NCSG Fellows Debate CON Bariatric Surgery

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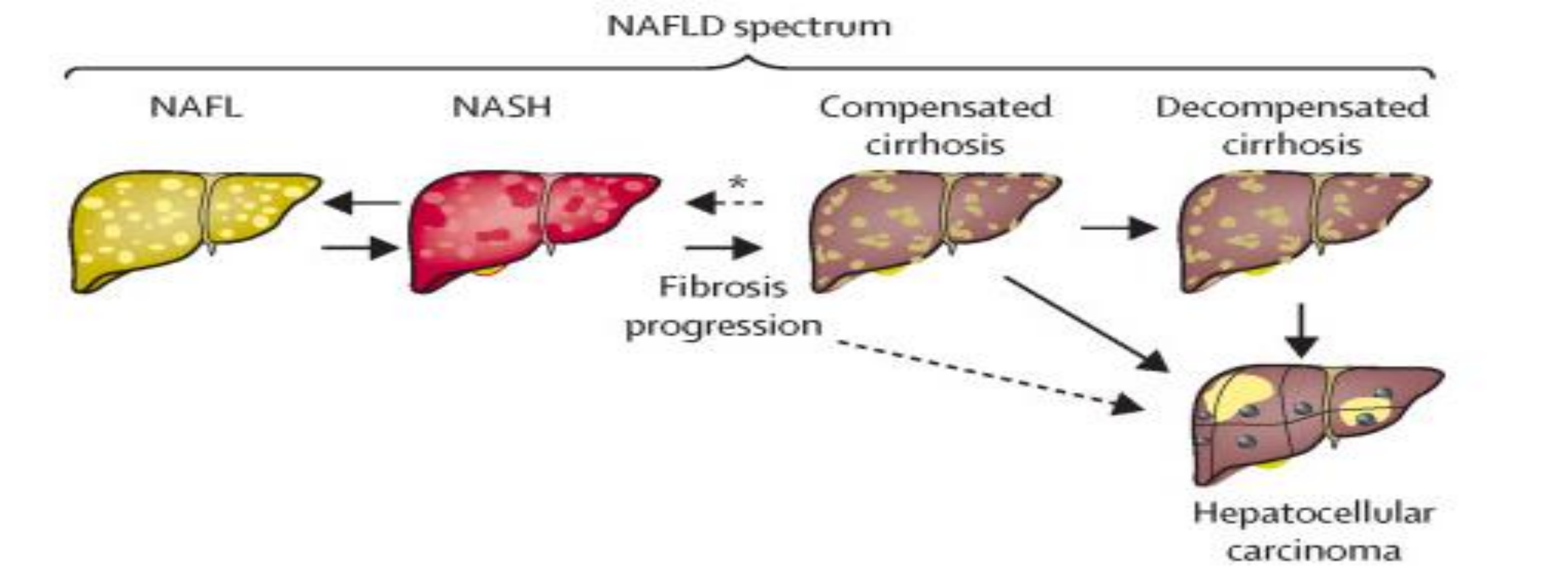
North Carolina Society of Gastroenterology Annual Meeting 2023

NAFLD

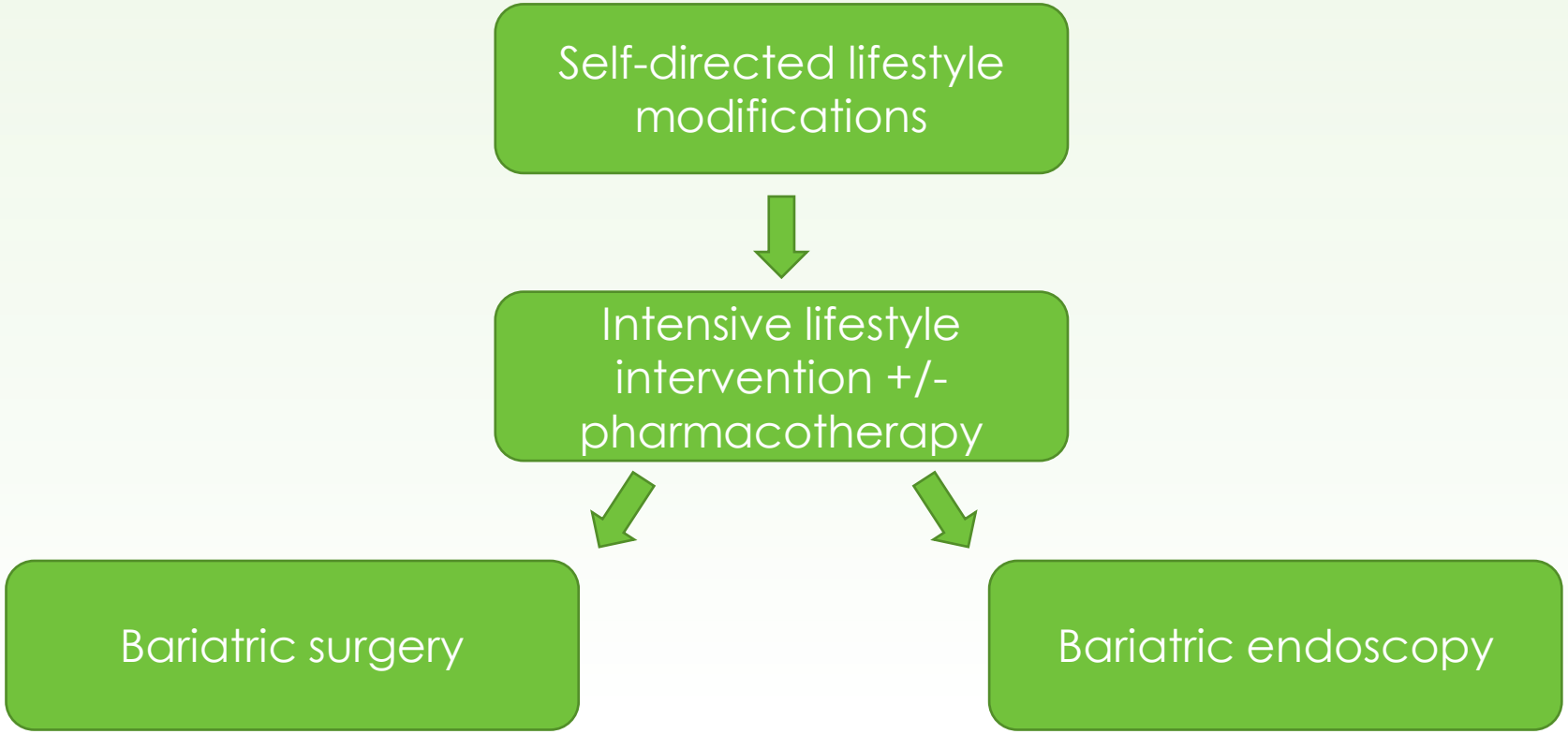


Powell EE, Wong VW, Mary Rinella M. Non-alcoholic fatty liver disease. *Lancet.* 2021; 397(10290): 2212-2224.

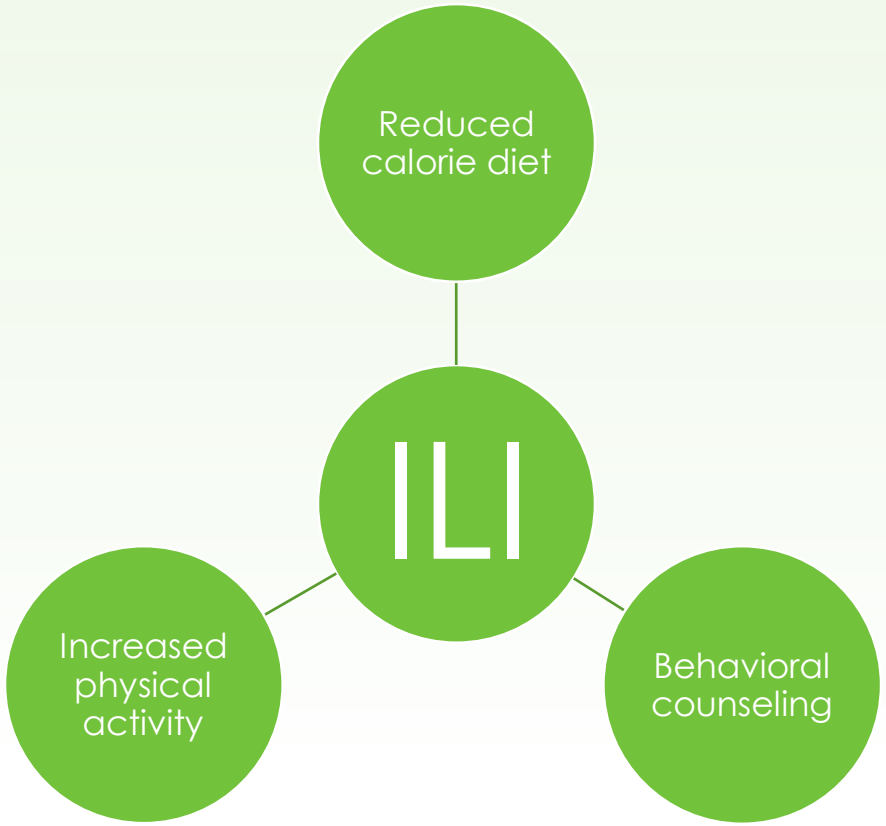
Weight Loss

Sheka AC et al. Nonalcoholic Steatohepatitis: A Review. *JAMA*. 2020;323(12):1175-1183.

Weight Loss Algorithm



Intensive Lifestyle Intervention (ILI)

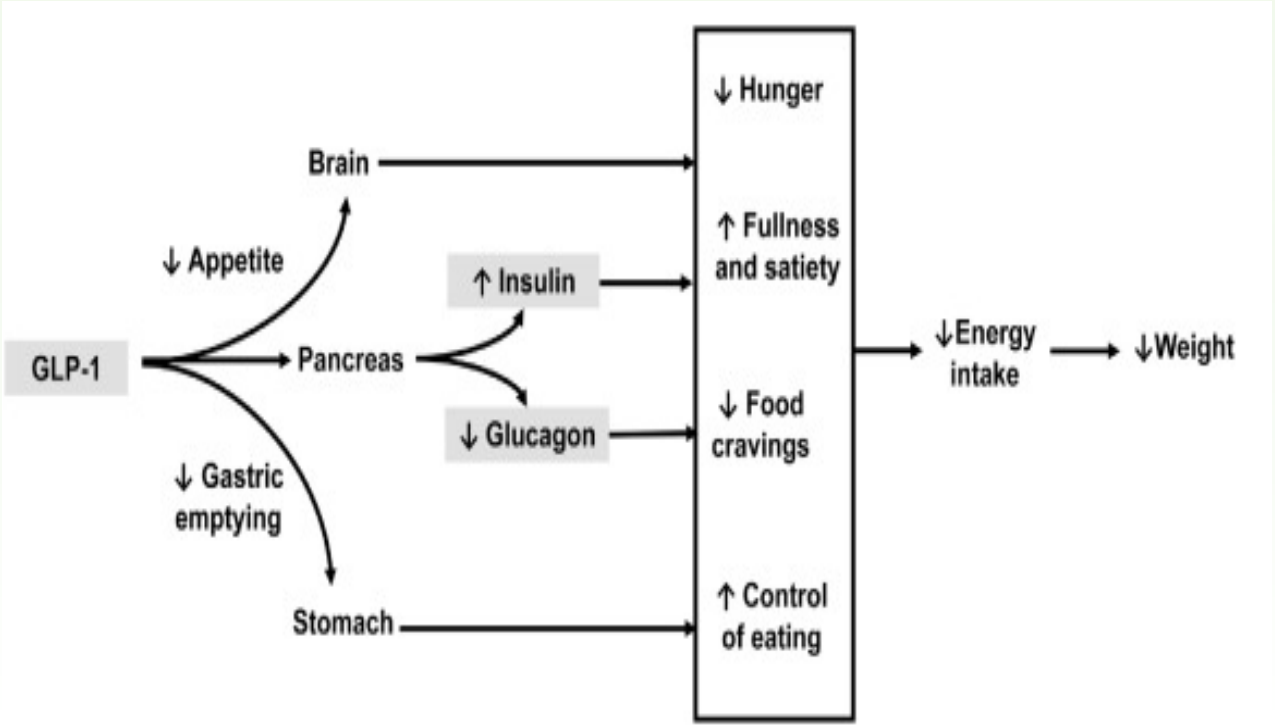


- Intensive lifestyle intervention in NASH[1]
  - Mean weight loss 9.2% of total body weight (TBW)
  - 72% had reduction in steatohepatitis
  - 45% who lost at least 10% had regression of fibrosis[2]
- Intensive lifestyle intervention in cirrhosis[3]
  - Mean weight loss ~5% TBW
  - HVPG decreased by over 10% in 42% of patients
  - No decompensations

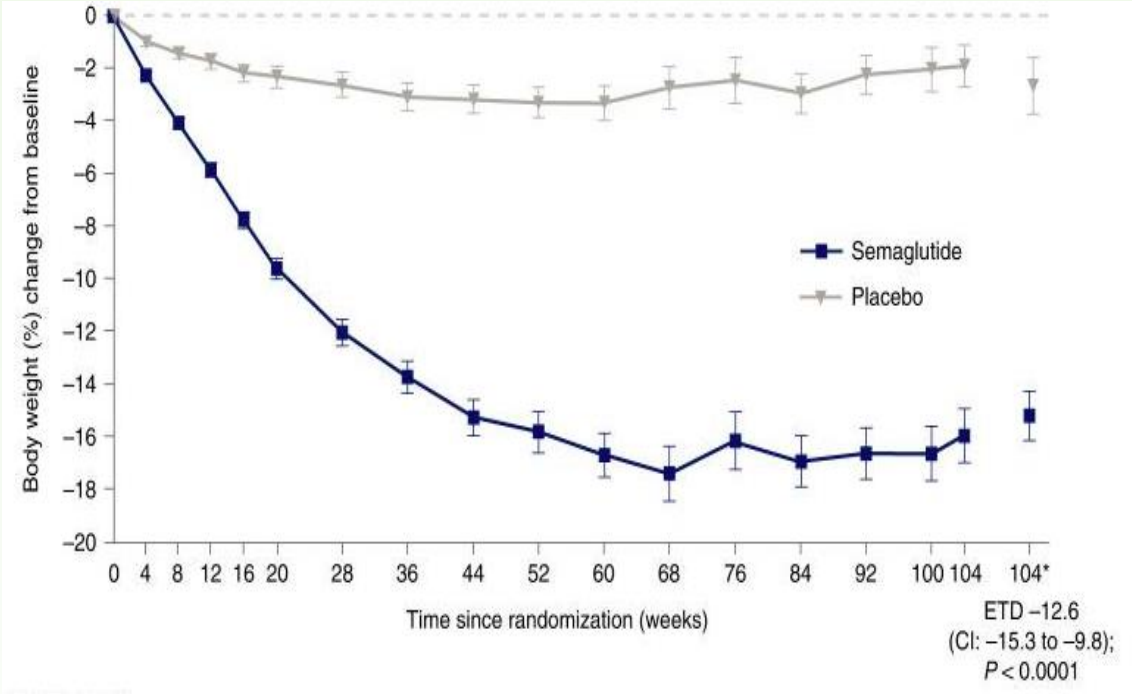
Jensen MD, et al. 2013 AHA/ACC/TOS guideline for the management of overweight and obesity in adults: A report of the American College of Cardiology/American Heart Association Task Force on practice guidelines and the obesity society. *Circulation.* 2013; 129(25, Suppl. 2):S102–S138

1. Promrat K, et al. Randomized controlled trial testing the effects of weight loss on nonalcoholic steatohepatitis. *Hepatology.* 2010 Jan;51(1):121-9.
2. Vilar-Gomez E, et al. Weight Loss Through Lifestyle Modification Significantly Reduces Features of Nonalcoholic Steatohepatitis. *Gastroenterology*. 2015 Aug;149(2):367-78
3. Berzigotti A, et al. Effects of an intensive lifestyle intervention program on portal hypertension in patients with cirrhosis and obesity: The SportDiet study. *Hepatology*. 2017 Apr;65(4):1293-1305.

GLP-1 Receptor Agonists



Chao AM, et al. Semaglutide for the treatment of obesity. *Trends in Cardiovascular Medicine*. 2021

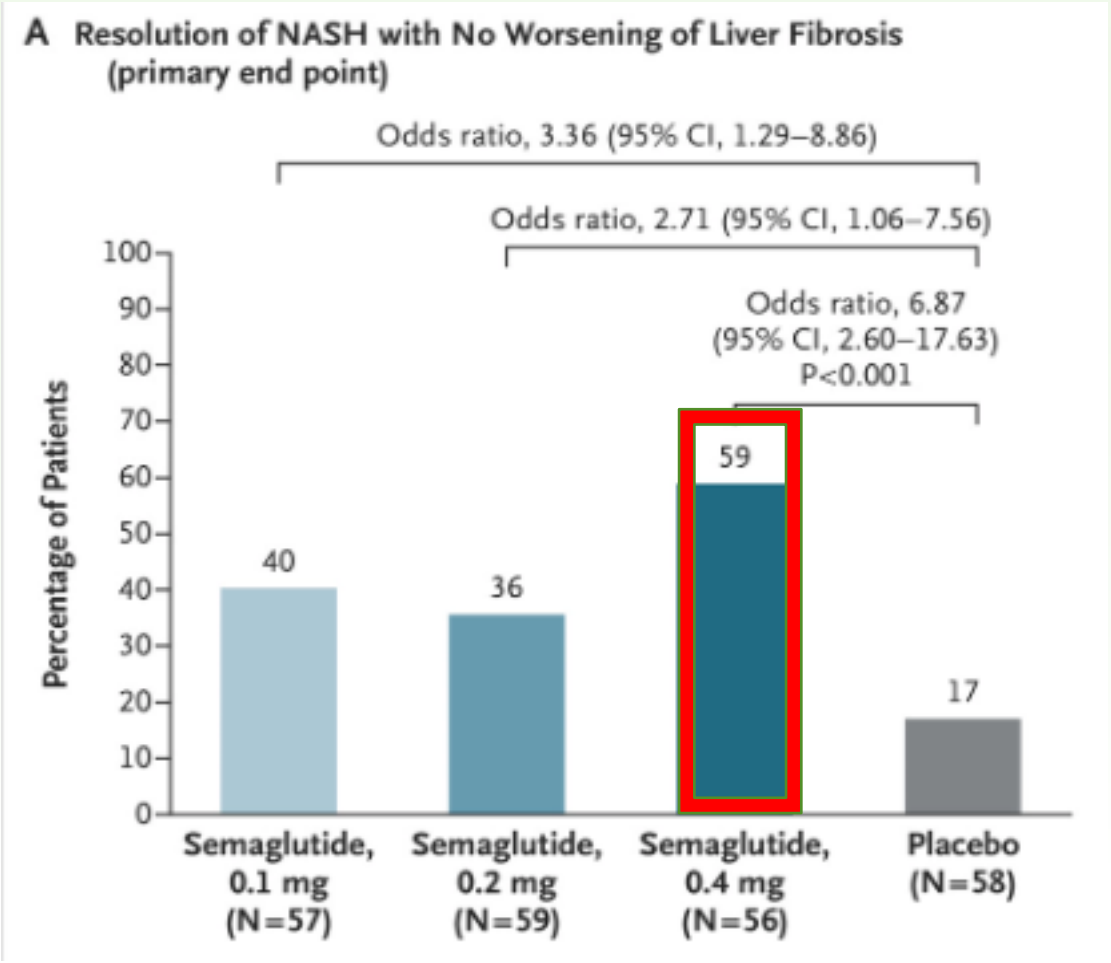


- Semaglutide in obese/overweight
  - 15.2% mean weight loss at 2 years
  - ~36% lost 20+%
  - Durable!

Garvey WT, et al. STEP 5 Study Group. Two-year effects of semaglutide in adults with overweight or obesity: the STEP 5 trial. *Nat Med.* 2022 Oct;28(10):2083-2091.

Semaglutide in NASH

- RCT of 320 NASH patients
  - Daily 0.1 mg, 0.2 mg, 0.4 mg, or placebo for 72 weeks
  - Mean weight loss 13% in 0.4 mg group
  - 43% in 0.4 mg group had improvement in fibrosis
  - Nausea (42%), constipation (22%), vomiting (15%) most common adverse effects
    - 7% stopped drug



Newsome PN, et al. A Placebo-Controlled Trial of Subcutaneous Semaglutide in Nonalcoholic Steatohepatitis. *N Engl J Med*. 2021;384(12):1113-1124.

Morbidity and Mortality of Bariatric Surgery

	No cirrhosis	Compensated cirrhosis	Measure
Overall complications	6.3%	13.6%	OR 2.10, 95% CI 1.47-3.00 **p < 0.0001**
Post-op bleeding	1.1%	2.39%	OR 2.22, 95% CI 1.95-2.54 **p < 0.00001**
LOS (days)	2.5 +/- 0.14	3.3 +/- 0.92	Mean difference 0.66 **p = 0.01**
In-hospital/90-day mortality	0.23%	0.83%	OR 3.59, 95% CI 2.84-4.54 **p < 0.00001**

Khajeh E, et al. Outcomes of bariatric surgery in patients with obesity and compensated liver cirrhosis. *Surg Obes Relat Dis*. 2022;18(6):727-737.

Delayed Adverse Effects of Bariatric Surgery

- Roux-en-Y gastric bypass
  - Anastomotic stricture (6-20%)
  - Marginal ulcers (0.6-16%)
  - Dumping Syndrome (~50%)
  - Hernias (incisional + internal)
  - Small bowel obstruction (3-5%)
  - Gallstone disorders (~38%)
  - Nutritional deficiencies
  - Weight regain (~20%)
  - 22% re-intervention rate at 5 years[1]

- Sleeve gastrectomy
  - Sleeve stenosis (0.1-4%)[2]
  - Staple line bleeding
  - Staple line leak (~5%)
  - GERD (~32%)[1]
  - Insufficient weight loss and weight regain (14-37%)[3]
    - 20% requiring revisional surgery by 7 years

Ellsmer JC,et al. Late complications of bariatric surgical operations. *UpToDate*. 2021

1. Peterli R, et al. Effect of Laparoscopic Sleeve Gastrectomy vs Laparoscopic Roux-en-Y Gastric Bypass on Weight Loss in Patients With Morbid Obesity: The SM-BOSS Randomized Clinical Trial. *JAMA*. 2018; 16;319(3):255-265
2. Hamed H, et al. Gastric Stenosis After Sleeve Gastrectomy: an Algorithm for Management. *Obes Surg*. 2020; 30(12):4785-4793
3. Clapp B, et al. Long term (7 or more years) outcomes of the sleeve gastrectomy: a meta-analysis. *Surg Obes Relat Dis*. 2018; 14(6):741-747

Conclusions

- Bariatric surgery → not a magic bullet!
  - Effective but has ↑ risk of post-operative morbidity and mortality in cirrhosis
  - Delayed complications can be debilitating for patients
  - That's a lot of "bad experiences"

- Intensive lifestyle intervention and/or medications → try first!
  - Safe
  - Effective at achieving goal weight loss (>10%)
  - Associated with fibrosis improvement in NASH

Photo owned by Pinehurst Resort. Retrieved from PGA of America website <https://www.pga.com/story/incredible-golf-trip-destinations-pinehurst-resort>

> Gastroenterology. 2020 Oct;159(4):1290-1301.e5. doi: 10.1053/j.gastro.2020.06.006. Epub 2020 Jun 15.

Bariatric Surgery Provides Long-term Resolution of Nonalcoholic Steatohepatitis and Regression of Fibrosis

Guillaume Lassailly [1], Robert Caiazzo [2], Line-Carolle Ntandja-Wandji [3], Viviane Gnemmi [4], Gregory Baud [2], Helene Verkindt [5], Massih Ningarhari [1], Alexandre Louvet [1], Emmanuelle Leteurtre [4], Violeta Raverdy [2], Sébastien Dharancy [1], François Pattou [6], Philippe Mathurin [7]

- Flaws (several of many)
  - 64 patients had repeat biopsy at 5 years (of 180 initially included)
  - Only 9 had cirrhosis (3 of those had biopsies at 5 years)

Surgical Endoscopy (2021) 35:1269–1277
https://doi.org/10.1007/s00464-020-07498-4

Impact of laparoscopic sleeve gastrectomy on fibrosis stage in patients with child-A NASH-related cirrhosis

Mohamed Abdalla Salman[1] · Hani Maurice Sabri Mikhail[1] · Mohammed A. Nafea[2] · Ahmed Abd El Aal Sultan[2] · Hossam E. Elshafey[3] · Mohamed Tourky[4] · Abeer Awad[5] · Tarek Elsayed Abouelregal[5] · Reham Abdelghany Ahmed[5] · Omar Ashoush[5] · Alhoussein Alsayed AbdelAal[6] · Hossam El-Din Shaaban[7] · Mohamed Atallah[7] · Mohamed Yousef[8] · Ahmed Abdallah Salman[5]

- Flaws
  - 135 confirmed F4 fibrosis on biopsy during surgery; only 71 completed 30 month follow-up and had repeat biopsy
  - Initial biopsy was intra-operative wedge biopsy
    - Overstage fibrosis and thus overestimate fibrosis regression