

# Roux-en-Y Benefits in Teens Plateau at 6 Months

BY MITCHEL L. ZOLER

ORLANDO — Bariatric surgery produces rapid, dramatic improvements in obese adolescents, but after the first 6 months post surgery these patients appear to hit a wall and further gains in their clinical status usually do not occur, according to a follow-up study of 44 patients.

"There is generally a plateau [of weight loss] at about 6-12 months, and sometimes a creep-up after 1 year. Even though [these adolescents] are significantly better, they're still not normal, so we should intervene even sooner," Dr. Holly M. Ippisch said at the annual scientific sessions of the American Heart Association.

In a series of 87 adolescents who underwent Roux-en-Y bariatric surgery at Cincinnati Children's Hospital Medical Center, average body mass index dropped from 58 kg/m<sup>2</sup> at baseline to 41 kg/m<sup>2</sup> in the 57 patients followed to 6 months. After that, average body mass

index generally leveled out to an average of 37 kg/m<sup>2</sup> in 44 teens followed for 1 year, and to 38 kg/m<sup>2</sup> in 21 patients followed for 2 years, reported Dr. Ippisch, a pediatric cardiologist at Cincinnati Children's.

Cardiovascular measures showed a similar pattern, with substantial improvements in parameters such as left ventricular mass and diastolic dysfunction during the first 6 months after surgery, followed by a leveling off to values that remained abnormally high and potentially dangerous.

"Even though it significantly improves [compared with baseline], it is still abnormal. It raises the issue of whether we should intervene [with bariatric surgery] sooner [in very obese adolescents], before they get beyond a certain point," she said.



Diminishing weight loss more than 6 months out from surgery "is very interesting and is being seen at a number of U.S. centers" that are doing bariatric surgery on adolescents, said Dr. Stephen R. Daniels, a pediatric cardiologist and professor and chairman of pediatrics at the University of Colorado in Denver.

DR. IPPISCH

"It's something that we don't understand and need to learn more about. From what we can tell they are in general eating in a healthy way. There probably is some plateauing in adults, too, but many of them get bariatric surgery at a healthier state [a lower body mass index], so they often get down to a body mass index that is closer to normal," he said in an interview.

At Cincinnati Children's and other centers, adolescents who are candidates for bariatric surgery must have a body mass index of at least 40 kg/m<sup>2</sup> plus a serious comorbidity such as type 2 diabetes or sleep apnea, Dr. Daniels noted.

To qualify without a serious comorbidity, their body mass index has to be at least 50 kg/m<sup>2</sup>. Adults are typically offered bariatric surgery at lower body mass index levels.

When bariatric surgery for adolescents began a few years ago, "the thought was to be as conservative as possible, and reserve it for only the most severely affected adolescents," Dr. Daniels added.

"We didn't know if it was safe for adolescents, so it was reserved for extreme cases," Dr. Ippisch said.

But the plateauing effect now being widely seen "is starting a thought process

on what the criteria should be," Dr. Daniels said.

The 87 adolescents who underwent Roux-en-Y surgery in Cincinnati were aged 13-19 years, and three-quarters were girls.

Their average left ventricular mass at baseline was 52 g/m<sup>2.7</sup>, a high-risk level that fell to about 40 g/m<sup>2.7</sup> after 6 months and then stayed roughly at that average level through 2 years of follow-up in the 21 patients who have been followed that long to date.

Another way that Dr. Ippisch assessed left ventricular size and shape was to divide patients into four risk categories: normal (low-risk), concentric remodeling (mildly elevated risk), eccentric hypertrophy (moderately elevated risk), and concentric hypertrophy (highest risk).

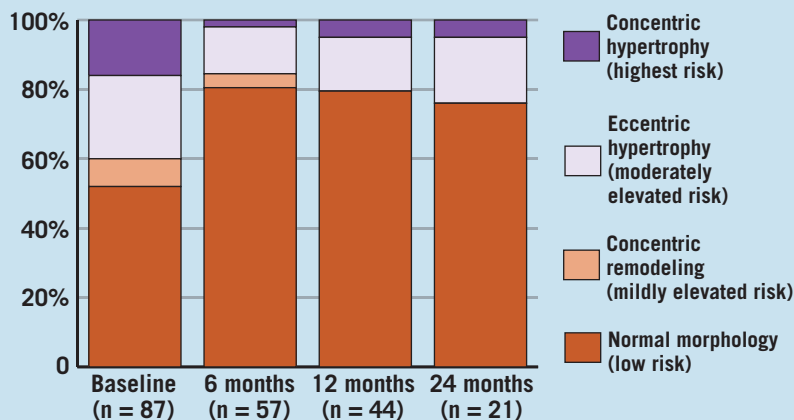
The patients showed a shift overall, from half having normal-shaped hearts at baseline to about 80% with normal shapes at 6, 12, and 24 months' follow-up. (See box.)

The patients also had an elevated left ventricular end diastolic pressure at baseline and an average mitral E/Ea ratio of about 7.0, indicating diastolic dysfunction, that improved to an average ratio of about 6.0 after 6 months and remained at that level through 2 years of follow-up.

Other improvements included heart rate, which fell from an average of 83 bpm at baseline to 63 bpm at 6 months and 61 bpm at 2 years, and blood pressure, which dropped from an average of 121/69 mm Hg at baseline to an average of 113/65 mm Hg at 6 months and 114/66 mm Hg at 2 years.

**Disclosures:** Dr. Ippisch had no commercial financial disclosures related to this study.

## Left Ventricular Shape Following Bariatric Surgery



Note: Zero patients had concentric remodeling at 12 and 24 months.  
Source: Dr. Ippisch

# Single Traumatic Injury Tied to Psychopathology in Teens

BY DAMIAN McNAMARA

ATLANTA — A single traumatic injury is associated with more psychiatric diagnoses and more psychotropic medication prescriptions among adolescents than among those uninjured, according to a large, prospective, cohort study.

Researchers studied 20,507 patients aged 10-19 years who were treated at Group Health, a large health maintenance organization based in Seattle. Dr. Doug Zatzick and his associate studied the 6,116 teenagers (30%) who experienced a single traumatic injury in the index year of 2001 and looked for mental health diagnoses and psychotropic prescriptions in these patients for 2002, 2003, or 2004. They compared these factors with the group of 14,391 teens (70%) who were not injured.

"Yes, a single event in 2001 was associated with increased risk for a broad range of psychopathology," Dr. Zatzick said at the annual meeting of the International Society for Trauma Stress Studies.

Injury during the index year was significantly and independently associated with an increased likelihood of any psychiatric diagnosis (odds ratio, 1.23) in this population-based study, said Dr. Zatzick, of the psychiatry

and behavioral science departments at the University of Washington, Seattle. Dr. Zatzick conducted the study with Dr. David Grossman, a pediatrician at the Group Health Research Center in Seattle.

Specifically, injured teenagers were more likely to have an anxiety diagnosis (OR, 1.19) or an acute stress disorder (OR, 1.21), compared with the noninjured adolescents, according to adjusted regression analyses. As an example, a significantly higher percentage of injured teens had an anxiety diagnosis in 2002, 6.5%, compared with 4.8% of the noninjured group.

A total 6.2% of the injured adolescents were subsequently diagnosed with a disruptive behavior disorder, compared with 4.6% of their noninjured peers, Dr. Zatzick said.

A secondary objective of the study was to look at prevalence of traumatic brain injury in this population. Of the 30% of the patients who were injured, "only 1% had a traumatic brain-related injury, so it's not that common," he said.

A greater percentage of the injured group (15%) received a prescription for a psychotropic medication, compared with the noninjured group (9%). There was an increased odds ratio of 1.35 for psychotropic drug use by the injured teenagers.

A total of 72% of the injured group versus 49% of the noninjured reported a history of previous injury. Although this study assessed only a single event, some adolescents present with a cumulative trauma burden.

"We randomly approach injured adolescents on our trauma ward. About 40% have four or more lifetime trauma [events] when they present, and so do about 50% of their parents—a common story at level 1 trauma centers," said Dr. Zatzick said, a self-described "front-line, trauma center clinician" at Harborview Injury Prevention and Research Center in Seattle. He is director of Attending Consult Services at Harborview.

Misclassification bias of psychiatric diagnosis is a potential limitation of the study, Dr. Zatzick said. In addition, there is the possibility of increased injury visits associated with increased diagnoses, "but we don't think that is happening."

In terms of the future, "injury surveillance would be good way to pick up these kids in general practice," Dr. Zatzick said. "There could be screening on [their] charts for one injury, two injuries, etc."

**Disclosures:** Dr. Zatzick and Dr. Grossman reported having no relevant conflicts of interest.