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**Bariatric Surgery – is it appropriate for obese children?  
Dr. Michael Helmrath, M.D., Texas Children’s Hospital**

In adults, we use Body Mass Index (BMI) to evaluate whether someone’s weight to height ratio is ok, overweight, or obese.

ideal BMI = 20-24.9

overweight 25-29.9

obese is over 30

But with children, it’s different because they have different appropriate ratios of height and weight. Instead of using the BMI formula (easy to find on the web), we take a direct ratio of weight to age. There is no ideal ratio of weight to age but less than 85% is ok.

We say a child is at risk for obesity if the ratio is 85 to 95%

We say the child is obese if the ratio is greater than 95%

We know there is a trend toward obesity among adults in the U.S. but obesity trends occur in adolescence as well in America.

**Real causes of obesity among children generally in America** (BBS has genetic component – we understand this is so; we don’t understand what it is exactly.):

- physical activity has decreased
  - decrease in required Phys Education
  - increase in playing internet/computer games
  - fear of outside play
- Diet is loaded with high calorie foods that don’t fill up, don’t satisfy
- Our perception of normal weight has changed; overweight is more acceptable.
- Children drink a lot of juices even if they don’t drink sodas and 100% juice is high sugar!

**Co-morbidities** are other bad symptoms or conditions that go along with obesity.

(These comorbidities used to only occur in adults; they are now occurring in children)

- type 2 diabetes
- obstructive sleep apnea
- chronic headaches and bone problems
- psychosocial handicaps
- osteoarthritis, Blount’s disease

**Treatment of obesity**

Children with an obesity problem -- their day is driven by food.

A Coke has 300 calories. 2 a day is 600 a day, In one week = 3000 calories which is what it takes to put on 1 pound, roughly 50 pounds in a year.

Switch to water to replace those two cans of soda, lose 50 pounds in a year.

To lose weight and keep it off, we need to do what is sustainable.

Also true for exercising, part of the way to keep the weight off.

Patients who have had strict dietary controls; only about 20% can sustain weight loss.

There are a lot of people who cannot lose and sustain weight loss for whatever reasons. One reason is that some people's drive to eat is extremely strong and can't be broken. These may be candidates for bariatric surgery (making the stomach small).

Dr. Helmrath needs to be very selective in the children he performs surgery on. It's not a good solution for many.

The reason diet programs don't work for most people is that they don't provide what is satisfying. When one's stomach is smaller, for some reason, one has the feeling of being satisfied with much smaller quantities of food.

### **Indications for surgery:**

In adults – obesity

In children – there is no data to support the decision. Patients who had life-threatening diseases and had a less likely chance of resolving it the longer they waited were candidates for surgery.

Surgery works in adults. – lose 70 to 90 % of body weight and sustainable in 2/3 of the cases.

But 1 in three will lose the weight and put it back on.

Surgery is not a CURE for obesity. It provides a tool we don't otherwise have. The person still needs to learn to use the tool in conjunction with other tools (increased exercise, changing the kind of food, etc.)

Surgery removes the need to eat for up to a year and we don't know why. They just don't feel hungry during that time. That's not sustainable. The drive to eat will come back in that initial 8 to 12 month period. During that hiatus, you can learn to eat better because you are not feeling deprived. If you have not learned to eat better, exercise more, etc., during that 8 to 12 month window and then the drive to eat returns, you do all the wrong things and the weight comes back.

With **diet drugs** – unless you keep taking it, the weight comes right back.

**Lap band** – potentially reversible; you feel full sooner. No device that is placed inside a person lasts more than 10 years so once you do install a lap band, you commit to another surgery later to have it removed or replaced.

Gastric bypass – this is the most effective procedure but there are complications:

- can leak
- wound complications
- some long term risks, also
- complications – nutritional – MUST take vitamins daily
- And there are complicated post-operation rules
- post-op rules:
  - For the first 2-3 months, “eat” only liquids, sipping constantly; must not gulp. This is hard to do with children (but it must be done because gulping causes vomiting and nutritional deficiencies – B1 deficiency for example)
  - eat small portions; eat protein before drinking any liquids
  - NO snacking between meals
  - exercise at least 30 minutes per day
  - always remember vitamin and mineral supplements

- other rules, too, but these are the main ones that make it difficult to manage in a child.

Those who benefit most have life threatening diseases which are avoided.

Risk of childhood development.

Long term risk is at least nutritional and maybe more.

We don't know the effects of losing that much weight and then putting it back which is what happens to 1/3 of the patients.

1 to 2% will die from the surgery itself.

**Guidelines:**

- Limited to children with co-morbidities that are life threatening before 18 yrs of age.
- Should only be done where data is being combined in a national data base so that others will benefit from what is learned in the process.
- Should only be done where multiple approaches are taken. If the doctor only does gastric bypass and has not explored other options, you are probably not getting an unbiased opinion from this doctor.
- You should only have this done for a child at a place where the decision is made by an entire board, not the surgeon.

Patient who has central drive to eat from radiation will always put the weight back on.

Dr. Helmuth has performed bariatric surgery on children with extreme comorbidities. He has never done the surgery on someone with BBS.

Obesity is not well defined. Obviously the syndrome includes a "need to eat".

Prader-Willi kids do terribly with bariatric surgery. Don't extrapolate that to BBS. We just don't know.

Individual needs to understand the surgery's role and the difficulty of the first year afterward.

Not a good surgery to do unless the patient understands how to use it as ONE tool among several (changes in diet, changes in activity level, changes in self-image, etc.)

**For an adult who wants to try bariatric surgery:**

Patient must buy-in to the fact that this is not a CURE; it's a tool. If the patient is mentally or emotionally unable to use it as a tool, it won't work.