

Clinical Cases – Bariatric Surgery

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What is bariatric surgery ???





case history

- 34 y/o female patient reports to the outpatient department with uncontrollable weight situation
- What next??





case history

- Since when?
- BMI?
- What measures have been undertaken?
- What measures should be taken?
- Any further conditions???
 - Metabolic Syndrome / Syndrome X





case history

- Weight: 156 kg
 - Height 1.60 m
- } BMI ???

Body Mass Index Formula

The formulas to calculate BMI based on two of the most commonly used unit systems:

$$\text{BMI} = \text{weight}(\text{kg}) / \text{height}^2(\text{m}^2) \quad (\text{Metric Units})$$

$$\text{BMI} = 703 \cdot \text{weight}(\text{lb}) / \text{height}^2(\text{in}^2) \quad (\text{U.S. Units})$$

BMI Calculator



Modify the values and click

US Units

Metric Units

Other Units

Age

Gender ☒ Male ☐ Female

Height centimeters

Weight kilograms

Calculate



case history

Result

BMI = 60.94 kg/m² (Obese Class III)

- Normal BMI range: 18.5kg/m² - 25 kg/m²
- Normal BMI weight range for the height:
47.4kgs - 64.0 kgs
- Ponderal Index: 38.09 kg/m³

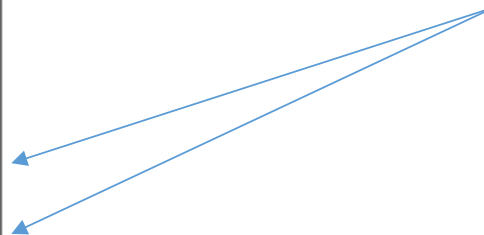
case history

BMI Table for Adults

This is the World Health Organization's (WHO) recommended body weight based on BMI values for adults. It is used for both men and women, age 18 or older.

Category	BMI range - kg/m ²
Severe Thinness	< 16
Moderate Thinness	16 - 17
Mild Thinness	17 - 18.5
Normal	18.5 - 25
Overweight	25 - 30
Obese Class I	30 - 35
Obese Class II	35 - 40
Obese Class III	> 40

Surgery possible option



case history

- What next???
- Dieting programs?
- Exercise?
- Psychotherapy?
- Underlying physical conditions?

- **SURGERY???**





case history





case history



case history

- After 12 months of intensive sports and diet program:
 - 156 kg → 146 kg
- → Weight loss surgery

US Units	Metric Units	Other Units
Age	34	
Gender	☐ Male ☒ Female	
Height	160 centimeters	
Weight	146 kilograms	
Calculate		

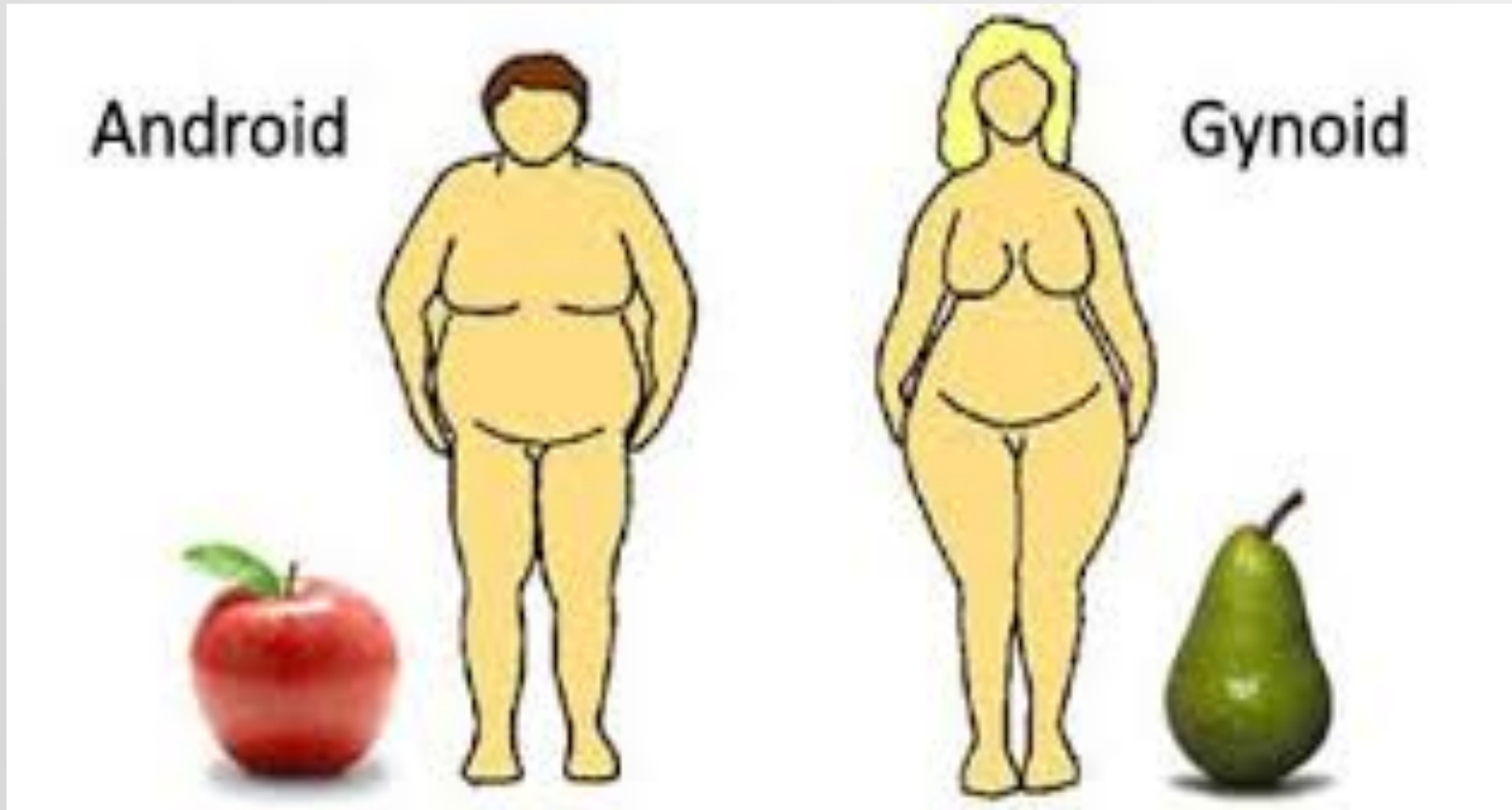
Result

BMI = 57.03 kg/m² (Obese Class III)

- Normal BMI range: 18.5kg/m² - 25 kg/m²
- Normal BMI weight range for the height: 47.4kgs - 64.0 kgs
- Ponderal Index: 35.64 kg/m³

types of obesity

- Intraabdominal fat
- Higher risk

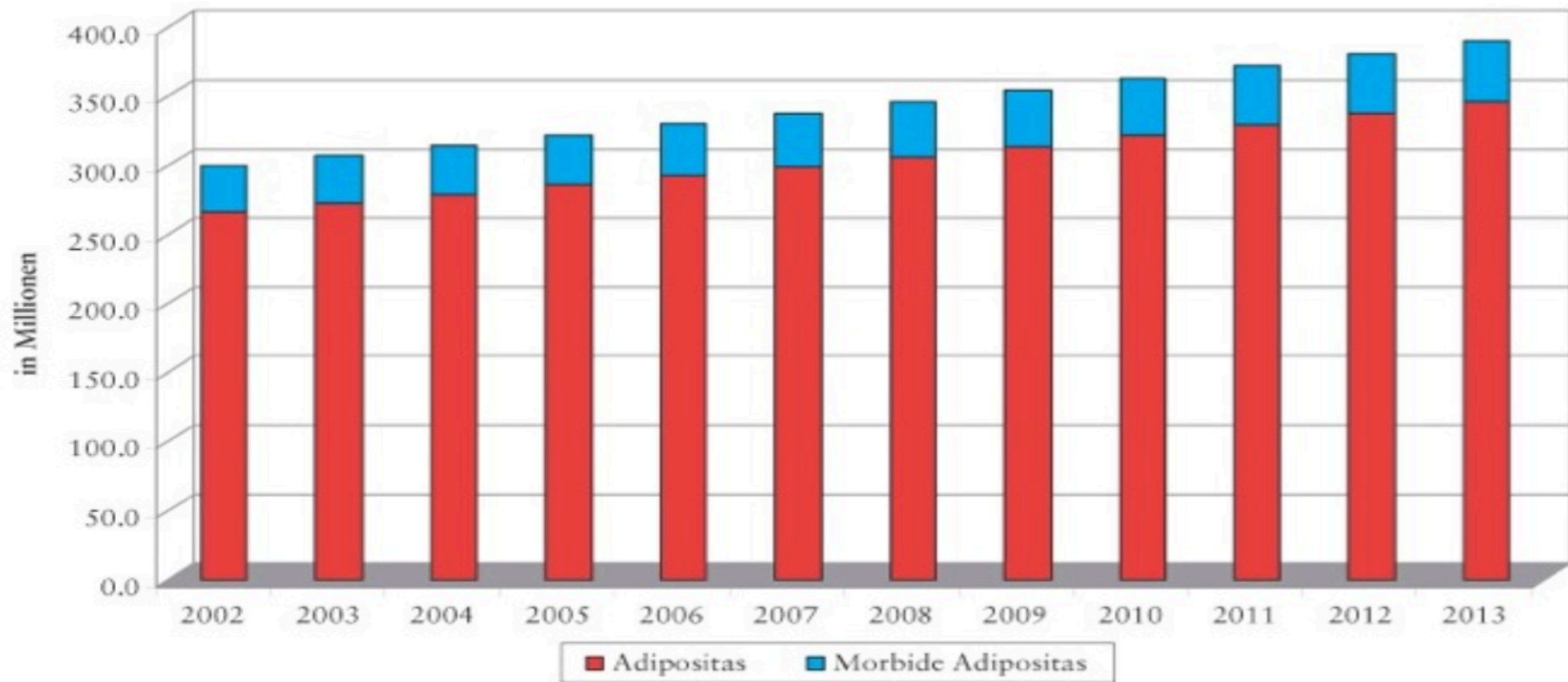


- peripheral fatty tissue
- Lower risk

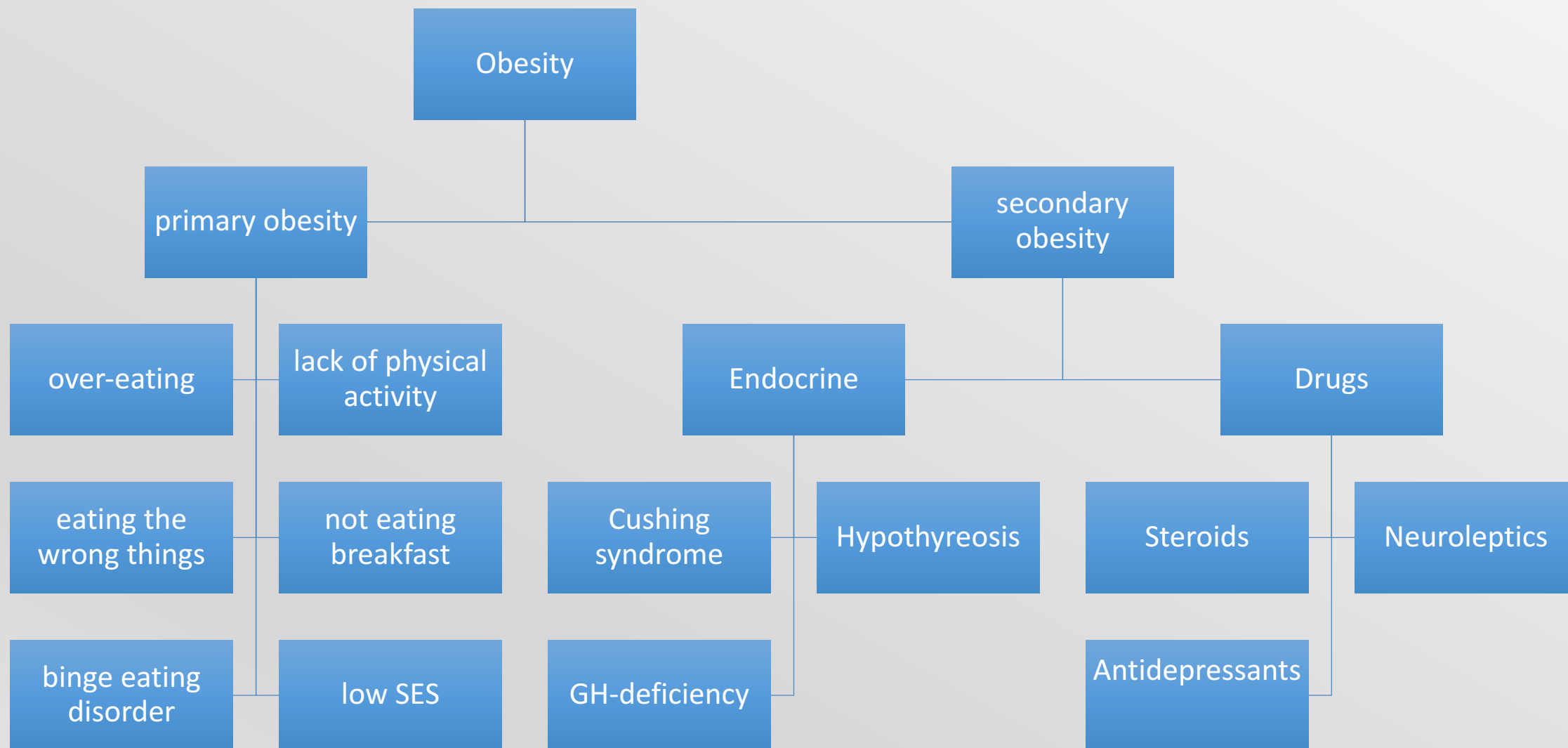
Epidemiology of obesity

- 300 million people affected worldwide
- 135 million in Europe (**approx. 8 million class III**)
- 20 % of the German population overweight
- Numbers on the rise globally
- **320'000 deaths per annum** directly linked to obesity in Europe

Epidemiology of obesity



Reasons for obesity



Consequences of morbid obesity → Syndrome X

a.k.a. **metabolic syndrome:**

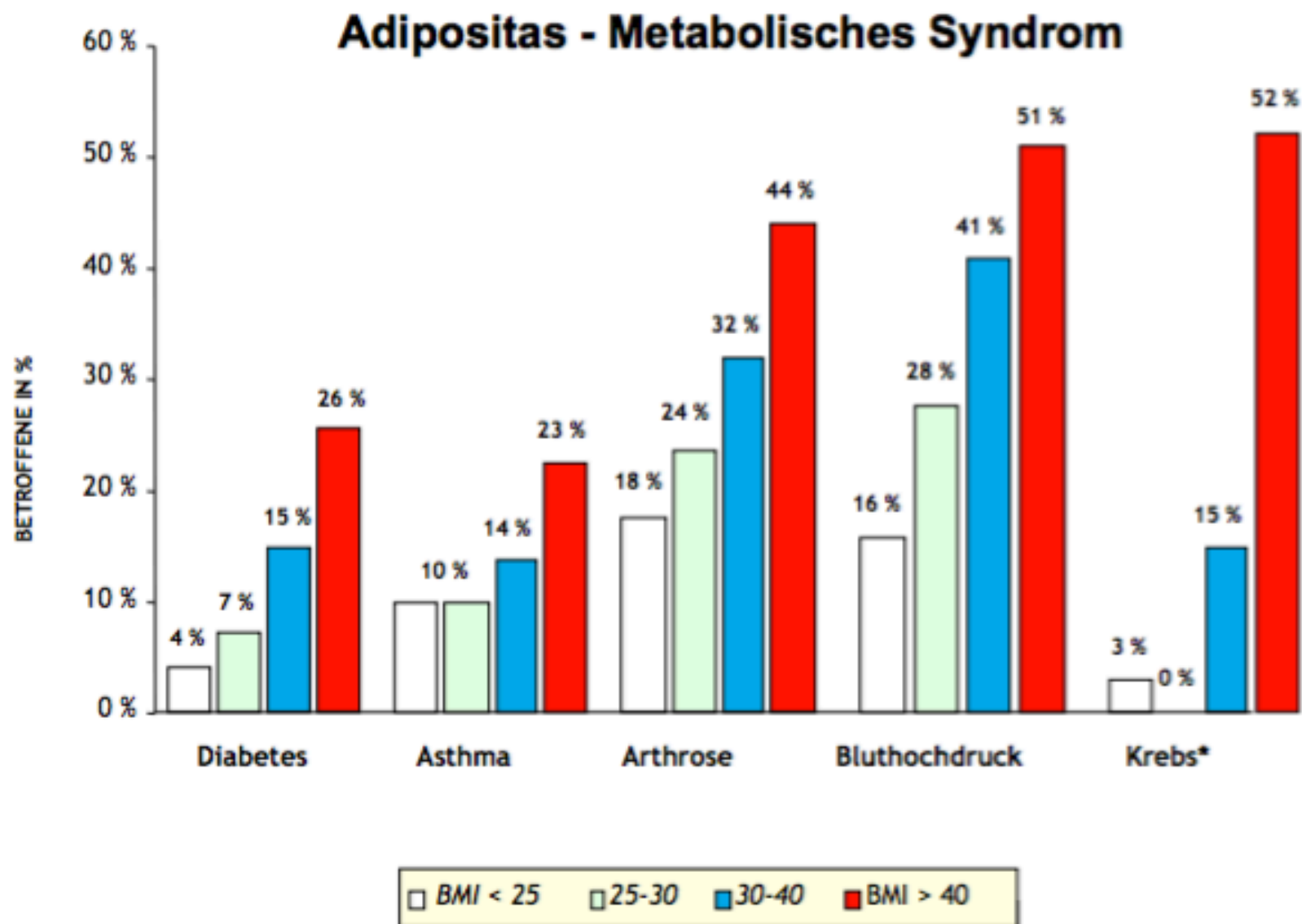
- Diabetes Type II
- Hyperlipidaemia, Hypercholesterolemia
- Hyperuricemia (Gout)
- Hypertonia (high blood pressure)



Consequences of morbid obesity → Syndrome X

Diabetes Type II, Hyperuricemia, Hypertonia, Hyperlipidaemia

Heart failure, Angina, Heart attacks, Stroke, Cerebral haemorrhage, Joint degeneration, Gallstones, Cancer, Leg ulcers, Sleep-apnoe-syndrome, Depression



bariatric / weight-loss surgery

- Only after **complete exhaustion** of **conservative measures!!!**

- Nutritional advising/schooling
- Psycho-social history and counselling
- Family history and counselling
- Physical activity programmes
- Motivation!!!

High prevalence of physical and psychological abuse in the history

bariatric / weight-loss surgery

Aims:

- Weight loss → health benefits, better well-being, back to work, cost reduction in the long run

Comprehensive approach

Plattform Adipositas in Tübingen



Psychosomatik



Sportmedizin



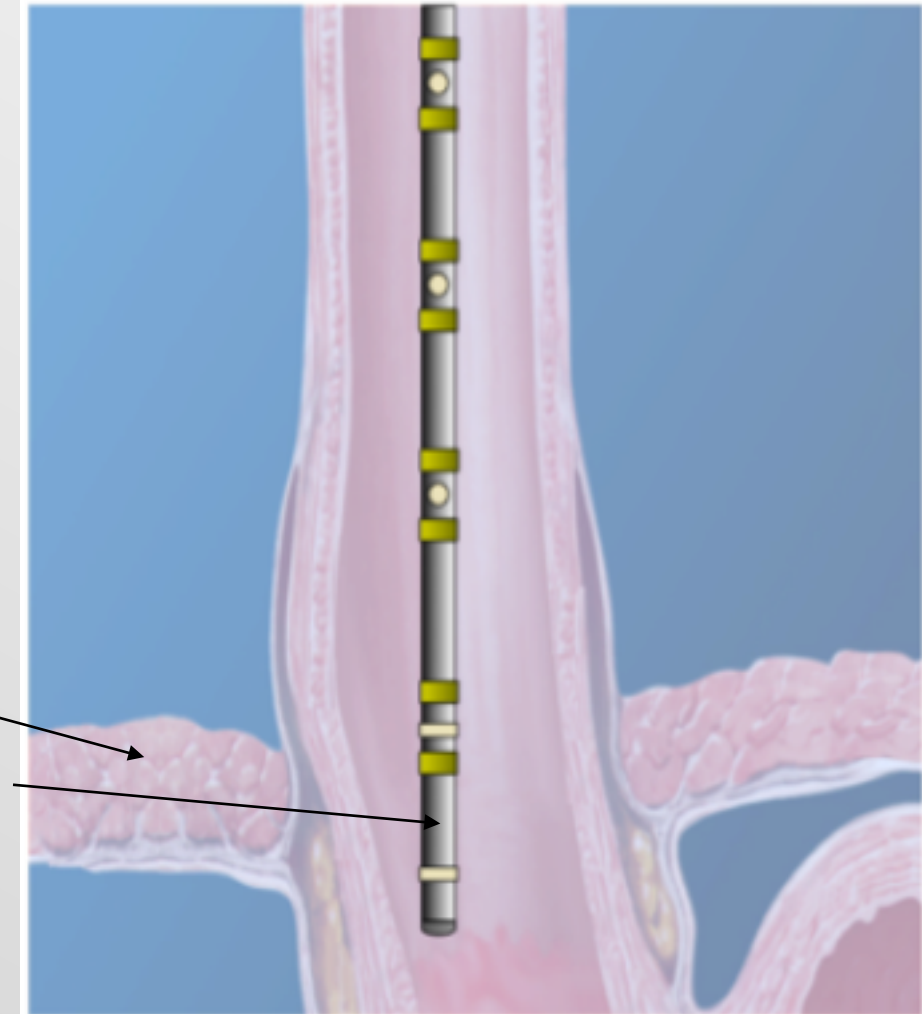
bariatric / weight-loss surgery

Preoperative considerations:

- Functional diagnostics of the stomach
- Optimal pharmacotherapy of concomitant ailments?
- ECG, Lung function tests
- Gastroscopy
- Blood tests

Impedance pH-metry and Manometry

Lower oesophageal sphincter (LES)
Measuring probe, inserted through the nose



bariatric / weight-loss surgery

Main Categories

Restrictive procedures

- Reduction of gastric volume
- Suitable for high quantity eaters

Malabsorptive procedures

- Reduction of nutrient absorption
- Suitable for sweet eaters

bariatric / weight-loss surgery

Main Categories

Restrictive procedures

- Gastric Balloon
- (Adjustable) gastric band
- Gastric sleeve

Malabsorptive procedures

- Gastric bypass surgery
- Biliopancreatic diversion

bariatric / weight-loss surgery

Restrictive procedures – gastric balloon

Pros:

- Easy to handle
- No Operation
- Fully reversible
- Good adjunct to dieting

Cons:

- Max 6 months
- Passage block
- JoJo effect after removal



bariatric / weight-loss surgery

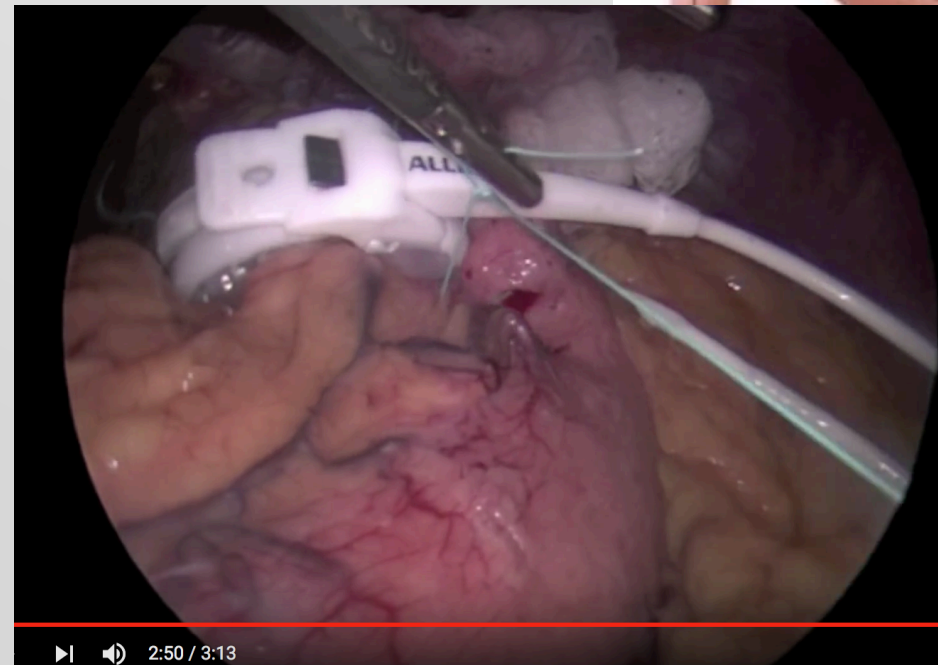
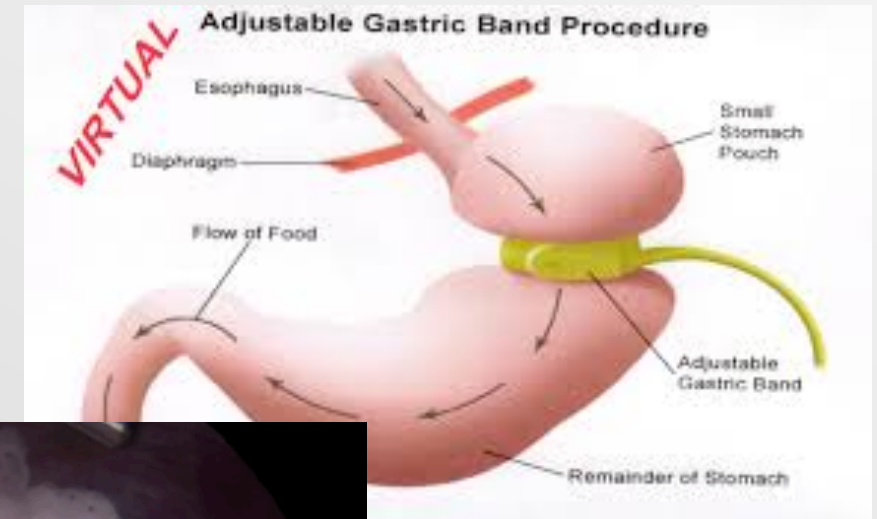
Restrictive procedures – gastric banding

Pros:

- Most common procedure
- Quick and easy procedure
- Good response
- reversible

Cons:

- Long term complications
 - 52% in 10 years
- Migration of the band
- Port infections
- High post-op care



bariatric / weight-loss surgery

Restrictive procedures – gastric sleeve

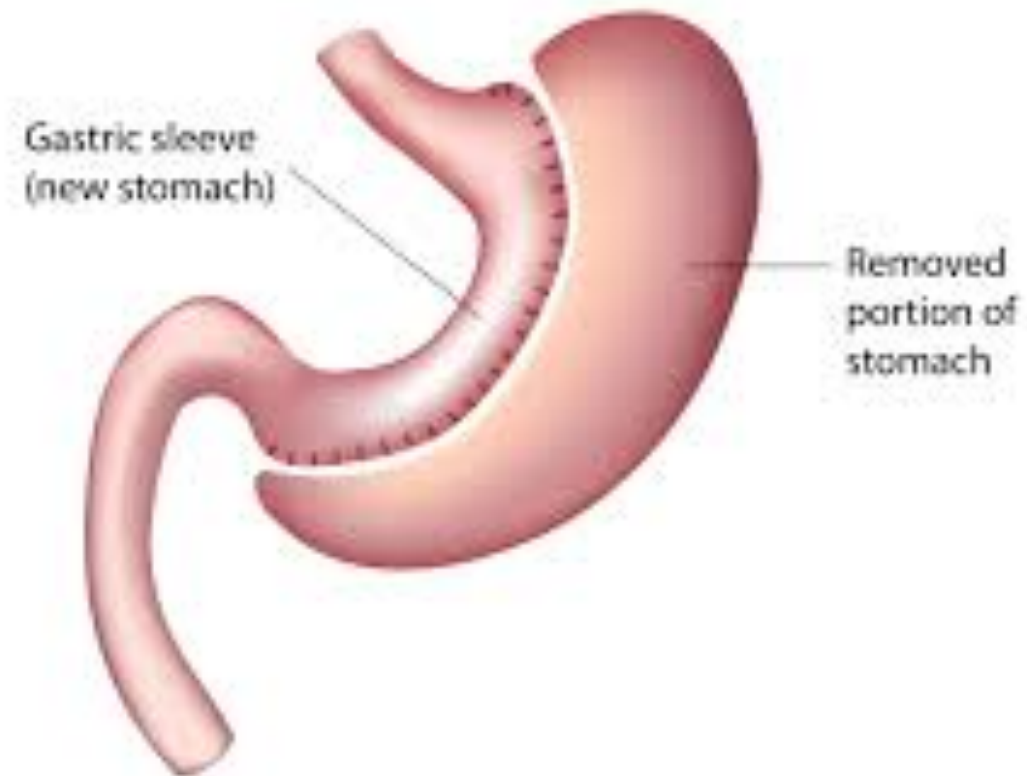
Pros:

- Great weight loss, especially for high volume eaters
- Quick satiety
- Short operation
- No malnourishment
- Total readjustment of medications!!
 - Antihypertensive, Insulin, Cholesterol Drugs...

Cons:

- Expensive procedure
 - Long staple row
 - Many cartridges needed (Industry loves that 😊)
- Possible leakage/ insufficiency
- Reflux

Vertical Sleeve Gastrectomy



bariatric / weight-loss surgery

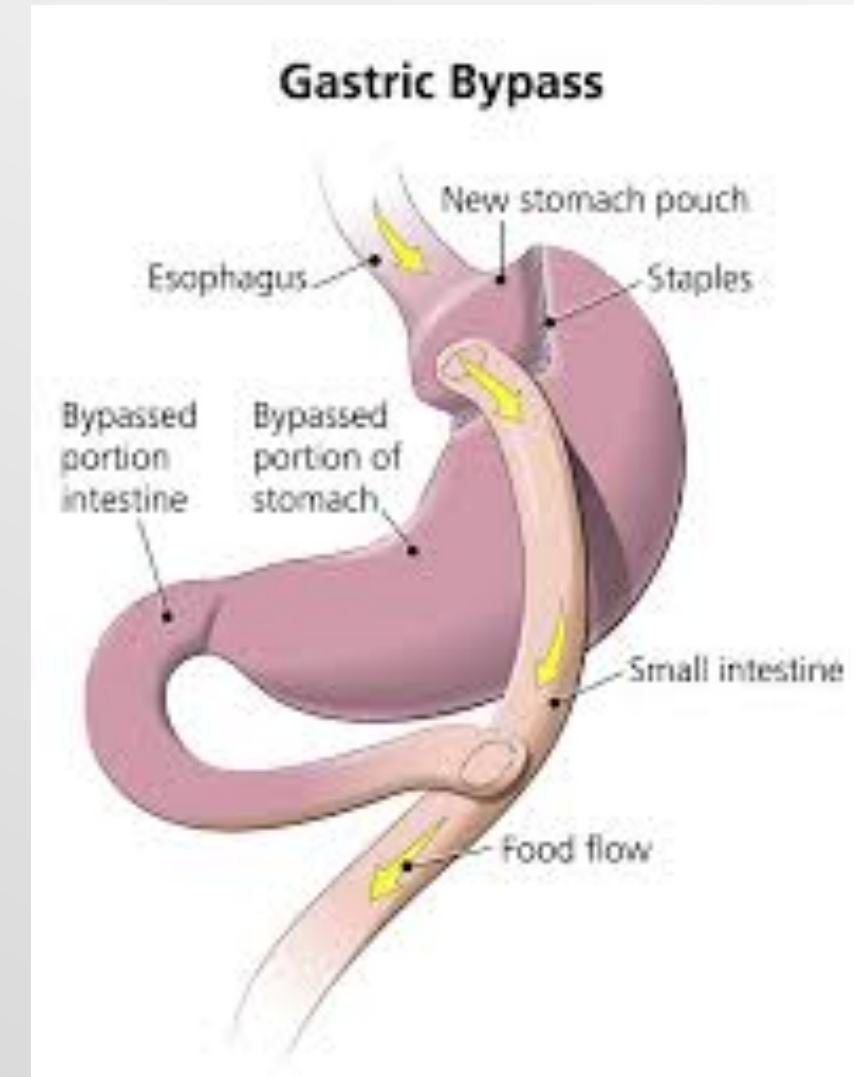
Malabsorptive procedures – gastric bypass

Pros:

- Great weight loss, especially for sweet eaters
- 80% Diabetes Type II cure rate
- Excellent long term results

Cons:

- Extensive operation
- Life-long Nutrient monitoring and substitution!
 - Vitamins (D + B12!!), Iron, Folate, Zink, Calcium...
- No gastroscopy possible
- Some malabsorption



bariatric / weight-loss surgery

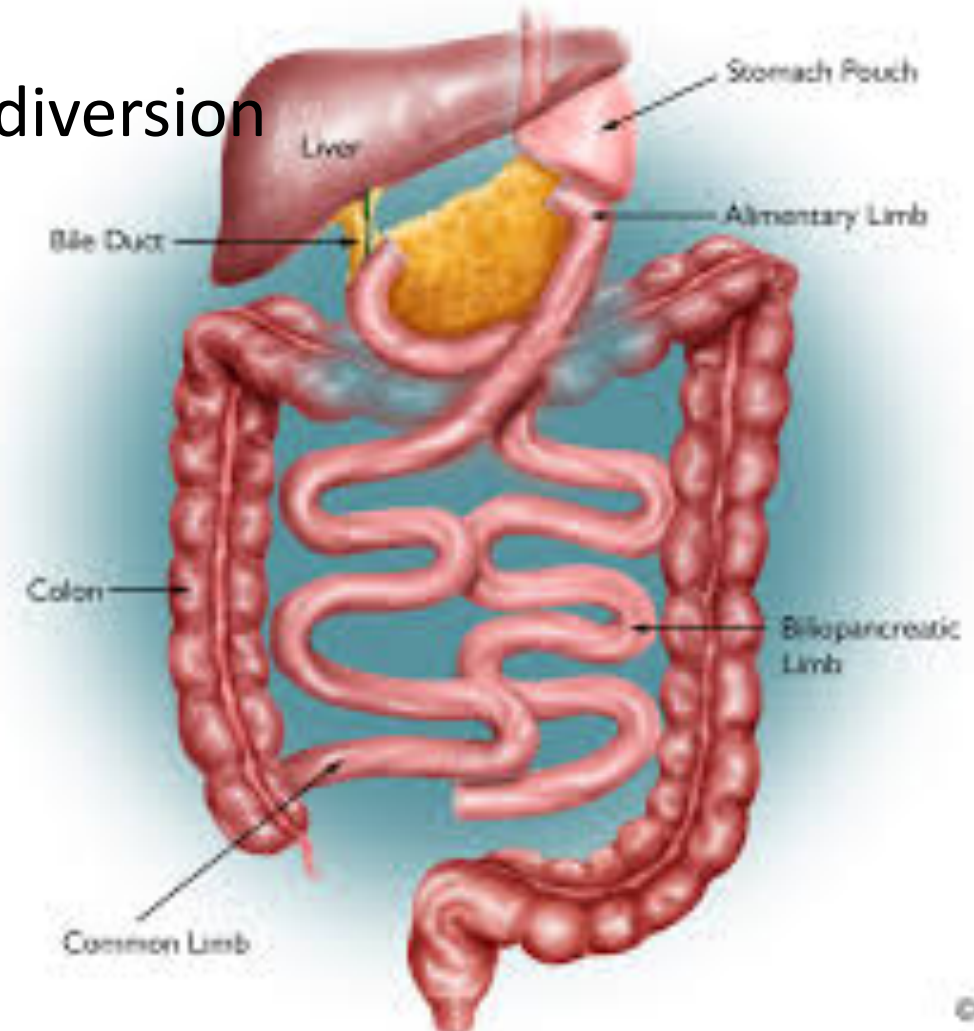
Malabsorptive procedures – biliopancreatic diversion

Pros:

- Great weight loss, especially for sweet eaters
- 100% Diabetes Type II cure rate
- Excellent long term results

Cons:

- Very extensive operation
- Life-long Nutrient monitoring and substitution!
 - Vitamins (D + B12!!), Iron, Folate, Zink, Calcium...
- No gastroscopy possible
- Malabsorptive stools / diarrhoea
- Heavy flatulence





Universitätsklinik für Allgemeine,
Viszeral- und Transplantationschirurgie



**Arbeitsgruppe
Chirurgische Technologie und Training**



**THANKS FOR
YOUR ATTENTION
AND
PLEASE DON'T ASK
TOO MUCH**

