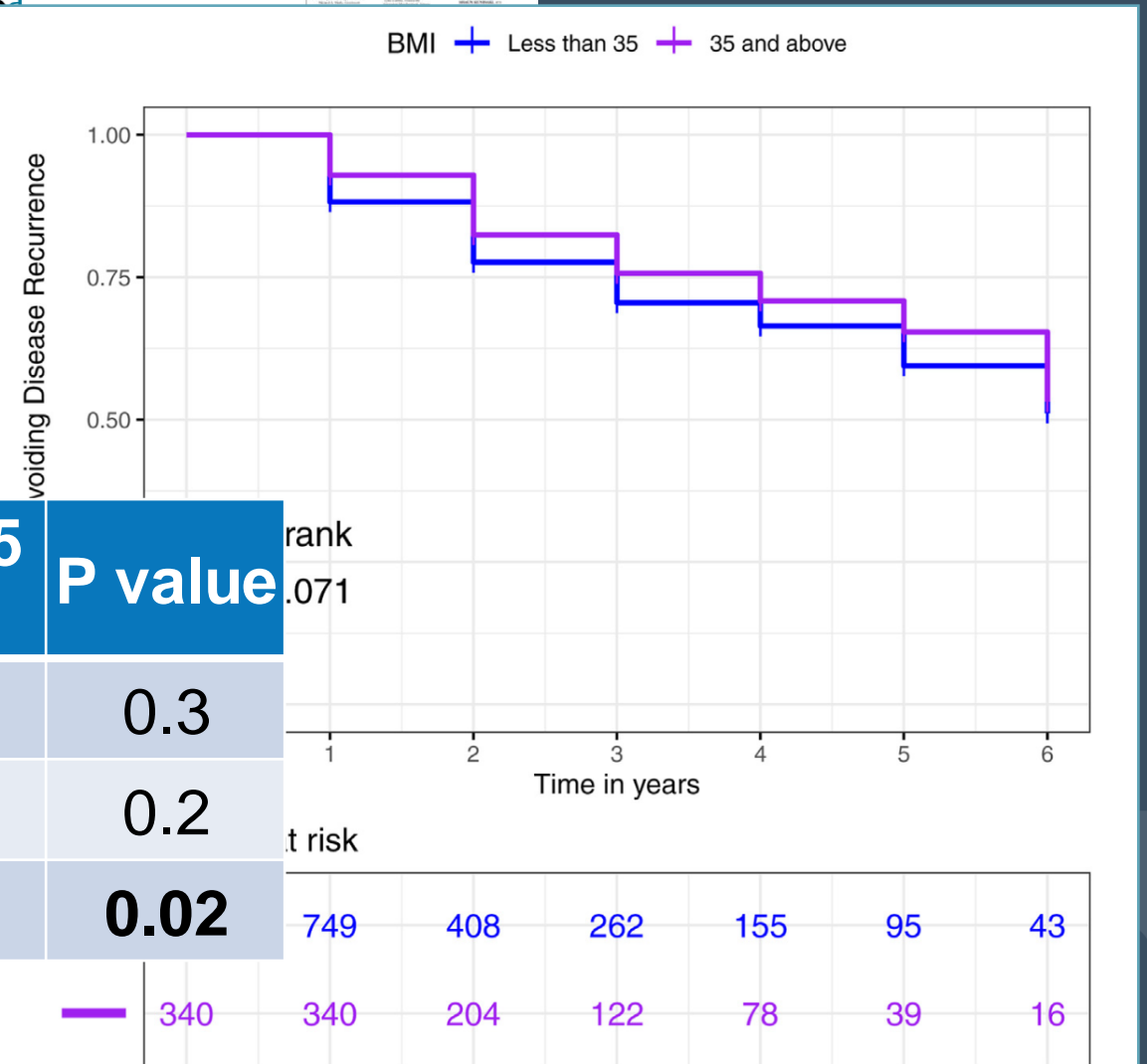


Figure 1. Hernia-free rate over 1 to 6 years postoperatively. BMI, body mass index.

Tipping the scale in abdominal wall reconstruction: An analysis of short- and long-term outcomes by body mass index

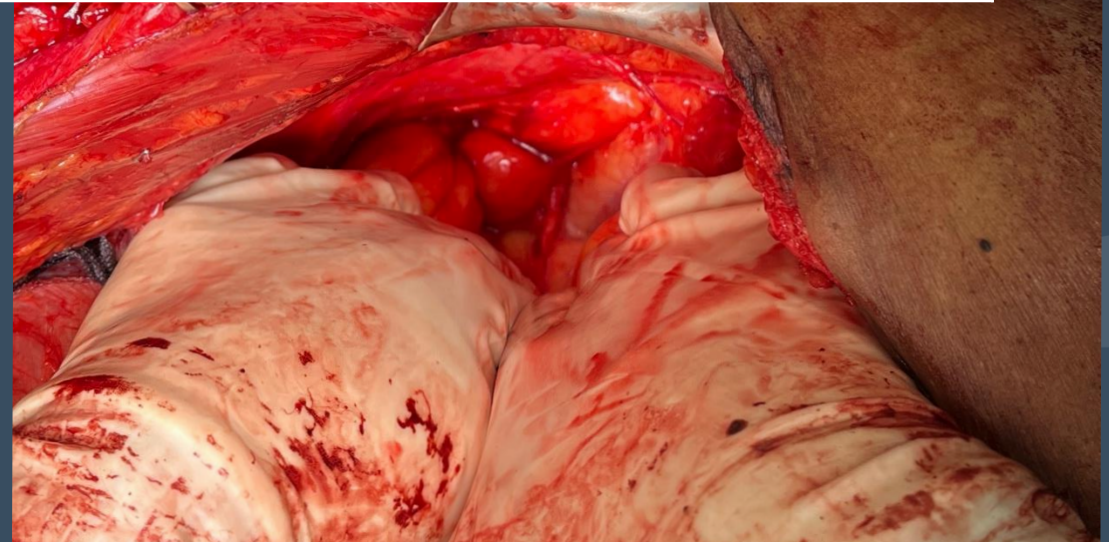
90-day wound events

	BMI < 35 N=749	BMI > 35 N=340	P value
SSO	11%	16%	0.021
SSI	7%	13%	0.002
SSOPI	9%	14%	0.009
Mesh excision	3%	0	0.28

Tipping the scale in abdominal wall reconstruction: An analysis of short- and long-term outcomes by body mass index

Obesity and difficulty of hernia repair

	BMI < 35 N=749	BMI > 35 N=340	P value
Operative time > 2 hours	86%	95%	< 0.01



Tipping the scale in abdominal wall reconstruction: An analysis of short- and long-term outcomes by body mass index

Hernia-specific Quality of Life

	N	BMI < 35 N=749	BMI > 35 N=340	P value
Baseline	850	35	30	< 0.01
1 year	974	83	80	0.3
Change from baseline	811	33	40	0.01

Obesity Takeaways

- Increased wound morbidity?



- Increased hernia recurrence?



- Makes the operation harder?



- Quality of life improves?



Smoking

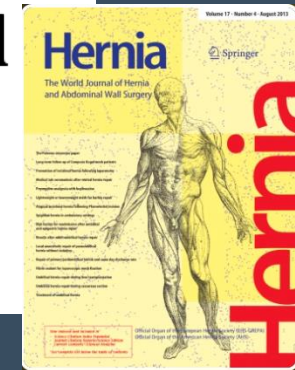


Do you require smoking cessation before elective ventral hernia repair?



The effect of smoking on surgical outcomes in ventral hernia repair: a propensity score matched analysis of the National Surgical Quality Improvement Program data

2017



N. P. Borad¹ · A. M. Merchant¹

1:1 matched analysis of lap and open hernia repairs

30-day outcomes

	Smokers N=30,529	Non-smokers N=30,529	P value
Any morbidity	7.2%	5.4%	<0.0001
Wound morbidity	4.6%	3.1%	<0.0001

Does active smoking really matter before ventral hernia repair? An AHSQC analysis ☆☆☆★



Clayton C. Petro, MD*, Ivy N. Haskins, MD, Luciano Tastaldi, MD, Chao Tu, MS, David M. Krpata, MD, Michael J. Rosen, MD, FACS, Ajita S. Prabhu, MD, FACS

	Smokers N=418	Non-smokers N=418	P value
Any morbidity	7.5%	6.6%	0.60
SSI	4.1%	4.1%	0.98
SSO	12.0%	7.4%	0.03
SSOPI	6.2%	5.0%	0.43

Evaluating the impact of lifting mandatory smoking cessation prior to elective abdominal wall reconstruction. A single-center experience

Nir Messer^{a,b,*}, Megan S. Melland^a, Benjamin T. Miller^a, David M. Krpata^a, Lucas R.A. Beffa^a, Xinyan Zheng^c, Clayton C. Petro^a, Sara M. Maskal^a, Ryan C. Ellis^a, Ajita S. Prabhu^a, Michael J. Rosen^a

2023



1:3 propensity score-matched analysis

30-day outcomes

	Smokers N=106	Non-smokers N=304	P value
SSO	22%	13%	0.052
SSI	12%	7%	0.13
SSOPI	11%	6%	0.14
Reoperation	2%	4%	0.53
Mesh removal	0	0.3%	1

Smoking Takeaway

- Smoking likely increases wound morbidity, but it's impact on your practice is probably small



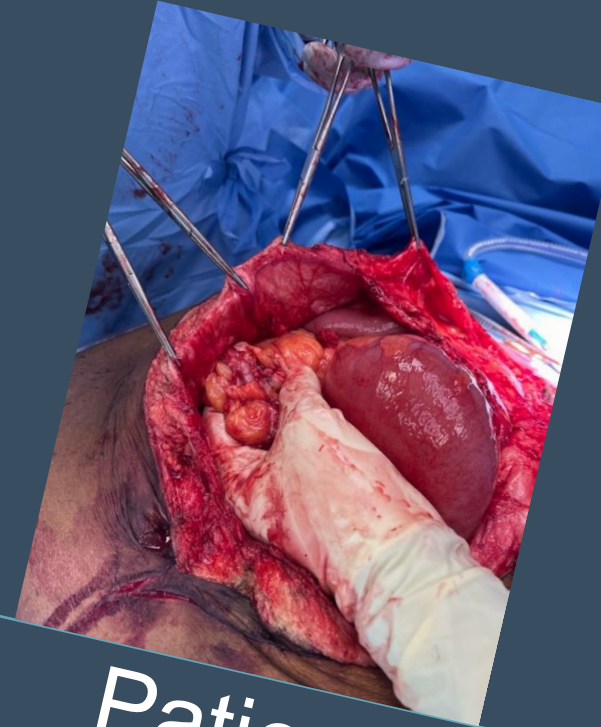
Conclusions



Obesity
Smoking



Complications



Patient
quality of life
Emergent
repair



Every life deserves world class care.

Limited or Lasting: Is Preoperative Weight Loss as Part of Prehabilitation Maintained after Open Ventral Hernia Repair?

2025



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	Preoperative change	Postoperative change	Net change
BMI	- 4.2	+ 0.7	- 3.5
Weight change	- 26 lbs.	+ 2.0 lbs.	- 24 lbs.
Time elapsed	10 months	42 months	52 months

The Effect of BMI on Outcomes Following Complex Abdominal Wall Reconstructions

2016

*Karan A. Desai, MD, Seyed Amirhossein Razavi, MD, Alexandra M. Hart, MD,
Peter W. Thompson, MD, and Albert Losken, MD*



TABLE 2. Type of Abdominal Wall Closure Stratified by BMI

	BMI 15–24.9 kg/m ²	BMI 25–29.9 kg/m ²	BMI 30–34.9 kg/m ²	BMI ≥35 kg/m ²
Primary closure	8 (13)	12 (15)	10 (12)	13 (15)
Mesh closure	28 (47)	45 (46)	37 (44)	31 (35)
Component separation	3 (5)	5 (6)	5 (6)	10 (11)
Component separation + mesh	20 (33)	23 (33)	32 (38)	33 (37)

TABLE 4. Reconstruction Outcomes Stratified by BMI

	BMI 15–24.9 kg/m ²	BMI 25–29.9 kg/m ²	BMI 30–34.9 kg/m ²	BMI ≥35 kg/m ²	<i>P</i>
Recurrence	8.3%	12.5%	29.8%	27.0%	0.002
Reoperation	25.0%	22.5%	41.7%	34.8%	0.025