
Medications in the Treatment of Obesity

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NO DISCLOSURES

Classification of Obesity

BMI (Body Mass Index)	Weight Classification
18.5 – 24.9	“Normal”
25 – 29.9	Overweight
30 – 34.9	Obesity Class I
35 – 39.9	Obesity Class II
40 or more	Obesity Class III

**BMI>23 is considered overweight for South, Southeast and East Asians

Medication Review

Category	Drug Class	Weight Gain	Alternatives
Psychiatric agents	Antipsychotic	Clozapine, risperidone, olanzapine, quetiapine, haloperidol, perphenazine	Ziprasidone, aripiprazole
	Antidepressants/mood stabilizers: tricyclic antidepressants	Amytriptyline, doxepin, imipramine, nortriptyline, trimipramine, mirtazapine	Bupropion ^a , nefazodone, fluoxetine (short term), sertraline (<1 year)
	Antidepressants/mood stabilizers: SSRIs	Fluoxetine?, sertraline?, paroxetine, fluvoxamine	
	Antidepressants/mood stabilizers: MAOIs	Phenylzine, tranylcypromine	
	Lithium	—	
Neurologic agents	Anticonvulsants	Carbamazepine, gabapentin, valproate	Lamotrigine?, topiramate ^a , zonisamide ^a
Endocrinologic agents	Diabetes drugs	Insulin (weight gain differs with type and regimen used), sulfonylureas, thiazolidinediones, sitagliptin?, metiglinide	Metformin ^a , acarbose ^a , miglitol ^a , pramlintide ^a , edenate ^a , liraglutide ^a

Medication Review

Category	Drug Class	Weight Gain	Alternatives
Gynecologic agents	Oral contraceptives	Progestational steroids, hormonal contraceptives containing progestational steroids	Barrier methods, IUDs
	Endometriosis treatment	Depot leuprolide acetate	Surgical methods
Cardiologic agents	Antihypertensives	α -blocker?, β -blocker?	ACE inhibitors?, calcium channel blockers?, angiotensin-2 receptor antagonists
Infectious disease agents	Antiretroviral therapy	Protease inhibitors	—
General	Steroid hormones	Corticosteroids, progestational steroids	NSAIDs
	Antihistamines/anticholinergics	Diphenhydramine?, doxepin?, cyproheptadine?	Decongestants, steroid inhalers

Treatment Pillars

Nutrition

Physical Activity

Behavior Therapy

Pharmacotherapy

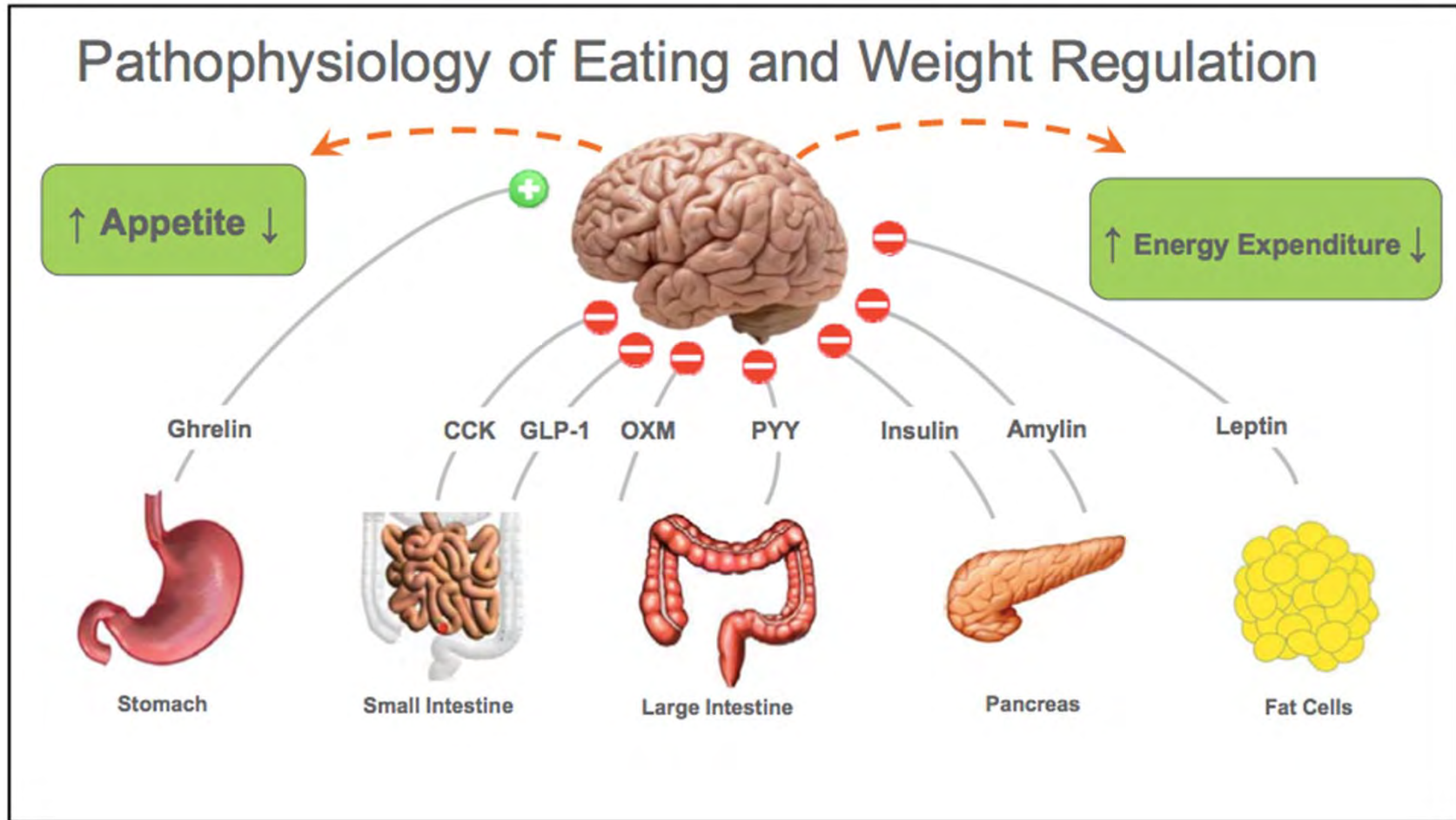
Bariatric Surgery

Goal 5-10% weight loss

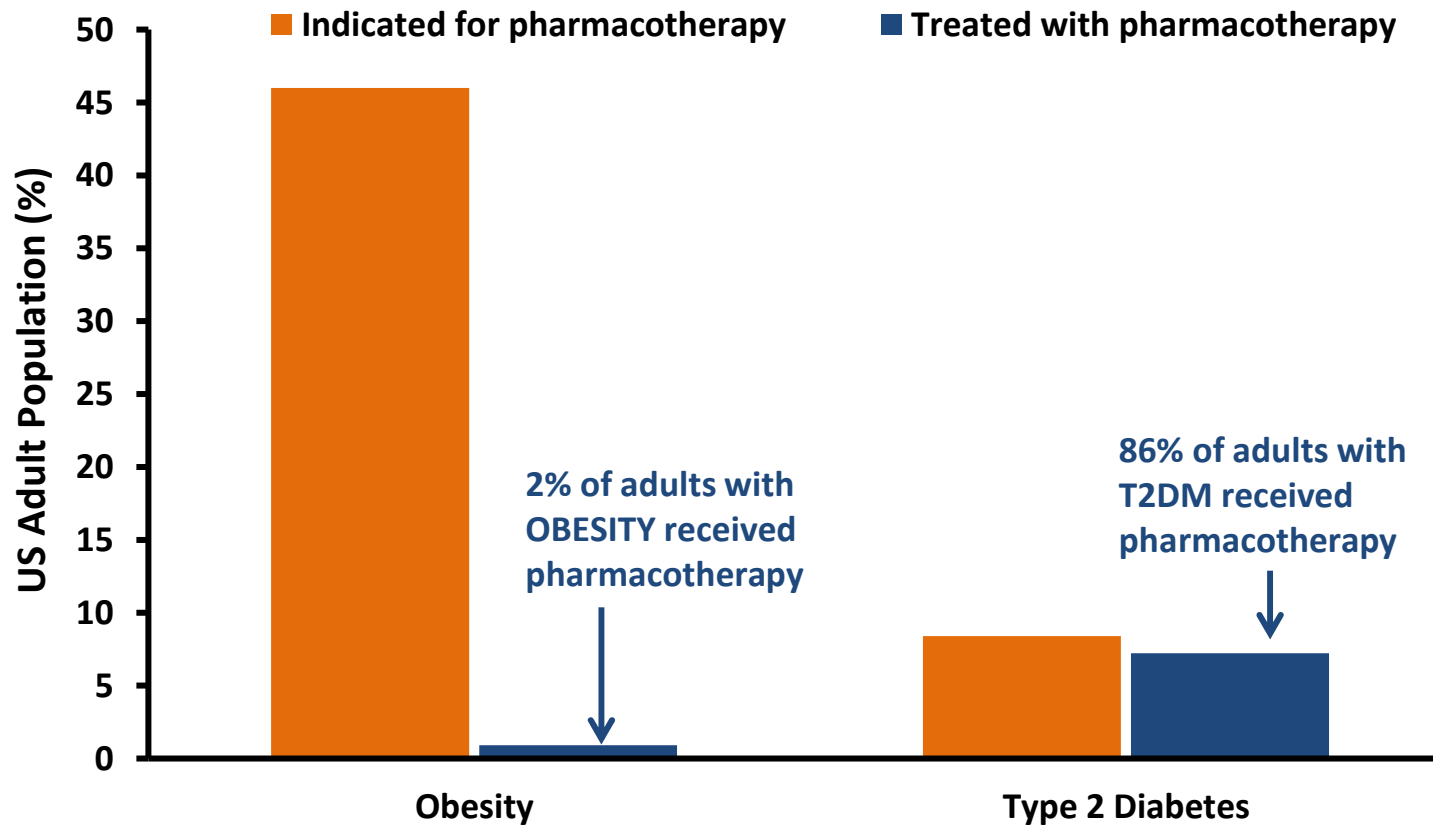
Benefits of 5-10% of weight loss

	% weight loss for therapeutic benefit	References
Diabetes Prevention	3% to 10%	DPP (Lancet, 2009) SEQUEL (Garvey et al, 2013)
Hypertension	5% to >15%	Look AHEAD (Wing, 2011)
Dyslipidemia	3% to >15%	Look AHEAD (Wing, 2011)
HbA1c	3% to >15%	Look AHEAD (Wing, 2011)
NAFLD	10%	Assy et al, 2007; Dixon et al, 2004; Anish et al, 2009
Sleep Apnea	10%	Sleep AHEAD (Foster, 2009) Winslow et al, 2012
Osteoarthritis	5-10%	Christensen et al, 2007; Felson et al, 1992; Aaboe et al, 2011
Stress Incontinence	5-10%	Burgio et al, 2007 Leslee et al, 2009
GERD	5-10% (women) 10% (men)	Singh et al, 2013 Tutujian R, 2011
PCOS	5-15% (>10% optimal)	Panidis D et al, 2008; Norman et al, 2002; Moran et al, 2013

Pathophysiology



We “under” prescribe



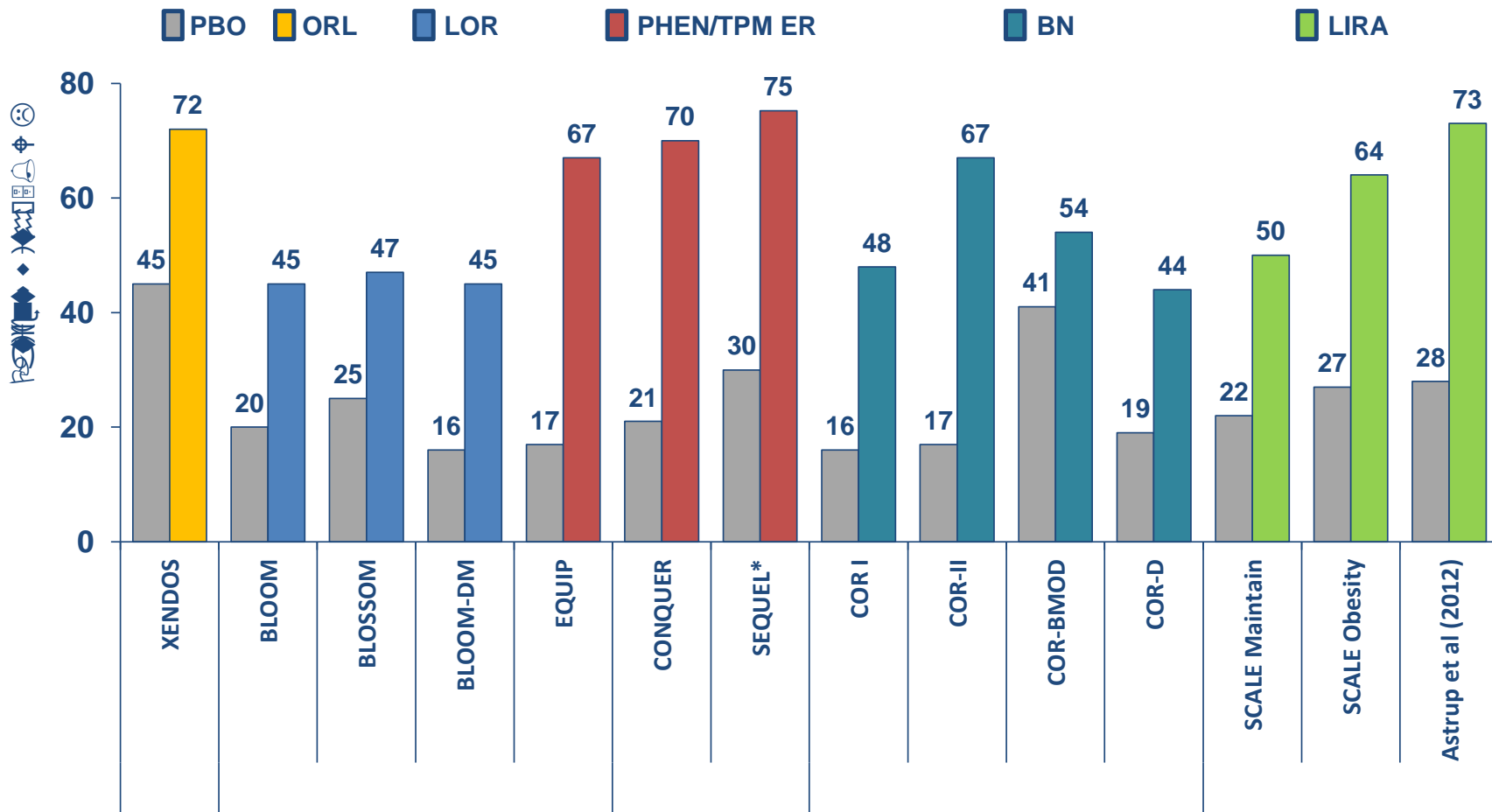
Thomas CE et al. Obesity. 2016;24:1955-1961.

Options

Drug	Mechanism of Action	Mean Weight Loss ^a	Study Duration
Phentermine resin	Norepinephrine-releasing agent	3.6 kg	2 to 24 weeks
Diethylpropion	Norepinephrine-releasing agents	3.0 kg	6 to 52 weeks
Orlistat	Pancreatic and gastric lipase inhibitor	2.9 to 3.4 kg, 2.9% to 3.4%	1 year
Lorcaserin	5HT _{2C} receptor agonist	3.6 kg, 3.6%	1 year
Phentermine/topiramate	GABA receptor modulation (topiramate) plus norepinephrine-releasing agent (phentermine)	6.6 kg (recommended dose), 6.6%; 8.6 kg (high dose), 8.6%	1 year
Naltrexone bupropion	Reuptake inhibitor of dopamine and norepinephrine (bupropion) and opioid antagonist (naltrexone)	4.8%	1 year
Liraglutide	GLP-1 agonist	5.8 kg	1 year

Apovian CM et al. *J Clin Endocrinol Metab.* 2015;100:342-362.

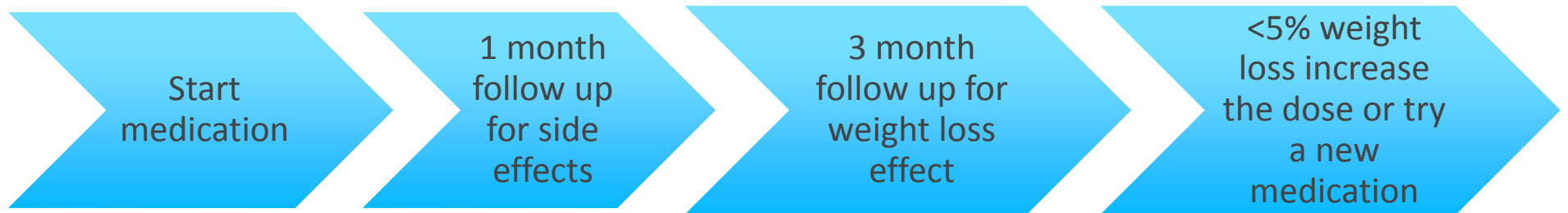
Efficacy



Pucci A, et al. *Can J Cardiol.* 2015;31(2):142-152. Astrup A, et al. *Int J Obes (Lond).* 2012;36(6):843-854.

Anti-Obesity Drugs	Why Choose this drug?	Why NOT choose this drug?
Phentermine	Inexpensive , time tested	<ul style="list-style-type: none"> •Stimulant side effects – anxiety, irritability •Schedule IV controlled substance • Known active cardiac disease
Topiramate	<p>Double Benefits: Migraines, Seizures, Binge eating, Bipolar</p> <p>•May help insomnia, reduce soda intake, excessive carb intake? Inexpensive</p>	<ul style="list-style-type: none"> • “Dopamax” – cognitive, word finding difficulty • Teratogenic effect (planning to be pregnant)
Phentermine/ Topiramate Cr (Qsymia)	Same as above. Highly effective	<ul style="list-style-type: none"> • Stimulant effect, teratogenic effect ,\$\$\$, hx of kidney stones or glaucoma •Higher doses greater cost
Liraglutide (Saxenda)	<p>Double Benefits: Diabetes, prediabetes</p> <p>•Improves BP, cardiovascular data, lack of central side effects, high efficacy</p>	<ul style="list-style-type: none"> •Gastroparesis, history of MTC, hx of pancreatitis, \$\$\$\$
Lorcaserin (Belvia)	<p>Double Benefits: Diabetes improvement</p> <p>•Less central side effects</p> <p>•Evening eating</p>	<ul style="list-style-type: none"> •Less effective • Potential interaction with SSRI • \$\$/Schedule IV controlled substance
Naltrexone/Bupropion XR (Contrave)	<p>Double Benefits: Alcohol cessation(Nal), Smoking, Depression(Bup) Diabetes improvement</p> <p>• Excessive cravings, hedonistic food drive</p>	<ul style="list-style-type: none"> •Stimulant side effects, nausea (Naltrexone), \$\$ •Hx of seizures, uncontrolled HTN, active bulimia •Less effective
Orlistat (Xenical, Alli)	Hypertriglyceridemia No central side effect profile	<ul style="list-style-type: none"> • Less effective • GI Side effect profile, B12 deficiency, \$
Metformin	<p>Double Benefits: PCOS, Diabetes, Pregnancy, Atypical Antipsych Meds</p> <p>Inexpensive</p>	<ul style="list-style-type: none"> • GI Side effect profile, B12 deficiency

Monitoring



Case 1: 60yo Female

Weight 210lb

BMI 37-class 2 obesity

Goal at 6 months is 10% down or 189lb

Exercises 3-5 days a week (tennis)

PMH: hypertension and hyperlipidemia

Medications: Hydrochlorothiazide 25mg daily

Labs:

HgbA1c 6.1%

Lipids:

Total cholesterol 268

Trig 95

HDL 80

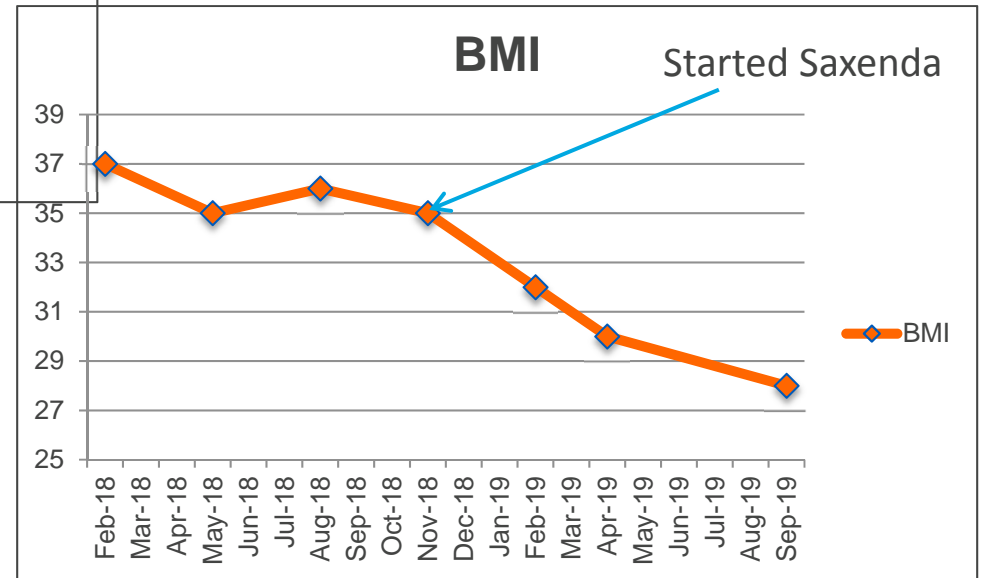
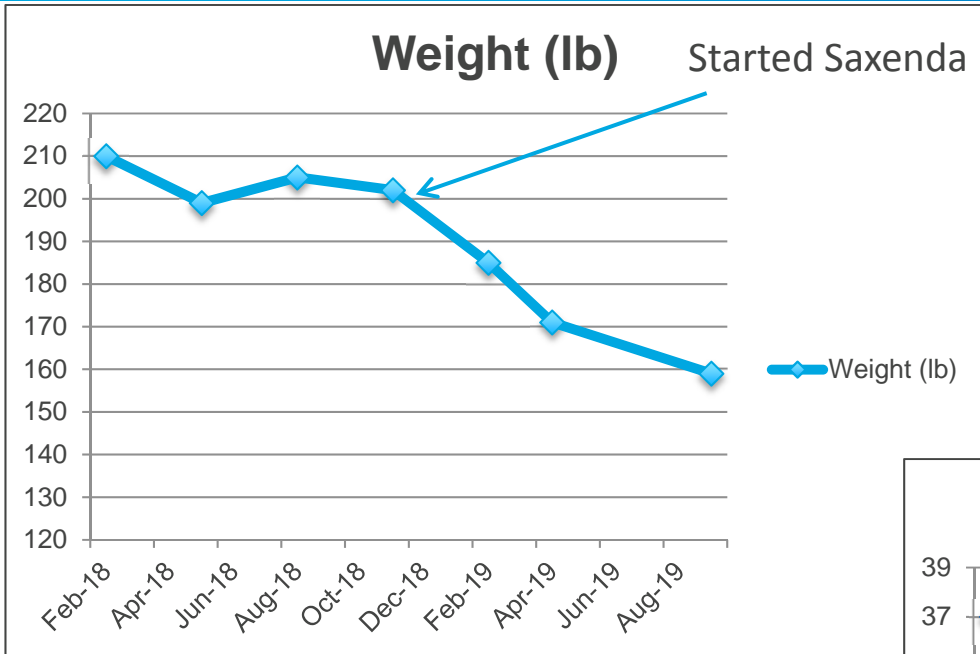
LDL 169

Question

What medication for obesity would you use in this patient?

- A. Phentermine/Topiramate (Qsymia)
- B. Naltrexone/Bupropion (Contrave)
- C. Metformin
- D. Liraglutide (Saxenda)

Weight Loss



Case 2: 59yo Female

Weight 198lb

BMI 31-Class 1 obesity

Hungry all the time, late night cravings, difficulty with portion control

PMH: CPPD, knee osteoarthritis

Medications: Plaquenil, Celecoxib, Glucosamine-Chondroitin

Labs:

HgbA1C-5.5%

Lipids:

Total chol-224

Trig-112

HDL-67

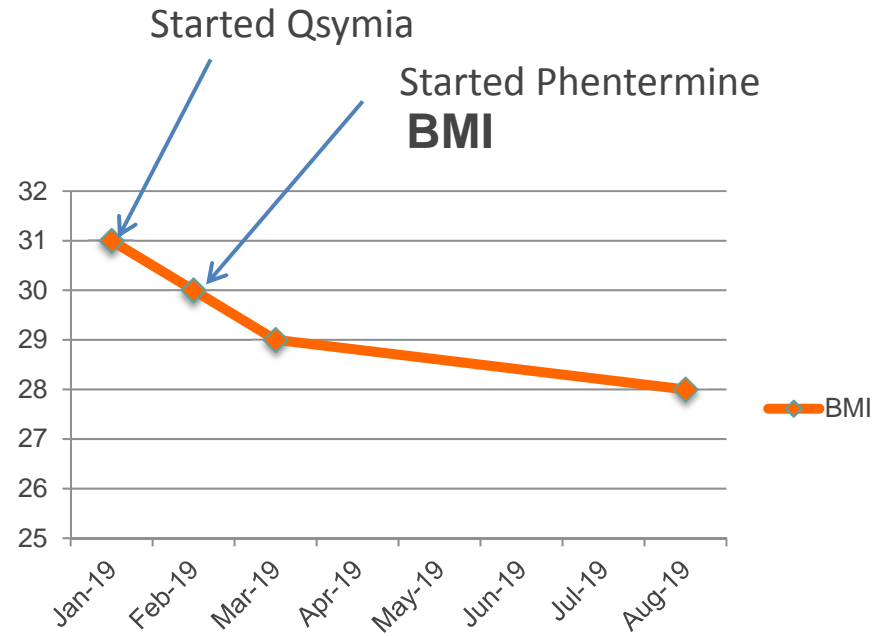
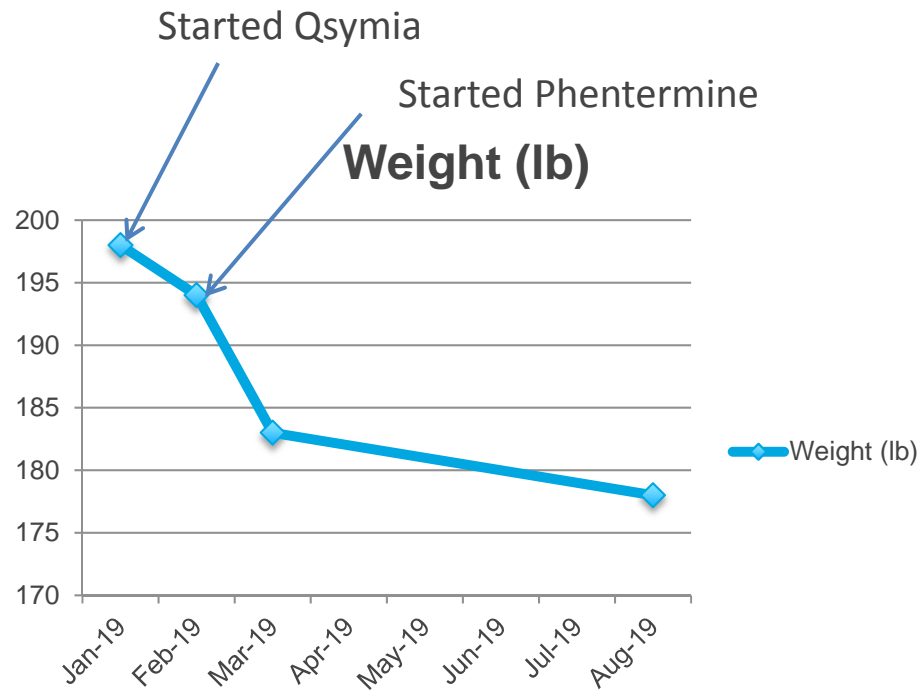
LDL-135

Question

What medication for obesity would you use in this patient?

- A. Phentermine/Topiramate (Qsymia)
- B. Naltrexone/Bupropion (Contrave)
- C. Orlistat
- D. Liraglutide (Saxenda)

Weight Loss



Case 3: 54yo Male

Weight: 294lb

BMI 37

Rarely hungry, emotional eating

PMH: Hypertension, Obstructive sleep apnea

Medications: Benazepril 10mg

Labs:

HgbA1C: 6%

AST: 38

ALT: 65

Total Cholesterol: 214

Triglycerides: 184

HDL: 48

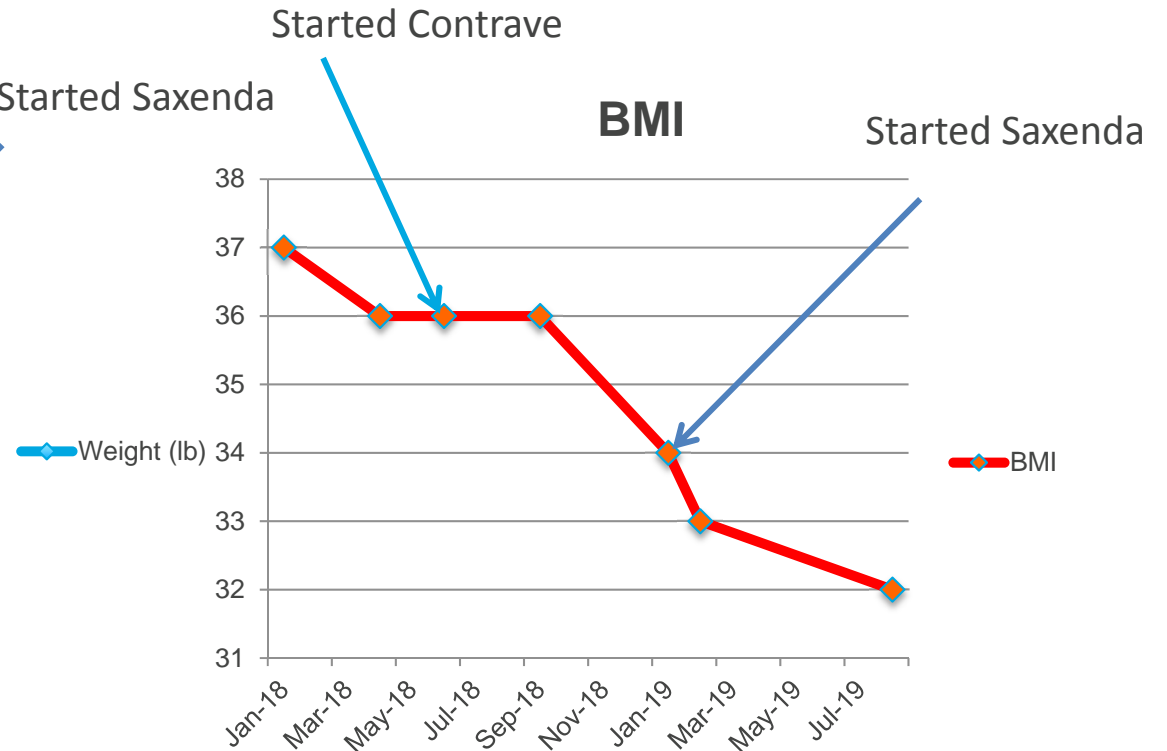
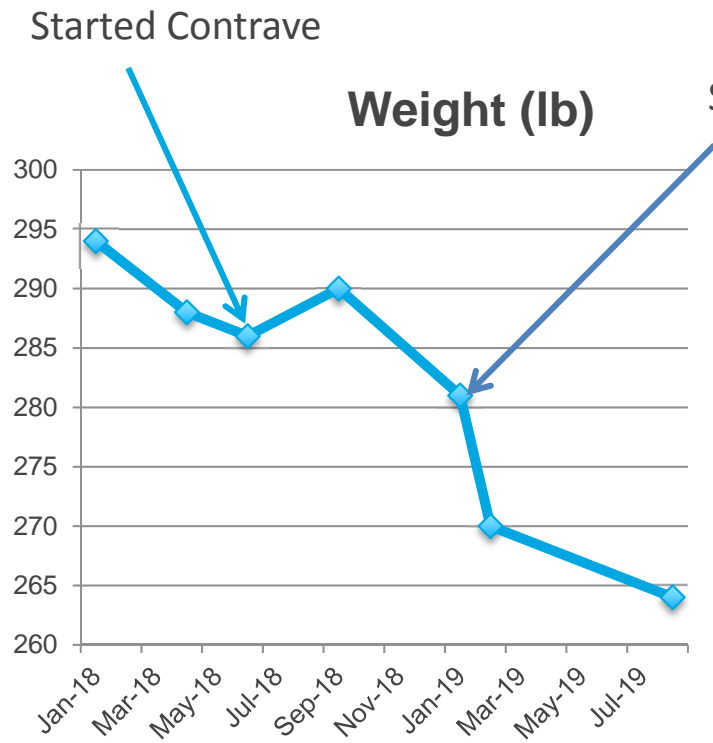
LDL: 129

Question

What medication for obesity would you use in this patient?

- A. Phentermine/Topiramate (Qsymia)
- B. Naltrexone/Bupropion (Contrave)
- C. Orlistat
- D. Liraglutide (Saxenda)

Weight loss



Take Home Points

Stage the patient's obesity and discuss it as a disease process that it is

Review and adjust current medications that may be contributing to weight gain

Start an anti-obesity medication at the same time as providing lifestyle interventions

Recommend frequent follow up for monitoring of efficacy, side effects and adherence

Questions?