



- **I have no potential conflict of interest to report.**

NEW ASMBS/IFSO GUIDELINES:

Pediatric/ Adolescents.

Real life indications beyond the
Guidelines



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The global prevalence of pediatric obesity increased from 0.7% to 5.6% for girls and from 0.9% to 7.8% for boys From 1975 to 2016.

Jebeile H, et al. Lancet Diabetes Endocrinol. 2022; 10: 351–65).

Bariatric surgery in adolescents can result in the loss of 58% to 73% of excess weight, along with resolution or improvement of associated morbidities.

Stefater MA. Curr Diab Rep 2017;17(8):62.

Inge TH, et al. Lancet Diabetes Endocrinol 2017;5(3):165–73.

Inge TH, et al. N Engl J Med 2016;374(2):113–23.

Inge TH, et al. N Engl J Med 2019;380(22):2136–45.

Early intervention increases the chances of patient reaching a healthy body weight and resolution of comorbidities after MBS.

Inge TH, et al. JAMA Pediatr 2014;168(1):47–53).



Over the last few years many different medical societies have widened their recommendations for pediatric MBS.

Michalsky M. et al, ASMBS pediatric committee best practice guidelines. Surg Obes Relat Dis 2012;8(1):1–7.

Armstrong SC, et al. Pediatric metabolic and bariatric surgery: evidence, barriers, and best practices. Pediatrics 2019;144(6)

Pratt JSA, et al. ASMBS pediatric metabolic and bariatric surgery guidelines, 2018. Surg Obes Relat Dis 2018;14(7):882–901.

American Academy of Pediatrics: <https://www.aappublications.org/news/aapnewsmag/2019/10/27/bariatricsurgery102719.full.pdf>

Eisemberg D. et al. 2022 American Society for Metabolic and Bariatric Surgery (ASMBS) and International Federation for the Surgery of Obesity and Metabolic Disorders (IFSO): Indications for Metabolic and Bariatric Surgery. Surgery for Obesity and Related Diseases - (2022) 1–12

Have these recommendations been translated into medical practice?

It seems that they have not...yet.

Despite scientific evidence that early surgical intervention can provide clear advantages, pediatric MBS is still very rarely performed. Many large nationwide databases show a low surgical rate.

AUTHOR	Rate/year (%)	YEAR
Tsai	0.002	2003
Kelleher	0.0024	2009
Griggs	<0.04	2005-2014
Perez	0.1	2015
Messiah	0.18	2015-2018

Tsai et al. Arch Pediatr Adolesc Med. 2007;161:217-221
C. Kelleher et al. JAMA Pediatr. 2013;167(2):126-132
Griggs et al, JAMA Pediatrics, 2018 Vol. 172, Num. 12
Perez NP. et al. Surg Obes Relat Dis 2020;16:414–419
Messiah et al. Ann Surg. 2022 August 01; 276(2): 324–333

Providers' barrier...

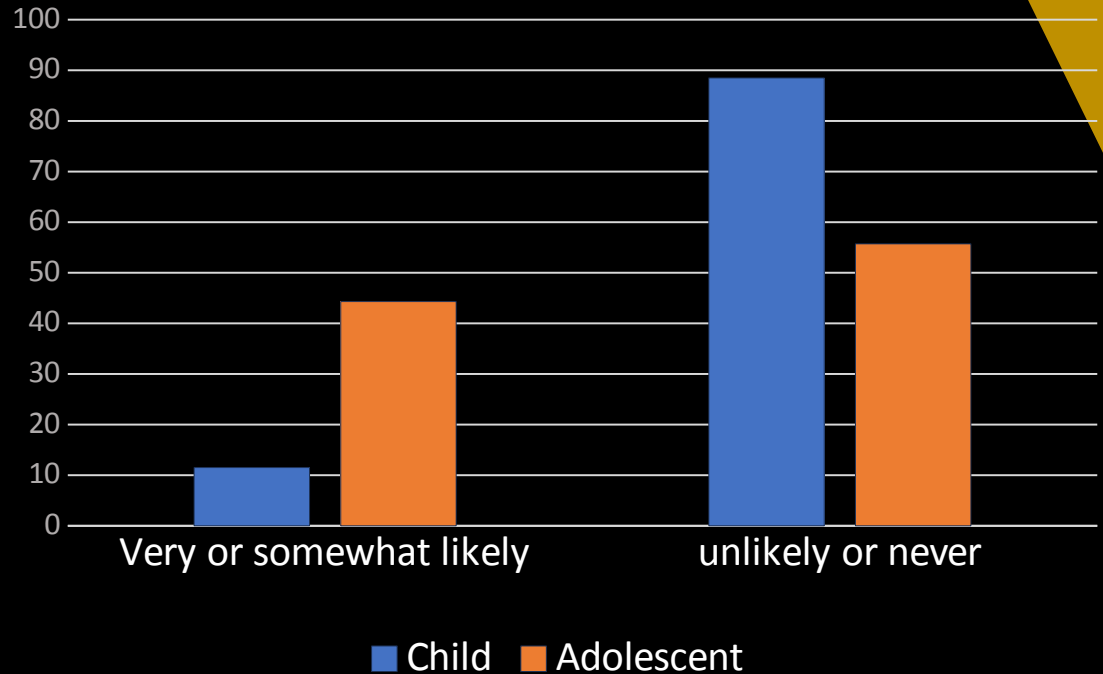
Providers' barrier...

Survey data suggest that providers/physicians are usually reluctant to refer pediatric patients with obesity for bariatric surgery...

In 2009 Iqbal send a survey to 61 pediatricians.

89% of them would be very unlikely or would never refer a child for a bariatric evaluation.

Physician-reported likelihood of referring child or adolescent for bariatric surgery evaluation



Iqbal CW, et al. Surg Obes Relat Dis. 2009;5(1):88- 93.

Woolford sent a survey to a sample of 750 physicians founding that almost half (48%) would never refer an adolescent for a bariatric procedure.

Woolford SJ, et al. Obes Surg. 2010;20(7):937-942.

Marta Pena discovered that only 9% of the UK physicians have ever referred an adolescent to be considered for bariatric surgery.

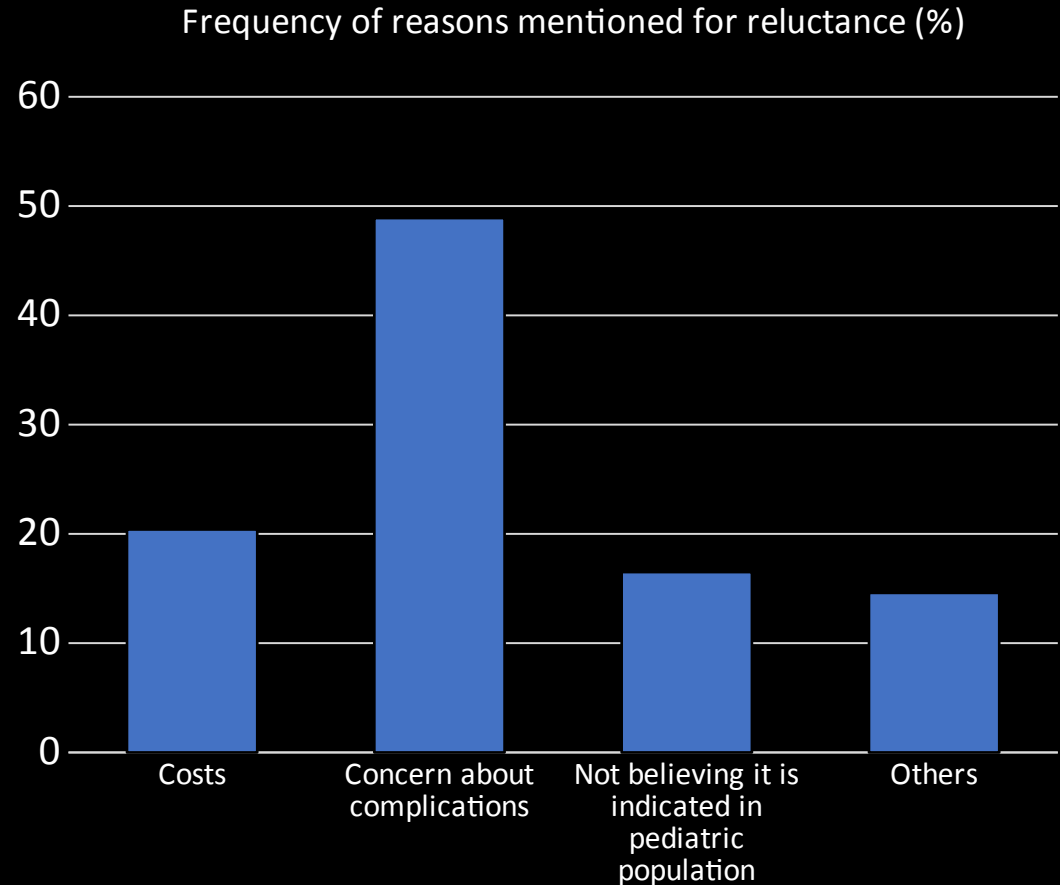
Penna et al. Int. J. Environ. Res. Public Health 2014, 11, 573-582.

Vangury Surveyed 109 pediatric providers.

27.1% respondents did not know that WLS is a treatment option for adolescents.

Less than 10% have ever referred patients for surgery, citing cost, risks, or “not indicated in pediatrics” as reasons.

Vangury T et al. Clinical Pediatrics. 2014, Vol 53(1) 60–65



Physicians' concerns and beliefs include:

- Lack of knowledge about biology of obesity, surgical procedures, risks, and follow-up.
- Lack of awareness of surgery as an option.
- Concern for altered growth or development.
- Provider belief that weight is a personal responsibility rather than a medical problem.
- The complicated ethics of surgery in adolescence and children.

Iqbal CW, et al. Surg Obes Relat Dis. 2009;5(1):88- 93.

Woolford SJ, et al. Obes Surg 2010;20(7):937-42.

Beamish AJ, et al. Eur J Endocrinol 2017;176(4):D1-15.

Early intervention
increases the chances
of patient reaching a
healthy body weight...

Inge TH, et al. JAMA Pediatr 2014;168(1):47–53).

The average age of
young people
undergoing surgery
remains high,...

- Most of the patients were between **18 to 19** years old. *Tsai et al. Arch Pediatr Adolesc Med. 2007;161:217-221*

- The mean age of surgical patients was **18** years old (95% CI 17.8–18.1 yr old).
Perez NP. et al. Surg Obes Relat Dis 2020;16:414–419

- Mean age of the analytical MBSAQIP sample was **18** years in youth.
Messiah et al. Ann Surg. 2022 August 01; 276(2): 324–333

- Bariatric procedures were mostly performed in adolescents **older than 17** y.
Kelleher et al. JAMA Pediatr. 2013;167(2):126-132

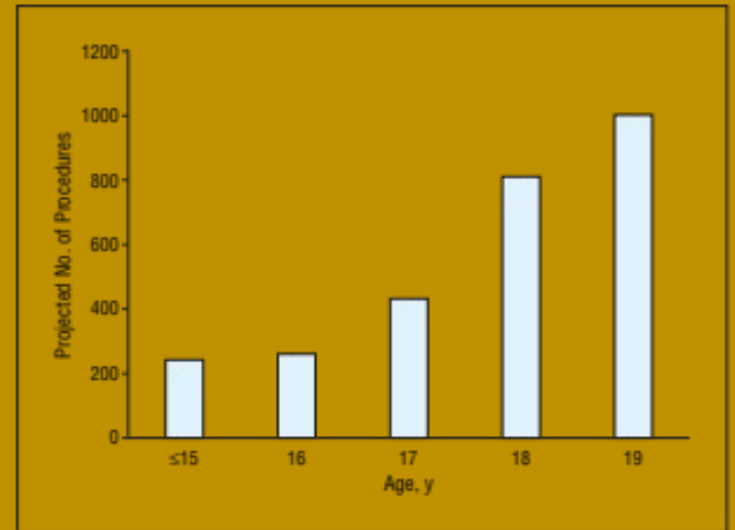


Fig: Tsai et al. Arch Pediatr Adolesc Med. 2007;161:217-221

Figure. Distribution of adolescents undergoing bariatric surgery from 1996 through 2003 on the basis of data obtained from the Nationwide Inpatient Sample.

While evidence suggests that individuals who present with the highest BMI levels are less likely to achieve a non-obesity state after it...

(Inge TH, et al. J Pediatr. 2010;156(1): 103–108.)

The average **BMI** of the young people operated on is still high,...

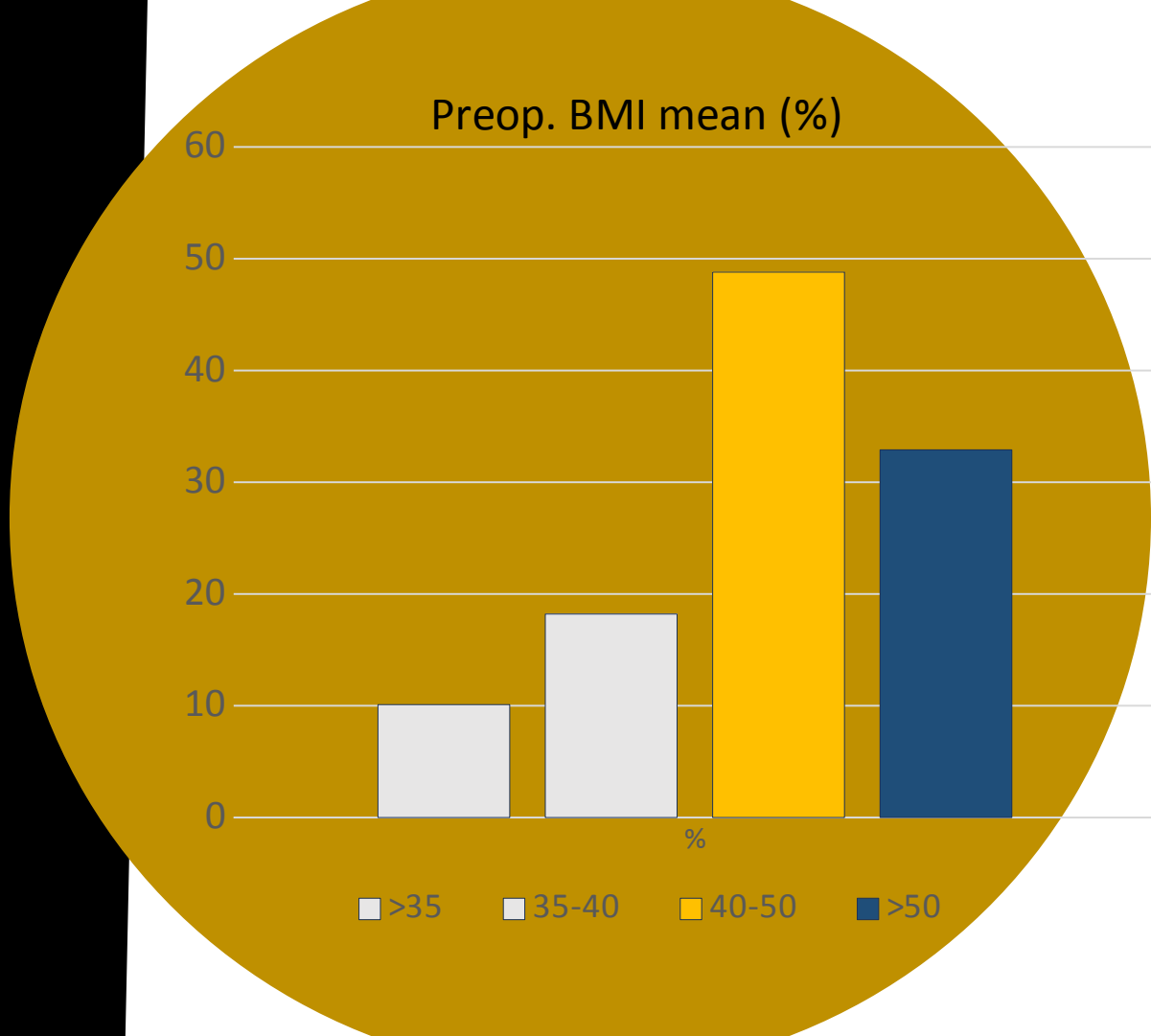
3,846 pediatric patients operated on from 2015 to 2018.

Mean pre-op BMI was **48.4** (9.0).

Almost a third (32.97%) of youth had a pre-op BMI of **50** kg/m² or more.

Analysis of the Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP) longitudinal cohort database.

Messiah et al. Ann Surg. 2022 August 01; 276(2): 324–333.

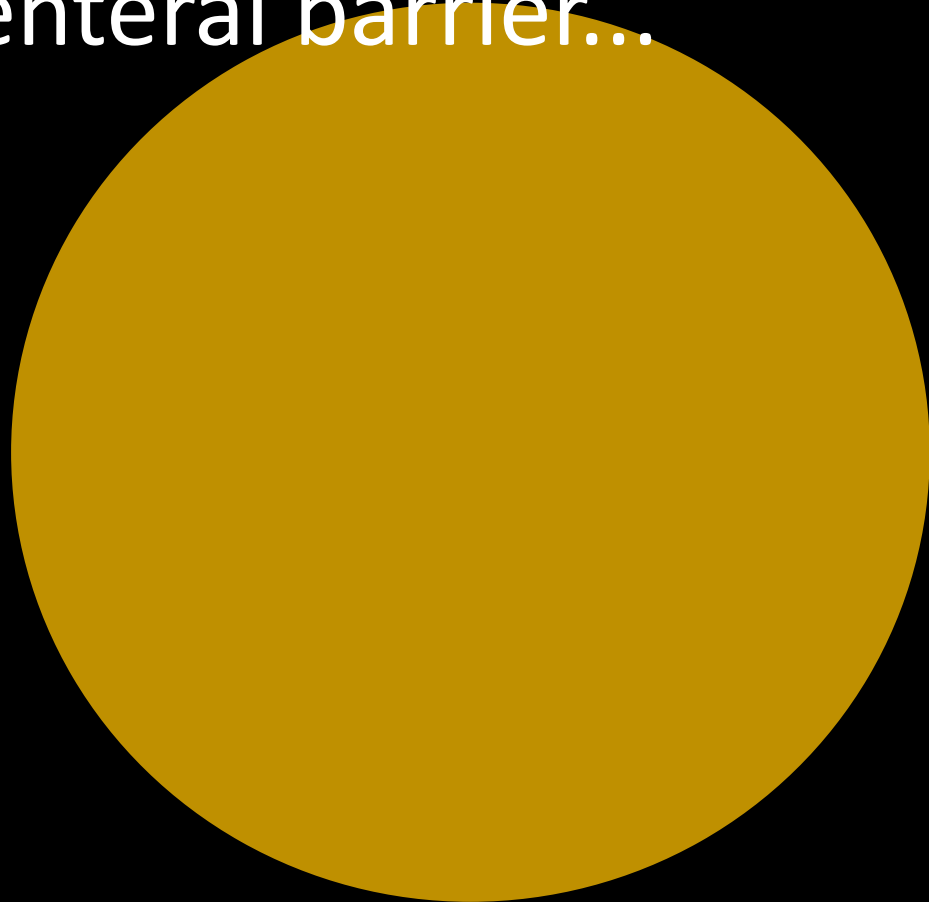


Providers wait longer to refer the patients....

- The most common minimum BMI level suggested by physicians to make a referral for bariatric surgery was 40 Kg/m².

Woolford SJ, et al. Obes Surg. 2010;20(7):937–942.

- The parenteral barrier...



- Many parents underestimate the severity and risks of their child's obesity.
- Parental underestimation of their children's weight can be influenced by their own implicit weight bias.

*Griggs CL, et al. JAMA Pediatr
2018;172(12):1191–2.*

*Van Geelen SM, et al.. J Bioeth Inq
2013;10:227–37.]*

- Several parents see MBS as a wrong or too easy solution for their child's actual problem.
- they saw their child's obesity as primarily pedagogical or psychological problem that they, or their child, could influence.

“I don't consider obesity a disease at all. ... With us it has everything to do with our lifestyle”.

- *Geelen V et al. Bioethical Inquiry (2013) 10:227–237.*

By sending a questionnaire to 72 parents, Urvashi et al. discovered that the main factor influencing parents' willingness to consider surgery for their child was whether they received counseling by their pediatric provider.

*(Urvashi D. Singh et al.
SOARD 16 (2020) 406–413).*

Only 35% who did not receive provider counseling would consider bariatric surgery for their child, compared with 85% of parents who were counseled. This finding emphasizes the significant role provider counseling plays in parents' decisions.

The surgeons' barrier...

The surgeons' barrier...

Only a limited number of surgeons specialize in bariatric surgery, and most only treat adults.

- Not knowing a local bariatric surgeon was the most common reason cited by physicians for not referring patients.

Avidor et al. Surg Obes Relat Dis 2007;3:392-407.

- Only 21% UK Bariatric surgeons have performed bariatric surgery on adolescents in the previous 12 months.

Penna et al. Int. J. Environ. Res. Public Health 2014, 11, 573-582.

- Many surgeons are still reluctant to embrace bariatric surgery in adolescent patients; they state that it is irreversible, invasive, and has potential life-long alterations.

Roebroek, et al. Eur. J. Pediatr Surg. 2020, 30, 117-121.

The payers' barrier...

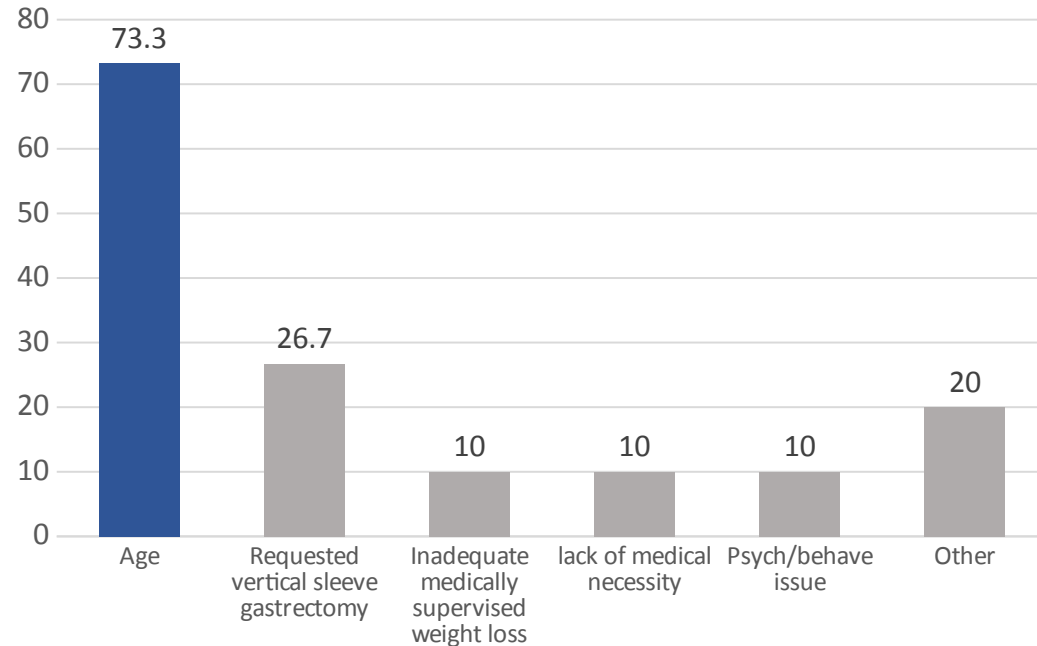
The payers' barrier...

In many countries, payers also limit surgical interventions in children or adolescents.

- Less than half of all pediatric cases, approval was granted upon initial request for coverage. In contrast, payers initially approved 80% to 85% of adults who met similar criteria.
- Age less than 18 years was the most common reason for denial childhood obesity (73%).

Inge et al. Obesity (2014) 22, 2593–2597.

Reasons for denial (%)



FUTURE PERSPECTIVES:

While adolescent bariatric surgery has remained largely underutilized, the number of procedures performed yearly is rising rapidly.

- Annual volume more than tripled from 2000 to 2003.

Tsai et al. Arch Pediatr Adolesc Med. 2007;161:217-221

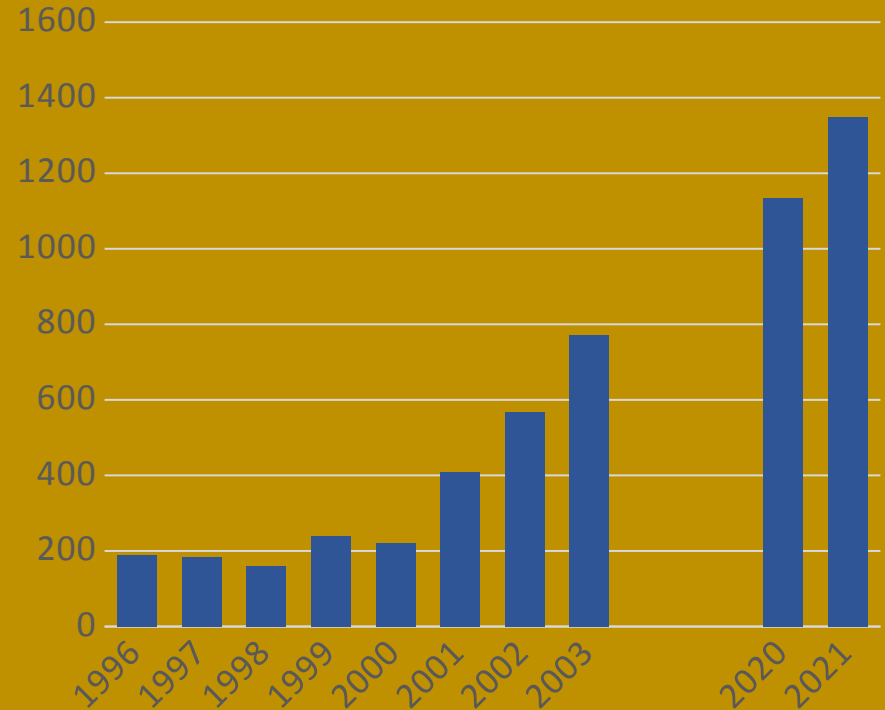
- ... volume more than doubled from 2003 to 2009.

Nathan P. Zwintscher et al. Journal of Pediatric Surgery (2013) 48, 2401–2407

- ...from 2020 to 2021 the rate increases by 18.85%.

Messiah SE et al, JAMA Pediatrics, 2023

US bariatric operations/year (n)



- GPs are more open to refer younger patients for bariatric surgery.
- The average minimum age of 14.1 years proposed by GPs to consider referral in 2018 is significantly lower than the 16.9 years found in the Woolford 2010 survey.

In summary:

- MBS in children or even young adolescents is still underutilized.
- There is a low referral rate by many physicians.
- Some parents see surgery as a wrong or too easy solution for their child's obesity.
- Insurance coverage also limits those who can undergo surgery.
- Some bariatric surgeons are still reductant to perform childhood bariatric surgery.
- In recent years, the trend has been clearly upwards.

Educate, educate, educate.

Educate, educate, educate.



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12th

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