Epidemic within the Pandemic: Battling Obesity in a COVID-19 Climate

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Chair and Navy Lead

DHA Surgical Services Clinical Community

San Diego

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Dr. Stéphanie B. Mayer, M.D. M.H.Sc. is an Associate Professor in the division of Endocrinology and Metabolism at the Hunter Holmes McGuire Veterans Affairs (VA) Medical Center and Virginia Commonwealth University, in Richmond Virginia. She trained at Brown Alpert Medical School for residency and Duke for her research fellowship in endocrinology, completing a masters in health science research at the Duke Clinical Research Institute (DCRI). She is a champion for the national VA/Department of Defense (DoD) 2020 update of the Clinical Practice Guidelines for the Management of Overweight and Obesity and co-champion for the Hunter Holmes McGuire VA MOVE! weight loss program. Her current clinical research focuses on outcomes of weight loss and weight regain in Veterans engaged in the McGuire VA MOVE! program. Dr. Mayer's passion is teaching the wonders and nuances of endocrinology to her students, trainees, fellow colleagues, and her patients. She also loves to dance and is an inveterate Francophile.

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Navy Capt. Gordon Wisbach is a general surgeon in the United States Navy stationed at the Naval Medical Center San Diego (NMCSD), where he serves as Director of Metabolic and Bariatric Surgery as well as Surgical Director of the Simulation Center. He was awarded his medical degree from Jefferson Medical College in Philadelphia, Pa. and completed his residency training at NMCSD. CAPT Wisbach was fellowship trained in Advanced Laparoscopic/Bariatric Surgery at Brigham and Women's Hospital in Boston, Mass. He holds the title of Associate Professor of Surgery at the Uniformed Services University of the Health Sciences in Bethesda, Md.

CAPT Wisbach specializes in Minimally Invasive, Robotic and Bariatric Surgery and has an active interest in related research and surgical tele-mentoring to enable surgical education using simulation. He serves as the inaugural current Chair and Navy Representative of the DHA Surgical Services Clinical Community.

Disclosures

- Dr. Stéphanie B. Mayer has no relevant financial or non-financial relationships to disclose relating to the content of this activity. She will discuss off-labeled uses of medications for purposes other than that for which the product(s) use was approved by the FDA.
- Navy Capt. Gordon Wisbach has no relevant financial or non-financial relationships to disclose relating to the content of this activity.
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Objectives

At the end of this presentation participants will be able to:

1. Examine your patients struggling with obesity from a new perspective.
2. Select medications that promote weight LOSS versus GAIN.
3. Identify patients who qualify for a medication for weight loss and Comprehensive Lifestyle intervention (CLI), and who qualifies for bariatric surgery and CLI.

American Medical Association (AMA) Recognized Obesity as a Disease 5/16/2013

AMERICAN MEDICAL ASSOCIATION HOUSE OF DELEGATES

Resolution: 420
(A-13)

Introduced by:	American Association of Clinical Endocrinologists American College of Cardiology The Endocrine Society American Society for Reproductive Medicine The Society for Cardiovascular Angiography and Interventions American Urological Association American College of Surgeons
Subject:	Recognition of Obesity as a Disease
Referred to:	Reference Committee D (Douglas W. Martin, MD, Chair)

Defining Obesity: Body Mass index (BMI) (kg/m²) (Adults)

BMI classification	
Underweight	< 18.5
Normal range	18.5 - 24.9
Overweight	≥ 25.0
Preobese	25.0 - 29.9
Obese	≥ 30.0
Obese class I	30.0 - 34.9
Obese class II	35.0 - 39.9
Obese class III	≥ 40.0

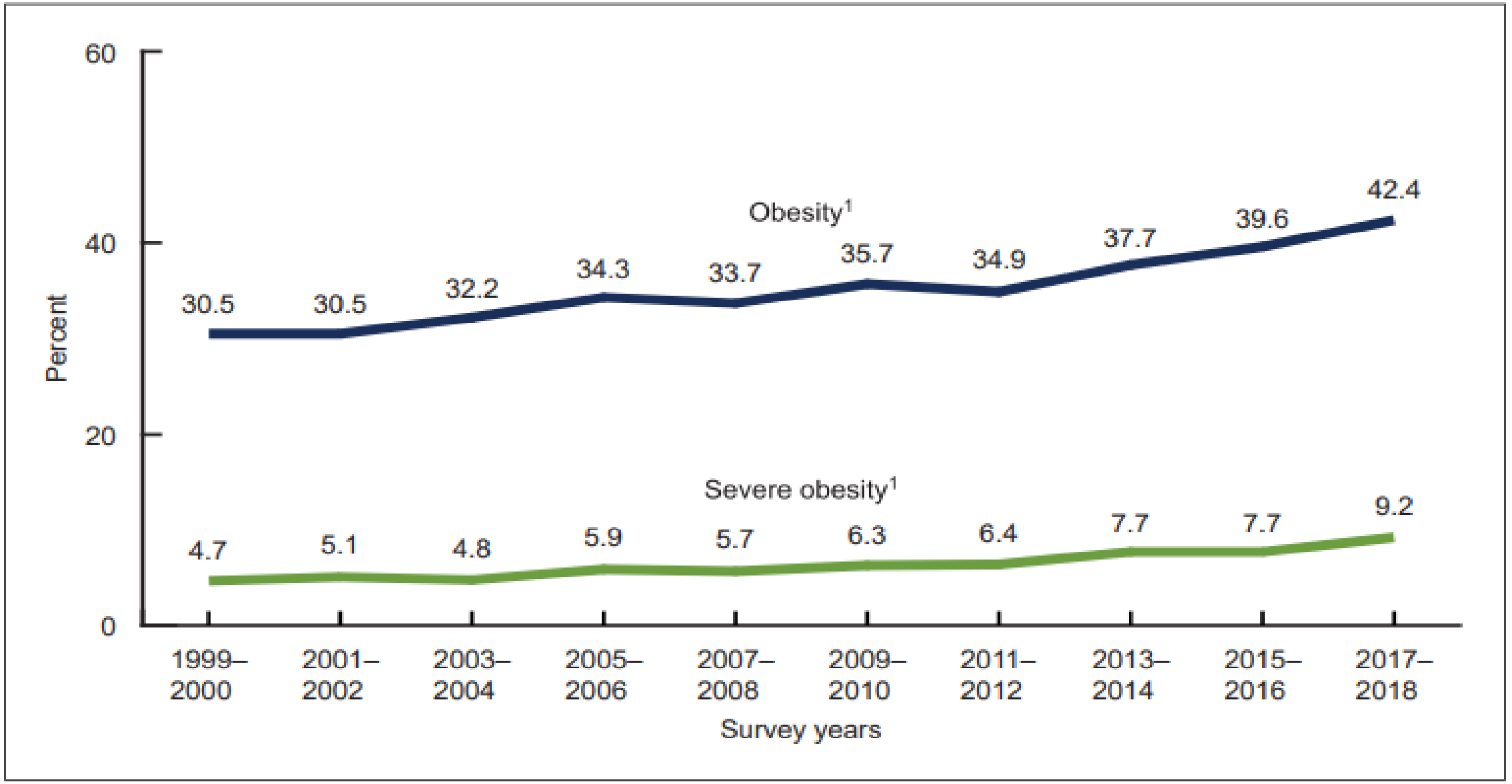
https://healthyglobals.com/overnutrition-and-obesity/, WHO 1998

https://www.huffpost.com/entry/realistic-beauty_b_870296

- Both healthcare providers and patients routinely underestimate BMI.

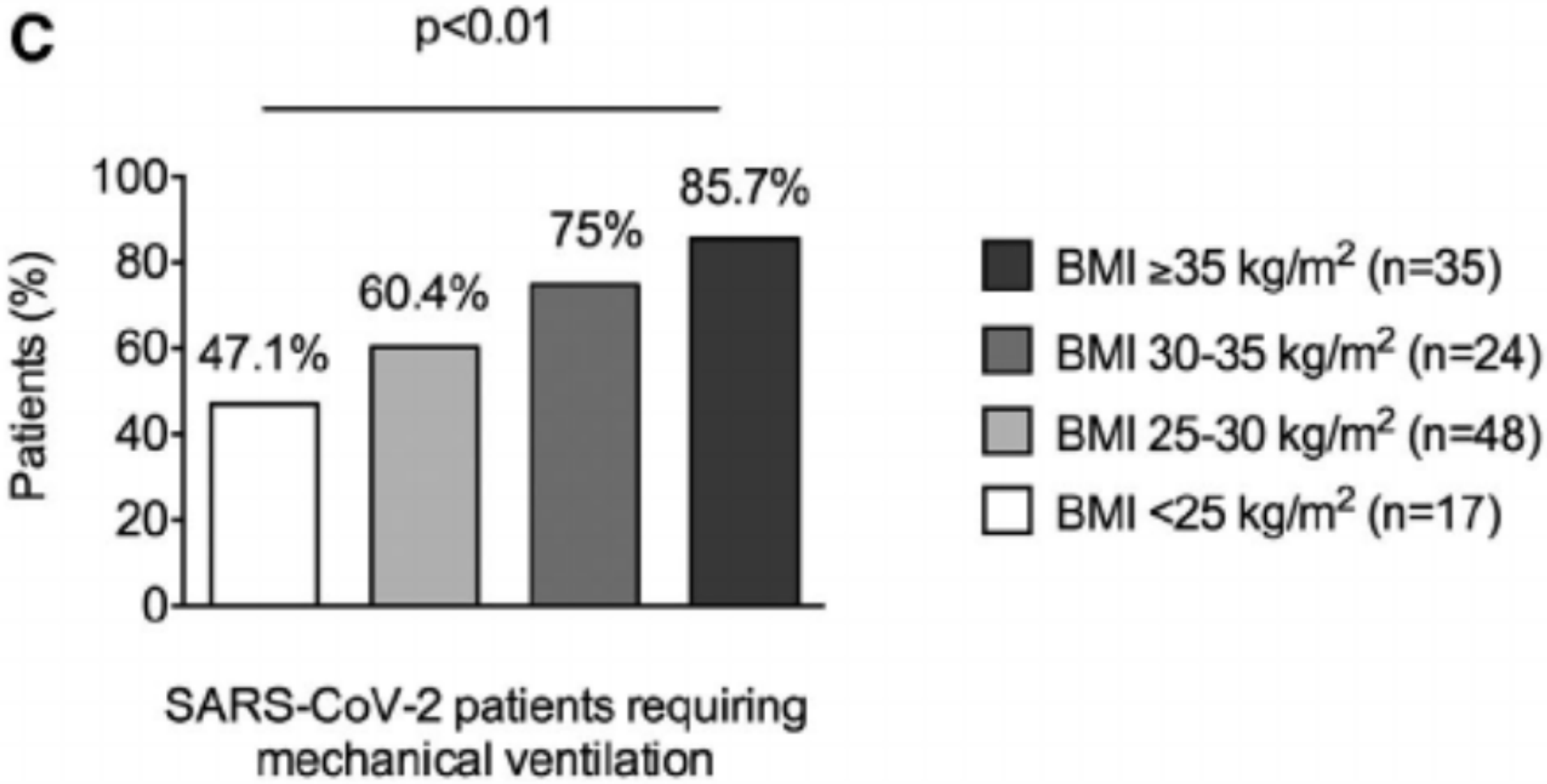
(Steinsbekk, 2017)
(Sun, 2010)

Obesity Trends US adults (>20 y.o.) 1999-2018



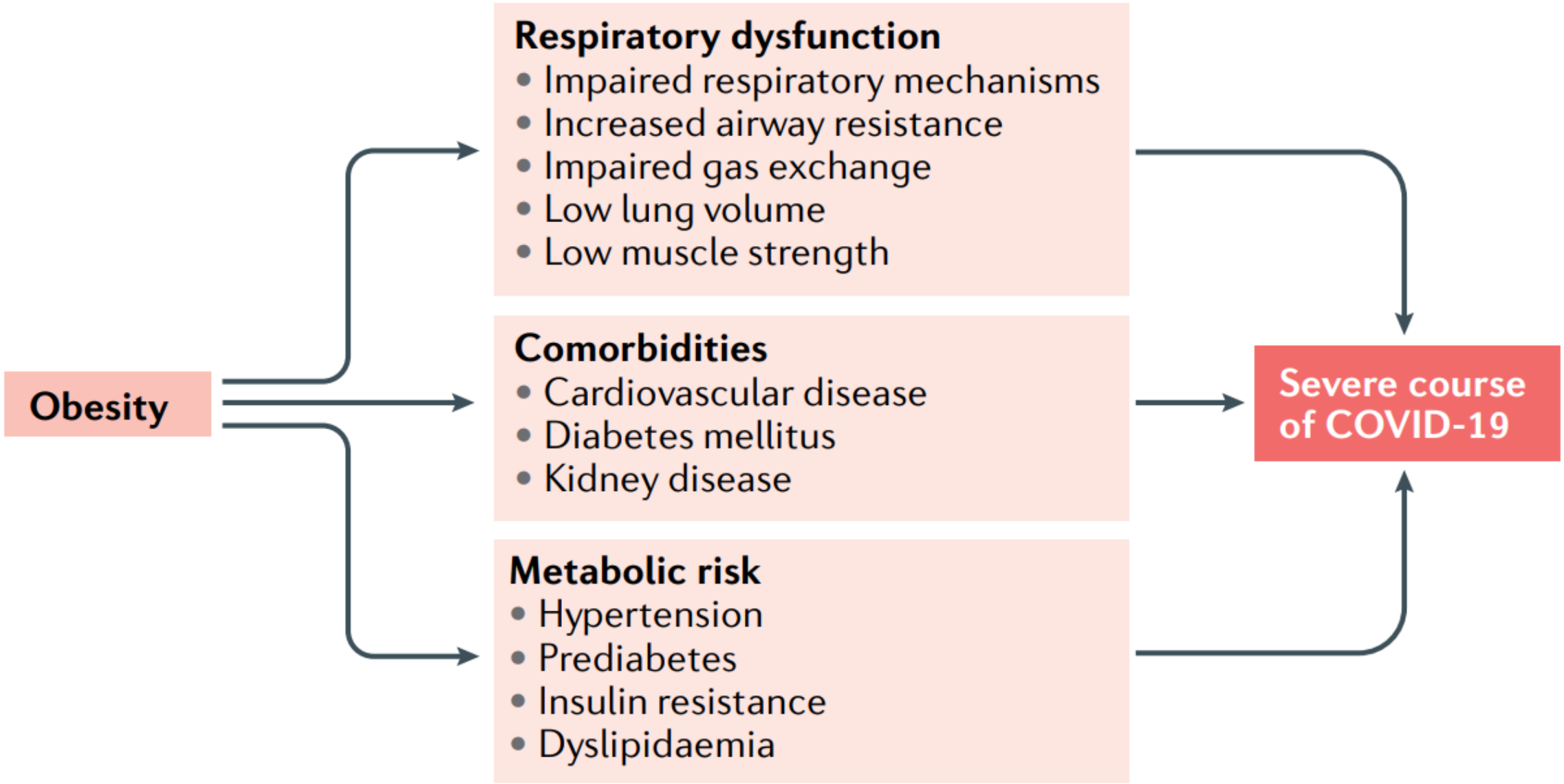
(NCHS, 2017–2018)

High Prevalence of Obesity in Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2)



(Simonnet et al. 2020)

Obesity and Coronavirus Disease 19 (COVID-19) Outcomes



(Stefan et al, 2020)

Your Patient in Clinic

Mr. O is a 52 year-old man.

- He is worried about his weight: BMI is 36 kg/m2
- Patient Medical History (PMHx): high blood pressure, type 2 diabetes complicated by neuropathy, depression, and seasonal allergies

Look for Culprit Obesogenic Meds

Next: Review medication list for Mr. O

→Look for culprit medications making weight loss harder

Med list:

1. Metoprolol tartrate 25 mg twice daily
2. Gabapentin 600mg three times daily
3. Cetirizine 10mg daily
4. Paroxetine 60mg daily
5. Glipizide 10mg 2 times/day (2xd)

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Look for Culprit Obesogenic Meds

Category	OBESOGENIC – CAUSE WEIGHT GAIN	Alternative to Consider
Antidepressants	TCAs (amitriptyline, nortriptyline, clomipramine, imipramine, doxepin, protriptyline*); Mirtazipine SSRIs (paroxetine, sertraline, citalopram*, escitalopram*, fluoxetine*) ; MAOIs (phenelzine)	Bupropion Desvenlafaxine Venlafaxine Duloxetine
Antipsychotics	Olanzipine; Quetiapine; Risperidone; Clozapine; Thioridazine	Aripiprazole; Haloperidol; Ziprasidone
Antiepileptics/ Mood Stabilizing	Gabapentin; Pregabalin; Divalproex; Valproic acid; Vigabatrin; Lithium; Carbamazepine	Topiramate; Lamotrigine; Zonisamide
Antiglycemics	Insulin Sulfonylureas (glipizide, glimepiride, glyburide etc) Thiazoledinediones (pioglitazone, rosiglitazone) Meglitinides (nateglinide, repaglinide)	Biguanides (metformin) SGLT2i (empagliflozin, canagliflozin, dapagliflozin etc.) GLP-1 (semaglutide, liraglutide, dulaglutide etc.) DPP4i (sitagliptin, saxagliptin, alogliptin etc.) alpha glucosidase inhibitors (acarbose or miglitol) Amylin analogs (pramlintide)
Antihypertensives	α Adrenergic Blocker (terazosin) β Adrenergic Blockers (especially nonselective metoprolol, propranolol, atenolol)	ACEi (lisinopril, ramipril etc) ARB (losartan, valsartan etc) CCB (amlodipine, verapamil, diltiazem) Diuretics
Steroid Hormones	Glucocorticoids (prednisone, hydrocortisone, methylpred) Contraceptives injectables >oral; any Progesterone based	NSAIDs; biologics; non-traditional therapies Copper IUD
Antihistamines	Cyproheptadine, Cetirizine, Fexofenadine	Decongestants, inhalers, nasal irrigation system

https://www.healthquality.va.gov/guidelines/CD/obesity/

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The American Journal of Medicine (2007) 120, 610-615

ELSEVIER

THE AMERICAN JOURNAL of MEDICINE®

CLINICAL RESEARCH STUDY

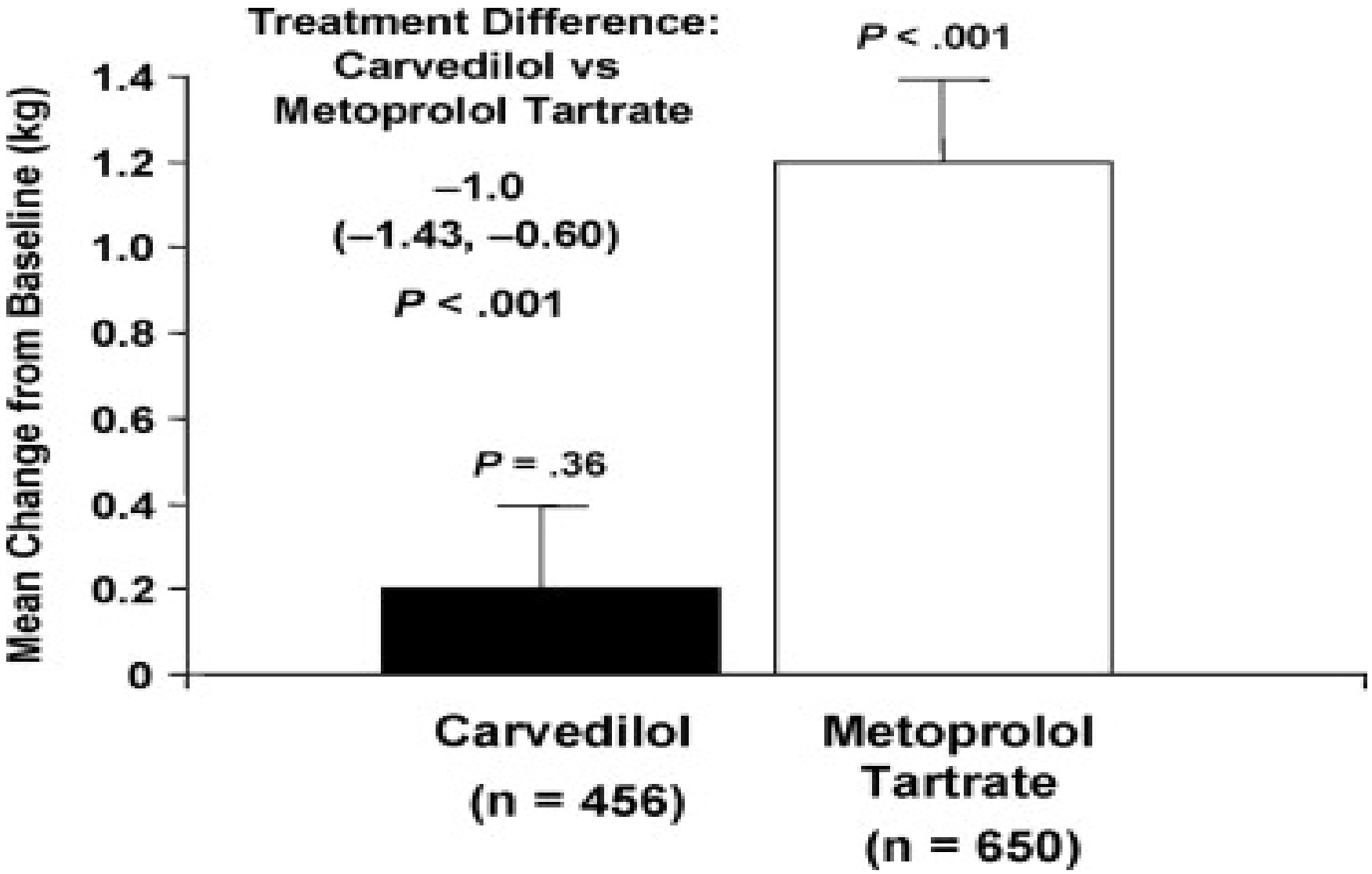
AJM Theme Issue: Diabetes/Metabolism

Body Weight Changes with β-Blocker Use: Results from GEMINI

Franz H. Messerli, MD,[a] David S. H. Bell, MB,[b] Vivian Fonseca, MD,[c] Richard E. Katholi, MD,[d] Janet B. McGill, MD,[e] Robert A. Phillips, MD, PhD,[f] Philip Raskin, MD,[g] Jackson T. Wright, Jr., MD, PhD,[h] Sripal Bangalore, MD,[a] Fred K. Holdbrook, PhD,[i] Mary Ann Lukas, MD,[i] Karen M. Anderson, PhD,[i] George L. Bakris, MD,[j] for the GEMINI Investigators

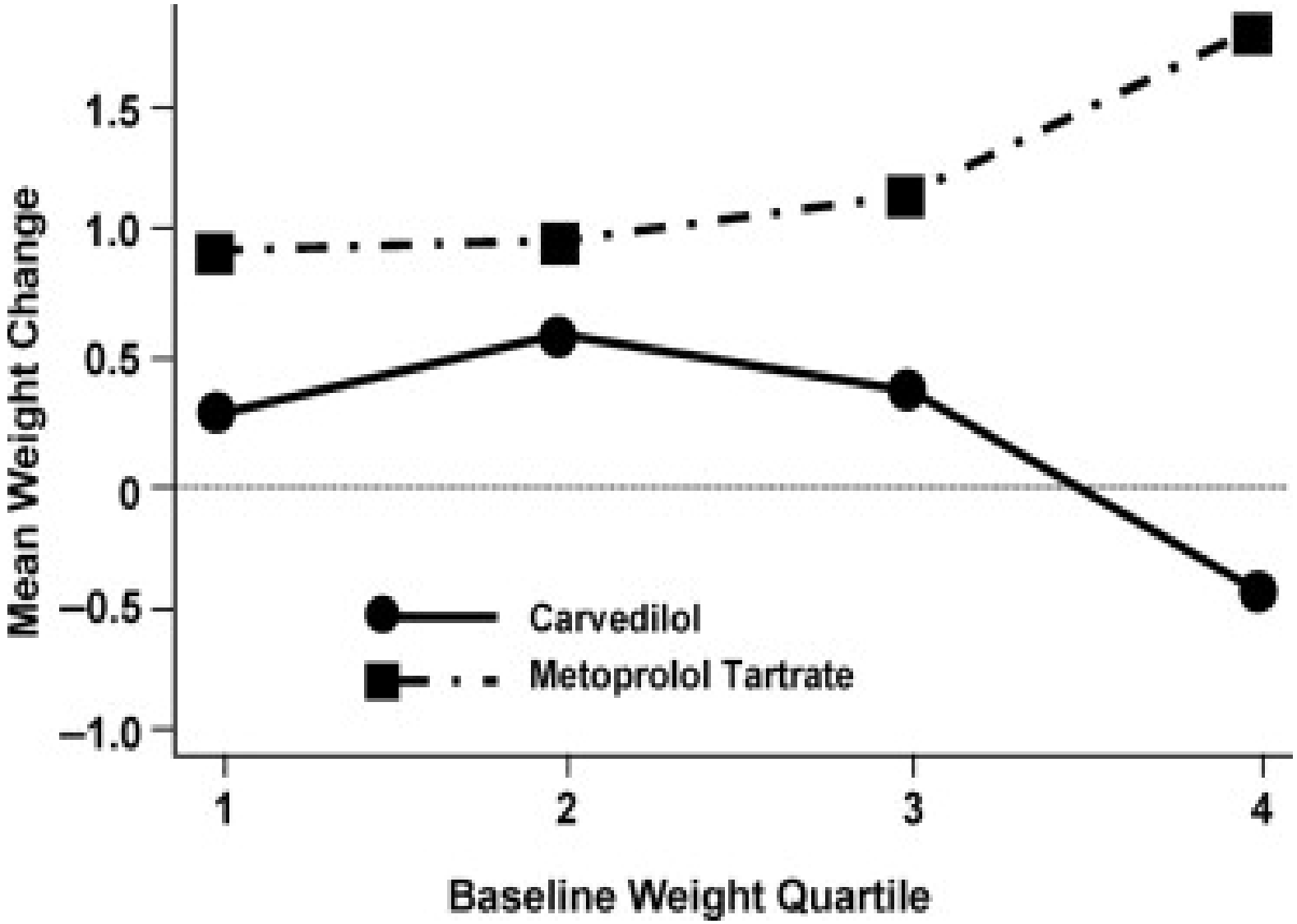
[a]St. Luke's-Roosevelt Hospital Center, New York City; [b]University of Alabama, Birmingham; [c]Tulane University, New Orleans, La; [d]St. John's Hospital, Springfield, Ill; [e]Washington University School of Medicine, St. Louis, Mo; [f]University of Massachusetts Memorial Medical Center and Medical School, Worcester; [g]University of Texas, Dallas; [h]Case Western Reserve University, Cleveland, Ohio; [i]GlaxoSmithKline, Philadelphia, Pa; [j]Rush University Medical Center, Chicago, Ill

GEMINI study (n=1106)



(Messerli et al. 2007)

GEMINI study (n=1106)



(Messerli et al. 2007)

UK Prospective Diabetes Studies (N=1,148) Randomized Control Trial in patients with Diabetes Mellitus type 2 and (DM2) and Hypertension (HTN)

Atenolol gained more weight > Captopril

- (3.4 kg (7.5 lbs) *vs.* 1.6 kg (3.5 lbs)over nine years, p=0.020).

Atenolol required additional antiglycemic treatment > captopril

- (81% vs 71%, p=0.029)

Atenolol had worse Hemoglobin A_{1c} over the first 4 years

- (7.5% vs 7.0%, p=0.0044)

(UK Prospective Diabetes Study Group, 1998)

CLINICAL PRACTICE GUIDELINE

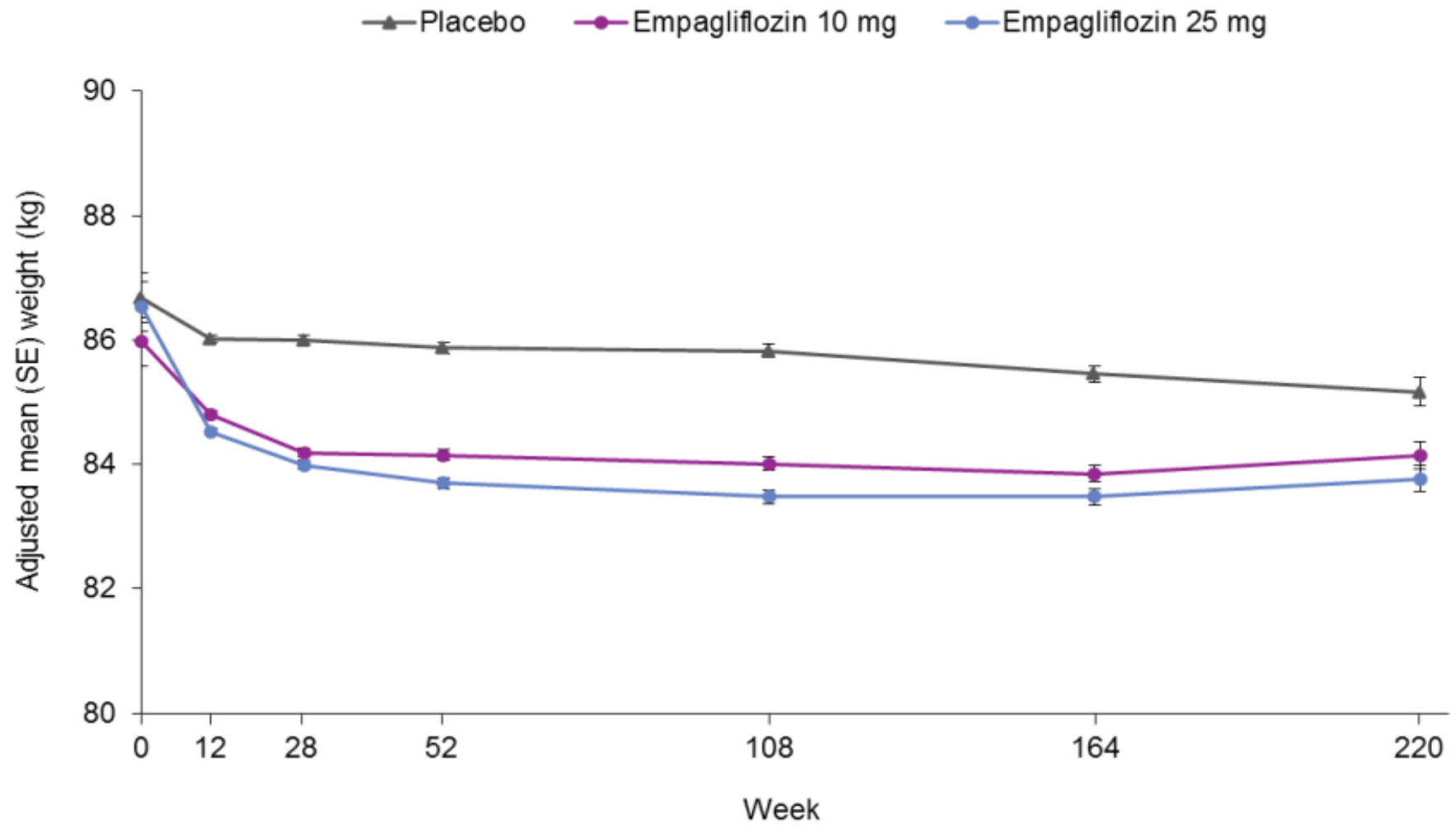
2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults

Recommendation for Choice of Initial Medication

References that support the recommendation are summarized in Online Data Supplement 27 and Systematic Review Report.

COR	LOE	RECOMMENDATION
I	A^{SR}	1. For initiation of antihypertensive drug therapy, first-line agents include thiazide diuretics, CCBs, and ACE inhibitors or ARBs. (S8.1.6-1,S8.1.6-2)

2015 EMPA-REG OUTCOME study – Weight in kg, (n=7020)



Placebo	2285	1915	2215	2138	1598	1239	425
Empagliflozin 10 mg	2290	1893	2238	2174	1673	1298	483
Empagliflozin 25 mg	2283	1891	2226	2178	1678	1335	489

(Zinman et al. 2015)

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› PLoS One. 2017 Dec 6;12(12):e0187982. doi: 10.1371/journal.pone.0187982. eCollection 2017.

The cardio-metabolic impact of taking commonly prescribed analgesic drugs in 133,401 UK Biobank participants

Sophie Cassidy [1], Michael I Trenell [1], Kirstie N Anderson [2]

Affiliations + expand

PMID: 29211804 PMCID: PMC5718411 DOI: 10.1371/journal.pone.0187982

Free PMC article

Look for Culprit Obesogenic Meds

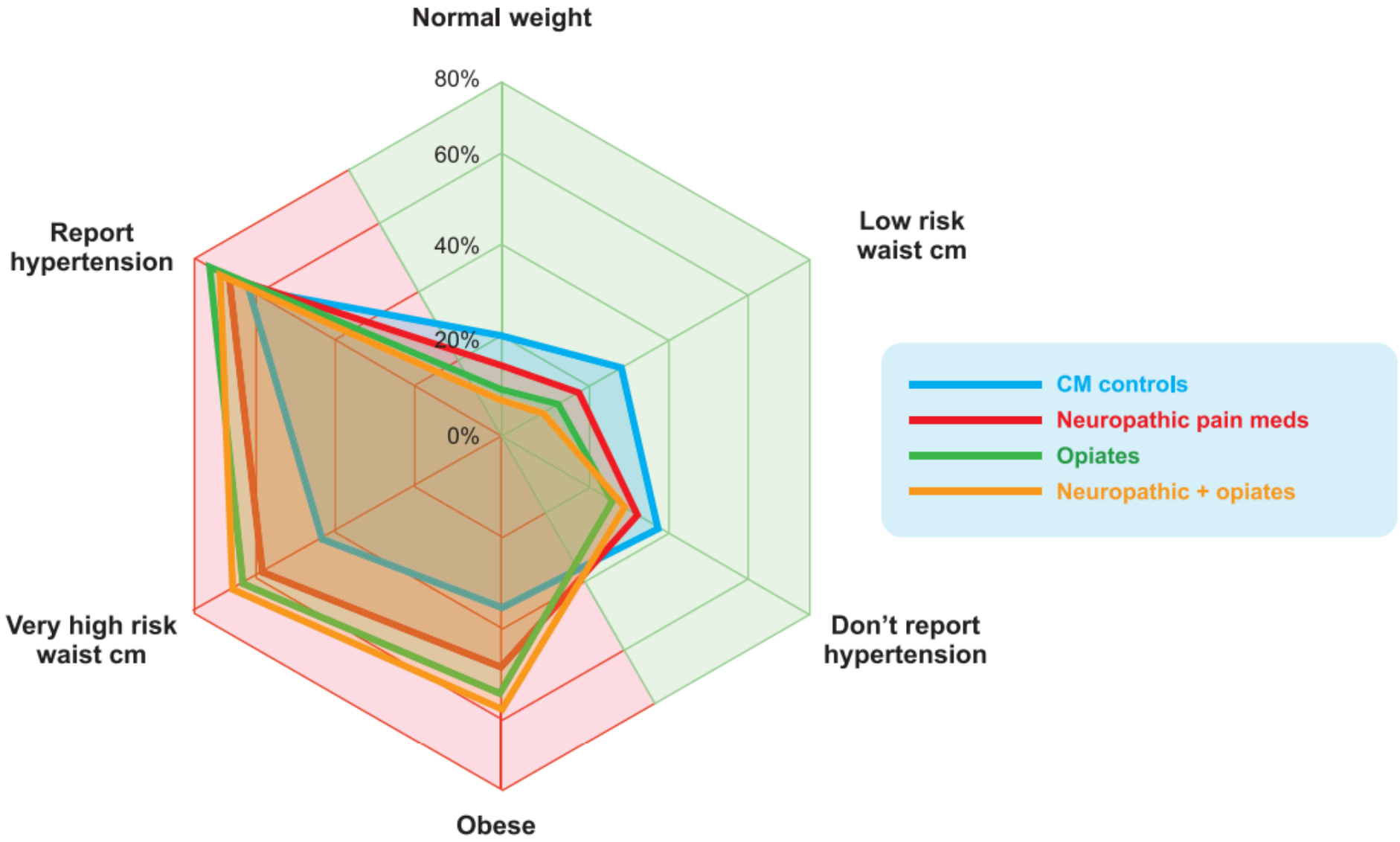

Fig 1. Radar chart showing the shift towards impaired cardio-metabolic health with sedative medication.

(Cassidy et al. 2017)

Dr. Mayer's approach to Neuropathy; Treatment Options that are LESS Obesogenic

1. Topiramate (OFF label; Avoid if CI: nephrolithiasis and acute closed angle glaucoma, also teratogenic)

OR (sometimes AND)

2. Duloxetine (FDA indication for diabetic neuropathy)

+ 3. Capsaicin cream (usually not monotherapy)

4. Lidocaine patches / cream

5. NSAID gel /cream ex. Voltaren

6. Alpha Lipoic Acid (OTC antioxidant) 600mg daily

- All of the above + improving BG control with a more narrow SD
- Referral to pain clinic +/- neurologist

Sleep! (7-8 hours every night)

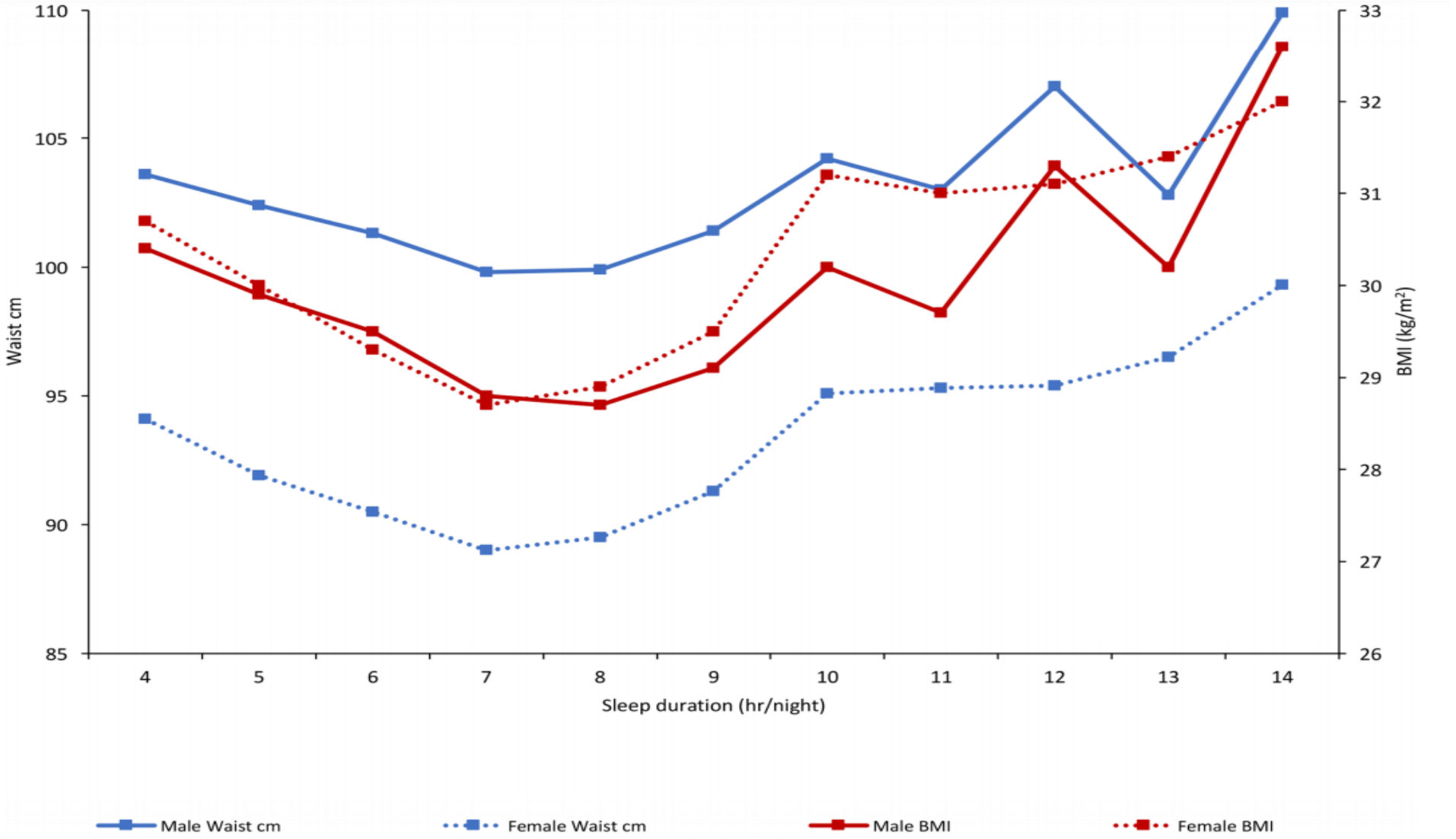

Fig 3. Waist cm and BMI (kg/m^2) according to sleep duration, separated by gender (n = 133,401).

(Cassidy et al. 2017)

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Antihistamine use and Obesity National Health and Nutrition Examination Survey (NHANES)

N=268 H1 antagonist users and 599 controls

Measure	H1 Antagonist	Control	Significance
Weight (kg)			
Males	97.03 ± 24.40	87.52 ± 19.83	.000**
Females	79.96 ± 21.07	75.59 ± 23.82	.037*
BMI (kg)			
Males	30.87 ± 7.57	27.93 ± 5.56	.000**
Females	30.49 ± 7.70	28.75 ± 8.77	.024*
Waist Circumference (cm)			
Males	106.47 ± 15.92	98.49 ± 14.31	.000**
Females	96.81 ± 16.64	93.25 ± 17.90	.028*
Insulin (pmol/L)			
Males	113.52 ± 94.41	64.65 ± 60.23	.000**
Females	66.68 ± 47.58	66.48 ± 64.10	.981

(Ratliff et al. 2010)

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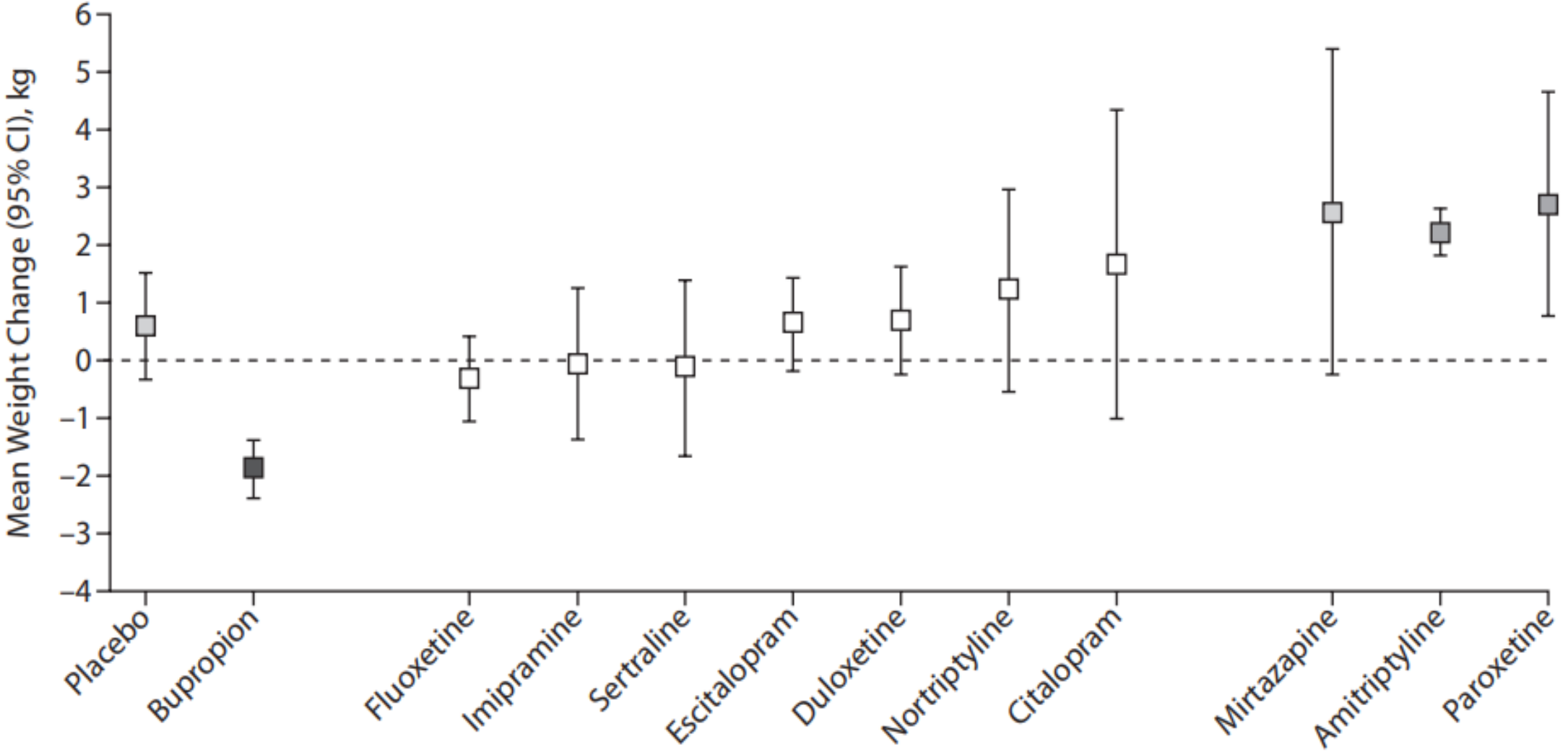
Weight Change with Chronic Antidepressant Use



(Serretti & Mandelli., 2010)

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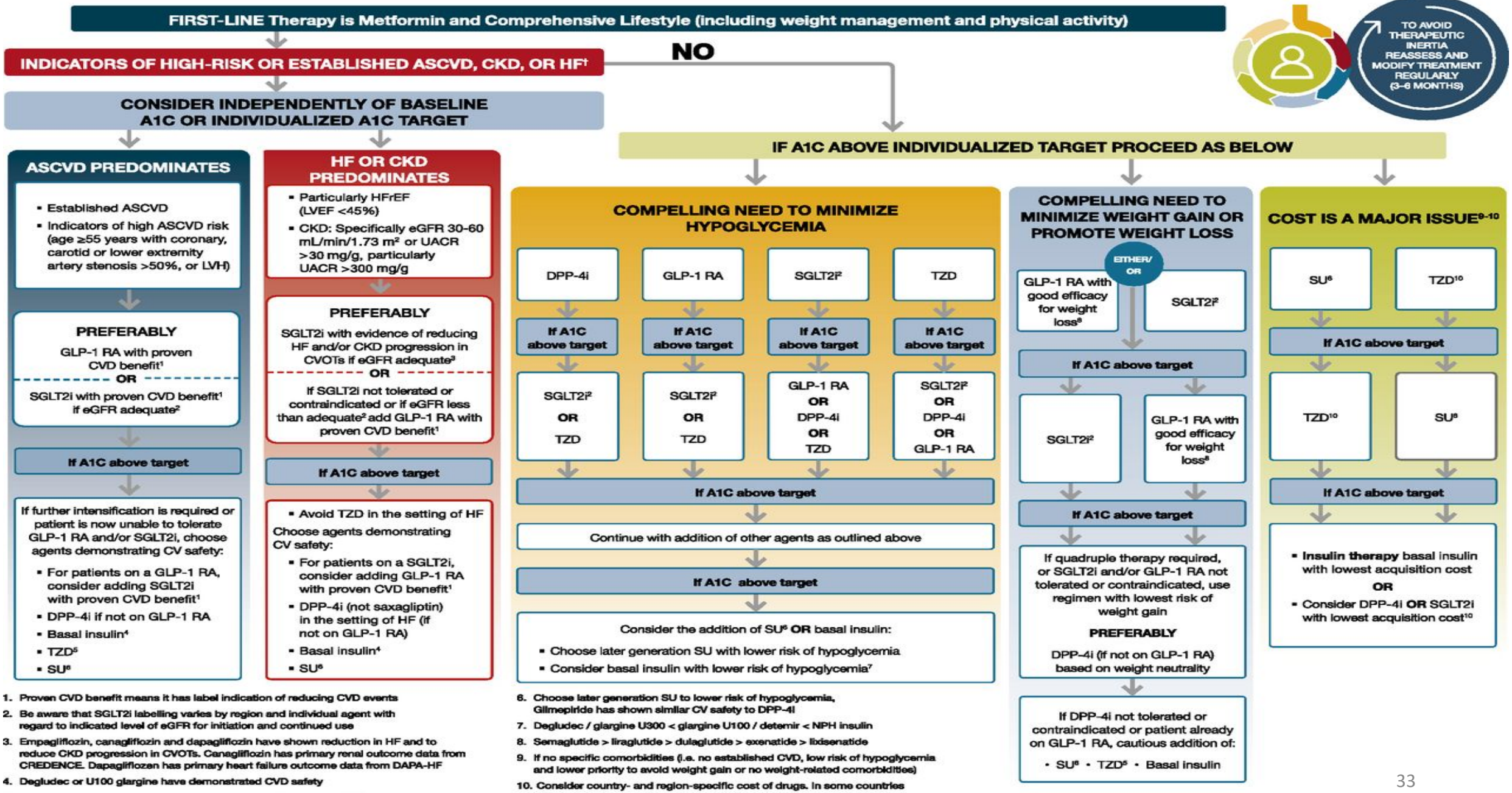

1. Proven CVD benefit means it has label indication of reducing CVD events
2. Be aware that SGLT2i labelling varies by region and individual agent with regard to indicated level of eGFR for initiation and continued use
3. Empagliflozin, canagliflozin and dapagliflozin have shown reduction in HF and to reduce CKD progression in CVOTs. Canagliflozin has primary renal outcome data from CREDENCE. Dapagliflozen has primary heart failure outcome data from DAPA-HF
4. Degludec or U100 glargine have demonstrated CVD safety
5. Low dose may be better tolerated though less well studied for CVD effects
6. Choose later generation SU to lower risk of hypoglycemia, Glimepiride has shown similar CV safety to DPP-4i
7. Degludec / glargine U300 < glargine U100 / detemir < NPH insulin
8. Semaglutide > liraglutide > dulaglutide > exenatide > lixisenatide
9. If no specific comorbidities (i.e. no established CVD, low risk of hypoglycemia and lower priority to avoid weight gain or no weight-related comorbidities)
10. Consider country- and region-specific cost of drugs. In some countries TZDs relatively more expensive and DPP-4i relatively cheaper

† Actioned whenever these become new clinical considerations regardless of background glucose-lowering medications.

LVH = Left Ventricular Hypertrophy; HFrEF = Heart Failure reduced Ejection Fraction
UACR = Urine Albumin-to-Creatinine Ratio; LVEF = Left Ventricular Ejection Fraction

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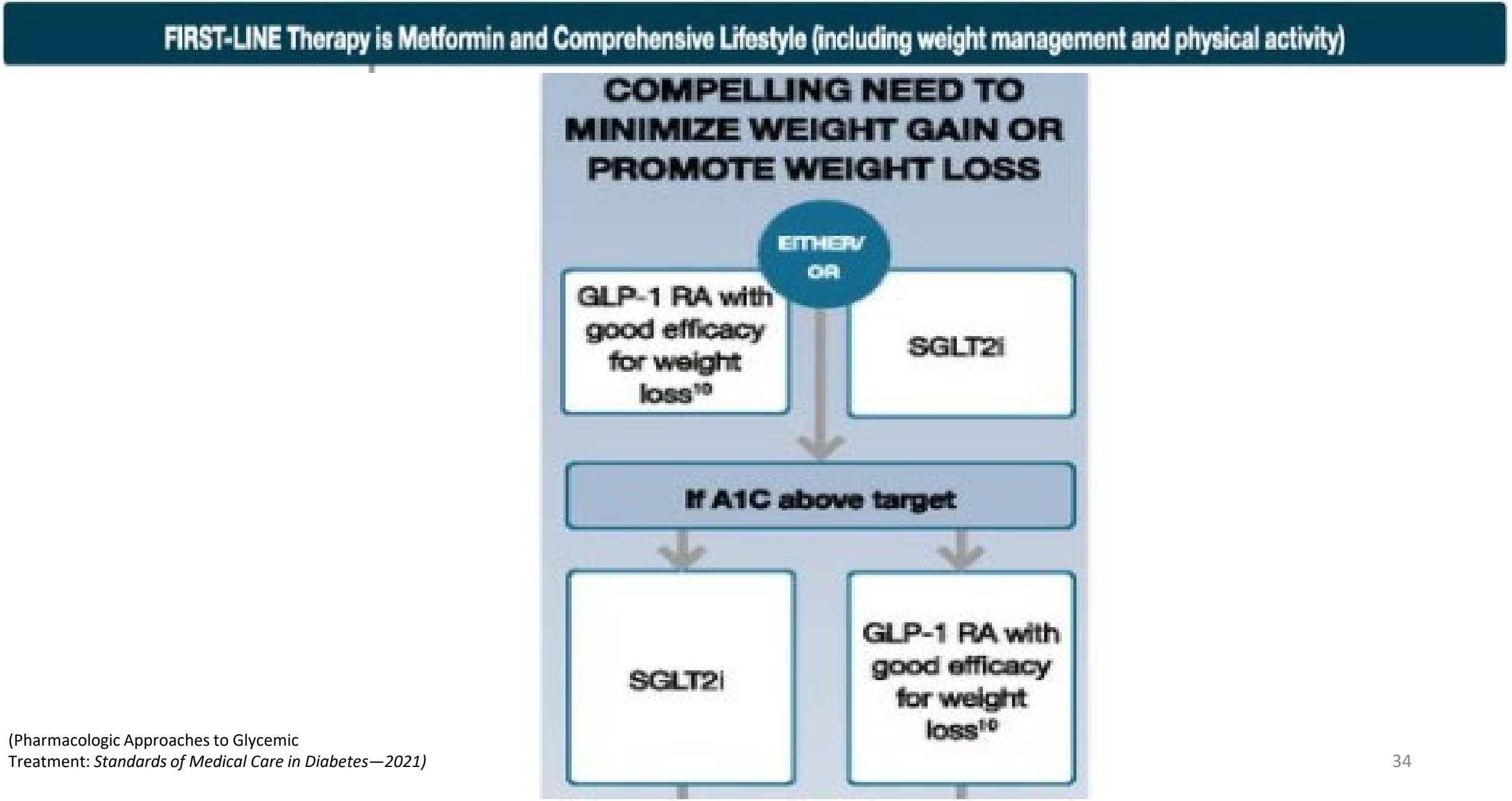


(Pharmacologic Approaches to Glycemic Treatment: *Standards of Medical Care in Diabetes—2021)*

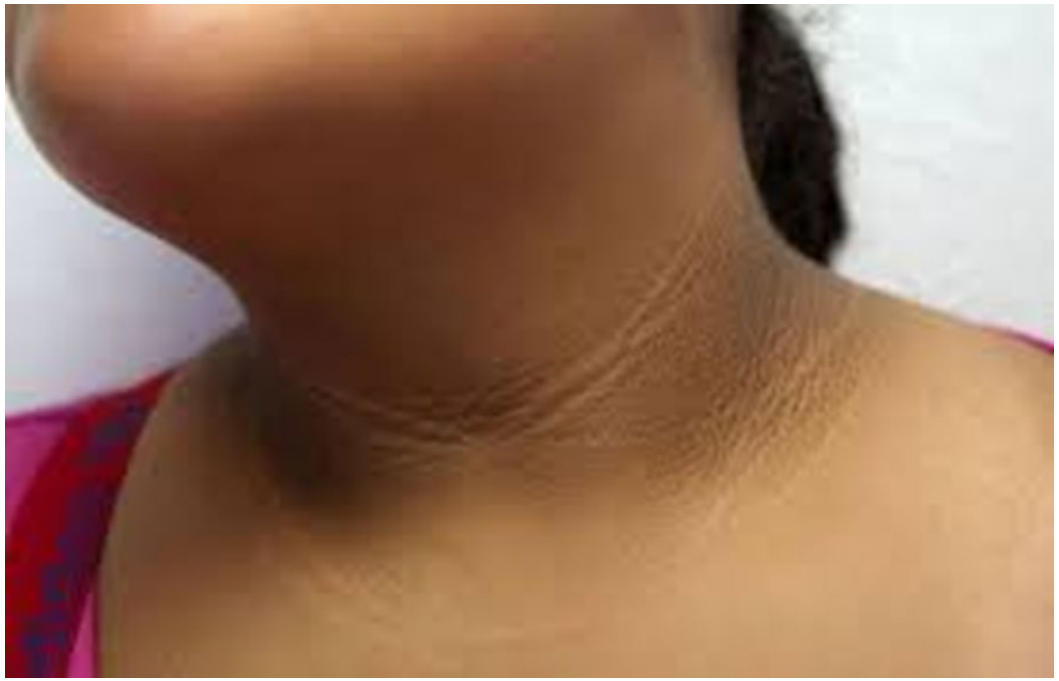
Lab Review: Consider Treating Pre-Diabetes A1c ≥ 5.7%

American Diabetes Association (ADA) recommends considering metformin therapy in patients with prediabetes, BMI ≥35kg/m2, <age 60, women with Gestational Diabetes Mellitus (GDM)

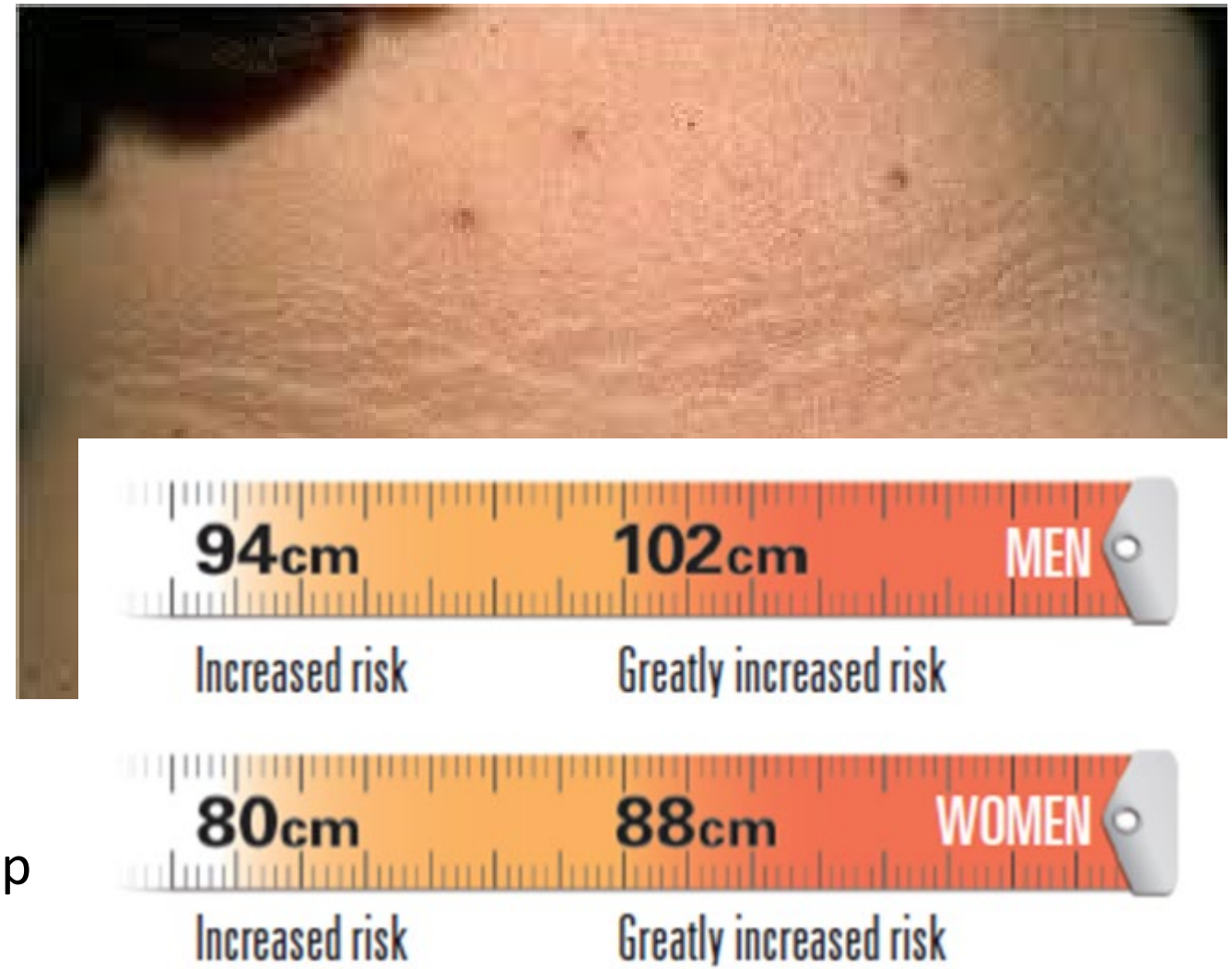
(grade A evidence)

(Knowler et al. 2002)

Physical Exam (PE): Look for signs of Insulin Resistance →check sugar/insulin/energy conversion and diabetes risk (HgbA1c)



https://dk.intelligentlabs.org.jpg



BMI >30kg/m² consider screening: diabetes mellitus, dyslipidemia, hypertension (HTN), cardiovascular disease (CVD), obstructive sleep apnea (OSA), non-alcoholic fatty liver disease (NAFLD), osteoarthritis (OA), major depression, and cancer screening as indicated.

Recommendations for Obesity

1. Screen all adults for obesity.

2. BMI ≥30 kg/m²→refer to intensive, multi-component behavioral intervention program, a **Comprehensive Lifestyle intervention** (B recommendation)

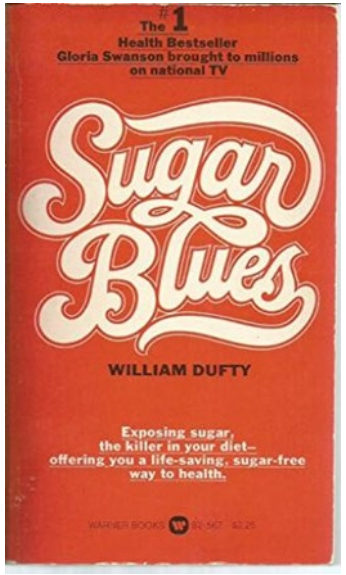
DoD:

Military OneSource

Command Fitness Evaluation Program

(http://uspreventativeservicestaskforce.org)

Behavior Modification Therapy



- Goal of long-term changes
- Identification and control of stimuli that trigger eating
- Setting SMART goals (Specific, Measurable, Action-oriented, Realistic, Time-sensitive)
- Modification and then monitoring (emphasis on self-monitoring) eating behavior and activity level
- Mindful eating, slowing down the process, eating with intent
- Social support, encourage family engagement
- Cognitive restructuring, problem solving, assertiveness training, behavioral contracting, reinforcement of success and stress reduction also may be helpful

(Voils et al. 2009)
(Apovian et al. 2015)
(https://pictures.abebooks.com/isbn/9780446825672-us.jpg)

Diet: Goal of Negative Energy Balance

- Many dietary programs studied: Low carbohydrate/ketogenic (modified-Atkins), DASH, Mediterranean, low fat (LEARN or Ornish), low glycemic index (South Beach, Zone), and intermittent fasting:

- Low carbohydrate more effective than low fat at 6 mos only, not different 12 mos.

- Meal replacement (shake or bar) can be helpful

- Degree of adherence, and perhaps frequency of intervention, key

Dietary Recommendations: Good for ALL!

- NO sugar-sweetened beverages (NO juice –including cranberry, no sweet tea, no Gatorade, no Koolaid, no Lemonade, no soda/ginger ale)
- MORE non-starchy vegetable servings per day
- MORE lean proteins
- Minimize or avoid alcohol –diuretic, calories, brain misinterprets thirst for hunger

https://d2d8wwwkmhfcva.cloudfront.net
https://www.google.com/url?sa=i&url=https%3A%2F%2Fasukarulz.blogspot.com
https://d1fywv0iz2cv2w.cloudfront.net/product-image/
https://images.epallet.com/production/media/cache/

Sugar synonyms:

- Agave syrup
- Maple syrup
- Molasses
- Brown sugar
- Sugar in the raw
- Honey
- Turbinado

(http://www.drnewtons.com/wp-content/uploads/2018/11/sugar-addiction-long-e1541786192542.jpg)

Physical Activity: Goal is to Move More

- We suggest choosing one or more of the following as the physical activity component of a comprehensive lifestyle intervention: aerobic, resistance, and/or lifestyle physical activity.

- “Every minute and Every step Counts”

Back to our patient in clinic

“Is there a medication I can take to help me to lose weight?”

Pharmacologic Management of Obesity

FDA cites indicated for:

- Patients with BMI 27 kg/m^2 + an obesity related comorbidity: type 2 DM, HTN, dyslipidemia, OA and OSA (consider with NAFLD, and Gastroesophageal Reflux Disease [GERD])

- Any patient with BMI >30 kg/m^2

FDA Approved Obesity Medications (more in pipeline)

1. ~~Phentermine and Diethylpropion (Short term only)~~
2. Orlistat (Xenical, Alli)
3. Topiramate ER + Phentermine (Qsymia)
4. Liraglutide (Saxenda)
5. Bupropion + Naltrexone (Contrave)
6. NEW! Semaglutide (Wegovy) approved 6/4/2021

Weight loss in general is contraindicated in pregnancy. Most Pregnancy class X.

7. Setmelanotide (Imcivree)*

- *For use **only** in patients with obesity due to proopiomelanocortin (POMC), proprotein convertase subtilisin/kexin type 1 (PCSK1), or leptin receptor (LEPR) deficiency confirmed by genetic testing

Net meta-analysis

Medication	Mean weight loss vs placebo	≥ 5% weight loss	Discontinuation due to an adverse event
phentermine/ topiramate	-8.80 kg	75%	10%
liraglutide	-5.24 kg	63%	12%
naltrexone/ bupropion	-4.95 kg	55%	13%
orlistat	-2.63 kg	44%	8%

(Khera et al. 2016)

Dr. Mayer's Approach to Pharmacotherapy Considerations for Obesity

Obtain history:

- If premenopausal female: Conception goals?
- Kidney stones
- Acute closed angle glaucoma
- Seizure
- Uncontrolled HTN or heart rate
- Any current or future need for opiates
- Diarrhea or constipation/GI concerns, gastroparesis
- Medullary thyroid cancer, MEN2, ? pancreatitis, ? family history of pancreatic cancer
- Mental health history

-Insomnia
-Migraine headaches
-Trying to quit smoking

Provider Weight loss Medication TOOL: 2020 CPG

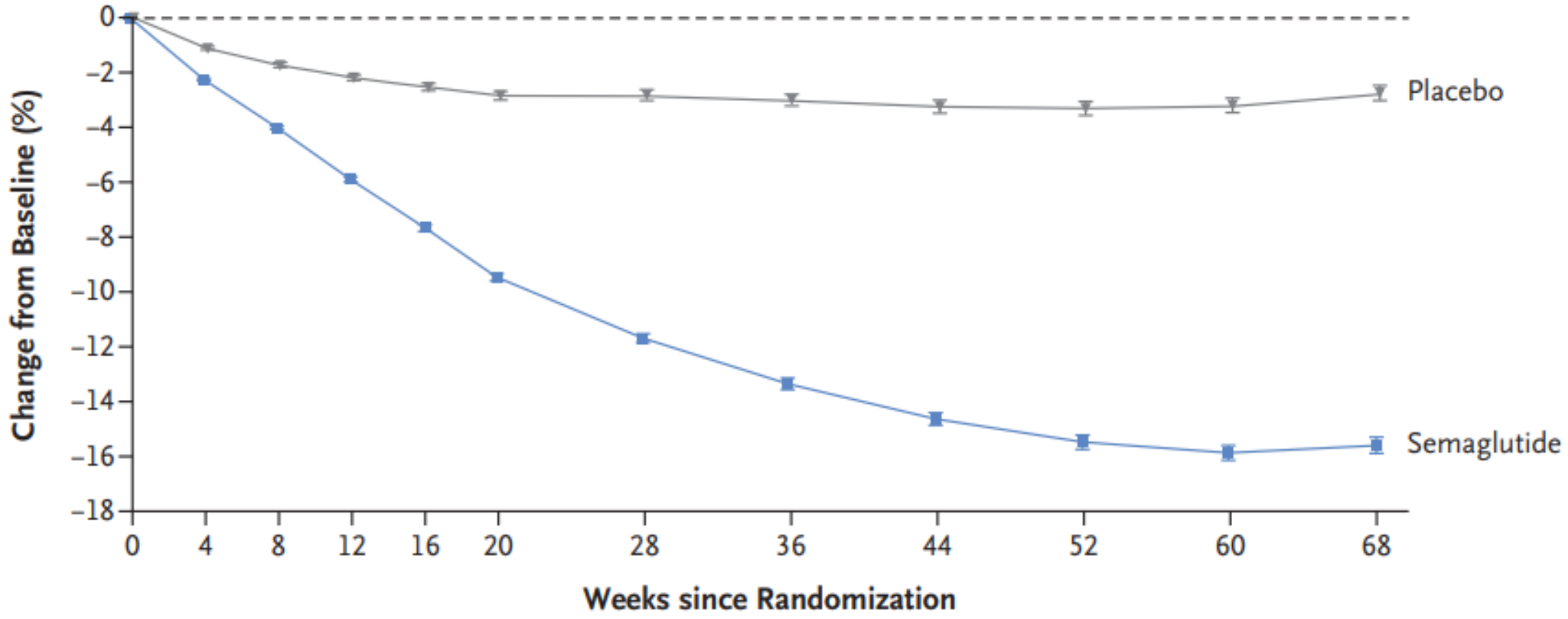
Prescribing Information for Chronic Weight Management Medications[a]	
Phentermine/Topiramate ER (Qsymia®) C-IV [3.75 mg/23 mg; 7.5 mg/46 mg; 11.25 mg/69 mg; 15 mg/92 mg capsules]	
Dosing: 3.75 mg/23 mg daily for 14 days; increase to 7.5 mg/46 mg for 12 weeks **Goal:** 3% weight loss within 12 weeks. If unsuccessful, increase to 11.25 mg/69 mg for 14 days; increase to 15 mg/92 mg daily for 12 weeks. If 5% baseline weight loss is not achieved, discontinue by slow taper. Renal/Hepatic Impairment (CrCl <50 mL/min or Child-Pugh 7-9): Max dose: 7.5 mg/46 mg daily	**Contraindications:** Pregnancy; REMS; glaucoma; MAOI use during or within 14 days; hyperthyroidism **Warnings:** Increased heart ratemood & sleep disorders; suicidal behavior/ ideation; increased creatinine; metabolic acidosis; cognitive impairment; drug abuse; nephrolithiasis; hypokalemia. • Taper slowly to discontinue (1 dose every other day for ≥1 week) to prevent seizure. Discontinue if glaucoma or myopia develop.
Naltrexone/Bupropion ER (Contrave®) [8 mg/90 mg tablet]	
• **Dosing: Week 1:** 1 AM tablet; **Week 2:** 1 AM tablet, 1 PM tablet; **Week 3:** 2 AM tablets, 1 PM tablet; **Weeks 4-12:** 2 AM tablets, 2 PM tablets • **Goal:** 5% weight loss within 12 weeks. Discontinue if unsuccessful. Renal Impairment **(moderate/severe):** Max dose: 1 tablet twice daily Not recommended for use in patients with ESRD. Hepatic Impairment: Max dose: 1 tablet in the morning.	**Contraindications:** Opioid use; pregnancy; uncontrolled hypertension; seizure disorder; bulimia & anorexia nervosa; abrupt stop of alcohol; acute opioid withdrawal; MAOI's **Warnings:** Suicidal thinking/behavior **[Boxed Warning]**; seizures; increased heart rate & blood pressure; neuropsychiatric symptoms; hepatotoxicity; may precipitate withdrawal if receiving opioids; adjust hypoglycemic medications to avoid hypoglycemia

Prescribing Information for Chronic Weight Management Medications[a] (cont.)	
Orlistat (Xenical®, Alli®) [120 mg; 60 mg (OTC) capsules]	
Dosing: • Xenical®: 120 mg 3 times daily with a fat containing meal (up to 1 hour after meal); omit dose if meal is occasionally missed or contains no fat • Alli® OTC labeling: 60 mg 3 times daily with a fat containing meal Renal/Hepatic Impairment: No adjustments provided by manufacturer	**Contraindications:** Pregnancy; chronic malabsorption syndrome; cholestasis **Warnings:** Hepatotoxicity; cholelithiasis; increased urine oxalate and nephrolithiasis; decreased absorption of fat-soluble vitamins, cyclosporine, thyroid hormone, and anticonvulsants; adjust hypoglycemic drugs to avoid hypoglycemia
Liraglutide (Saxenda®) [6 mg/mL, 3mL injection for subcutaneous use]	
Dosing: Initiate 0.6 mg daily for 1 week; increase by 0.6 mg per week to target dose of 3 mg; slow titration may improve tolerability **Goal:** 4% weight loss within 16 weeks. Discontinue if unsuccessful. Renal Impairment: Use with caution	**Contraindications:** Pregnancy; Personal or family history of medullary thyroid carcinoma or MEN2 **[Boxed Warning]** **Warnings:** Thyroid C-cell tumors **[Boxed Warning]**; gallbladder disease; pancreatitis (discontinue); increased heart rate; renal impairment; suicidal behavior/ideation; to reduce the risk for hypoglycemia, decrease concomitant secretagogue (i.e., sulfonylureas) dose (e.g., by 50%) or insulin

(VA/DoD Clinical Practice Guidelines, 2020)

STEP 1: Semaglutide 2.4mg weekly

A Body Weight Change from Baseline by Week, Observed In-Trial Data



No. at Risk

Placebo	655	649	641	619	615	603	592	571	554	549	540	577
Semaglutide	1306	1290	1281	1262	1252	1248	1232	1228	1207	1203	1190	1212

(Wilding et al. 2021)

Reassess Response

- Reassess!
- “Effective” is often defined as 5% loss of body weight at three months.

- Ineffective = < 5% weight loss at three months, or if side effects →discontinue (may need to taper back down) consider switch or referral

- Weight loss effects are sustained only while taking these agents.

- Cross-over trials demonstrate weight regain once off of the obesity treatment agent →Long-term use required.

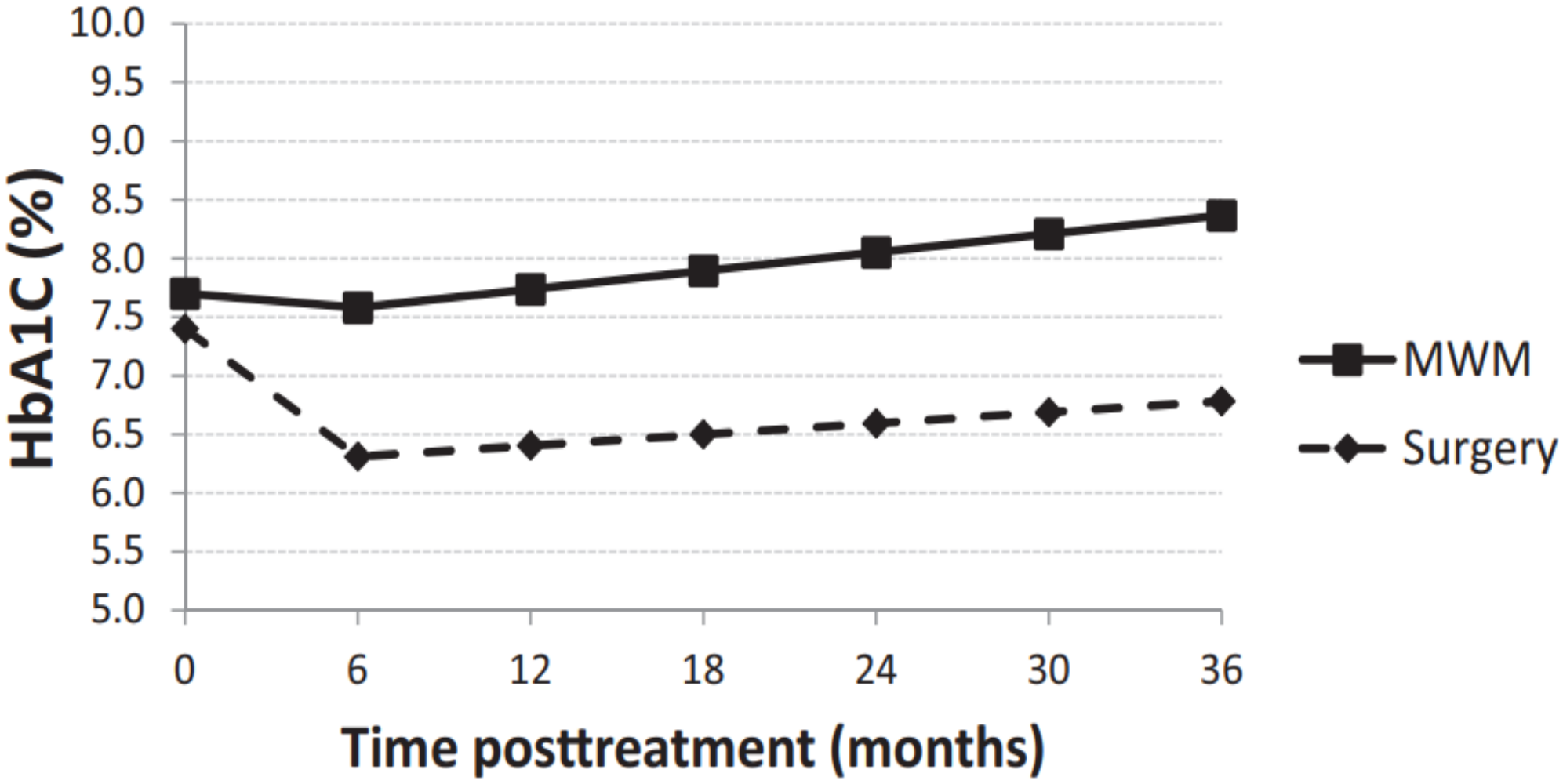
Surgical Treatment Options for Obesity

Bariatric surgery is indicated:

- BMI ≥30 kg/m^2 with type 2 Diabetes
- BMI ≥35 kg/m^2 + an obesity-related comorbidity (could include HTN, OSA, OA, GERD)
- BMI ≥ 40 kg/m^2 (without additional comorbidity presence required)

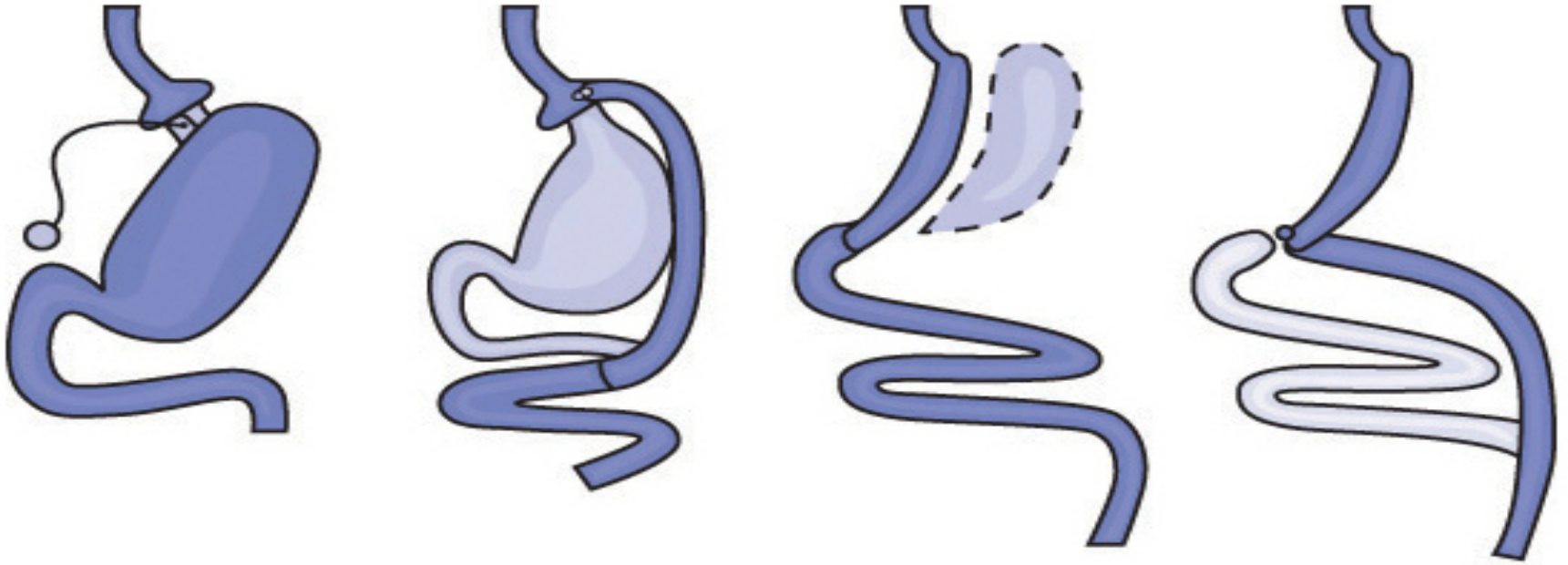
(https://www.healthequality.va.gov/guidelines/CD/obesity/)
(Horwitz et al. 2016)
(Liang et al. 2013)

Metabolic Surgery vs. Lifestyle Intervention Sessions



(Horwitz et al. 2016)

Surgical Treatments for Obesity



Adjustable Gastric Band (AGB)

Roux-en-Y Gastric Bypass (RYGB)

Vertical Sleeve Gastrectomy (VSG)

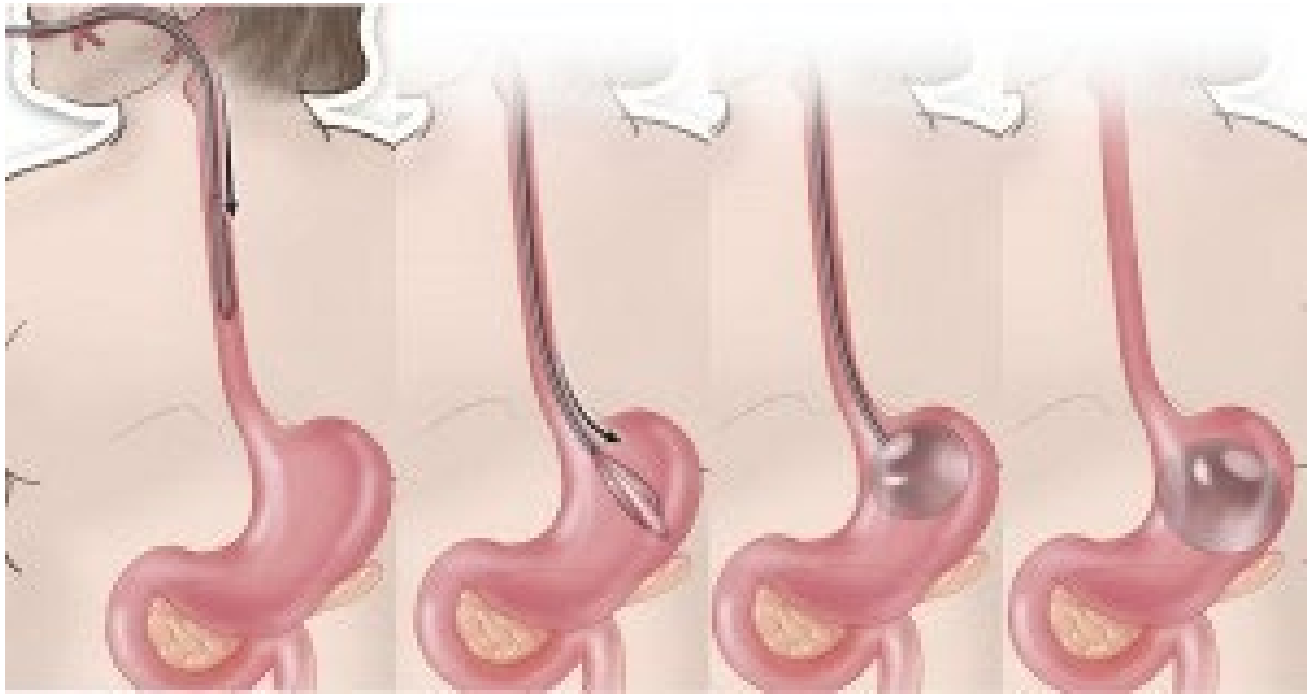
Biliopancreatic Diversion With a Duodenal Switch (BPD-DS)

(http://win.niddk.nih.gov/publications/gastric.htm)

Space Occupying Systems for weight loss

- Endoscopically placed balloons

Short-term six month use only

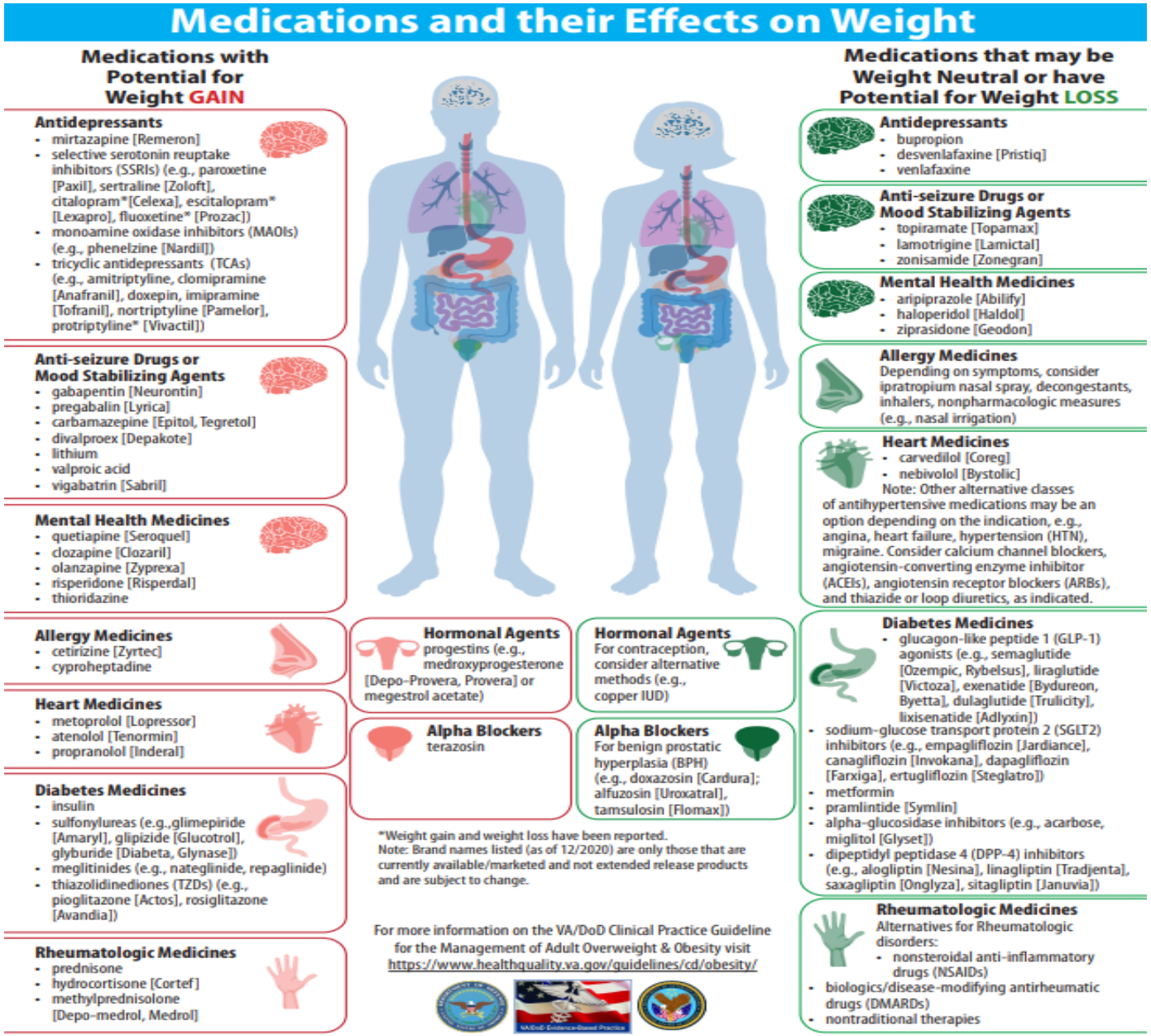


TOOLS for you to use TODAY!

Management of Adult Overweight and Obesity (OBE) (2020) - VA/DoD Clinical Practice Guidelines

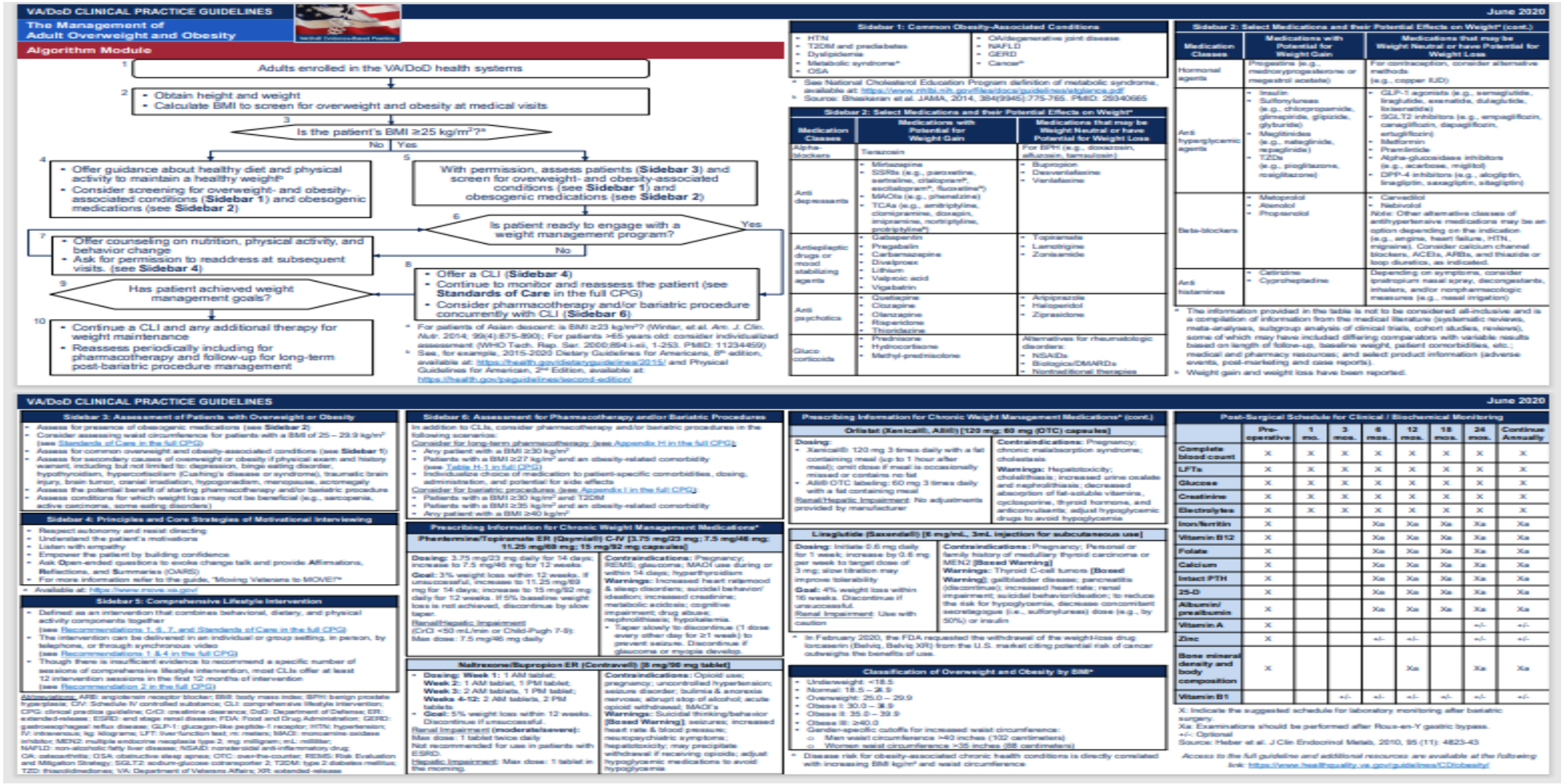
https:/www.healthquality.va.gov/guidelines/CD/Obesity

Medication Weight Effect Poster for Your Clinic Rooms



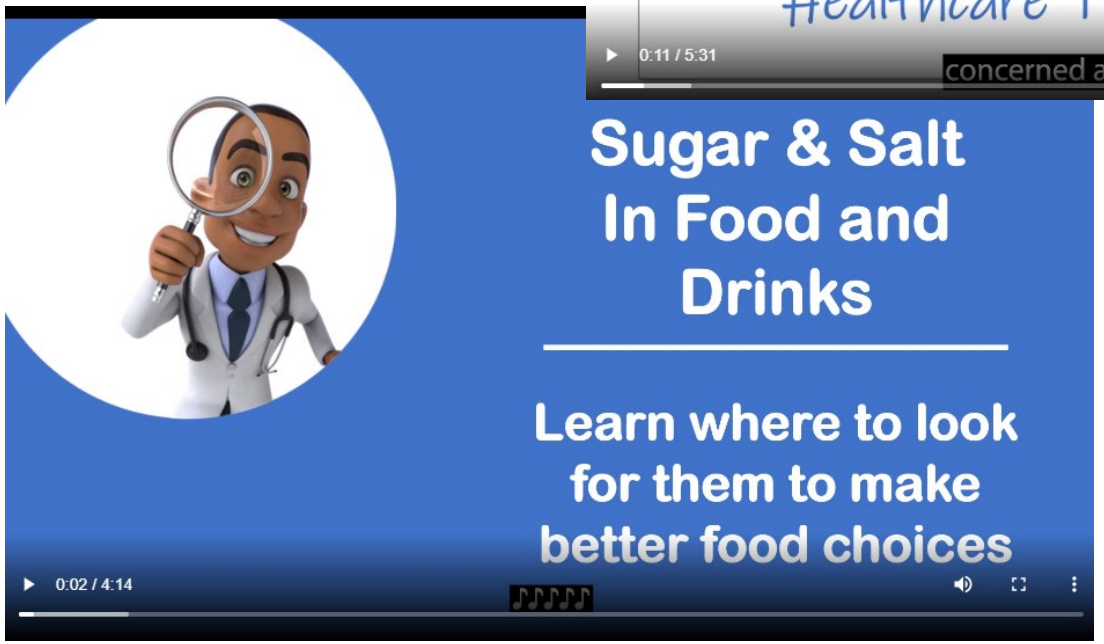
(VA/DoD Clinical Practice Guidelines, 2020)

Provider Pocket Reference Card



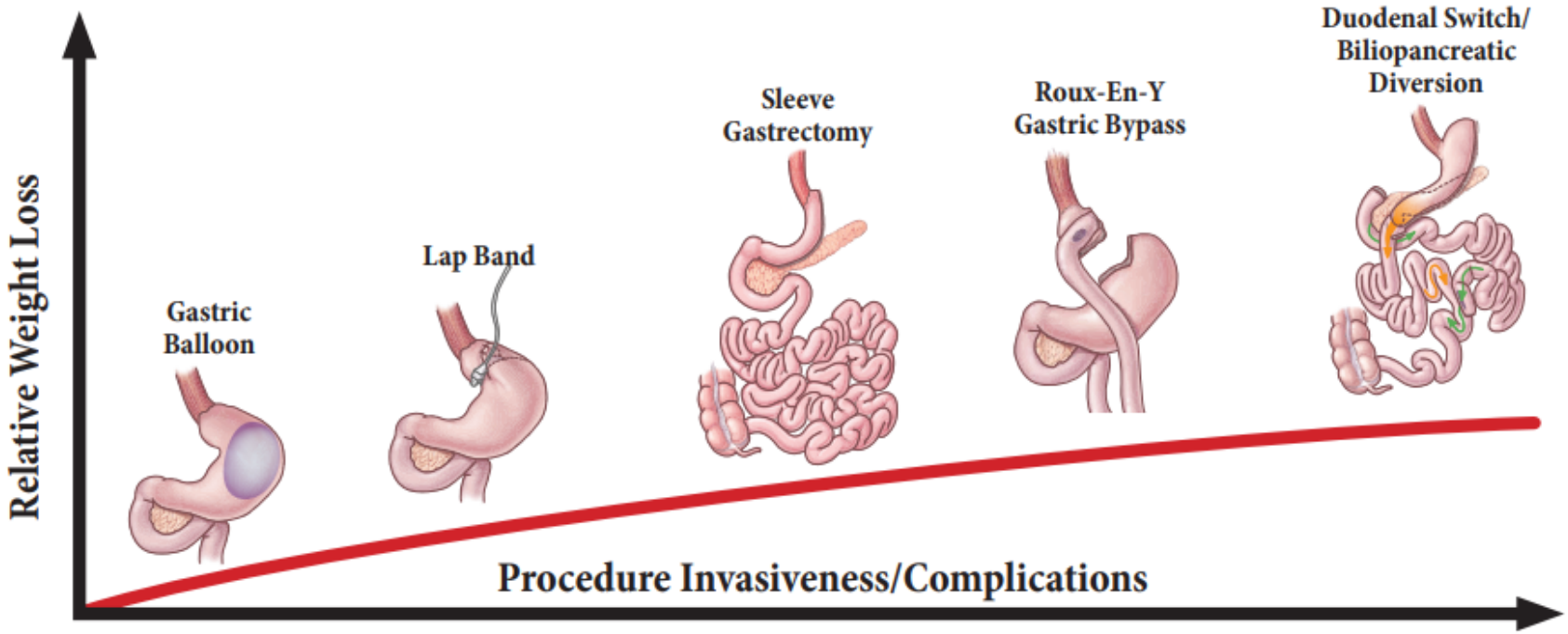
(VA/DoD Clinical Practice Guidelines, 2020)

Three Videos for your Patient Waiting Room!



(https://www.qmo.amedd.army.mil/obesity/OverweightAndOBesity_SugarsandSaltVideoFINALCC13Apr2021.mp4)

Metabolic/Bariatric Procedure Comparisons



Gastric Balloon

- Daily Multi-Vitamin
- Eat slowly stop when full
- FDA approved for only six (6) months

For more information on the VA/ DoD Clinical Practice Guideline for the Management of Adult Overweight & Obesity, visit https://www.healthquality.va.gov/guidelines/cd/obesity/

Lap Band

- Requires commitment to life-long follow-up
- Three meals per day (high protein/low carb) - initially liquids with gradual transition
- Will require periodic band adjustments
- Eat slowly, chew well, and stop when full
- Daily Multi-Vitamin
- 64 oz. of water throughout the day
- Avoid high calorie drinks, carbonated drinks, and alcohol
- Avoid stringy vegetables, sticky foods, large chunks of meat, crunchy foods such as popcorn and nuts

Sleeve Gastrectomy - Gastric Bypass - Duodenal Switch

- Requires commitment to life-long follow-up
- Avoidance of carbohydrates/refined man-made sugars and alcohol
- Diet of high protein, low fat, and low carb - avoid carbonated beverages
- Eat slowly and stop when full
- No drinks 30 minutes before or after a meal. Aim for at least 64 oz. of water throughout the day.
- Lifelong Multi-Vitamin Supplementation: Folate, B12, B1, Iron, Calcium, Vitamins D, A, E, K, Zinc, and Copper
- Three small meals per day/avoid drinking immediately before/during/after meals
- Avoidance of ALL ulcerogenic drugs and No smoking
- Proton Pump Inhibitors (PPIs) - initially in the post-operative period
- Gallstone prophylaxis with ursodiol for six (6) months post-operatively
- Close post-operative follow up for de-escalation of diabetes/hypertensive meds
- Weight-based medication doses will likely decrease over time
- Avoidance of pregnancy for the first year

(VA/DoD Clinical Practice Guidelines, 2020)

Treatment Pearls from an Endocrinologist to consider:

- Am I making weight loss harder for my patient? Review their medication list. Consider getting help from a pharmacist. Ask the patient to review their list with pharmacist and discuss next visit.

- Ask for permission: “I am concerned about how your weight might be affecting your health. Is this something you feel comfortable discussing today?”

- Consider screening for diabetes: BMI >30kg/m2; OR signs of insulin resistance: acanthosis, or metabolic type lipid pattern (low high-density lipoprotein [HDL] + high triglycerides [TG]).

- Assess where your patient is in their desire for change

- Start with lowest hanging fruit: NO LIQUID SUGAR!

Look for Culprit Obesogenic Meds

Next: Review medication list

→Look for culprits making weight loss harder

Med list:

1. Metoprolol tartrate 25 mg twice daily
2. Gabapentin 600 mg three times daily
3. Cetirizine 10mg daily
4. Paroxetine 60mg daily
5. Glipizide 10mg 2xd

Don't make it harder than it already is!

Key Takeaways:

1. Obesity is chronic condition requiring lifelong management.

2. Don’t prescribe medications that promote weight gain and warn prescribing providers.

3. Comprehensive lifestyle Intervention is all 3 components (behavior, diet, and exercise) and is foundational to other interventions.

4. Several dietary approaches can be successful. Adherence is most important.

5. We have many tools for you to use with your patients! Use them all!


Merci
de tout
Coeur

References

American Diabetes Association. (2021). Diabetes Care: Pharmacologic approaches to glycemic treatment: Standards of medical care in diabetes: 2021. *American Diabetes Association Diabetes Care, 44*(1), S111-S124. https://doi.org/10.2337/dc21-S009

Apovian, C.M., Aronne, L.J., Bessesen, D.H., McDonnell, M.E., Murad, H., Pagotto, U., Ryan, D.H., & Still, C.D. (2015). Pharmacological management of obesity: An endocrine society clinical practice guideline. *The Journal of Clinical Endocrinology Metabolism, 100*(5), 342–362. https://doi.org/10.1210/jc.2015-1782

Cassidy, S., Trenell, M.I., & Anderson. (2017). The cardio-metabolic impact of taking commonly prescribed analgesic drugs in 133,401 UK Biobank participants. *PLOS ONE, 12*(12), e0187982. https://doi.org/10.1371/journal.pone.0187982

Centers of Disease Control and Prevention. (2021). National Health and Nutrition Examination Survey, 2017–2018. National Center for Health Statistics. https://www.cdc.gov/nchs/nhanes/index.htm

Flegal, K.M. & Graubard, B.I., (2009). Estimates of excess deaths associated with body mass index and other anthropometric variables. *American Journal of Clinical Nutrition. 89*(4), 1213–1219. https://doi.org/10.3945/ajcn.2008.26698

Horwitz, D., Padron, C., Kelly, T., Saunders, J.K., Ude-Welcome, A., Schmidt, A., & Parikh, M. (2020). Long-term outcomes comparing metabolic surgery to no surgery in patients with type 2 diabetes and body mass index 30-35. Surgery for Obesity and Related Diseases, 1-6. https://doi.org/10.1016/j.soard.2020.01.016

Johnston, B.C., Kanters, S., Bandayrel, K., Wu, P., Naji, F., Siemieniuk, R.A., Ball, G.D., Busse, J.W., Thorlund, K., Guyatt, G., Jansen, J.P., & Mills, E.J. (2014). Comparison of weight loss among named diet programs in overweight and obese adults: A meta-analysis. *Journal of the American Medical Association, 312*(9), 923-33. https://doi.org/10.1001/jama.2014.10397

References

Khera, R., Murad, M.H., Chander, A.K., Dulai, P.S., Wang, Z., Prokop, L.J., Loomba, R., Camilleri, M., & Singh, S. (2016). Association of pharmacological treatments for obesity with weight loss and adverse events: A systematic review and meta-analysis. Journal of the American Medical Association, 315(22), 2424-2434. https://doi.org/10.1001/jama.2016.7602

Knowler, W.C., Barrett-Connor, E., Fowler, S.E., Hamman, R.F., Lachin, J.M., Walker, E.A., Nathan, D.M., & Diabetes Prevention Program Research Group. (2002). Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. New England Journal of Medicine, 346, 393-403. https://doi.org/10.1056/NEJMoa012512

Kushner, R.F., and the STEP 1 Study Group. Once-weekly semaglutide in adults with overweight or obesity. New England Journal of Medicine, 384(11), 989. https://doi.org/10.1056/NEJMoa2032183

Liang, Z., Qinan, W., Chen, B., Yu, P., Zhao, H., & Ouyang, X. (2013). Effect of laparoscopic roux-en-Y gastric bypass surgery on type 2 diabetes mellitus with hypertension: A randomized controlled trial. Diabetes Research in Clinical Practice, 101(1), 50-56. https://doi.org/10.1016/j.diabres.2013.04.005

McAllister, E.J., Dhurandhar, N.V., Keith, S.W., Aronne, L.J., Barger, J., Baskin, M., Benca, R.M., Biggio, J., Boggiano, M.M., Eisenmann, J.C., Elobeid, M., Fontaine, K.R., Gluckman, P., Hanlon, E.C., Katzmarzyk, P., Pietrobelli, A., Redden, D.T., Ruden, D.M., Wang, C., Waterland, R.A., Wright, S.M., & Allison, D.B. (2009). Ten putative contributors to the obesity epidemic. Critical Review Food Science Nutrition, 49(10), 868-913. https://doi.org/10.1080/10408390903372599

Messerli, F.H., Bell, D.S., Fonseca, V., Katholi, R.E., McGill, J.B., Phillips, R.A., Raskin, P., Wright, J.T., Bangalore, S., Holdbrook, F.K., Lukas, M.A., Anderson, K.M., Bakris, G.L., Gemini Investigators. (2007). Body weight changes with beta-blocker use: Results from GEMINI. American Journal of Medicine, 120(7), 610-615. https://doi.org/10.1016/j.amjmed.2006.10.017

References

O'Neil, P.M., Birkenfield, A.L., McGowan, B., Mosenzon, O., Pedersen, S.D., Wharton, S., Carson, C., Jepsen, C., Kabisch, Wilding, P. (2018). Efficacy and safety of semaglutide compared with liraglutide and placebo for weight loss in patients with obesity: A randomized, double-blind, placebo and active controlled, dose-ranging, phase 2 trial. The Lancet, 392(10148), 637-649.

Ratliff, J.C., Barber, J., Palmese, L., Reutenauer, E., & Tek, C. (2010). Association of prescription H1 antihistemine use with obesity: Results from the national health and nutritional examination survey. Obesity, 18(12), 2398-2400. https://doi.org/10.1159/000108341

Serretti, A., & Mandelli, L. (2010). Antidepressants and body weight: A comprehensive review and meta-analysis. Journal of Clinical Psychiatry, 71(10), 1259-1257. https://doi.org/10.4088/JCP.09r05346blu

Simonnet, A., Chetboun, M., Poissy, J., Raverdy, V., Noulette, J., Duhamel, A., Labreuche, J., Mathieu, D., Pattou, F., Jourdain, M., on behalf of the LICORN and the Lille COVID-19 and Obesity study group. (2020). High prevalence of obesity in severe acute respiratory syndrome Coronavirus-2 (SARS-CoV-2), requiring invasive mechanical ventilation. Obesity, 28(7), 1195-1199. https://doi.org/10.1002/oby.22831

Stefan, N., Birkenfield, A.L., Schulze, M.B., & Ludwig, D.S. (2020). Obesity and impaired metabolic health in patients with COVID-19. Nature Review Endocrinology, 16, 341-342. https://doi.org/10.1038/s41574-020-0364-6

Steinsbekk, S, Klockner, C.A., Fildes, A., Kristofferson, p, Rognsas, L., & Wichstrom, L. (2017). Body size estimation from early to middle childhood: Stability of underestimation, BMI, and gender effects. Frontiers in Psychology, 8, 2038. https://doi.org/10.3389/fpsyg.2017.02038

References

Sugar and salt in food and drinks. https://www.qmo.amedd.army.mil/obesity/OverweightAndOBesity_SugarsandSaltVideoFINALCC13Apr2021.mp4

Sun, Q., van Dam, R.M., Spiegelman, D., Heymsfiels, S.B., Willett, W.C., & Hu, F.B. (2010). American Journal of Epidemiology, 172(12), pp.1442–1454. https://doi.org/10.1093/aje/kwq306

UK Prospective Diabetes Study Group. (1998). Efficacy of atenolol and captopril in reducing risk of macrovascular and microvascular complications in type 2 diabetes: UKPDS39. British Medical Journal, 317(7160), 713-720. https://pubmed.ncbi.nlm.nih.gov/9732338/

U.S. Food and Drug Administration. FDA revises warnings regarding use of the diabetes medicine metformin in certain patients with reduced kidney function. http://www.fda.gov/downloads/Drugs/DrugSafety/UCM494140.pdf

Wilding, J.P., Batterham, R.L., Calanna, Salvatore, S., Davies, M., Van Gaal, L.F., Lingvay, I., McGowan, B.M., Rosenstock, J., Tran, M.T., Wadden, T.A., Wharton, S., Yokote, K., Jeuthen, N., Zinman, B., Wanner, C., Lachin, J.M., Fitchett, D., Bluhmki, E., Hantel, S., Mattheus, M., Devins, T., Johansen, E., Woerle, H.J., Broedl, U.C., & Inzucchi, S.E., for the EMPA-REG Outcome investigators. (2015). Empagliflozin, cardiovascular outcomes, and mortality in Type 2 diabetes. The New England Journal of Medicine, 373(22), 2117-2128. https://doi.org/10.1056/NEJMoa1504720

VA/DoD Clinical Practice Guidelines. (2020). VA/DoD clinical practice guideline for the management of adult overweight and obesity. https://www.healthquality.va.gov/guidelines/CD/obesity/

Voils, C.I., Chang, Y., Crandell, J., Leeman, J., Sandelowski, M., Maciejewski, M.L. (2012). Informing the dosing of interventions in Randomized Trials. Contemporary Clinical Trials, 33(6), 1225-1230. https://doi.org/10.1016/j.cct.2012.07.011

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