Morbid Obesity

A Curable Disease?

Piotr Gorecki, M.D. F.A.C.S.

Associate Professor of Clinical Surgery
Weill Medical College of Cornell University

Chief of Laparoscopic Surgery New York Methodist Hospital
Medical Director of Bariatric Surgery Center at NYMH

Morbid obesity

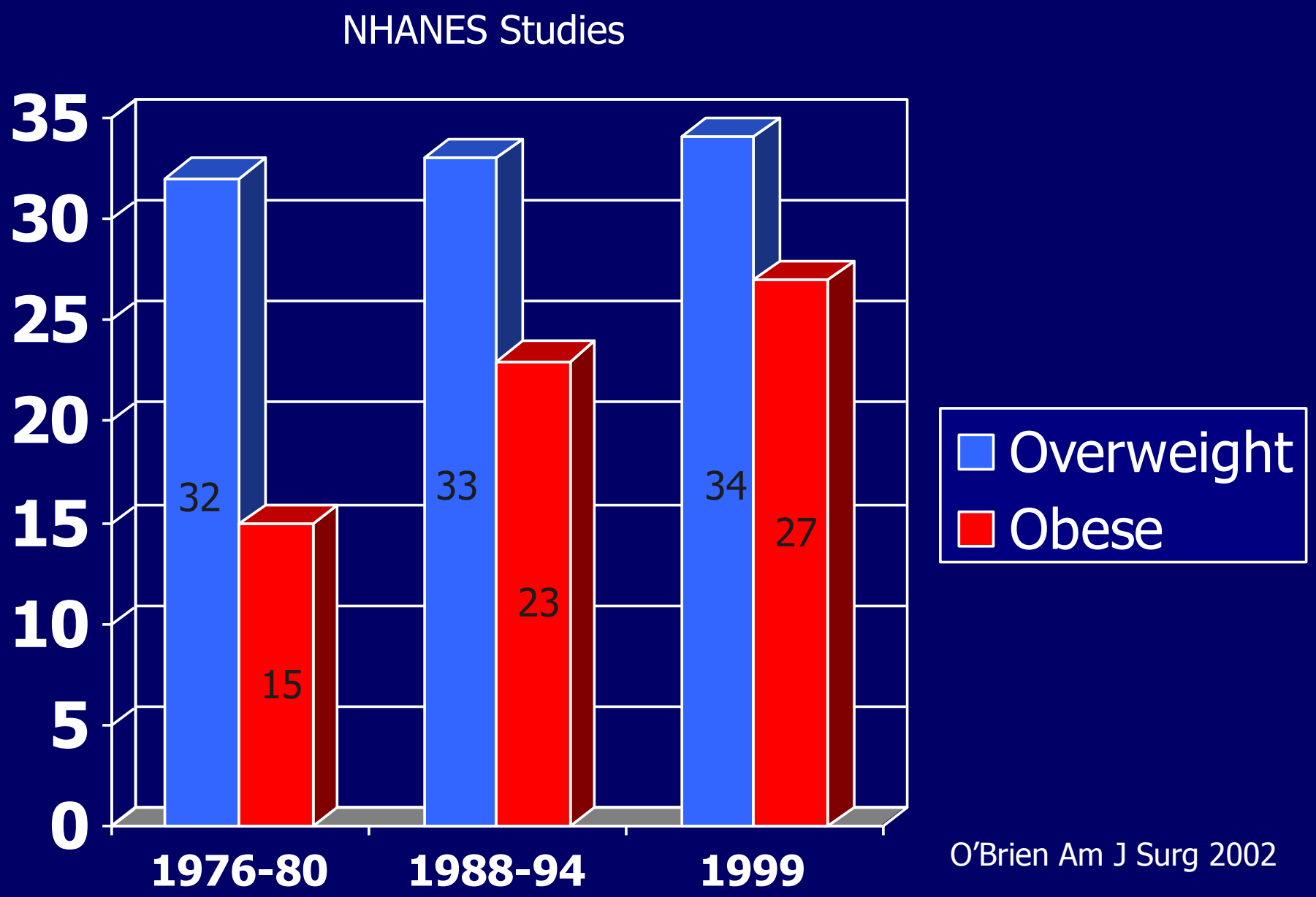
– an epidemic

Morbid obesity – a magnitude of the problem

Americans spend **$33 billion** annually on weight-reduction products and services.

An estimated cost of obesity to American society has been estimated at **$100 billion** annually.

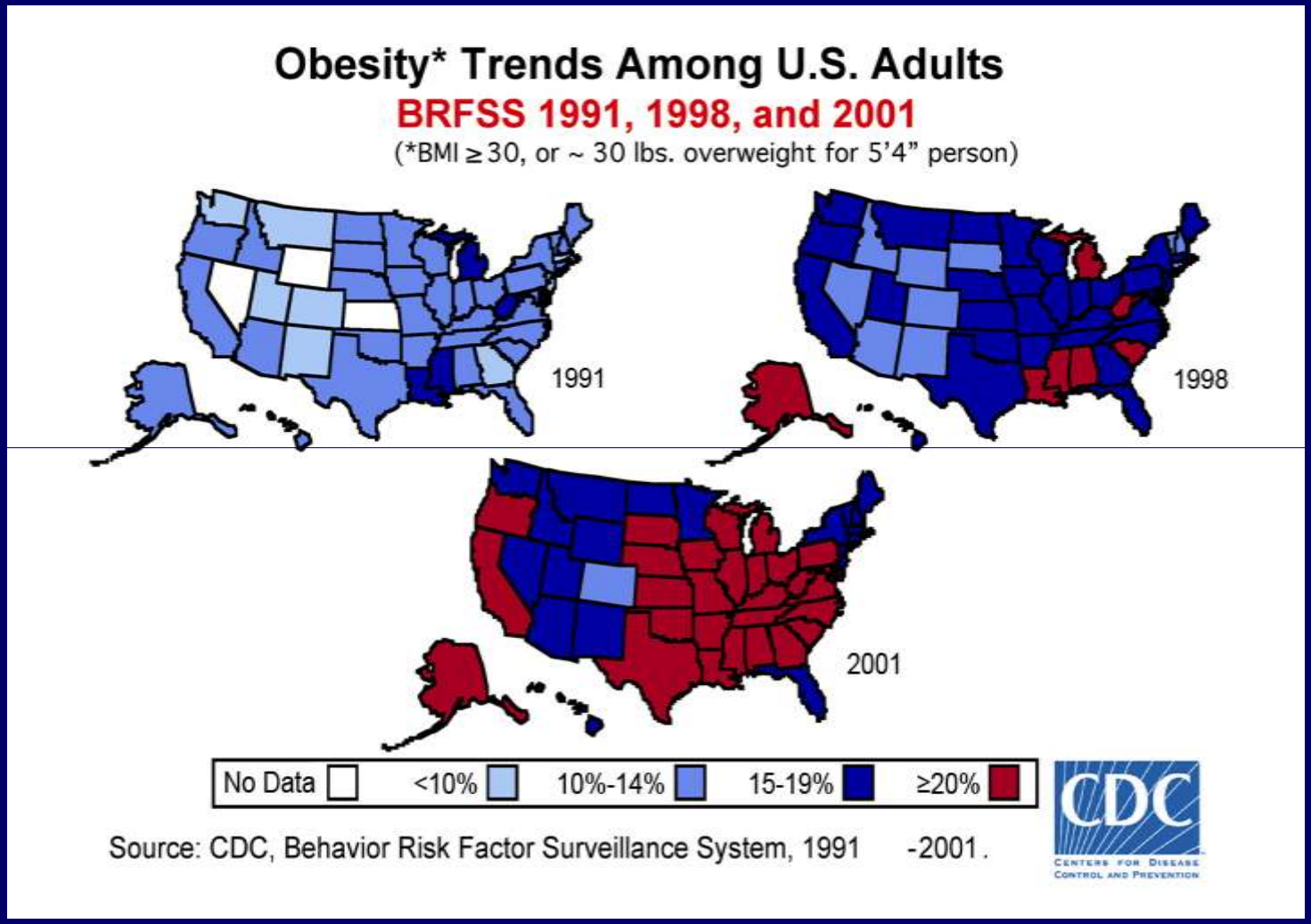
Morbid obesity – a magnitude of the problem



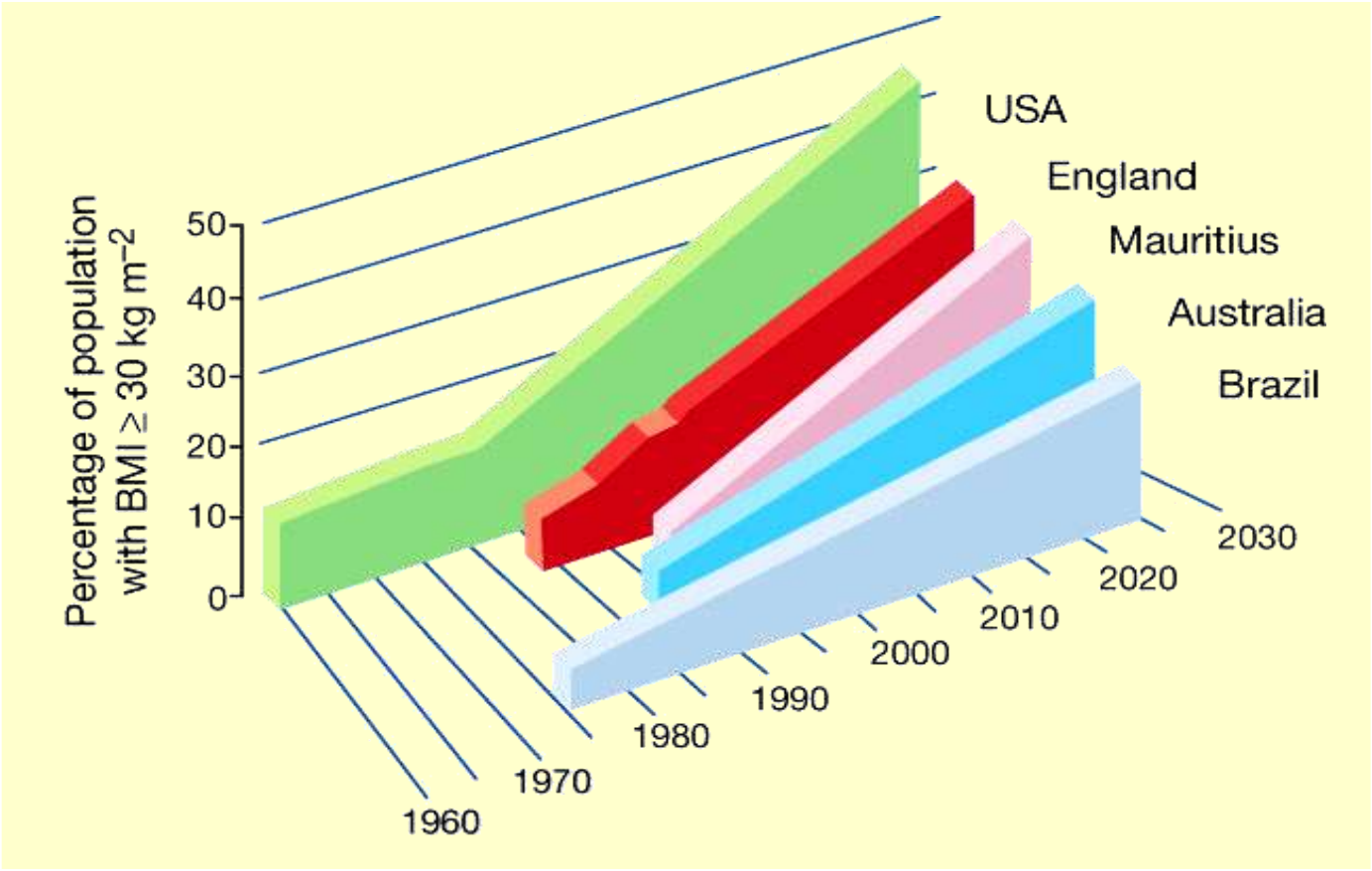
O'Brien Am J Surg 2002

OBESITY* TRENDS AMONG U.S. ADULTS

- BRFSS 1991, 1998, and 2001



Accelerating Worldwide Problem



Morbid obesity – a magnitude of the problem

according to "surgeon's general call to action"

- Obesity is a number 1 cause of preventable deaths in the USA.
- An estimated 400 000 annual deaths (Mokdat JAMA 2000) in the US is attributable to obesity and poor diet.

Morbid obesity

In 1997 World Health Organization (WHO) and in 1998 National Institute of Health (NIH) endorsed the BMI as a measure of obesity.

- BMI < 18.5 kg/m2 – underweight
- BMI 18.5-24.9 kg/m2 – normal range
- BMI > 25 as "overweight"with 3 classes of "obesity"
  - Class I = BMI 30 - 34.9 kg/m2 - moderate
  - **Class II = BMI 35 – 39.9 kg/m2 - severe**
  - **Class III = BMI > 40kg/m2 – very severe**
  - **Class IV = BMI > 50 kg/m2 – super-obesity**

Morbid obesity

Definitions:

- >100 Lbs over the ideal body weight
- BMI >35 with weight related comorbidities
- BMI > 40 without comorbidities
- Double the ideal body weight

Surgery for Morbid Obesity

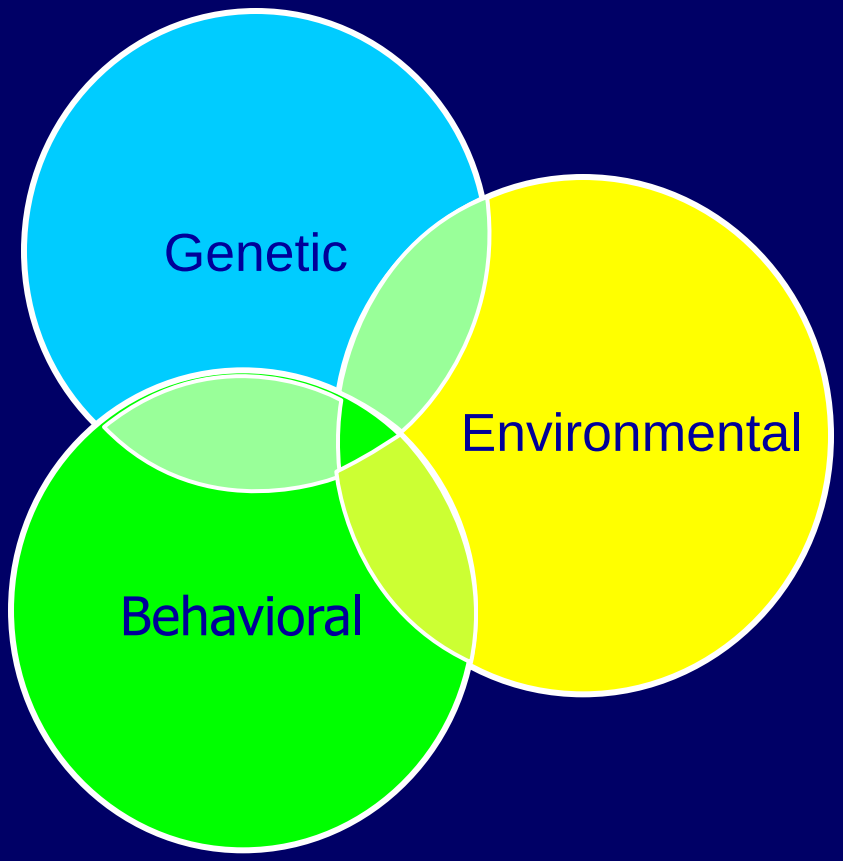
Indications (NIH endorsed)

BMI >35 with obesity related comorbidities

BMI > 40 without comorbidities

Dietary attempts at weight control have been ineffective

Multiple Factors Influence the Disease



The relative risk of death and disease for a person of BMI 40 kg/m2 compares with that of normal BMI 20-25 kg/m2. All risks are approximations compiled from cited literature.

Relative Risk >5.0	Relative Risk >2 - 5	Relative Risk 1-2
Type 2 Diabetes	Mortality	Cancer mortality
Obstructive Sleep Apnea	Hypertension	Prostate Cancer
Dyslipidaemia	Myocardial Infarction	Breast Cancer
Breathlessness	Stroke	Colon Cancer (Men)
Excessive Daytime Sleepiness	Gallstones and complications	Obstetric complications
Obesity Hypoventilation Syndrome	Endometrial carcinoma	Impaired fertility
Idiopathic Intracranial Hypertension	Gallbladder cancer	Fetal abnormalities
	Polycystic ovary syndrome	Asthma
	Osteoarthritis (knees)	Gastroesophageal reflux
	Gout	Anaesthetic risk

Development of Surgery for Morbid Obesity

Rationale

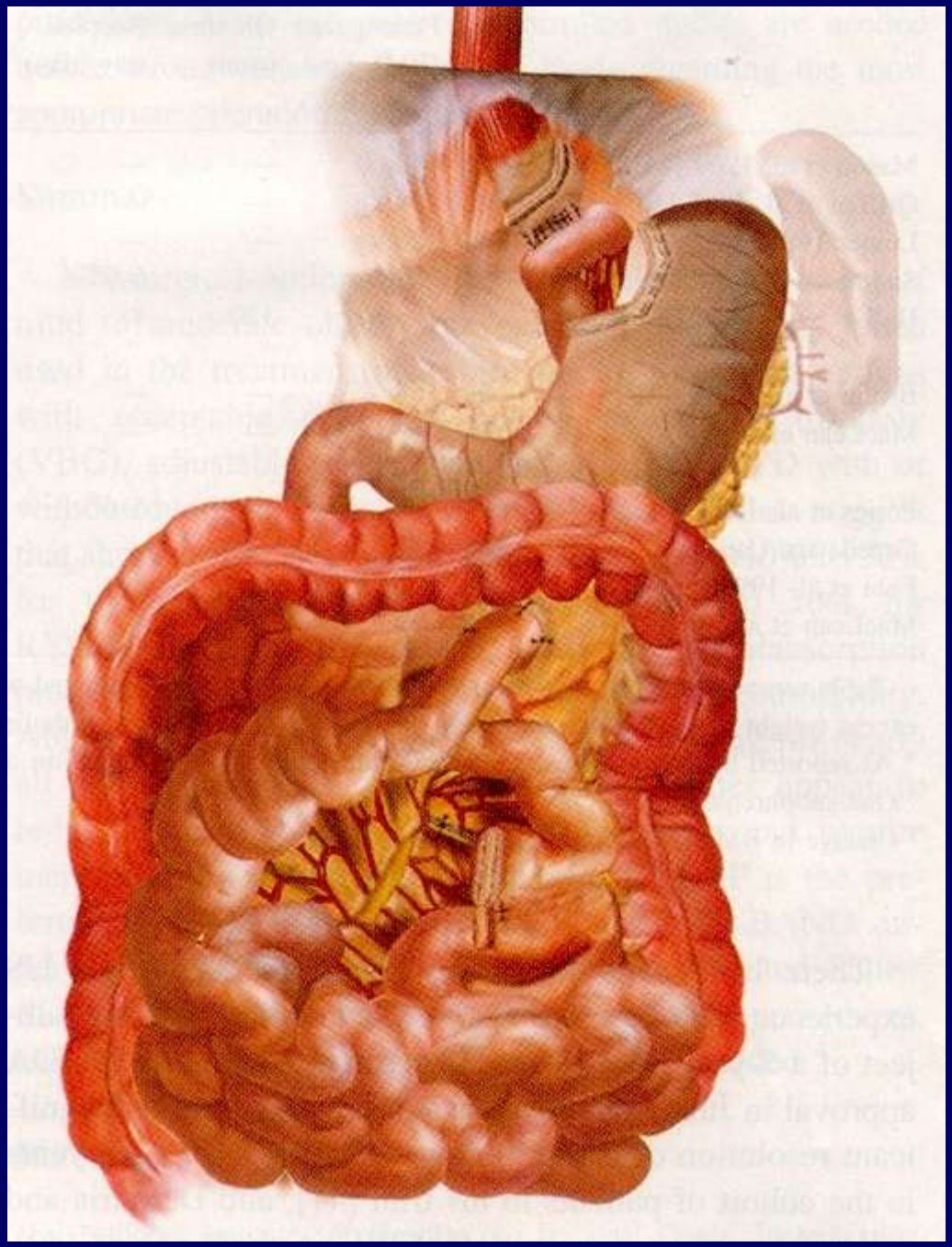
Severe obesity is a **major heath risk**.

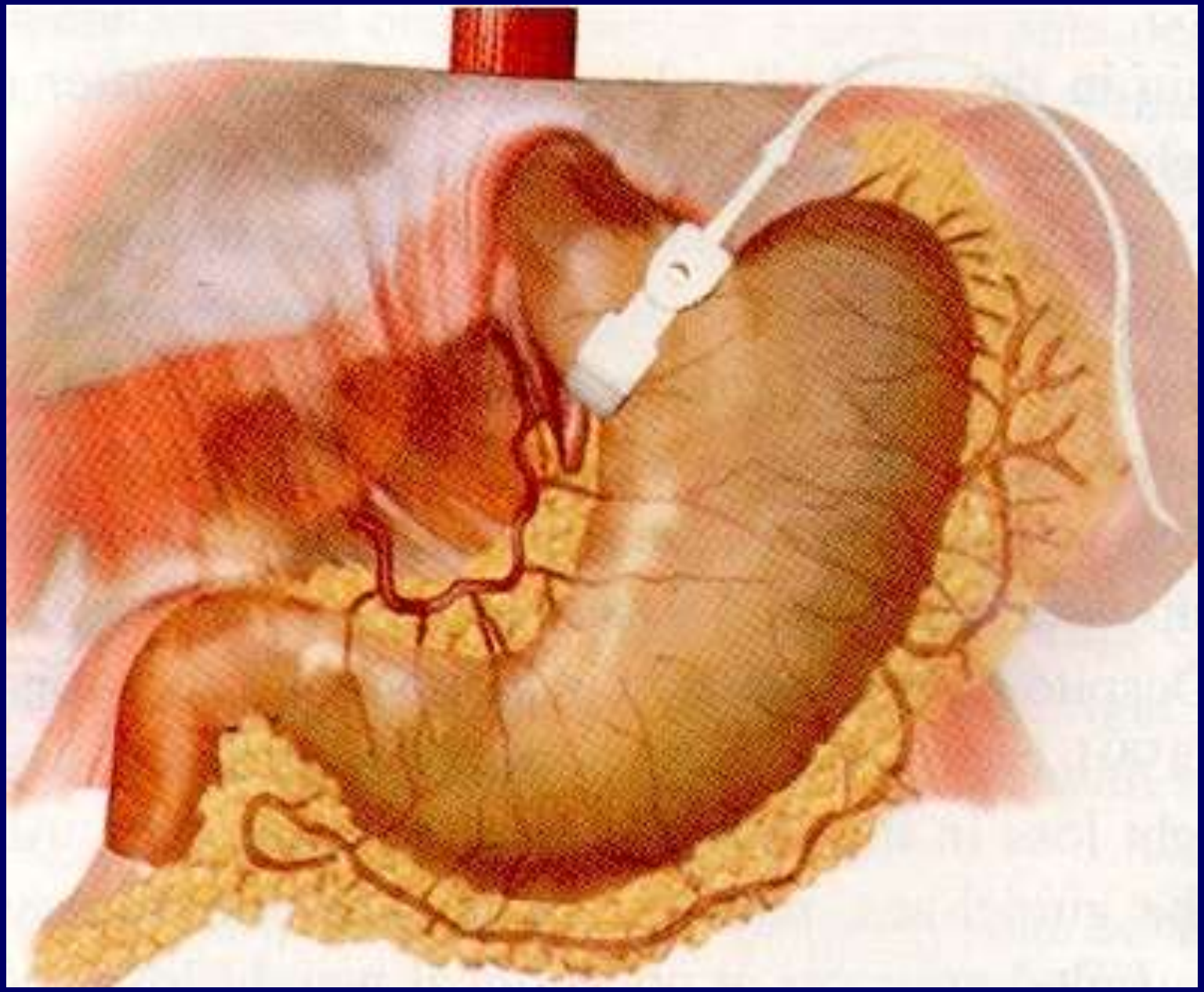
Dietary, life style modifications, exercise programs and medical therapy are all **unsuccessful** in providing patients with a significant and sustained weight loss.

The natural history of morbid obesity is continuing weight gain, development of comorbidities and **premature death**.

Modern Surgery For Morbid Obesity

- Restrictive procedures (Lap Band, Sleeve Gastrectomy)
- Malabsorbtive procedures (BPD)
- Mixed - restriction and malabsorbtion (RYGB)





1000 Consecutive Bariatric Patients

Operated at NYMH August 2001 – April 2011

Consecutive 1000 Bariatric Operations At NYMH

Operated at NYMH August 2001 – April 2011

- 641 Laparoscopic RY Gastric Bypass
- 359 Lap Adjustable Gastric Bands
- No Mortality
- No Conversions to Open
- No Intraoperative Blood Transfusion
- No Major Intraoperative Complication

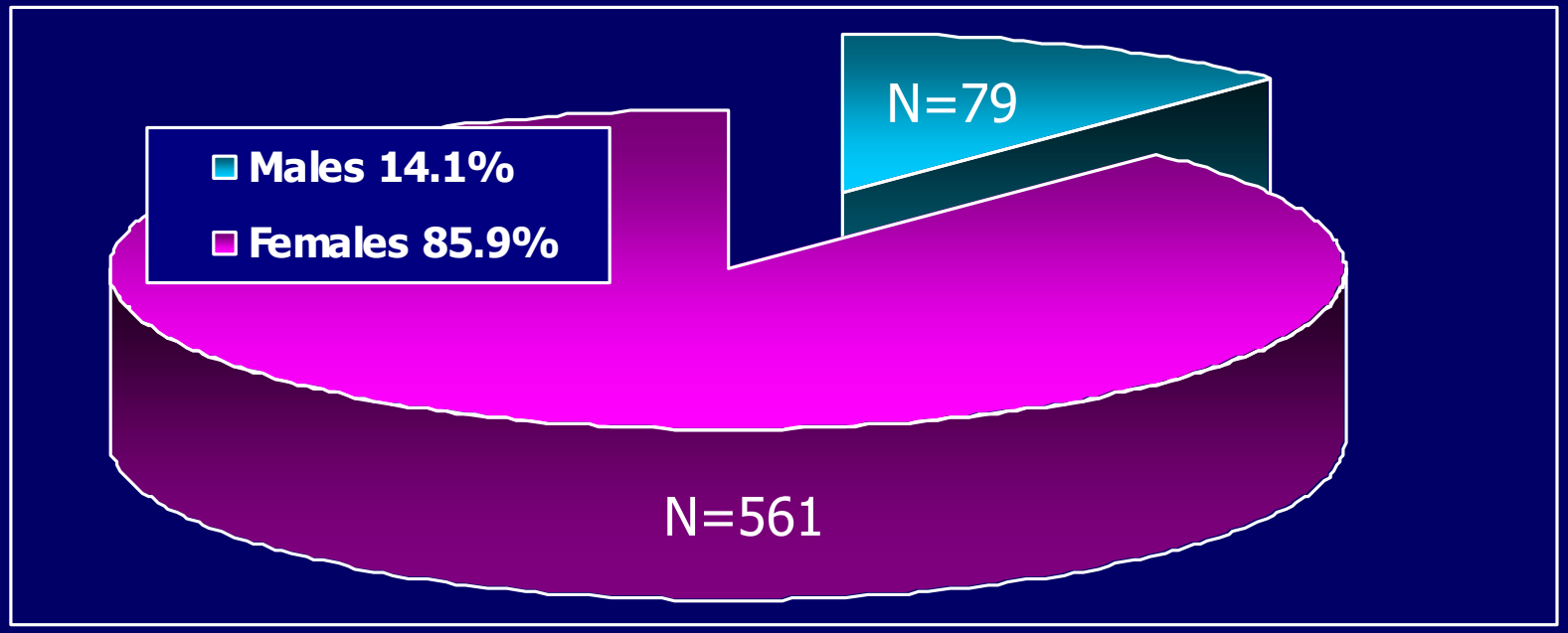
Preoperative evaluation

Clinical Pathways

- ✓All patients met NIH criteria for Bariatric Surgery
- ✓All were evaluated in the multidisciplinary setting
- ✓Therapeutic options were given (RYGB vs Lap-Band)
- ✓Extensive informed consent was obtained
- ✓Understanding of the surgery documented in the form of a test
- ✓Conference with family
- ✓Prospective database – severity of symptoms, comorbidities and QOL
- ✓Support group
- ✓Intensive follow -up

Patient demographics

641 Consecutive
Morbidly Obese Patients RYGB

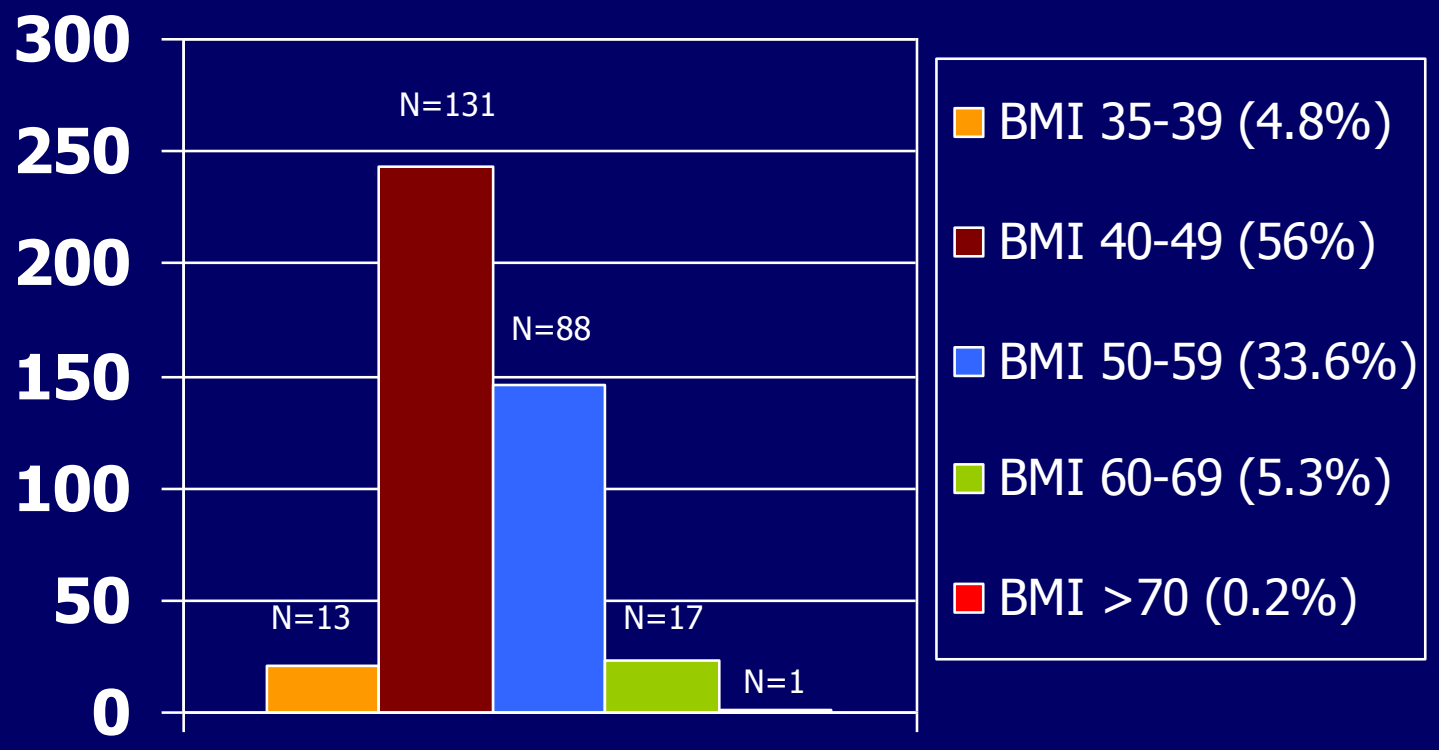


Average age – 38 years (range 18 – 67)

Patient demographics

434 Consecutive Patients

Preoperative BMI



BMI Distribution in 434 Patients

Complications

All data collected and recorded prospectively

1000 Consecutive Bariatric Patients

Complications

Laparoscopic Bariatric Surgery - 1000 Consecutive Patients

- No mortality
- No permanent disability

Outcomes of Bariatric Surgery

- Surgical complications
- Weight loss
- Resolution of comorbidities
- Quality of life
- Reduction of mortality
- Reduced cost to heath care

Weight Loss

Laparoscopic Roux-en-Y Gastric Bypass and Adjustable Gastric Band are effective weight loss operations

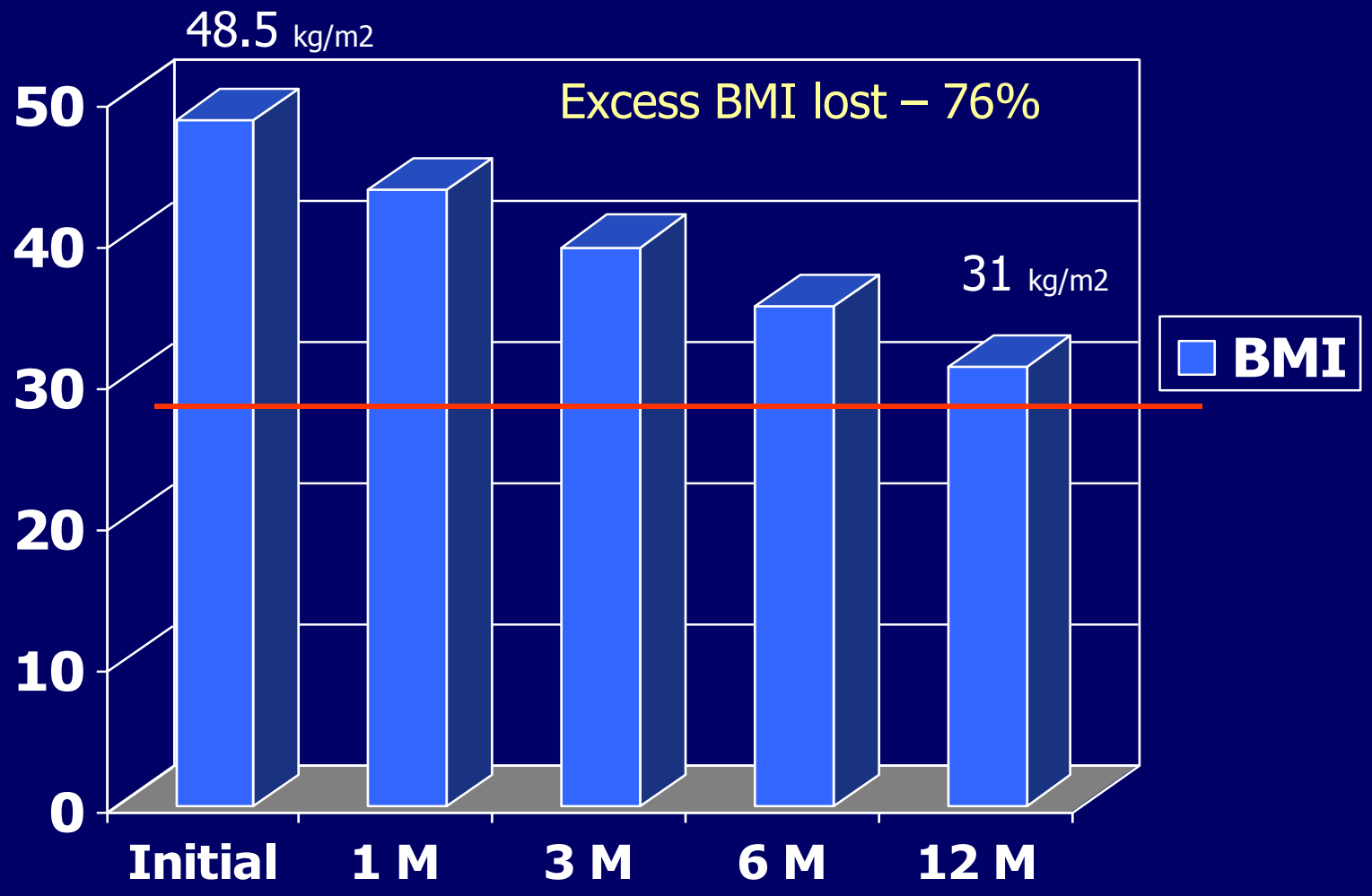
1000 Consecutive Patients

22 Year old female

1 year later – lost 200 Lbs

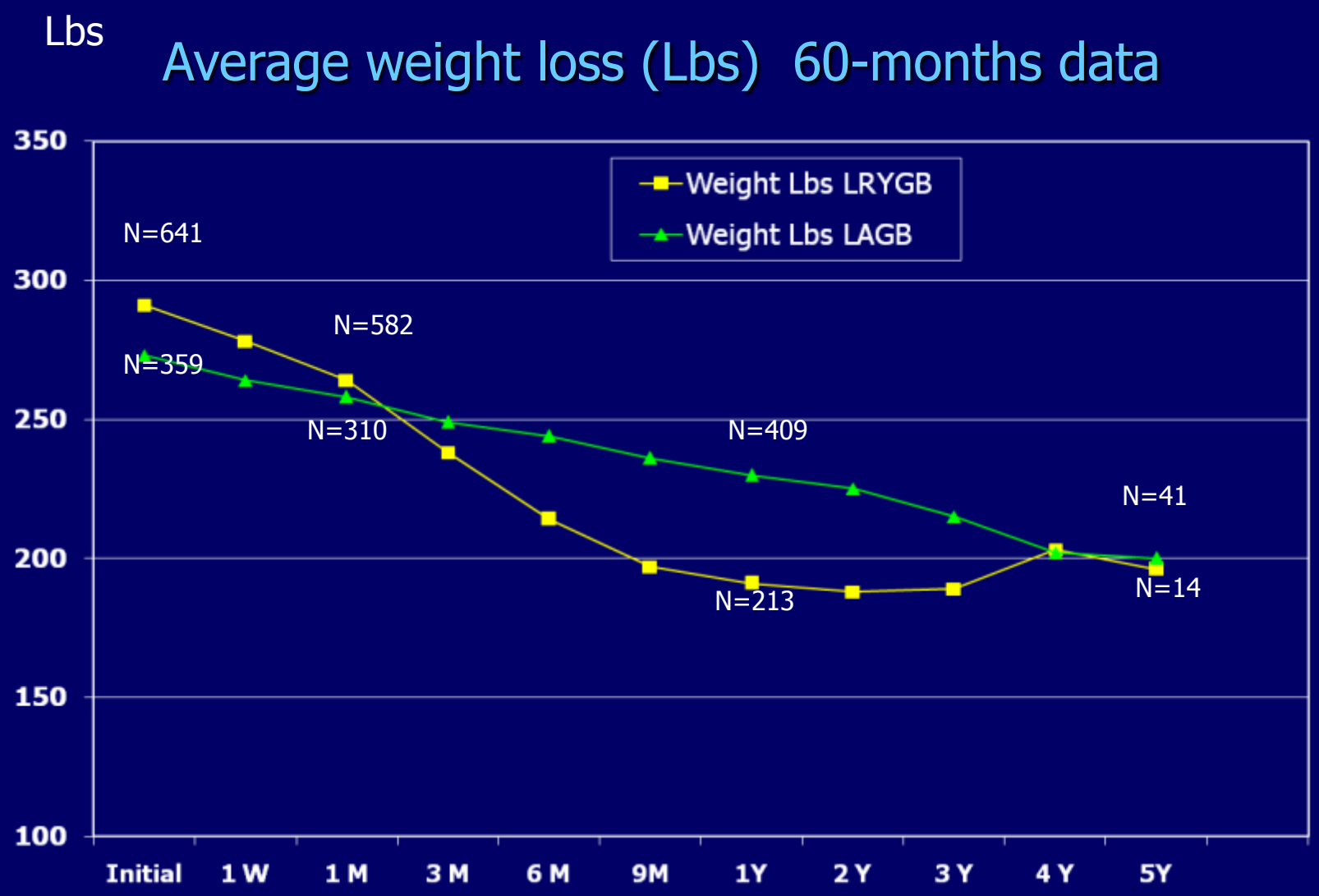
Laparoscopic Roux-en-Y Gastric Bypass - 250 patients

Average weight loss – 12 month data



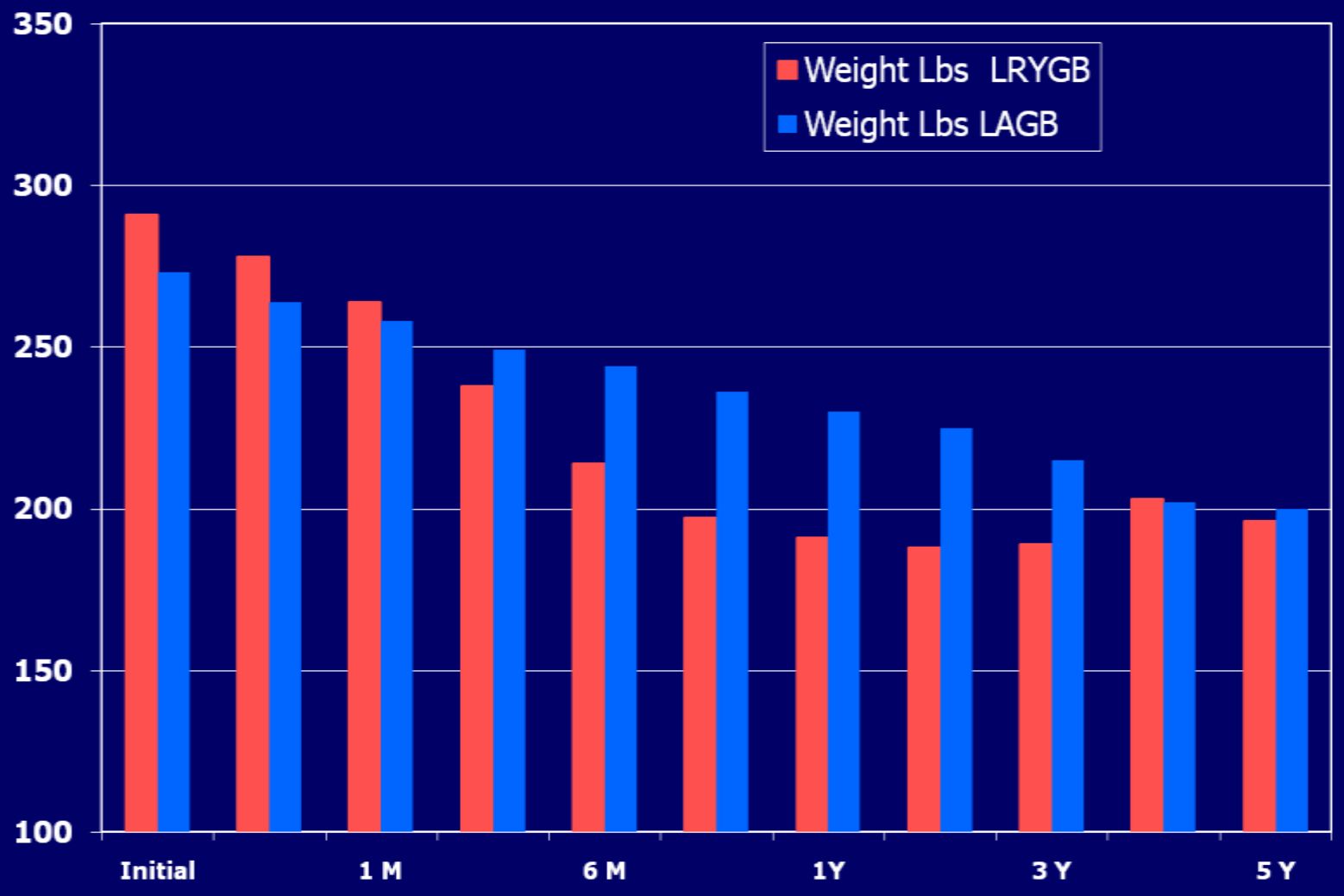
Laparoscopic bariatric surgery LAGB v.s. LRYGB

1000 consecutive patients

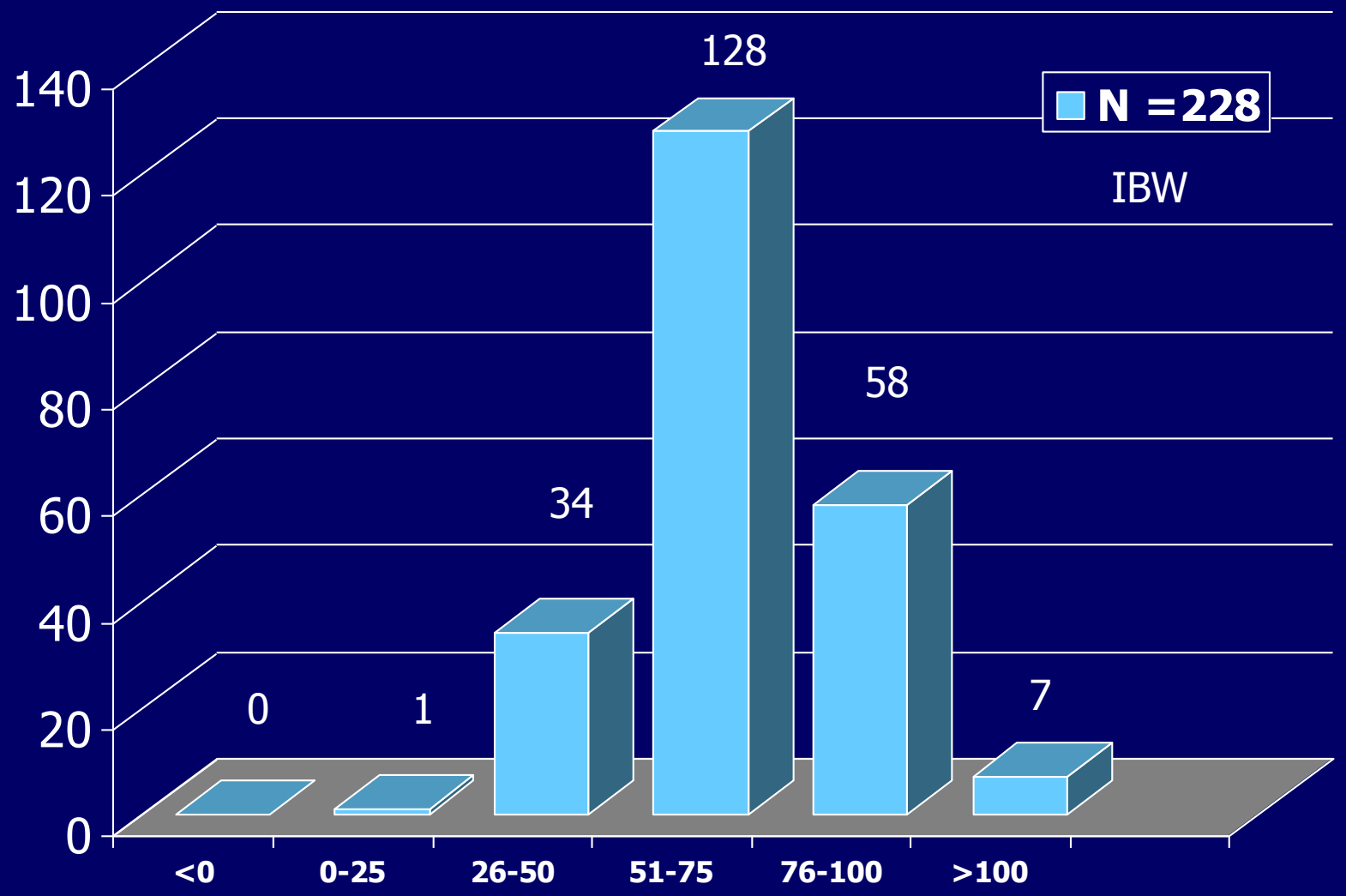


Laparoscopic AGB - 1000 patients total

Average weight loss 5-Year data



RYGB Distribution of weight loss at 1 year (IBW)



99.6% lost more than 25% of EWL, **85.5%** lost more than 50% of EWL

P Gorecki 434 patients

Laparoscopic RYGB Improves Quality Of Life

Analysis of Consecutive 434 Patients

Patient Satisfaction and Quality of Life

Laparoscopic Roux-en-Y Gastric Bypass

434 Consecutive Patients

Patient satisfaction

434 Consecutive Laparoscopic RYGB Patients

Are you satisfied with your decision to undergo weight reduction surgery ?

(first postoperative visit 4-43 days)

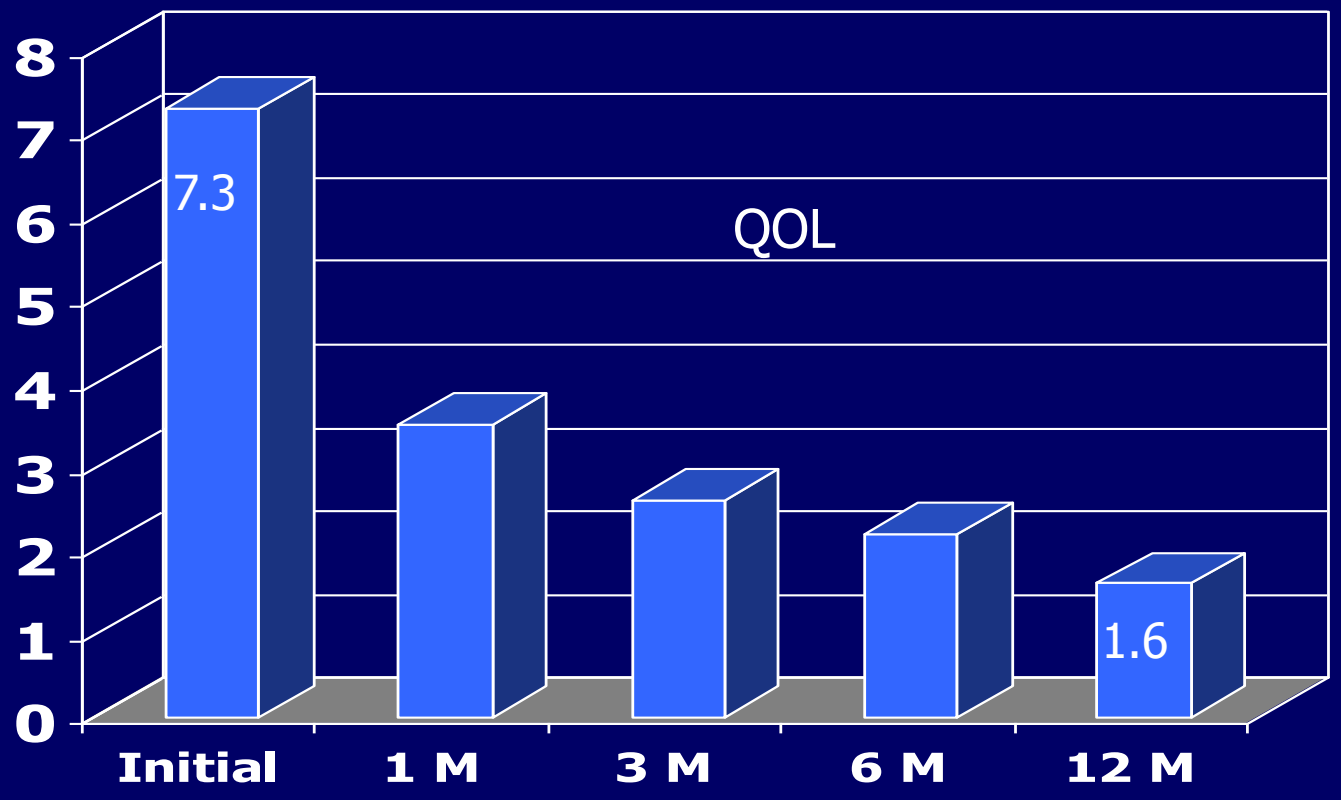
Yes - 431 patients (99.3%)

No – 3 patients

At 6-moth follow up all patients admitted the benefit of surgery.

Laparoscopic Roux-en-Y Gastric Bypass - 250 patients

Quality of life – 12 month data

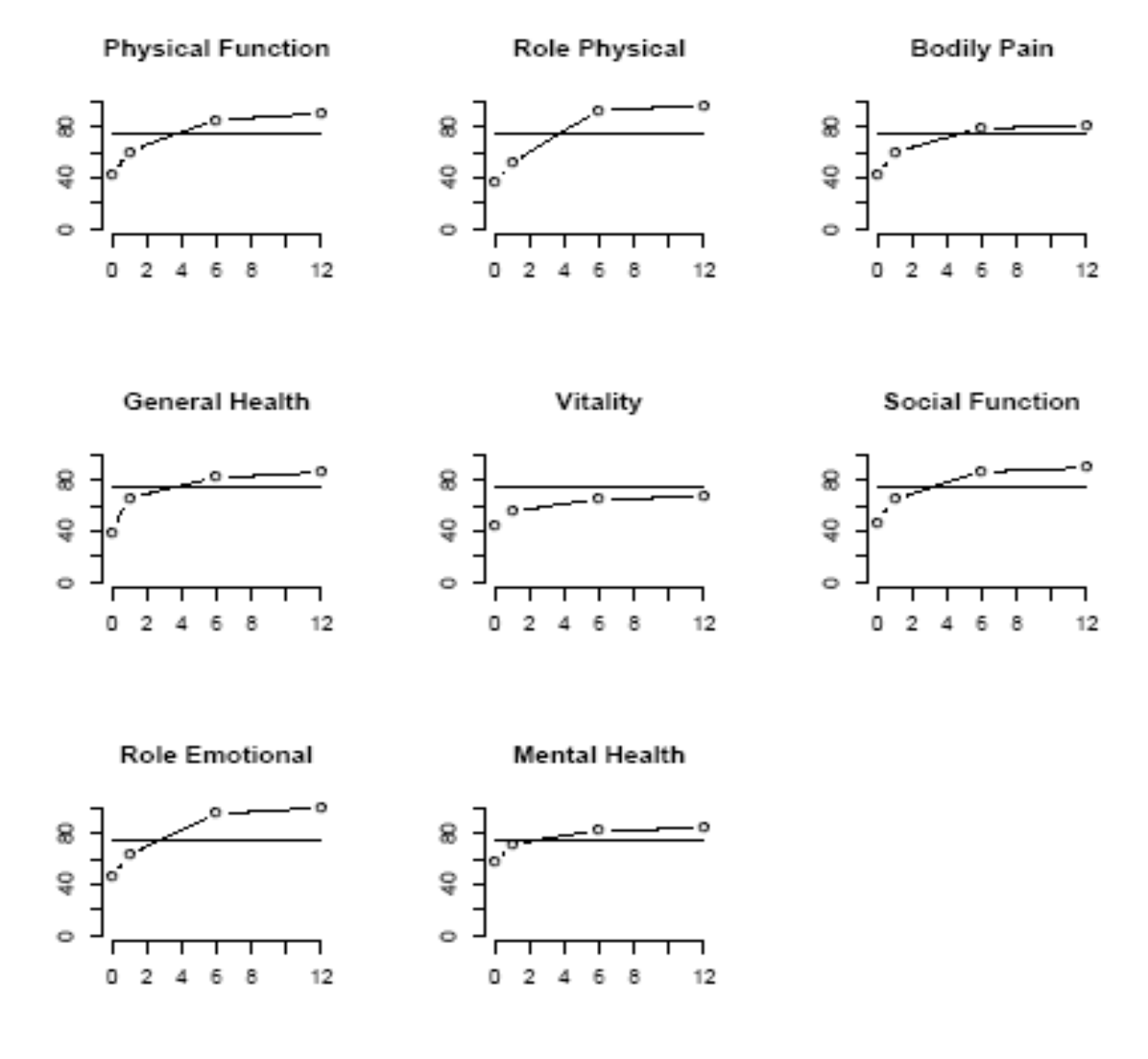


QOL – General well being score

(1-2 excellent, 3-4 good, 5-6 acceptable, 7-8 not acceptable, 9-10 very poor)

Quality of life SF – 36 health survey

434 patients (280 patients)



P<0.003

1 month

Male 9, Female 40

6 months

Male 7, Female 47

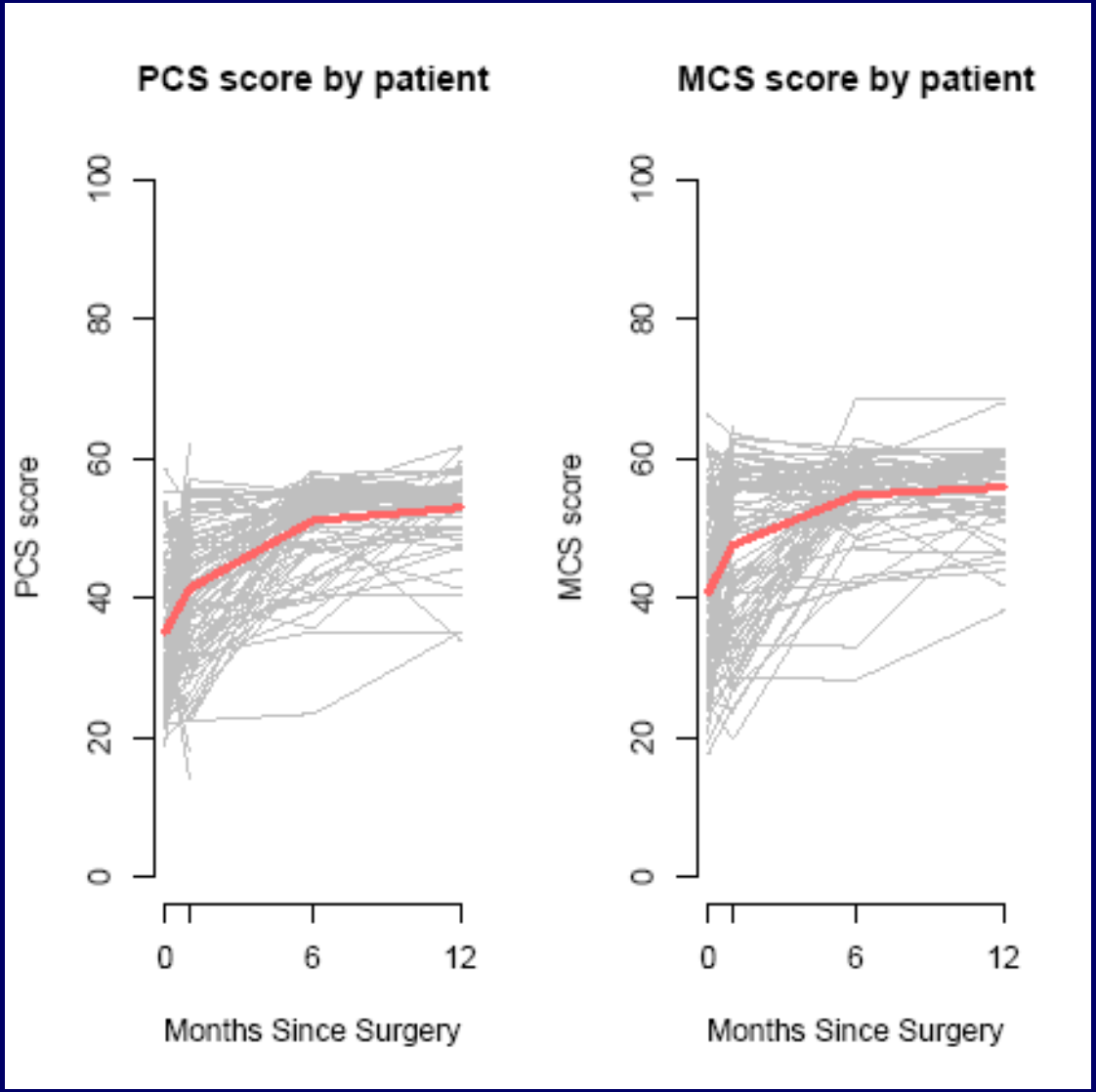
12 months

Male 9, Female 92

Quality of life SF–36 health survey

434 patients

Physical Component Summary Mental Component Summary



P<0.003

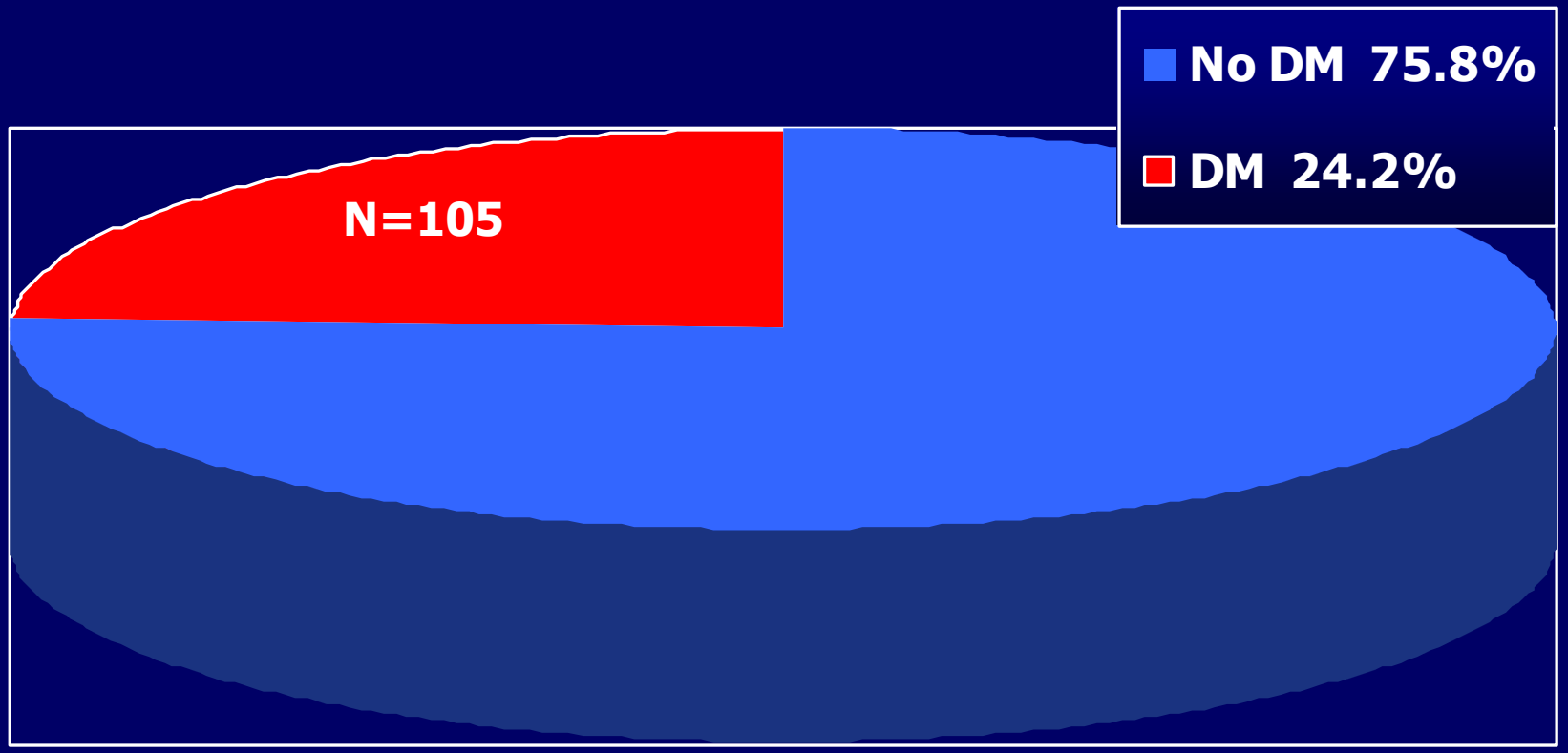
Population

mean = 50

Diabetes

Prevalence of Diabetes

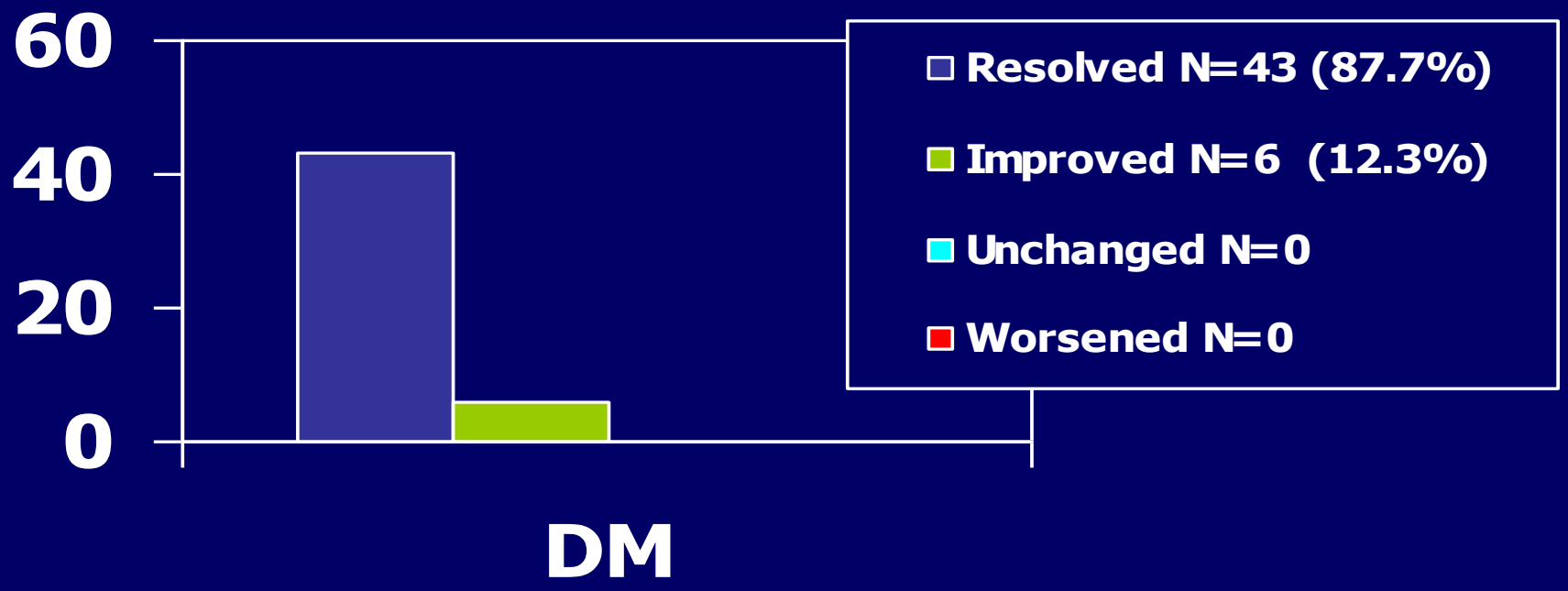
434 Consecutive Morbidly Obese Patients



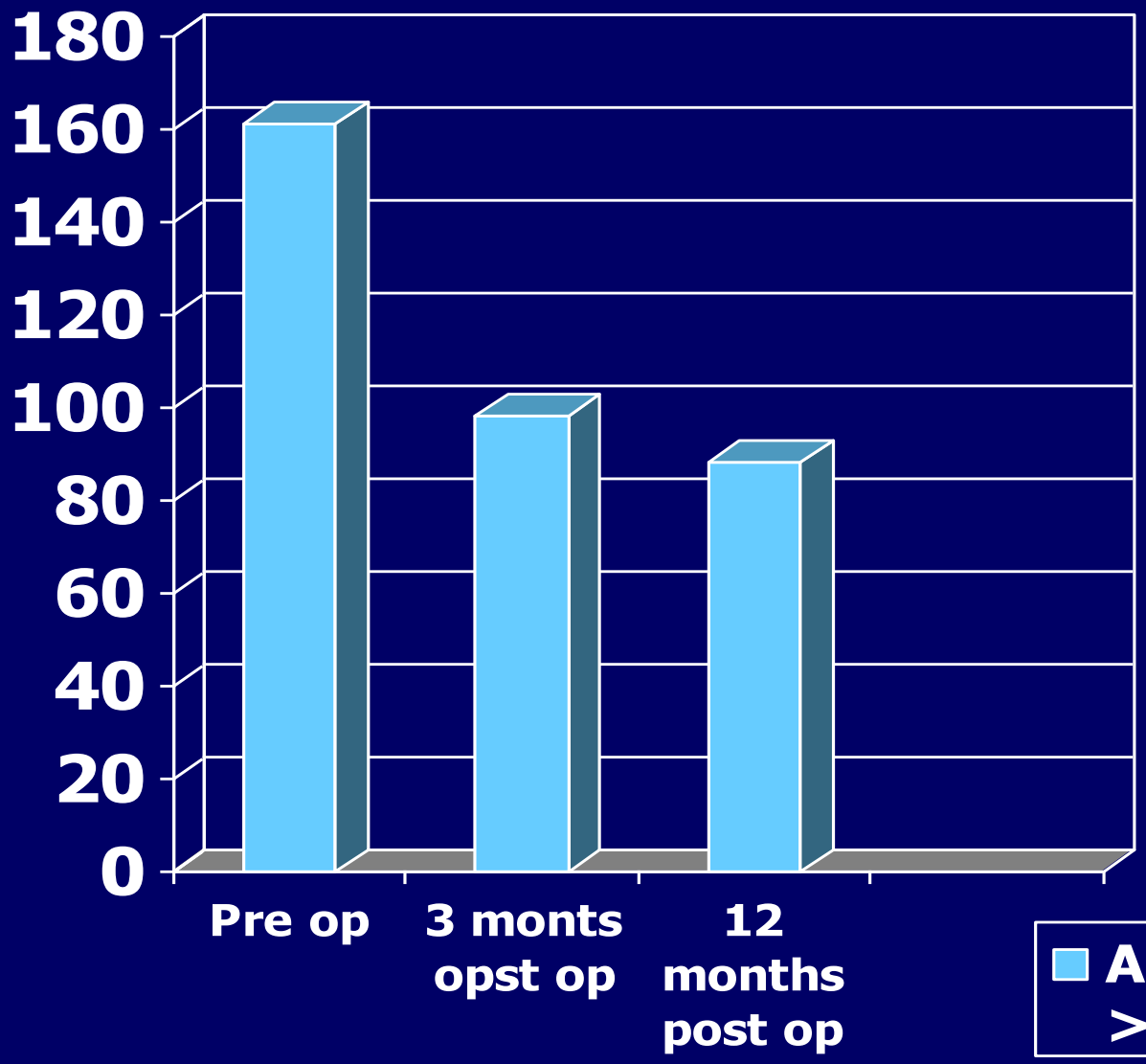
Resolution of Diabetes

434 Consecutive Morbidly Obese Patients

N=105 - 24.2 % of patients, 49 available for 1 year follow up



Glucose levels – elevated pre op



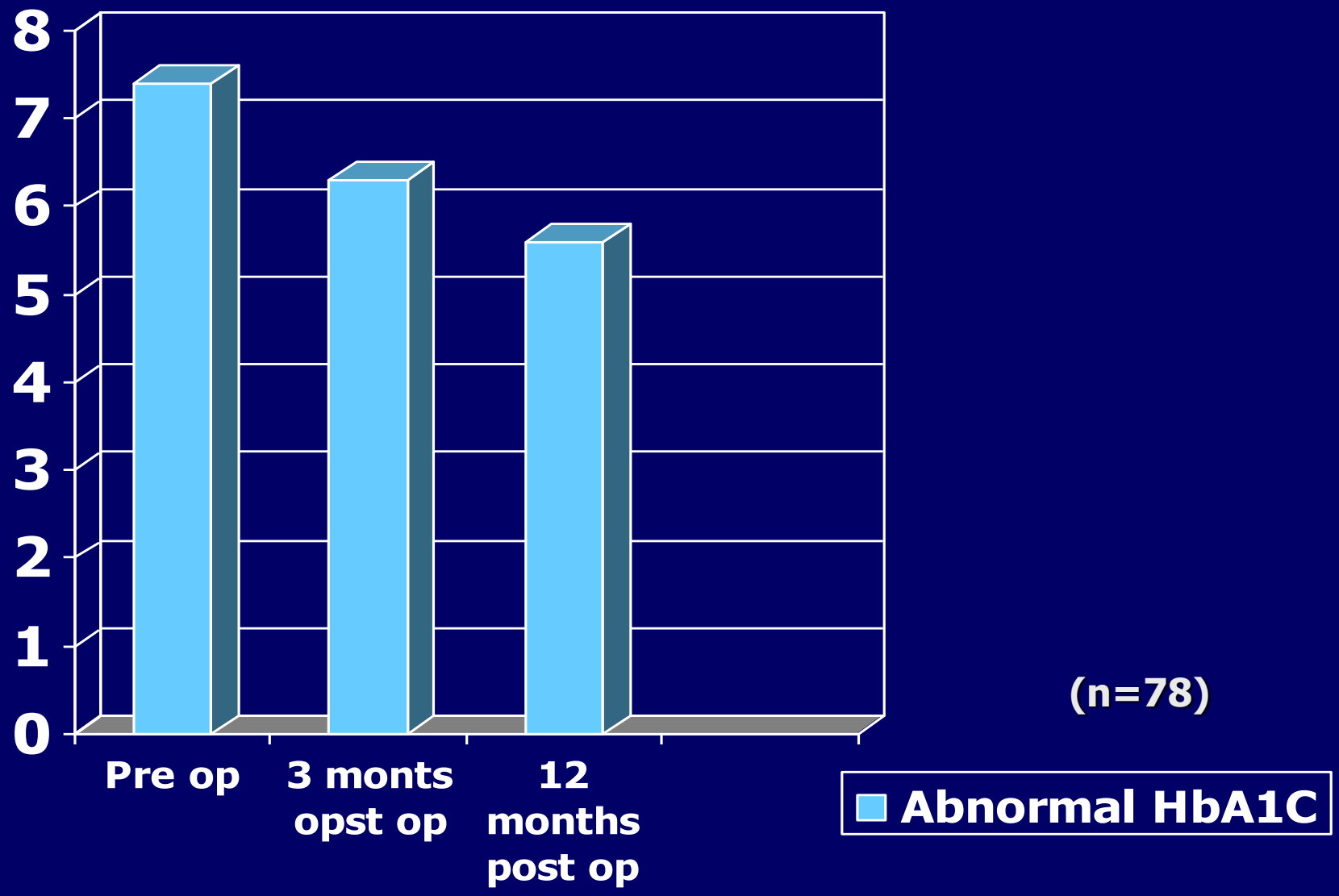
Paired t-test

P<0.001

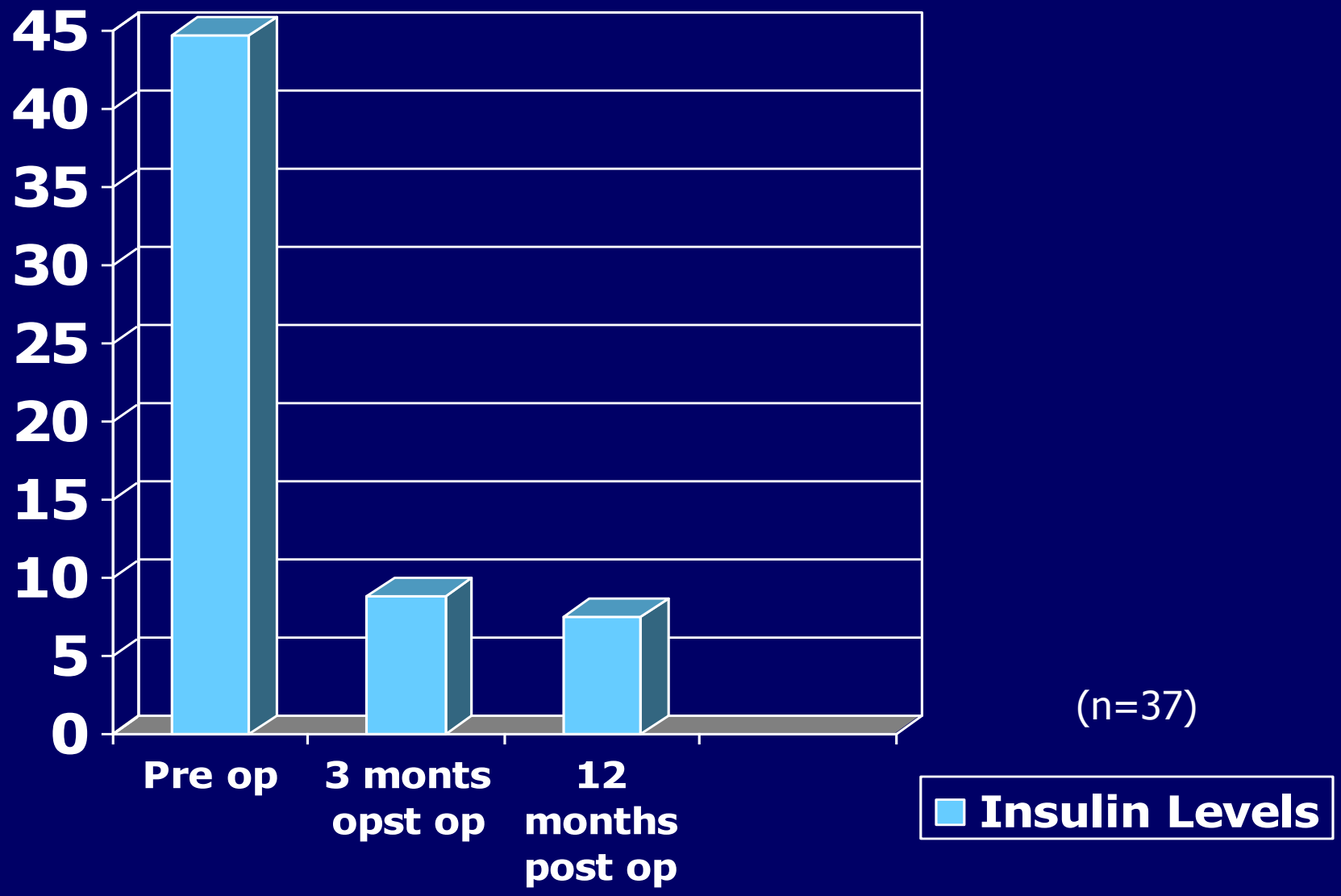
(n=102)

Abnormal glucose, >110

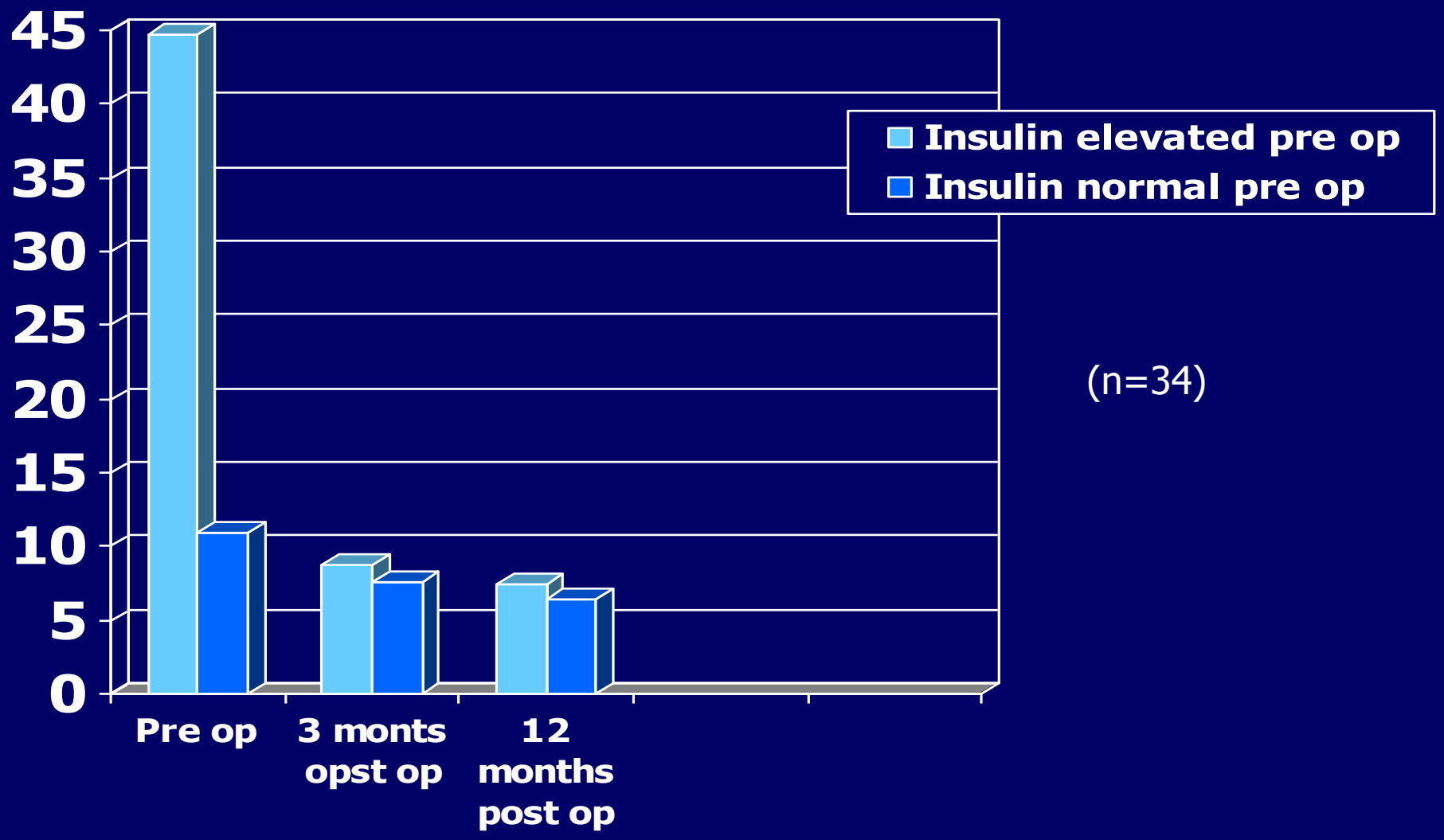
Hb A1C levels elevated pre op, > 6



Insulin levels – elevated pre op, >16



Insulin levels – normal vs abnormal pre op



(n=34)

Resolution of Diabetes

434 Consecutive Morbidly Obese Patients

Diabetes was resolved in 87.7% of patients and improved in 12.3% of patients.

100% of patients who underwent laparoscopic RY gastric bypass had resolved or improved diabetes.

434 RYGB patients – resolution of comorbidities at 1 year - P Gorecki

Comorbidities	Resolved %	Improved %	Resolved or improved %
Diabetes	87.7	12.3	100
HTN	61	35	96
Sleep apnea	87.1	10	97.1
GERD	89	7.5	96.5
Asthma	53	34.8	87.8
Arthritis	69.4	24.7	94.1
Urinary SI	90.2	8.5	98.7
Depression	71.3	23.6	95.3
Hypercholesterolema	65.1	27.9	93
Back Pain	63.2	30.3	93.5

434 RYGB patients – resolution of comorbidities at 1 year - P Gorecki

Comorbidities	Resolved %	Improved %	Resolved or improved %
Difficulty walking n=209	90%	9.1%	99.1%
Shortens of breath n=36	94.4%	5.6%	100%
Dysmenorrhea n=23	87%	4.3%	91%

Managing Bariatric Patient

Important pitfalls for primary care physicians

Internal hernias
Marginal ulceration
Anastomotic strictures
Bowel obstructions/adhesions
Gallstones
Gastric prolaps – band slip
Band erosion
Tight band
Loose band

VS.

Gastritis
Dyspepsia
Gas pains
Back pains
Kidney stones
Pancreatitis
IBS
GERD

Managing Bariatric Patient

Important pitfalls for primary care physicians

Maintenance

Good quality solid food - protein rich
Avoidance of liquid calories
Avoid snacking
Multivitamins twice a day
Calcium 1 gm a day/Vit D
Extra iron for menstruation woman
B12 (injections i.m. Q1-6 months?)
H2 blockers daily?
No smoking (marginal ulcers)
Physical activity
Long term goal – change in life habits

Managing Bariatric Patient

Important pitfalls for patients and primary care physicians

Common deficiencies that require supplements:

- Iron
- B12
- Calcium

VS.

Uncommon deficiencies:

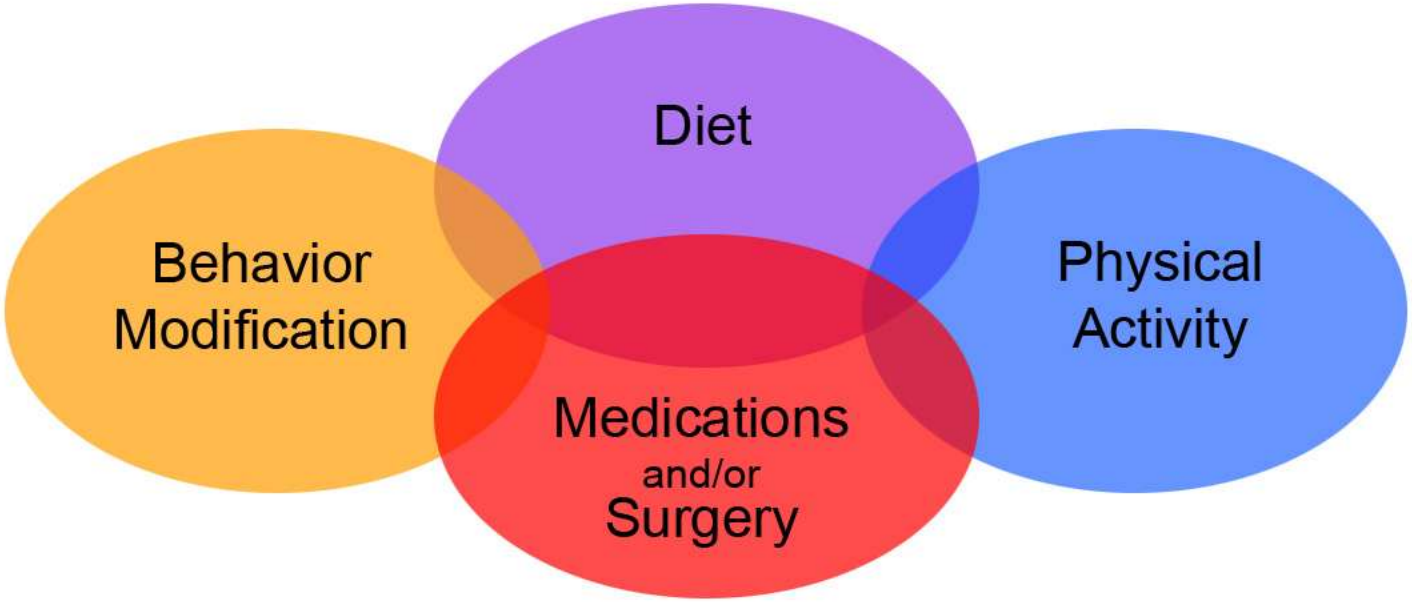
- Calorie malnutrition
- Protein malnutrition

Medicare Advisory Panel Concludes Weight Loss Surgery Safe and Effective for Morbidly Obese patients

Nov 5, 2004 - The Medicare Coverage Advisory Committee

"The Medicare Coverage Advisory Committee (MCAC) concluded that there is significant evidence supporting the safety and effectiveness of weight loss surgery and its ability to improve a number of life-threatening obesity related conditions including diabetes, high blood pressure and high cholesterol."

COMPONENTS OF EFFECTIVE WEIGHT-MANAGEMENT PROGRAMS



Conclusions

There is sufficient scientific evidence to suggest that morbid obesity is a severe, chronic, lifelong disease that has profound impact on life expectancy, morbidity and quality of life.

Medical therapy is ineffective.

Surgery has been shown to produce a significant and durable weight loss averaging 60 – 80 % of excess body weight.

Conclusion

Surgically induced weight loss results in:

- **Significant and sustained weight loss**
- **Improved quality of life**
- **Significant reduction of mortality**
- **Reduction or elimination of co morbidities**
- **Overall reduction of the health care costs.**

Risks/Benefits

Obesity Surgery - Risks/Benefits

Benefits

- Significant weight loss
- Longer life
- Better quality of life
- Reduction or elimination of obesity comorbidities
  - Diabetes
  - High blood pressure
  - Heartburn
  - Joint pains
  - Sleep apnea
  - Depressions

Risks

- Mortality
- Anesthesia
- Bleeding
- Leak/Infection
- Wound problems
- Hernias
- DVT/PE
- Pulmonary problems
- Bowel obstruction
- Pains

ASBS

Bariatric Centers of Excellence Program


The designation of

BARIATRIC SURGERY
CENTER OF EXCELLENCE

is bestowed upon

Dr. Piotr J. Gorecki

and

New York Methodist Hospital

by the American Society for Bariatric Surgery

October 21, 2005 to October 21, 2008

Neil Hutcher, MD, FACS
President, American Society for Bariatric Surgery

Walter J. Pories, MD, FACS
Chairman, Surgical Review Corporation

To protect and serve our patients to the best of our ability.

To provide a platform for continuous improvement in our discipline.

To reward excellence.

To promote research and pursuit of knowledge.

Thank You