



**Karolinska  
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# **AMOS 2 års data**

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# Varför överväga läkemedel och kirurgi:

- **Shorter life:**
  - **Morbid obesity at the age of 20-30 results in a 13 y reduced life expectancy = 22% reduction of expected remaining life time**

(Fontaine, KR JAMA 2003)

## Why adolescent obesity surgery:

- **Poor outcome of behavioral obesity treatment in adolescents**

## Why adolescent obesity surgery:

We have no treatment with acceptable efficacy to offer severely obese adolescents today



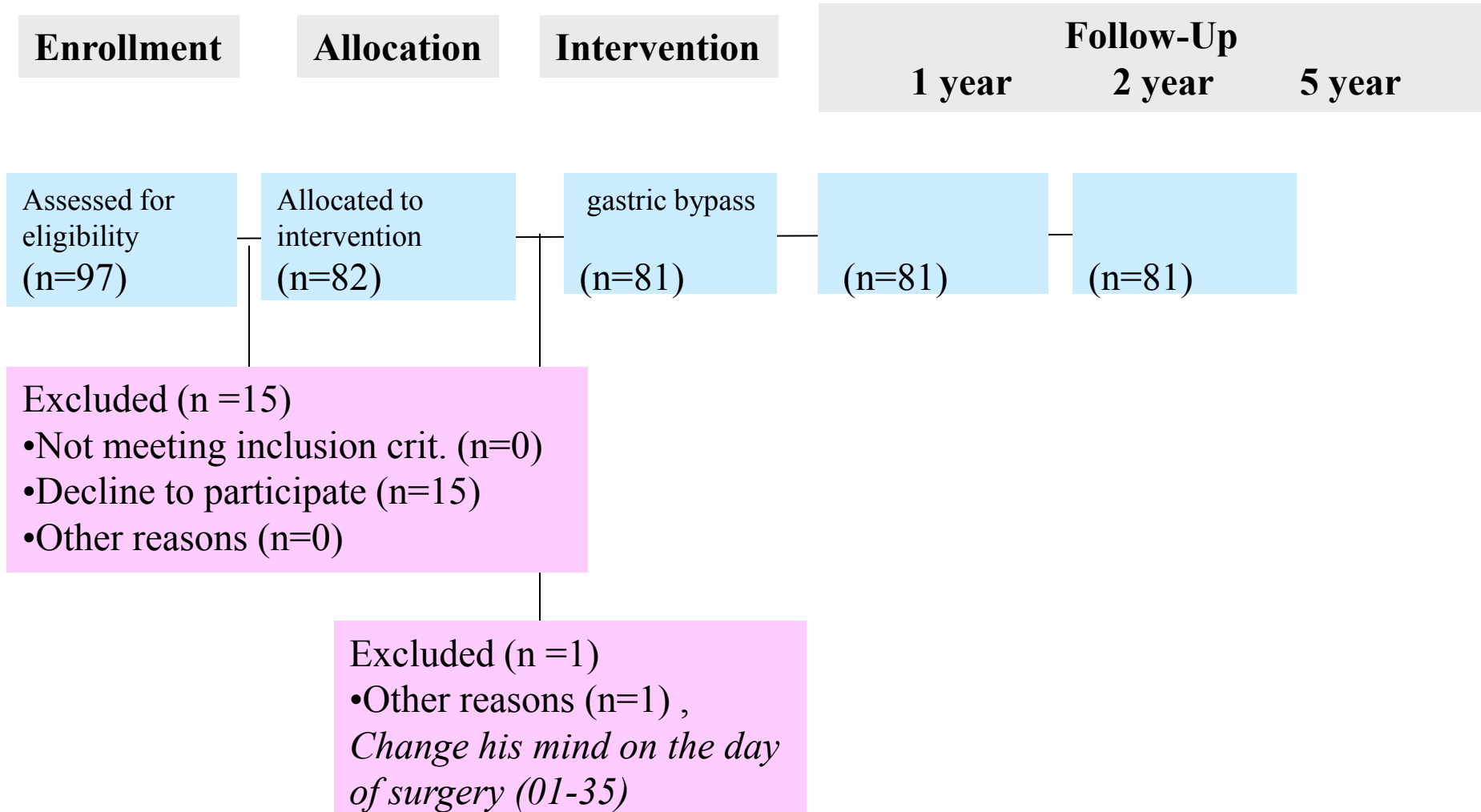
# AMOS study :

## ( Adolescent Morbidity Obesity Surgery study)

- started 2006 in Sweden, all subjects through surgery April 2009
- Prospective non-randomized study
- Controls: conventionally treated obese adolescents and GB operated obese adults
- Multicenter study, Stockholm, Göteborg, Malmö
- Follow up visit at 1, 2, 5 and 10 years post surgery
- Inclusion criteria: BMI > 40 or 35 with comorbidities Age: 13-18 yr
- Exclusion criteria severe depression, mental retardation, obesity syndromes, drug abuse, severe eating disorder

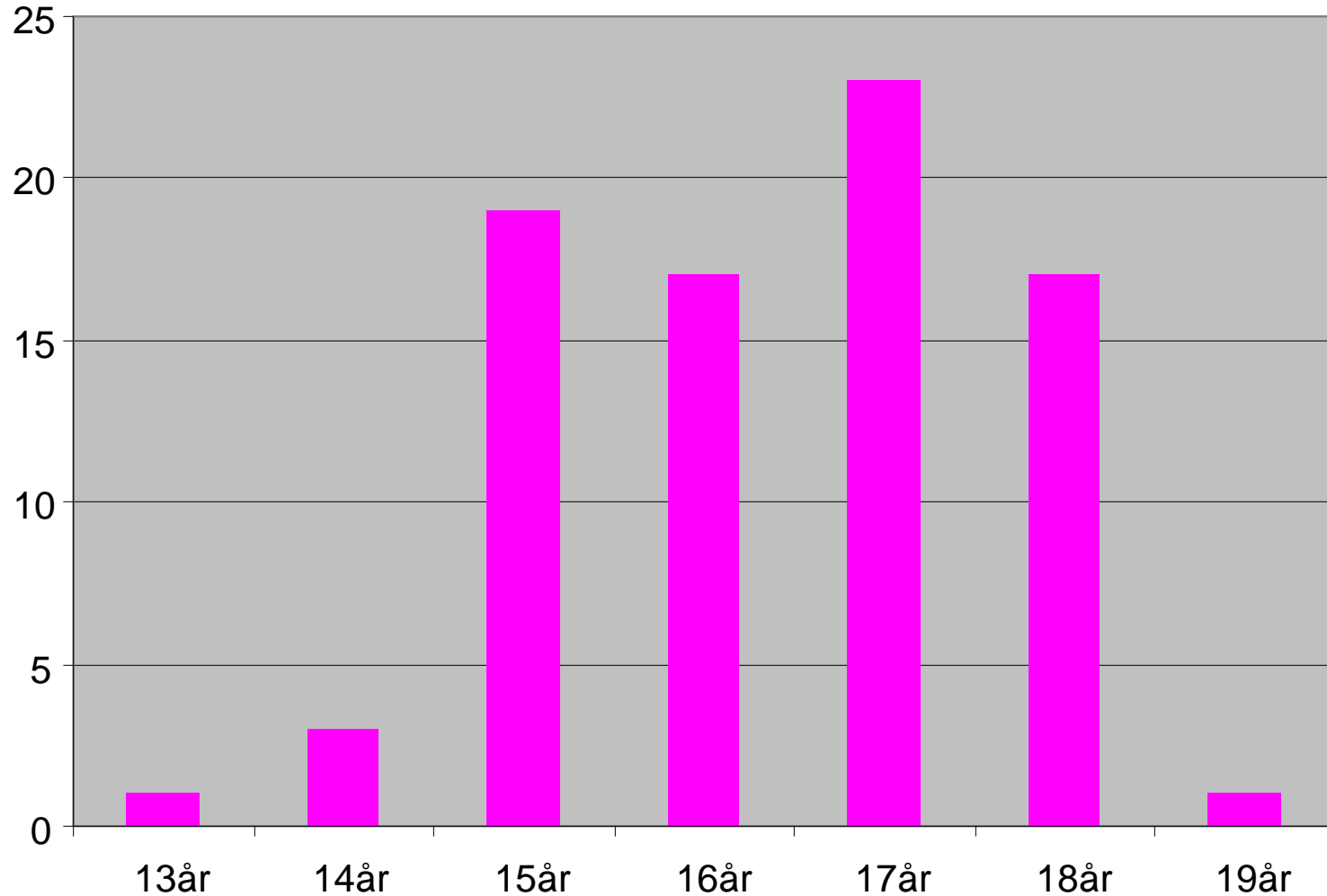


# AMOS study flow-chart

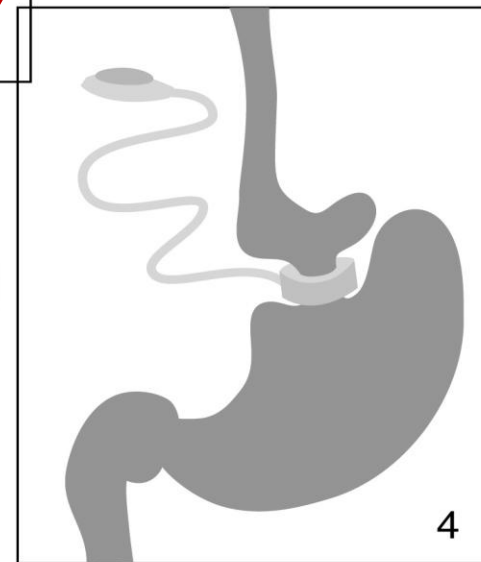
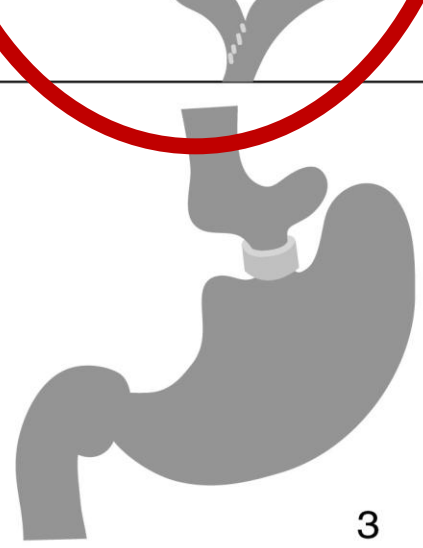
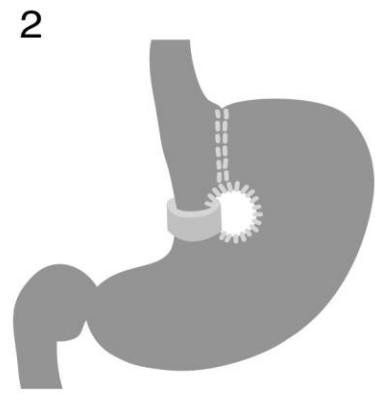
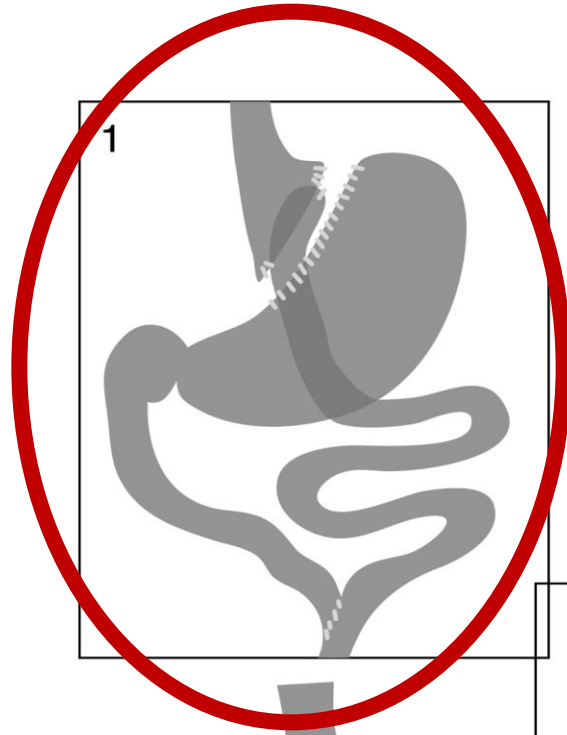


# Age at surgery

•n=81 mean 16.9 SD 1.20 range 13.8 – 19.0 yr



# Gastric bypass study for adolescents in Sweden, the AMOS study





# Why not adjustable gastric banding?

## Previous study:

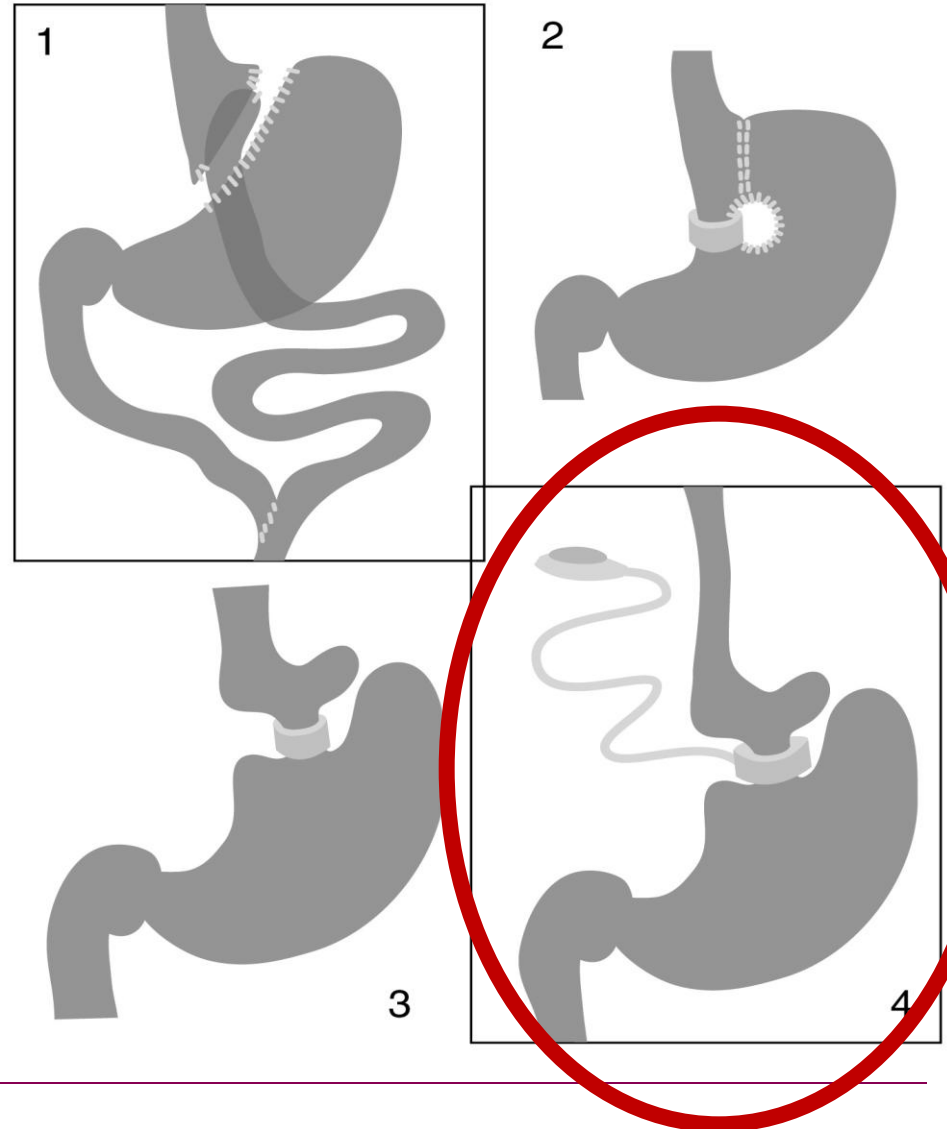
8 subjects, 15-17y

## One year follow-up:

5 severe complications

2 had >10kg weight loss

The study was terminated!



Paul E O'Brien et al JAMA 2010

84% of gastric banding subjects lost > 50% of excess  
body weight

Paul E O'Brien et al JAMA 2010

84% of gastric banding subjects lost > 50% of excess  
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**Different populations with different comorbidity  
patterns and psychosocial background**

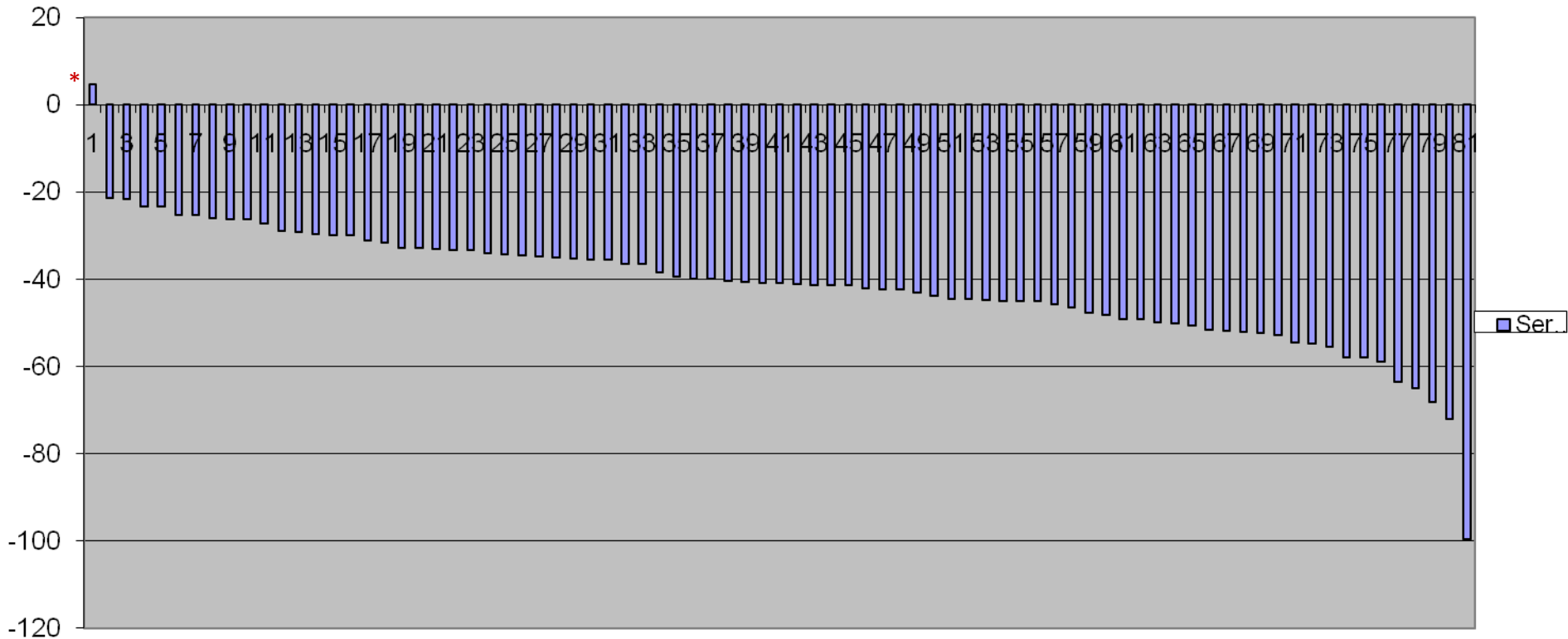
# Psychosocial background in th AMOS study

(preliminary data)

	<u>prevalence</u>
Ongoing or previous contact with child psychiatric team	50%
Defined psychiatric disorder (ADHD, depression, anxiety)	40%
Use of psychoactive drugs (present or previous)	20%
Very poor school performance (truancy, leaving school without diplomas etc)	60%

# Weight change from inclusion to one year after surgery

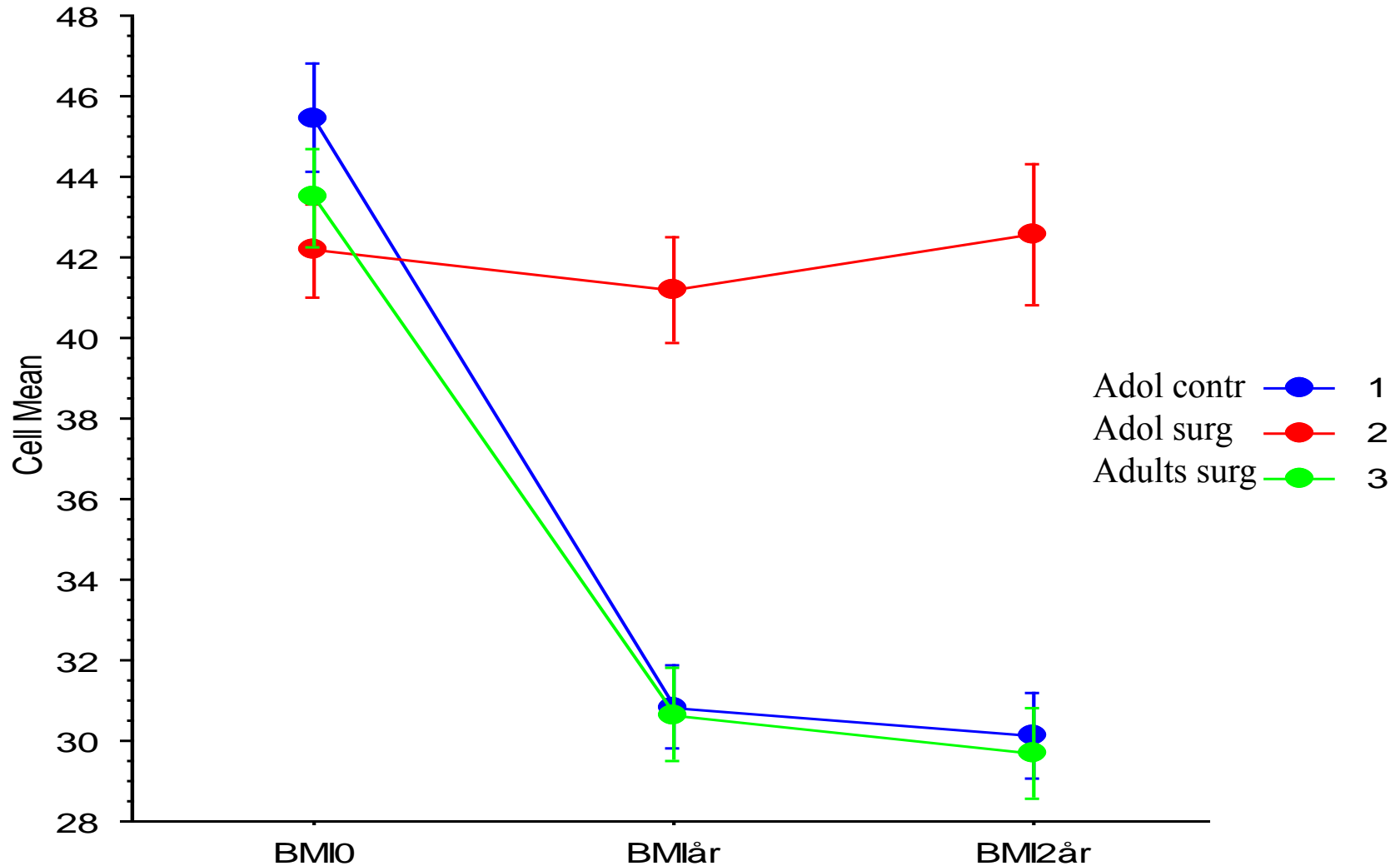
AMOS weightloss (kg) 1 yr postop



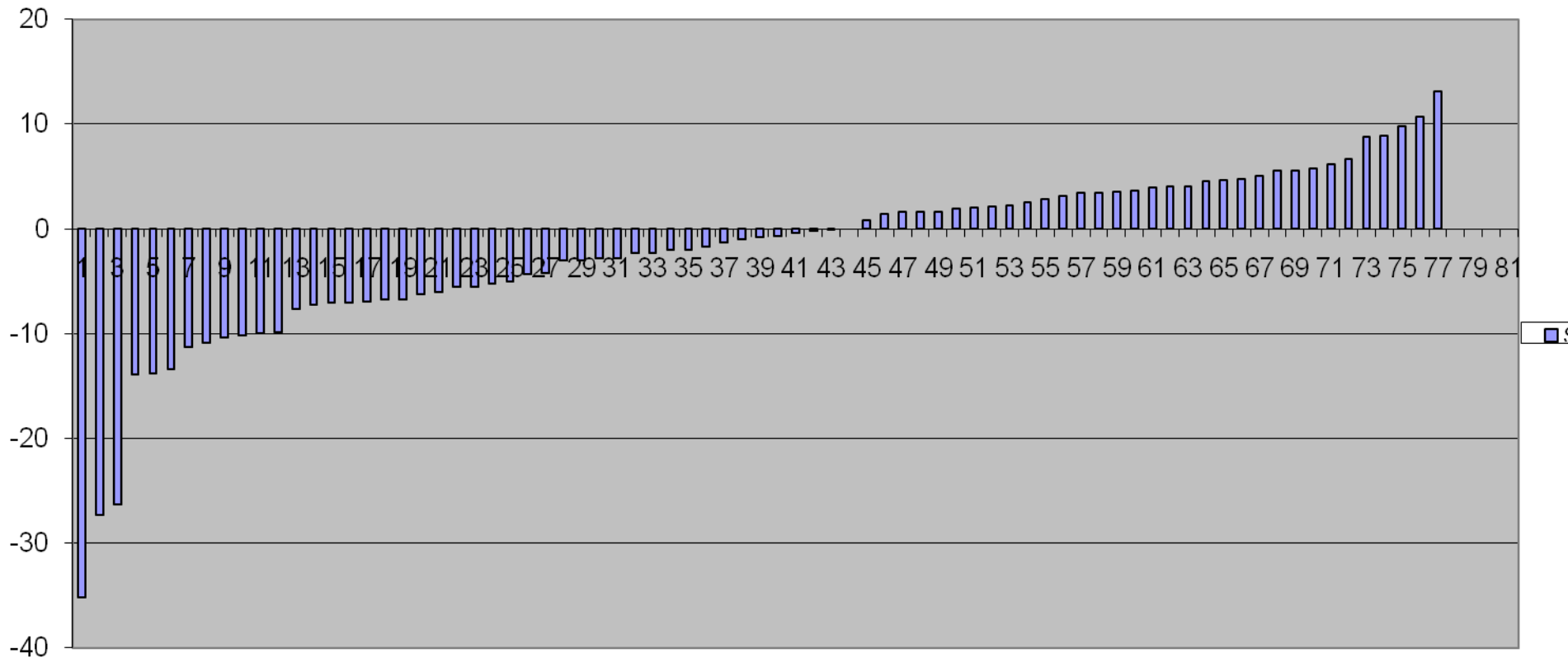
## Negative side effects

- Reoperation due to internal hernia 5
- Unwanted pregnancies 2
- Decreased self-esteem 5
- Suicidal attempts 2
- Eating disorder 2
- Drug abuse 2
- Gall bladder surgery 7
- Low vitamine levels despite substitution 55

# Two year results of Swedish GB study in 81 obese adolescents – the AMOS study

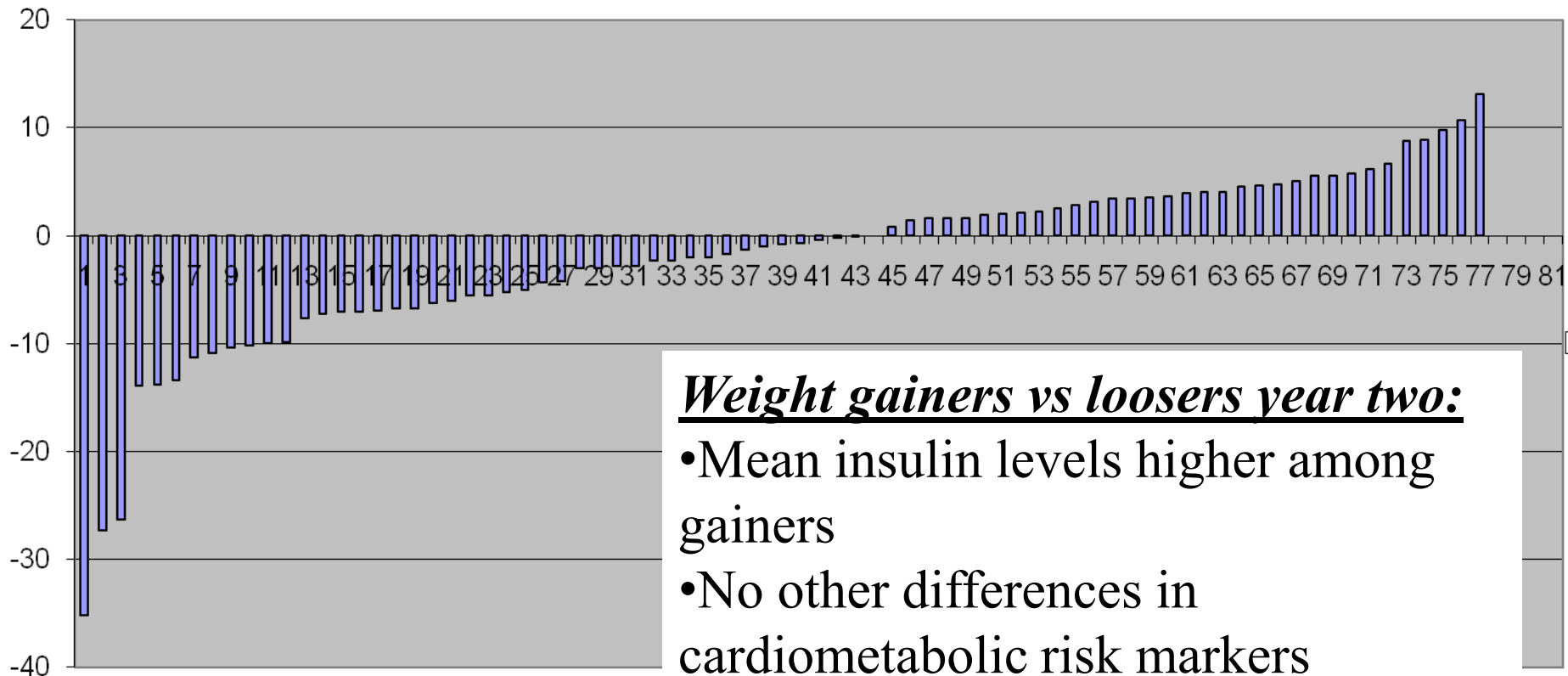


# AMOS: Weight change (kg) during the second year after surgery





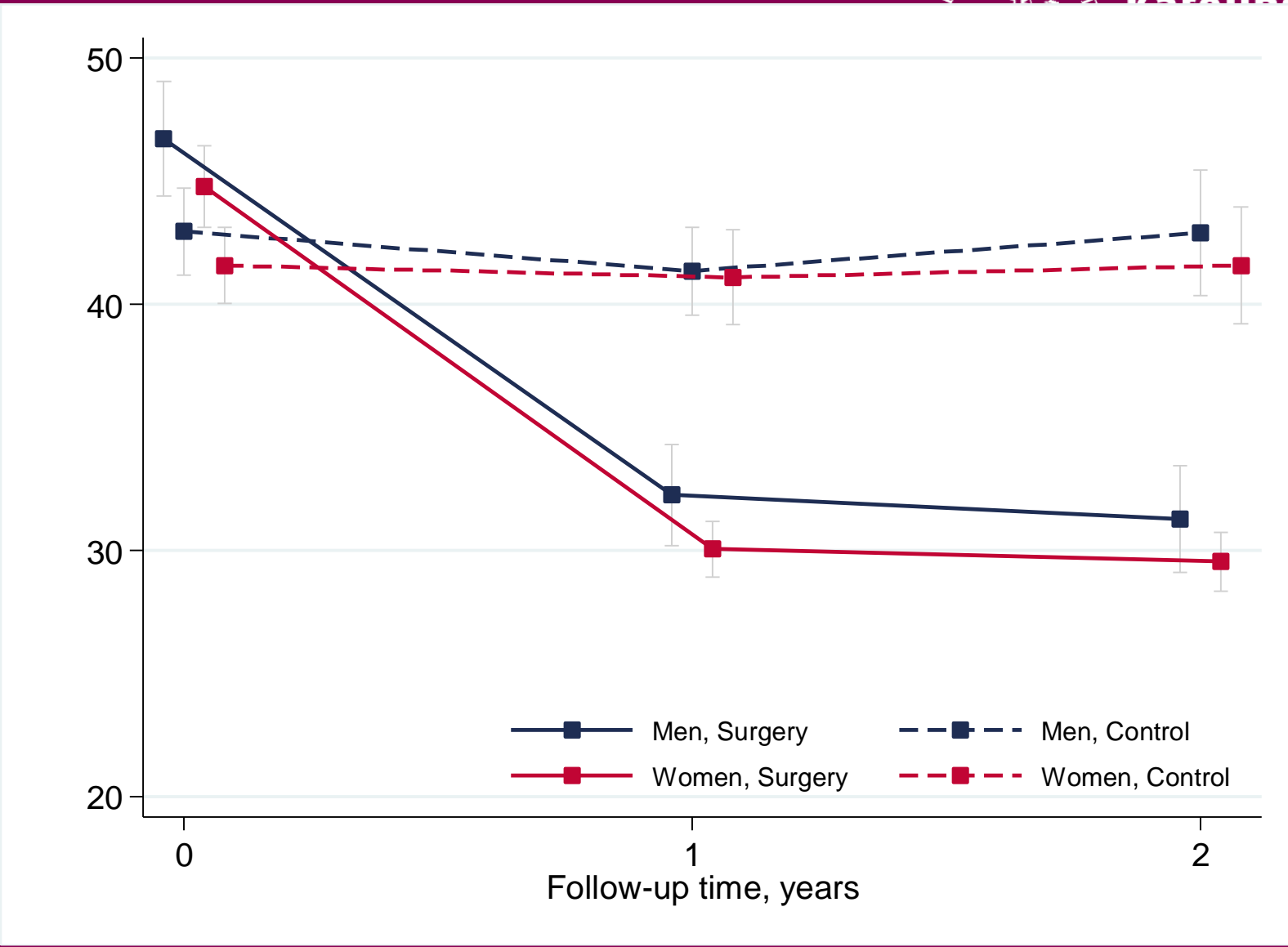
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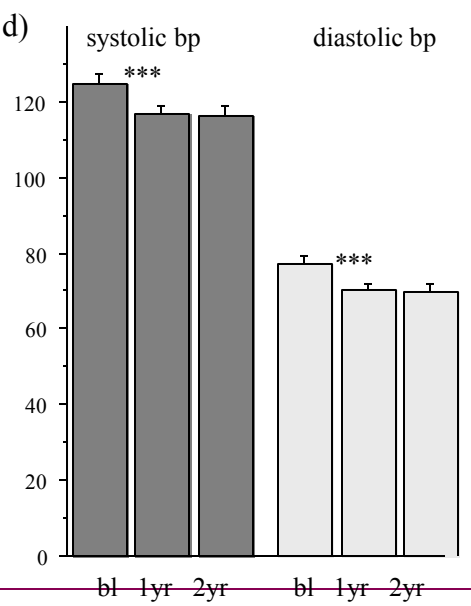
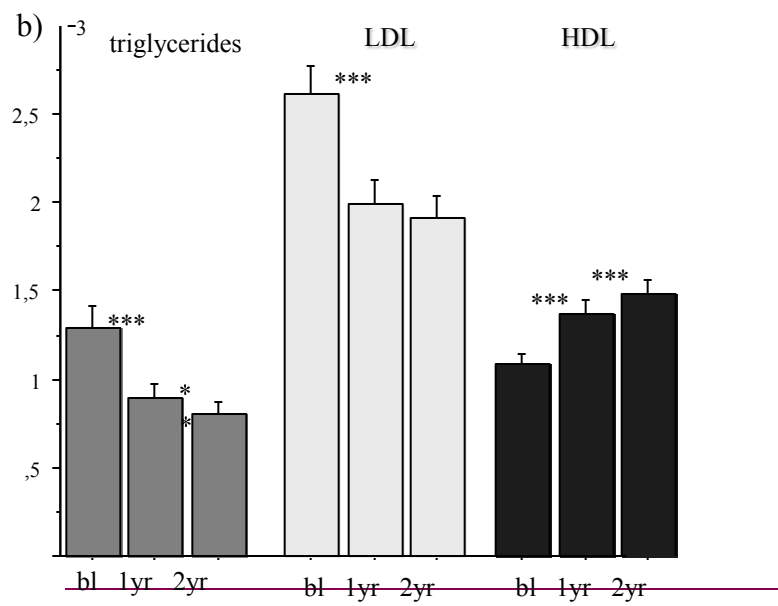
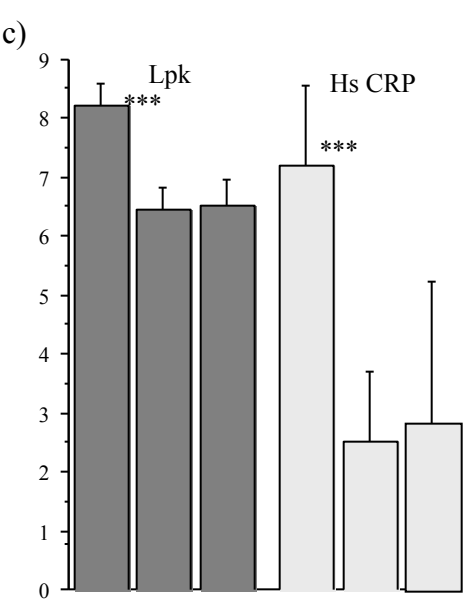
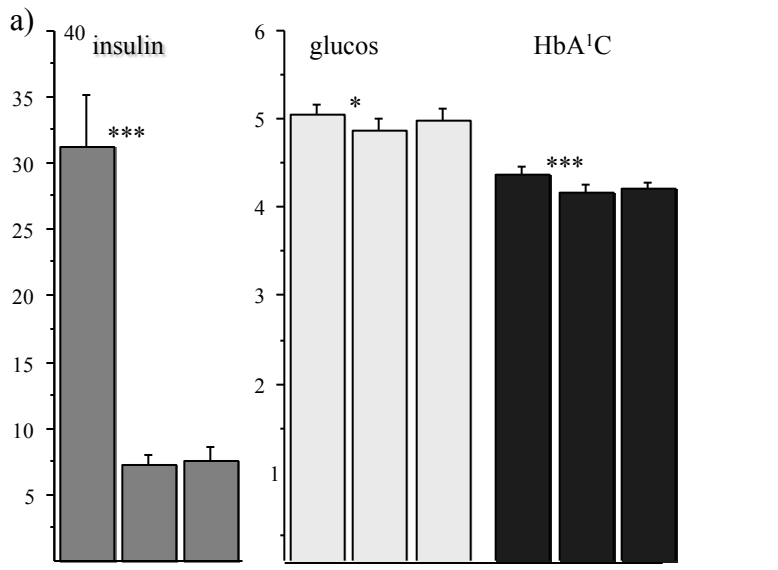
## *Weight gainers vs losers year two:*

- Mean insulin levels higher among gainers
- No other differences in cardiometabolic risk markers

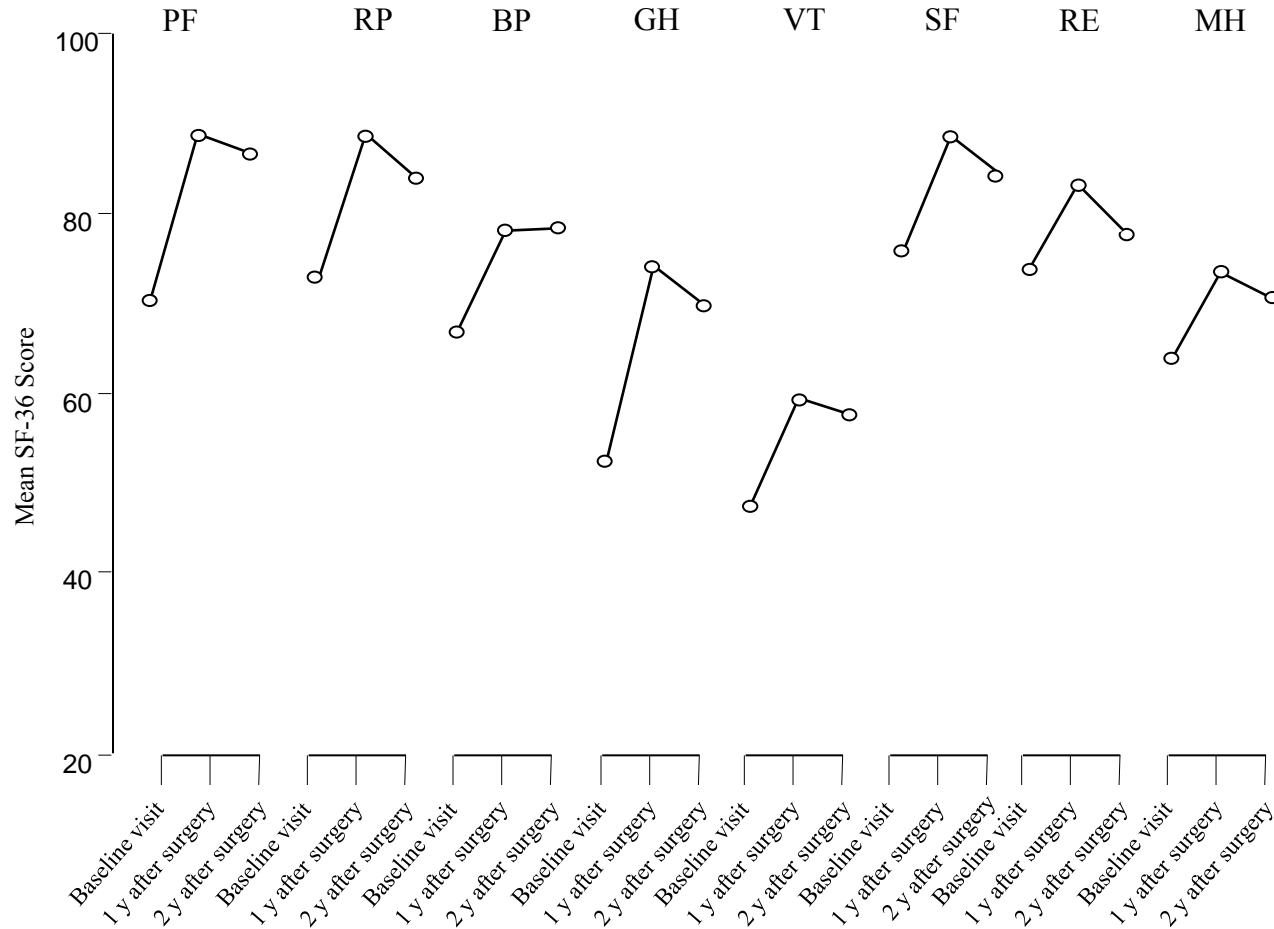
Fig #. BMI by sex.



**Fig 3 Mean (95% CI) for major biochemical data ( a) insulin, glucos HbA<sup>1</sup>C, b) Triglycerides, LDL, HDL, c) high sensitive CRP, leukocytes and d) blood pressure in 81 adolescents operated with GBP at baseline, 1 and 2 years follow up**



# SF-36 QoL in 81 adolescents after gastric bypass



Estimated postsurgery values are expected means from the linear mixed-effects models; a score of 0 represents worst possible health and 100 represents best possible health. PF = physical functioning; RP = role limitations due to physical health problems; BP = bodily pain; GH = general health perceptions; VT = vitality; SF = social functioning; RE = role limitations due to emotional problems; MH = general mental health; SF-36 = Short Form-36 Health Survey;

Plastikkirurgi ofta  
nödvändig för en rimlig  
livskvalitet för en 16  
åring som opererats  
med gastric bypass

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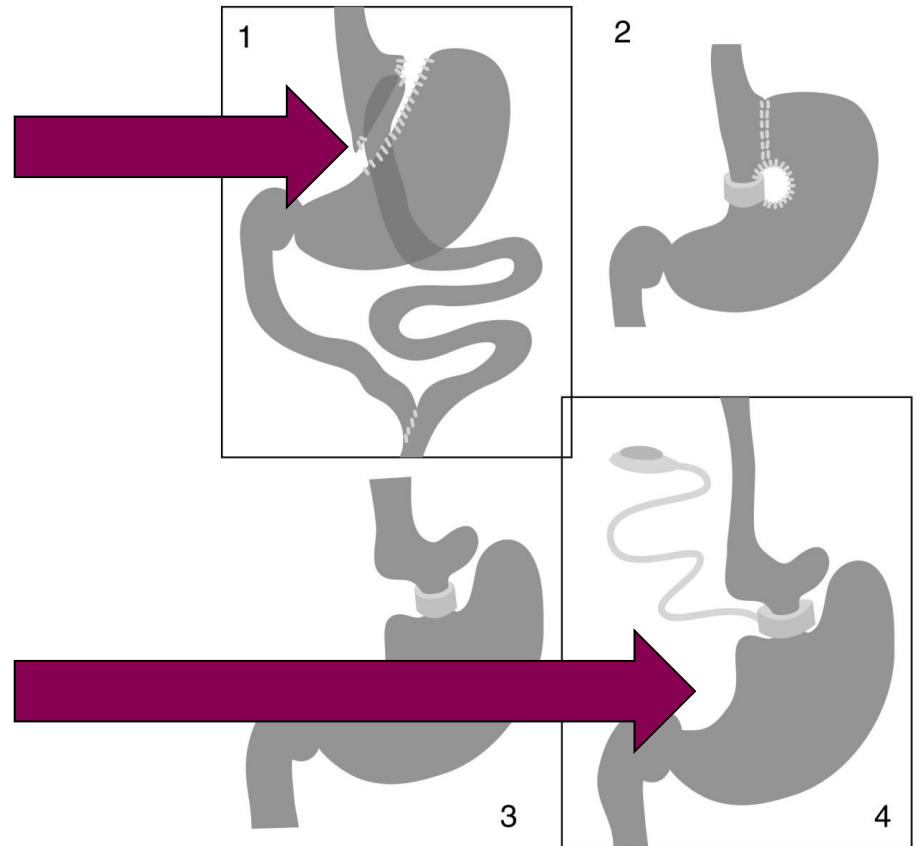


# Men varför fungerar det?

Liten magsäck  
Maten direkt till jejunum  
Kraftig GLP-1 stegring  
Bättre val av födoämnen

*..och varför inte:*

Enbart hindrande  
Ingen mättnadskänsla  
Ökar småätandet



## Vad händer nu?

- För tidigt att avgöra om gastric bypass ska användas för ungdomar generellt!
  - All obesitaskirurgi före 18 års ålder i Sverige ska göras i longitudinella studier
  - Ungdomar före 18 års ålder ska följas upp i minst två år på specialistenhet med erfarenhet av fetmakirurgi bland ungdomar
  - Etisk ansökan
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SLUT!

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