



Obezite Modelleri

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Genel Cerrahi Ad.



OBESITY IN AMERICA

Americans' Understanding of Obesity is Increasing But Myths Persist
The Percentage of 1,509 adults...

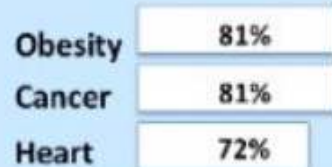
Believe Obesity Results From:

Poor Diet And Exercise

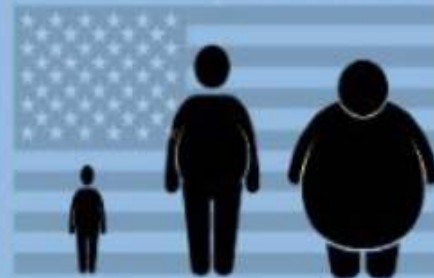


Genetics, Environmental And Social Causes

Believe These Issues As Most Serious :



Consider Themselves



9% Normal 47% Overweight 44% Obese

(But All Have A BMI >30)

35% Of Patients Have Not Talked With Their Doctor About Their Weight

Who Are Eligible For Weight Loss Surgery And Consider Having It



Who Consider An Obesity Treatment Safe



Bariyatrik Cerrahi-Deney Modelleri

Restriktif prosedürler

- Gastrik Band
- Sleeve Gastrektomi

Kombine prosedürler

- Roux-en-Y gastrik bypass

Malabsorptif prosedürler

- Biliopankreatik Diversiyon
- Duodenal Switch



Obezite Modelleri-Rat seçimi

Hiperfaji

Enerji
metabolizması
düzenlenmiş

İnsülin
Rezistansı

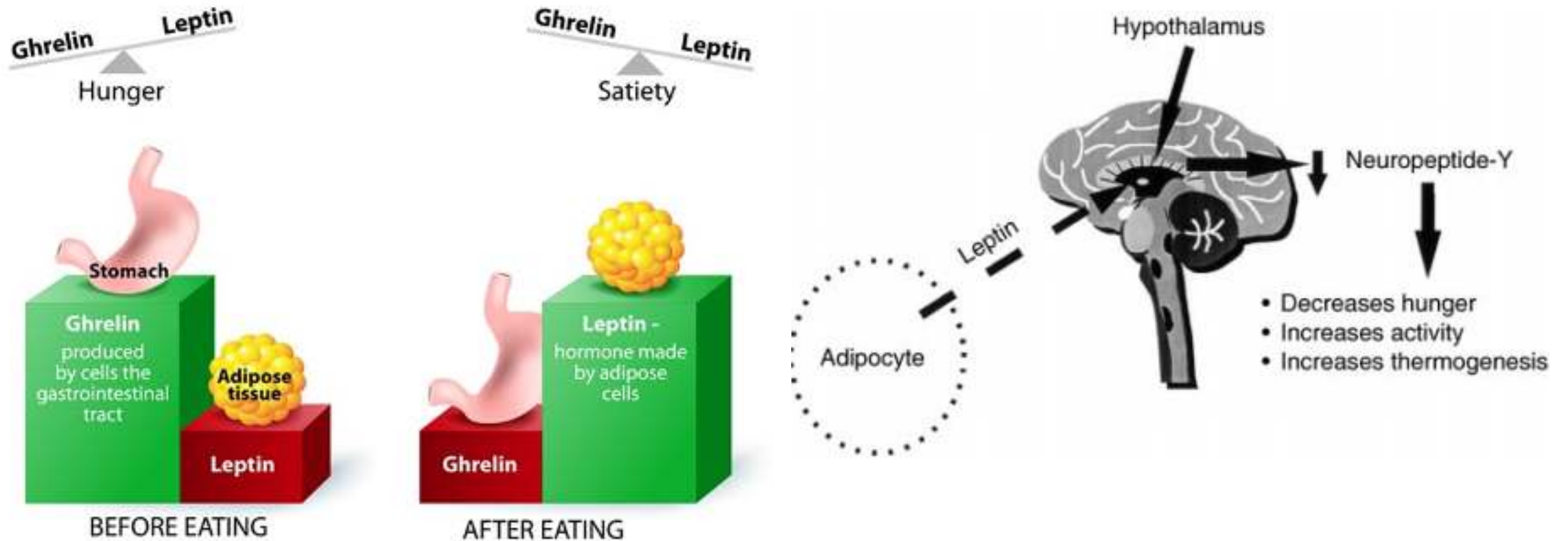
Diabetes
Mellitus

Diabetes-
benzeri
sendromlar



Obezite Modelleri-Rat seçimi

LEPTIN & GHRELIN



Obezite Modelleri-Rat seçimi

LEPTİN ÜRETİMİNDE DEFEKT

ob/ob mouse (Lep^{ob}/Lep^{ob} mouse, the 'obese' mouse).



LEPTİN RESEPTÖR/SİNYAL DEFEKTİ

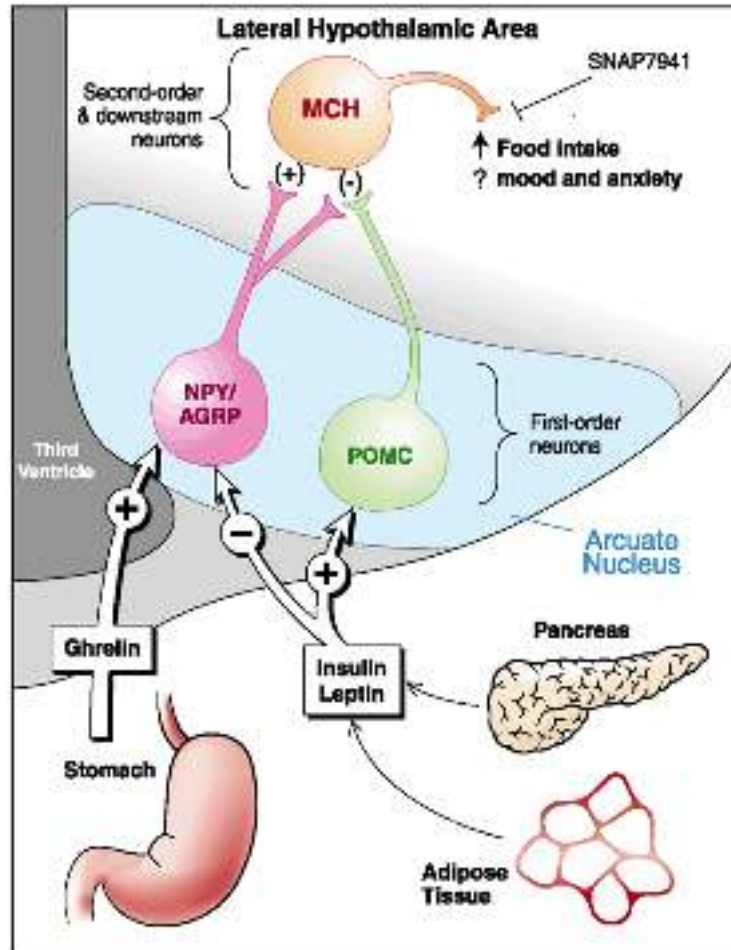
db/db mouse (the 'diabetic' mouse).

Leptin receptor-deficient rats; Zucker rat, ZDF rat, Koletsky rat-



Obezite Modelleri-Rat seçimi

LEPTİN RESEPTÖR/SİNYAL DEFECTİ-KNOCKOUT MODELLER



POMC/AgRP knockout mice-

MC4R knockout models

MC3R knockout mouse-

AgRP overexpression

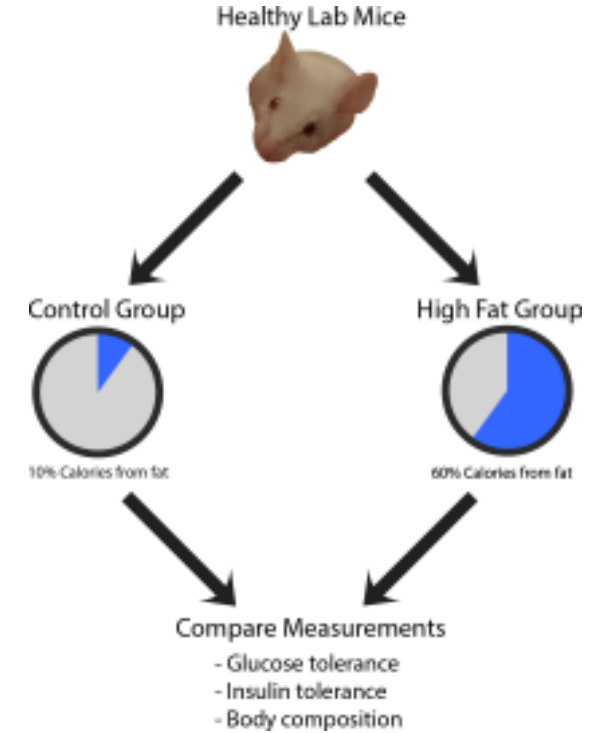
Obezite Modelleri-Rat seçimi

DIET ile OBEZ YAPILMIŞ RATLAR

High-fat diet-induced obesity

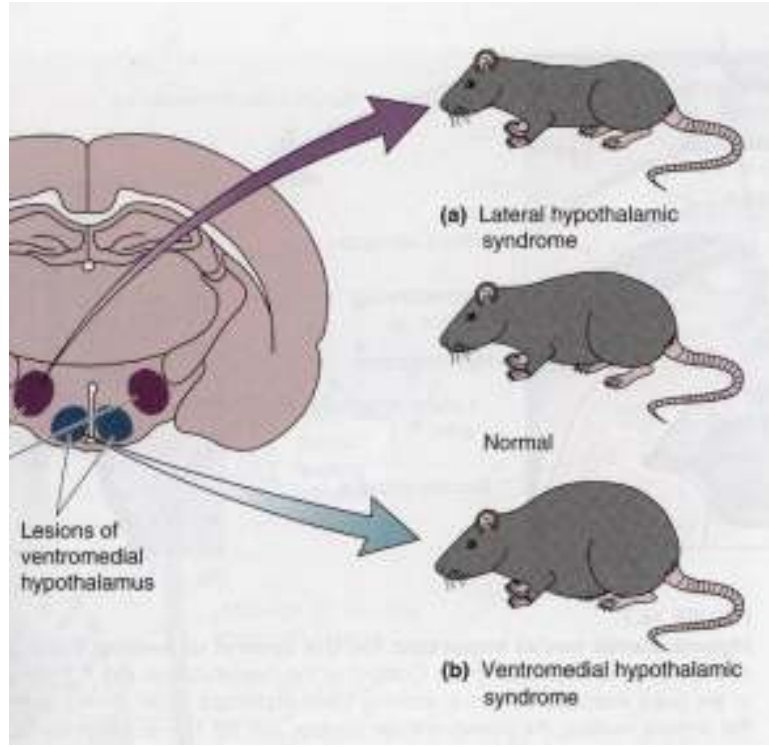
%60 yağlı diyet

Cafeteria diet-induced obesity

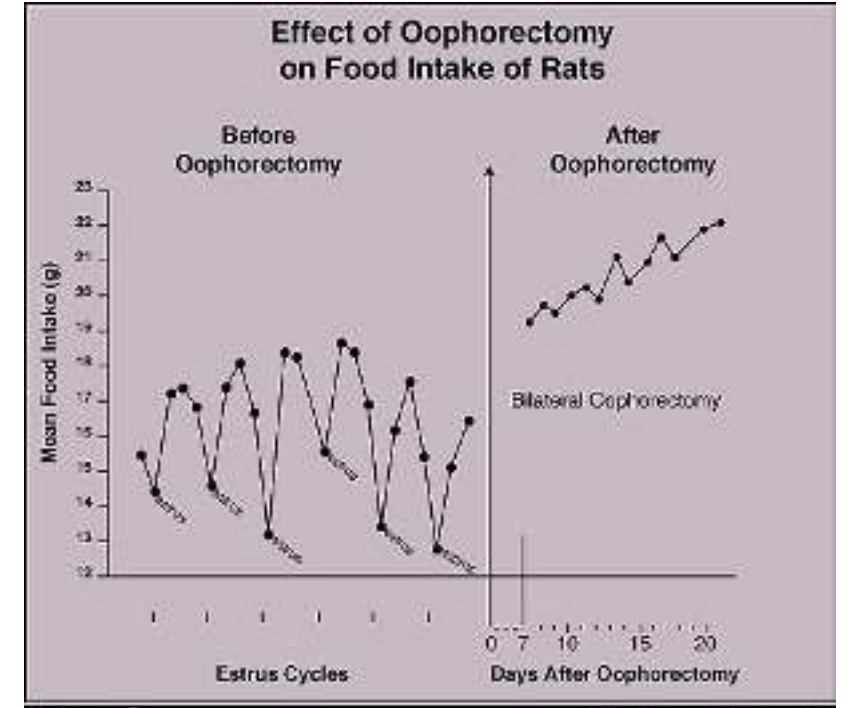


Obezite Modelleri-Rat seçimi

CERRAHİ İLE OBEZ YAPILMIŞ RATLAR



HİPERFAJİ
ADİPOZİTE
KİLO ARTIŞI



Lesion of the ventromedial hypothalamus (VMH lesion)

Ovariectomy

Model name	Mutation	Hyperphagia	Decreased Energy Expenditure	Hyperglycemia	Insulin Resistance
MONOGENIC MUTATIONS IN THE LEPTIN PATHWAY					
Leptin and its receptor					
ob/ob mouse	Lep ^{ob} /Lep ^{ob} (leptin deficiency)	X	X	X	X
db/db mouse	Lep ^{db} /Lep ^{db} (leptin receptor)	X	X	X	X
s/s mouse	disrupted STAT3 signal of leptin receptor	X	X		[X]
Zucker rat	mutated leptin receptor (fa/fa)	X	X	X	X
Koletsky rat	mutated leptin receptor (null mutation)	X	X	X	X
Obesity models with a deficit downstream of the brain leptin receptor					
POMC knockout mouse	POMC deficiency	X	X	X	X
POMC/AgRP double knockout mice	POMC and AgRP deficiency	X	X	X	X
MC4R knockout mouse	melanocortin 4 receptor	X	X	X	X
DIET-INDUCED MODELS; POLYGENIC MODELS					
Diet induced obese (DIO) rat	Polygenic	X	X	[X]	X
Cafeteria diet-induced obesity	Polygenic	X	X	[X]	X
High-fat diet-induced obesity	Polygenic	X	X		X
SURGICAL OR CHEMICAL MODELS OF OBESITY					
Lesion of the ventromedial hypothalamus (VMH lesion)		X	X	X	X
Lesion of the hypothalamic paraventricular nucleus (PVN lesion)		X		[X]	[X]
Lesion of the hypothalamic arcuate nucleus (ARC lesion)		X	X	[X]	[X]
Ovariectomy		X	X		

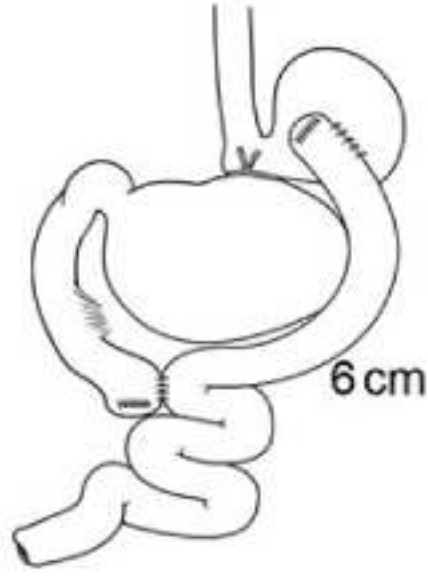
BARIYATRİK CERRAHİ MODELLERİ



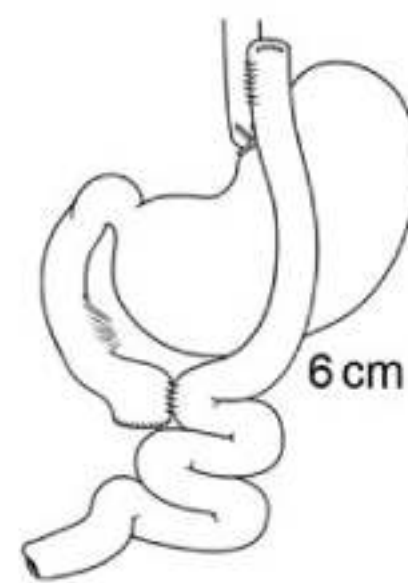
(A) Banding



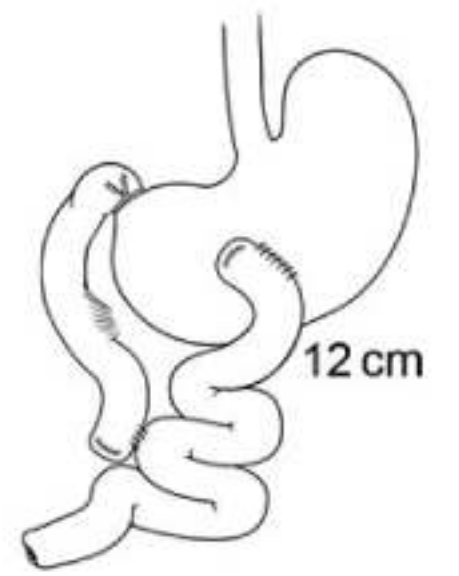
(B) Sleeve



(C) RYGB

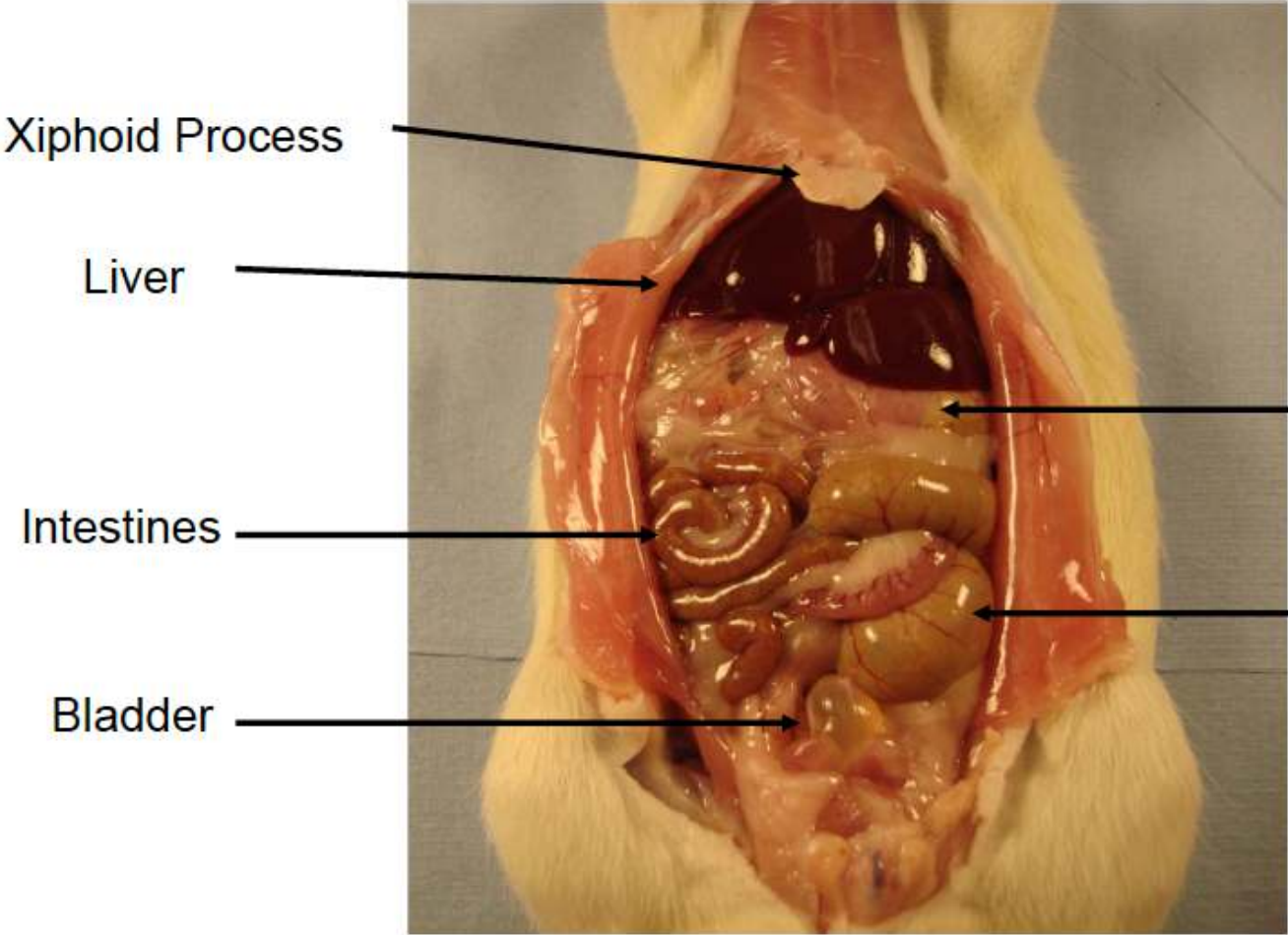


(D) mRYGB

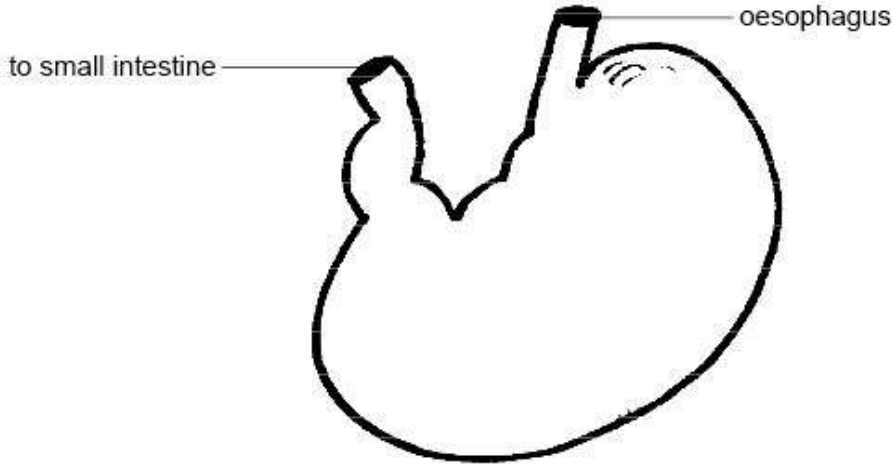


(E) BPD

Abdominal (Peritoneal) Cavity *in situ*



Stomach



BARİYATRİK CERRAHİ MODELLERİ

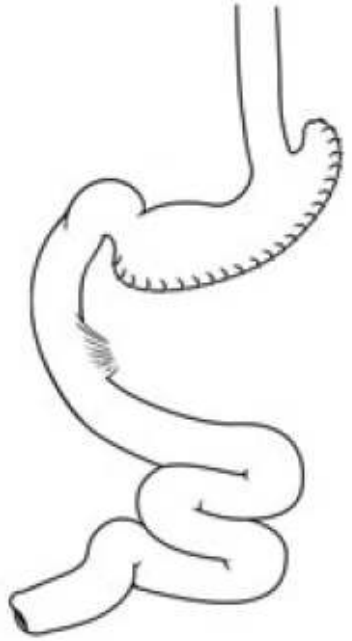
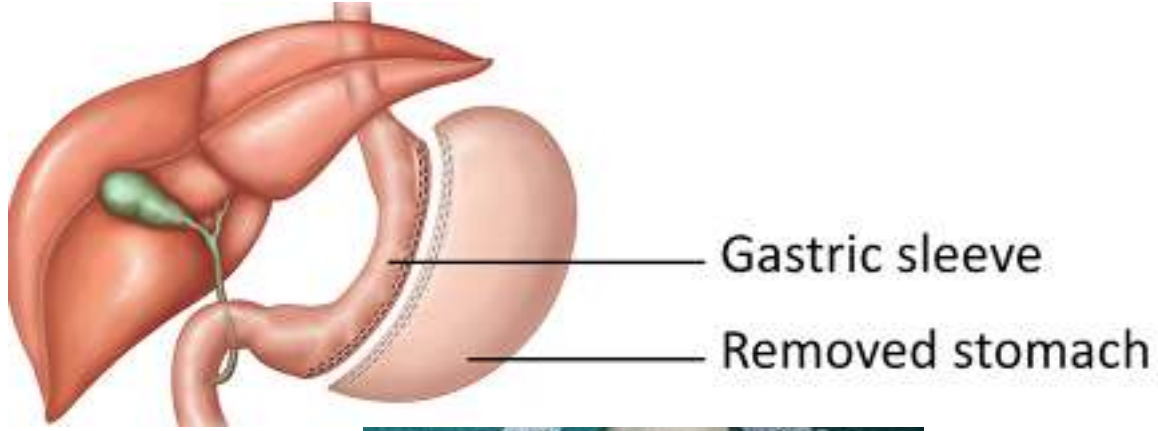
GASTRİK BAND



GÖ bileşke right angle ile dönölüp cerrahi silikon band ile boğmayacak şekilde bağlanır.

Sham gastrik band: Bağlanıp/açılır

SLEEVE GASTREKTOMİ



iki hemoklips+sütün

SLEEVE GASTREKTOMİ



Median
laparotomi



Mide fundus,
korpus ortaya koy



Pilorik damarı
bağla



Özefageal damarı
bağla

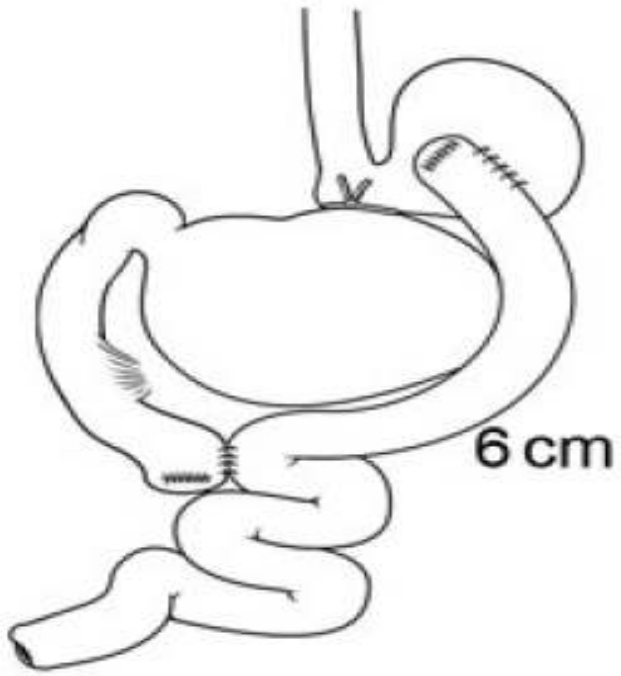


Fundus ve
korpus
rezeksiyonu



Nonabsorbabl
sütün ile tüpü
oluştur

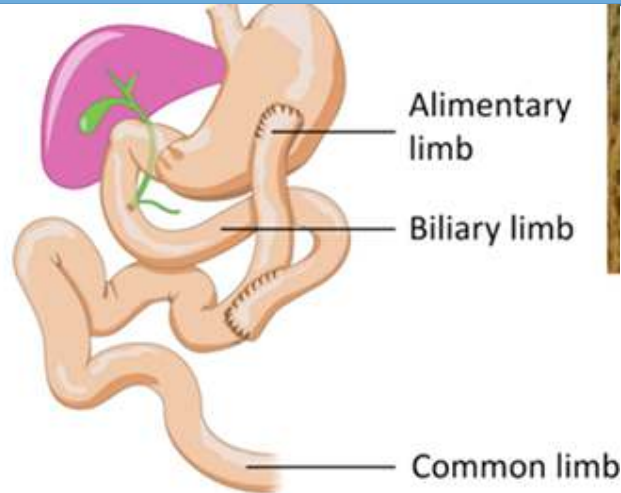
Roux en Y Gastrik Bypass



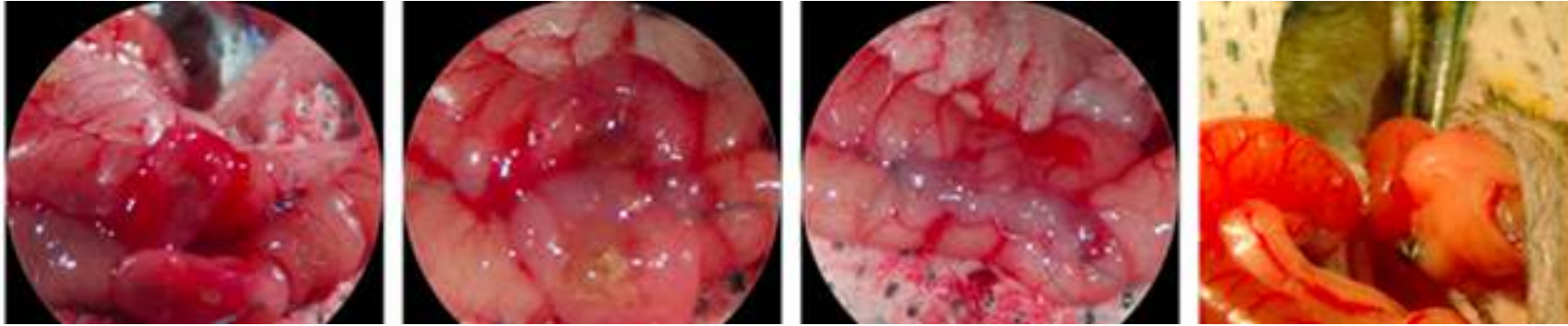
RNY Gastrik bypass ratlarda mortal seyrediyor.
Mide poşu ile jejunum anastomozu sonrası
şiddetli beslenme bozukluğu ve intestinal obstrüksiyon geliyor



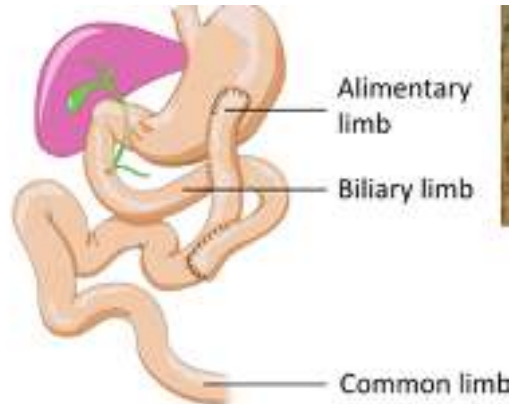
Modifiye Roux en Y Gastrik Bypass



Modifiye Roux en Y Gastrik Bypass

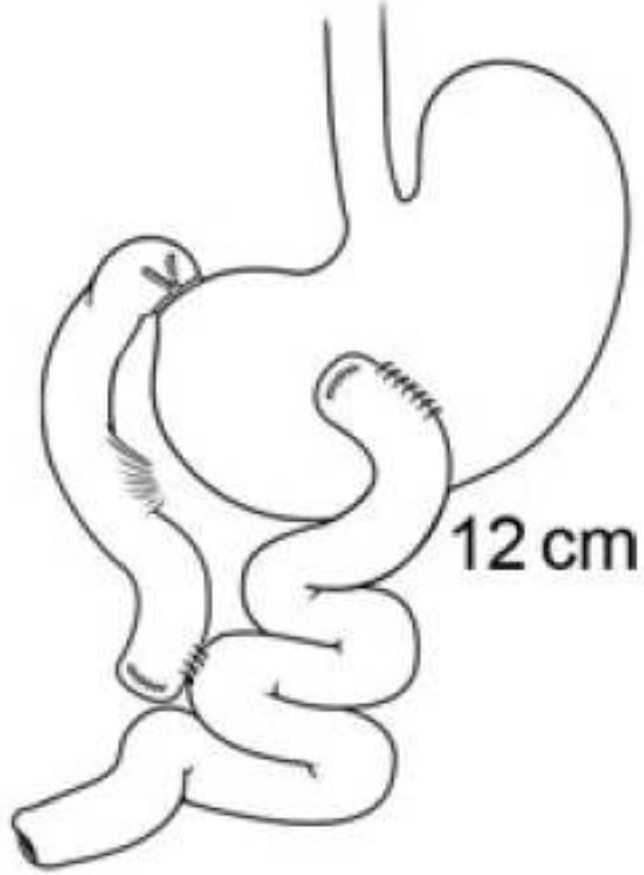


Pilordan 8 cm
distalinden kesilir



6 cm lik alimenter
limb ile mide
korpusuna
anastomoz

Biliopankreatik diversiyon



Treitzdan 4 cm distalinden kesilir

12 cm'e anastomoz yapilir

GJ oluřturulur

Pilor insandan farklı olarak transekte edilmez sadece bađlanır

BARIYATRİK CERRAHİ SONUÇLARI

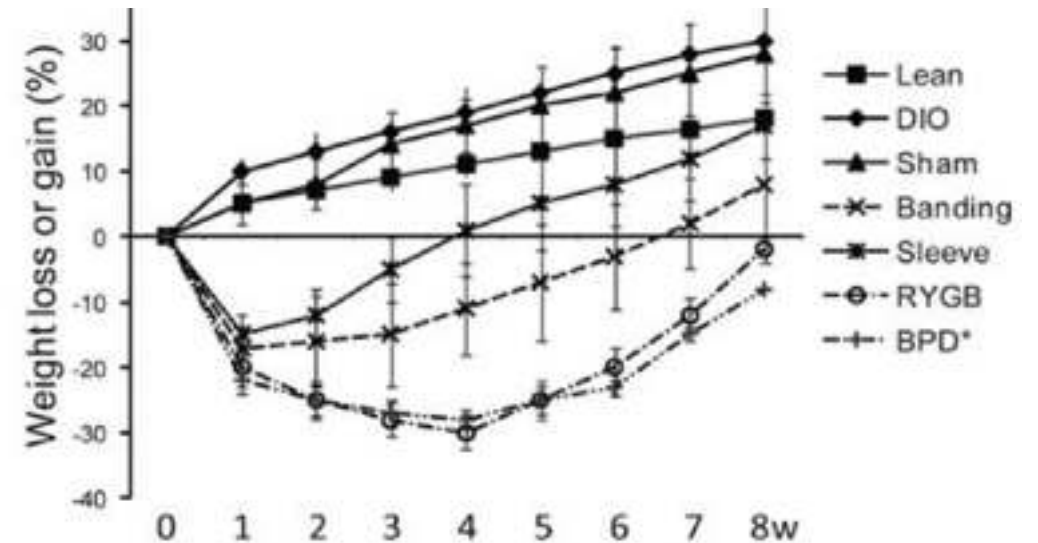
Annals of Surgery • Volume 254, Number 1, July 2011



Naive Banding Sleeve RYGB mRYGB BPD

TABLE 1. Mouse Bariatric Surgery Model

Model	Number	Success%*	Mortality%†
Banding	12	100 (12/12)	33.3 (4/12, restriction)
Sleeve	14	100 (14/14)	0
RYGB	8	87.5 (7/8)	100 (7/7, obstruction)
mRYGB	12	75 (9/12)	33.3 (3/9, malnutrition)
BPD	10	90 (9/10)	88.9 (8/9, malnutrition)
Sham‡	23	100 (23/23)	0





EVOLUTION...

7/1/2007