

A decorative graphic featuring various colored circles (teal, green, yellow, orange, pink) and dashed lines of different colors (teal, green, yellow) scattered across the white background. The circles vary in size and some have smaller circles inside them, creating a layered, abstract effect.

# A New Tool in the Tool Box- Bariatric Surgery in Adolescent Patients

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# Obesity in Adolescents

NHANES Data 2014-2016

Severe Obesity- BMI  $\geq 35$  or  $\geq 120\%$  of the 95% for age and sex

7.9% Overall

9.7% age 12-15 years

14% age 16-19 years

4.5 million children in the United States

Number has nearly doubled since 1999

Impact of pandemic on these numbers?



# Obesity Sequelae

- Hypertension
- Dyslipidemia
- Obstructive Sleep Apnea
- Polycystic Ovarian Syndrome
- Type II Diabetes Mellitus
- Fatty Liver Disease
- Bone and Joint Dysfunction
- Depression
- Poor Quality of Life

# Obesity Classification

Normal weight- 5<sup>th</sup> to 8<sup>th</sup> % BMI

Overweight- 85<sup>th</sup> to 95<sup>th</sup> % BMI

Class 1 Obesity- 95<sup>th</sup> to <120<sup>th</sup> % of the 95<sup>th</sup>% BMI

Class 2 Obesity- 120<sup>th</sup> to <140<sup>th</sup> % of the 95<sup>th</sup> % or BMI 35  
to <40

Class 3 Obesity- ≥140<sup>th</sup> % of the 95<sup>th</sup> % or BMI >40



# Obesity Disparities

African American and Hispanic populations have 1.5 to 2 times the prevalence of severe obesity as age-matched white populations.



# Obesity Disparities

American Indian youth- Increased risk for severe obesity and Type 2 Diabetes Mellitus

Lower Socioeconomic status- Increased risk for severe obesity, most pronounced in girls



# Indications to Consider Bariatric Surgery

- ◎ Class 2 obesity with Comorbid Conditions:
- ◎ Obstructive sleep apnea, Type 2 DM, Nonalcoholic Steatohepatitis, Idiopathic Intracranial Hypertension, Blount Disease, SCFE, GERD and Hypertension



# Indications to Consider Bariatric Surgery

- ◎ Class 3 Obesity
- ◎ Comorbid conditions not required but frequently present
- ◎ Higher preoperative BMI correlated with higher probability of multiple comorbid conditions



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## Bariatric Surgery Complications

Major complications- 8% of patients

Minor complications- 15%

Reoperation rate before hospital discharge-  
2.7% (similar to adult rate)

Mortality rate reported 0.3% (deaths not  
necessarily related to surgery)



# Common Bariatric Surgery Complications

Nutrient Deficiencies-  
Fe, Vit B12, Folate.

Vitamin D deficiency common,  
both pre and postoperatively

# Bariatric Surgery Outcomes

Teen LABS Study- Teen Longitudinal Assessment of Bariatric Surgery study

Patients age 12-28 years, mean age 17 years

3 year outcomes reported on patients under 19 years of age.

Total weight loss 27%

Resolution of Type 2 DM- 95%

Resolution of Hypertension- 80%

Resolution of dyslipidemia- 66%

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## Bariatric Surgery Outcomes

**AMOS- Adolescent Morbid Obesity Surgery study**

**Comparison of adolescent bariatric surgery, adult bariatric surgery and adolescent standard medical care.**

**Surgical treatment compared favorably to medical care.**

**Adolescent surgical outcomes were similar to adult outcomes.**



# Bariatric Surgery Outcomes

Follow-up of Adolescent Bariatric  
Surgery at 5 Plus Years (FABS-5+)

29% Long term reduction in BMI  
Reduction in Type 2 DM,  
Hypertension and dyslipidemia



# Bariatric Surgery Barriers

Access to Care- Insurance Coverage

Adolescents are far less likely to initially receive insurance approval despite meeting approval criteria.

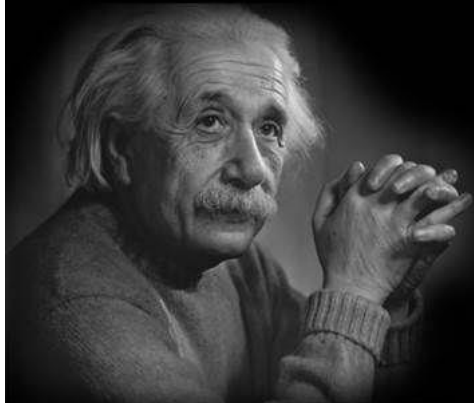
Lack of physician knowledge about adolescent bariatric surgery



## The Bottom Line

Bariatric Surgery is an option for adolescents with severe obesity. If we don't consider bariatric surgery, our patients may lose access to an important treatment option.

**Insanity: doing the  
same thing over and  
over again and  
expecting different  
results.**



**Albert Einstein**

*German Theoretical-Physicist*

(1879-1955)

*QuoteHD.com*