

Presented by:  
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A CUP OF MEDS A  
DAY, MAY MAKE THE  
WEIGHT GO  
AWAY...OR UP: A  
MEDICATION-BASED  
APPROACH TO YOUR  
RESIDENT'S WEIGHT

# LEARNING OBJECTIVES

- To understand how medications can impact weight gain and weight loss
- To understand what medications and classes of medications can contribute to weight gain and weight loss
- To identify ways that you can implement this knowledge in your day-to-day practice

# WHAT WE WILL DISCUSS TODAY

- Unintentional weight loss and its health consequences
- Causes of unintentional weight loss
- Medications that can cause weight loss and why
- Medications for intentional weight gain
  
- Unintentional weight gain and its health consequences
- Causes of unintentional weight gain
- Medications that can cause weight gain and why
- Medications for intentional weight loss – special focus on GLP-1 agonists

# UNINTENTIONAL WEIGHT LOSS: THINGS TO KNOW

- Unintentional weight loss: 10 lbs or 5% of your normal body weight over 6 to 12 months without knowing the reason <sup>(1)</sup>
- Prevalence varies: 35 to 85% of residents in nursing homes <sup>(2)</sup>

# HEALTH OUTCOMES OF SIGNIFICANT BODY WEIGHT LOSS

- Decline in physical function
- Poorer quality of life
- Increased risk of hip fracture
- Increased risk of death <sup>(1)</sup>

# YOUR RESIDENT IS LOSING WEIGHT: IDENTIFY THE CAUSE

- Is there a loss of appetite?
  - Depression
  - Cancer
  - Chronic infections (AIDS, parasites)
  - Chronic illness (COPD, Parkinson's)
  - Side effects from a medication (ask your pharmacist! 😊)
- Is there a chronic digestive problem?
  - Diarrhea
  - Chronic inflammation of the pancreas
  - Removal of part of the small intestine <sup>(1)</sup>

## "Meals on Wheels": A Mnemonic for Common Treatable Causes of Unintentional Weight Loss in the Elderly

- M** Medication effects
- E** Emotional problems, especially depression
- A** Anorexia nervosa, alcoholism
- L** Late-life paranoia
- S** Swallowing disorders
- O** Oral factors (e.g., poorly fitting dentures, caries)
- N** No money
- W** Wandering and other dementia-related behaviors
- H** Hyperthyroidism, hypothyroidism, hyperparathyroidism, hypoadrenalism
- E** Enteric problems
- E** Eating problems (e.g., inability to feed self)
- L** Low-salt, low-cholesterol diet
- S** Stones, social problems (e.g., isolation, inability to obtain preferred foods)

*Adapted with permission from Morley JE, Silver AJ. Nutritional issues in nursing home care. Ann Intern Med 1995;123:850-9, with additional information from Reife CM. Involuntary weight loss. Med Clin North Am 1995;79:299-313.*

# OTHER CAUSES OF WEIGHT LOSS

- Eating disorders
- Undiagnosed diabetes
- Overactive thyroid gland <sup>(1)</sup>

# MEDICATION SIDE EFFECTS RELATED TO WEIGHT LOSS

- Dysphagia
- Nausea, vomiting and/or GI disturbances
- Constipation or decreased gastric emptying
- Diarrhea or increased gastric emptying
- Altered taste and/or smell
- Diuresis leading to possible dehydration
- Drowsiness (possibly causing missed meals)
- Depression
- Decreased appetite through hormonal changes <sup>(3)</sup>

# MEDICATIONS THAT MAY CAUSE DYSPHAGIA

- Nitrofurantoin
- NSAIDs
- Potassium
- Quinidine <sup>(3)</sup>

# MEDICATIONS THAT MAY CAUSE GI DISTURBANCES

- Acetylcholinesterase inhibitors
- Amiodarone
- Antibiotics
- Antidepressants,
- Antineoplastic agents
- Bromocriptine
- Buspirone
- Carvedilol
- Cholestyramine
- Conjugated estrogens
- Digoxin
- Ethosuximide
- Griseofulvin
- Hydralazine
- Lanthanum
- Levothyroxine
- Lubiprostone
- Metformin <sup>(3)</sup>

# MEDICATIONS THAT MAY CAUSE GI DISTURBANCES, CONT.

- Methotrexate
- Methylphenidate
- Metronidazole
- Opiates/Opioid derivatives
- Oxaprozin
- Ranolazine
- Roflumilast
- Theophylline
- Tolcapone
- Valproate/valproic acid
- Warfarin <sup>(3)</sup>

# MEDICATIONS THAT MAY CAUSE CONSTIPATION

- Aluminum hydroxide
- Amiodarone
- Anticholinergics
- Antidepressants, tricyclic
- Bromocriptine
- Caffeine
- Calcium channel blockers
- Clonidine
- Diphenoxylate/atropine
- Duloxetine
- Ferrous fumarate
- Ferrous sulfate
- Nitrates
- Opiates/opioid derivatives
- Solifenacin
- Theophylline
- Trospium<sup>(3)</sup>

# MEDICATIONS THAT MAY CAUSE DIARRHEA

- Bethanechol
- Colchicine
- Donepezil
- Erythromycin
- Lanthanum
- Laxatives
- Levothyroxine
- Lubiprostone
- Metformin
- Metoclopramide
- Misoprostol
- Roflumilast <sup>(3)</sup>

# MEDICATIONS THAT MAY CAUSE ALTERED TASTE OR SMELL

- Albuterol
- Amiloride
- Amoxicillin
- Ampicillin
- Antihistamines
- Antineoplastic agents
- Captopril
- Carbamazepine
- Diltiazem
- Enalapril
- Eszopiclone
- Ferrous fumarate
- Ferrous sulfate
- Lithium
- Metronidazole
- Minocycline
- Nifedipine
- Opiates/opioid derivatives<sup>(3)</sup>

# MEDICATIONS THAT MAY CAUSE ALTERED TASTE OR SMELL, CONT.

- Penicillins
- Phenytoin
- Spironolactone
- Streptomycin
- Sulfamethoxazole/Trimethoprim
- Tetracycline <sup>(3)</sup>

# MEDICATIONS THAT MAY CAUSE DIURESIS

- Alcohol
- Antidepressants, tricyclic
- Caffeine
- Carbamazepine
- Chlorpropamide
- Chlorthalidone
- Diuretics
- Haloperidol
- Indapamide <sup>(3)</sup>

# MEDICATIONS THAT MAY CAUSE DROWSINESS

- Antidepressants
- Antiemetics
- Antihistamines
- Antipsychotics
- Benzodiazepines
- Beta blockers
- Diphenoxylate/atropine
- Fentanyl
- Meprobamate
- Morphine
- Sedative/hypnotics
- Skeletal muscle relaxants
- Tramadol
- Trospium <sup>(3)</sup>

# MEDICATIONS THAT MAY CAUSE DEPRESSION

- Barbiturates
- Benzodiazepines
- Beta blockers
- Calcium channel blockers
- Carbidopa/levodopa
- Digoxin
- Diphenoxylate/atropine
- Diuretics, thiazide
- Histamine-2 blockers
- Neuroleptics
- Roflumilast
- Thiazide diuretics<sup>(3)</sup>

# MEDICATIONS THAT MAY CAUSE WEIGHT LOSS THROUGH NEUROTRANSMITTER OR HORMONAL CHANGES

- Antidepressants
- Antipsychotics
- Beta blockers
- Roflumilast <sup>(3)</sup>

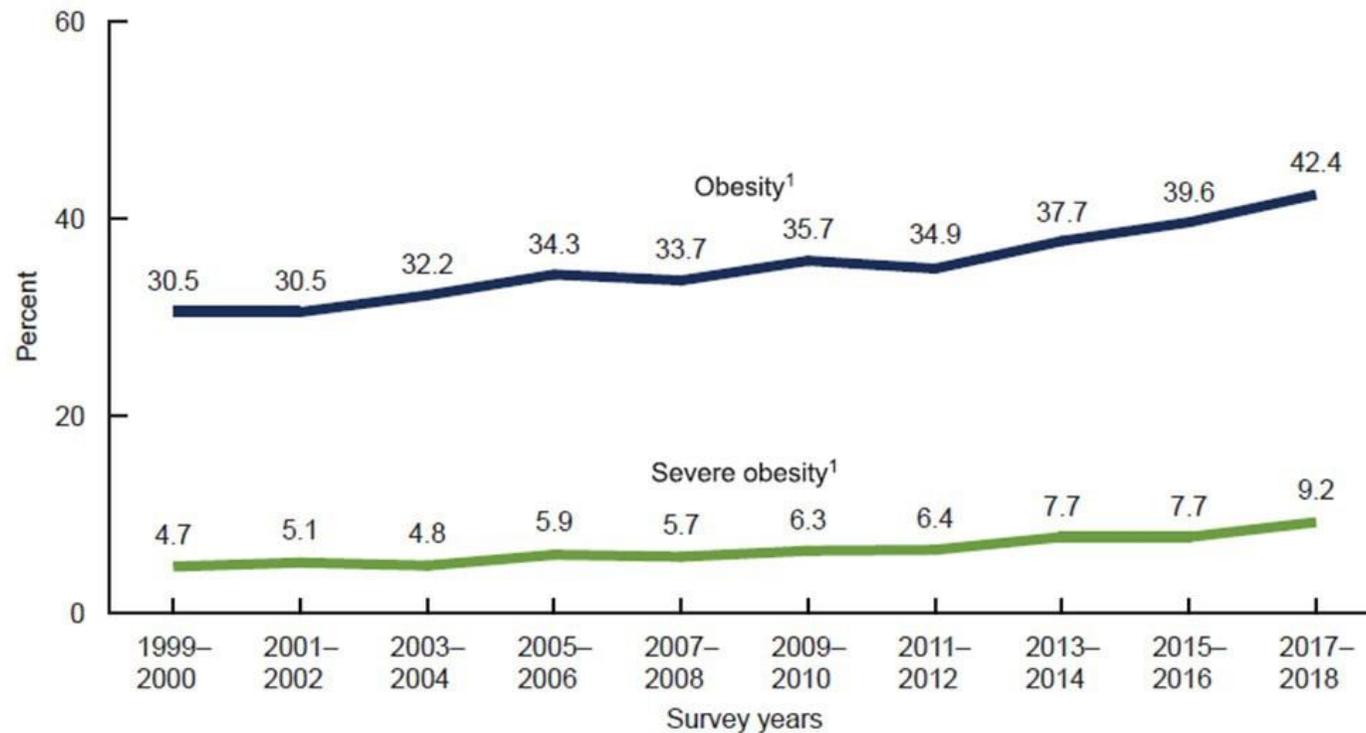
# STRATEGIES FOR INTENTIONAL WEIGHT GAIN

- Adequate nutritional intake
  - Supplements
  - Food fortification
- Feeding Assistance
- Medications: only after dietary intake/malnutrition assessed
  - Ornithine: 10 grams twice daily x 2 months
  - Recombinant human growth hormone: 0.09 IU/kg three times weekly x 4 weeks
  - Dronabinol 2.5mg bid x 6 weeks
  - Megestrol acetate 800mg daily x 12 weeks
  - Mirtazapine (off-label) <sup>(1)</sup>

# UNINTENTIONAL WEIGHT GAIN: THINGS TO KNOW

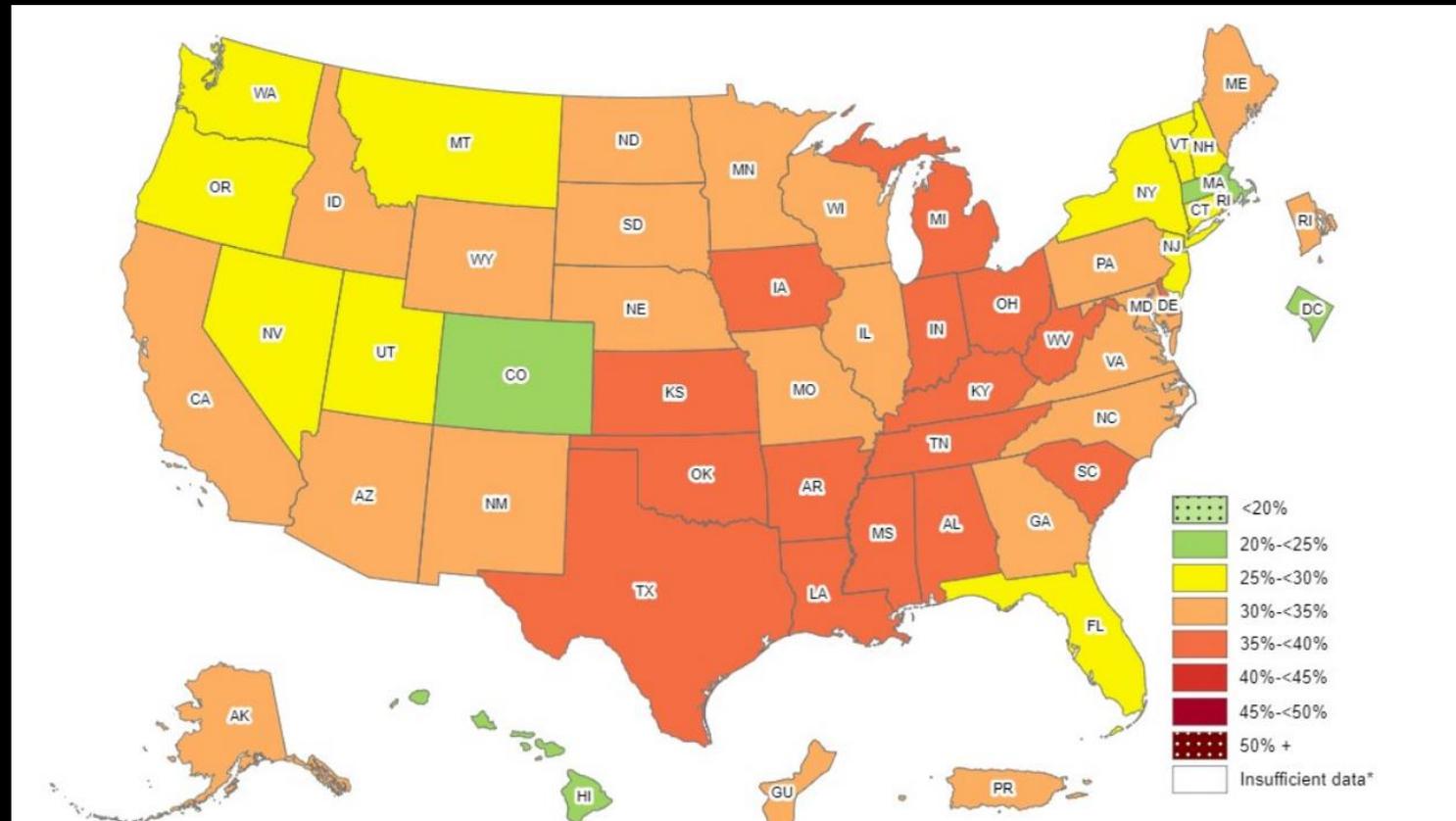
- Nearly 1 in 3 adults are overweight
- 41.5% of adults aged 60 and older are obese <sup>(4)</sup>
- According to one study, 86% of patients with type 2 diabetes are overweight<sup>(5)</sup>
- 1 in 5 adults take medications that may lead to weight gain <sup>(6)</sup>

# TRENDS IN AGE-ADJUSTED OBESITY AMONG ADULTS AGES 20 AND OVER



SOURCE: National Center for Health Statistics, National Health and Nutrition Examination Survey, 1999–2018.

# PREVALENCE OF SELF-REPORTED OBESITY AMONG U.S. ADULTS BY STATE AND TERRITORY, BRFSS, 2020



# HEALTH CONSEQUENCES OF UNINTENTIONAL WEIGHT GAIN

- Early onset of chronic morbidities
  - Hypertension
  - Dyslipidemia
  - Type 2 diabetes
  - Coronary heart disease
  - Stroke
  - Gallbladder disease
  - Osteoarthritis
  - Sleep apnea
- Functional impairment
- Premature mortality <sup>(7)</sup>

# YOUR RESIDENT IS GAINING WEIGHT: IDENTIFY THE CAUSE

- Slow metabolism
- Medication side effects
- Hormonal changes
- Fluid retention
- Smoking cessation <sup>(8)</sup>

# MEDICATIONS THAT MAY CAUSE WEIGHT GAIN

- Chlorpropamide
- Clozapine
- Glimepiride
- Glipizide
- Insulin
- Lithium
- Metoprolol
- Mirtazapine
- Nortriptyline
- Olanzapine
- Pioglitazone
- Prednisone
- Propranolol
- Risperidone
- Rosiglitazone
- Valproate/valproic acid
- Ziprasidone <sup>(3)</sup>

# WEIGHT LOSS BENEFITS

- Even modest weight loss (5 to 10 percent) produces health benefits:
  - Improved blood pressure
  - Improved blood cholesterol
  - Improved blood sugars
- Increased physical mobility
- Improvement in general mood
- Improvement in self-confidence <sup>(9)</sup>

# MEDICATIONS FOR INTENTIONAL WEIGHT LOSS: WHO QUALIFIES?

- Patients with a BMI of 30 or greater
- Patients with a BMI of 27 or greater with weight-related health problems (blood pressure or type 2 diabetes) <sup>(10)</sup>

# PRESCRIPTION MEDICATIONS APPROVED TO TREAT OBESITY

- Orlistat (Xenical or OTC Alli)
- Phentermine-topiramate (Qsymia)
- Naltrexone-bupropion (Contrave)
- Liraglutide (Saxenda)
- Semaglutide (Wegovy) <sup>(10)</sup>

# GLP-1 AGONISTS

- Mimic the hormone called glucagon-like peptide-1 (GLP-1)
- GLP-1 targets areas of the brain that regulate appetite and food intake
- Wegovy (semaglutide) and Saxenda (liraglutide) are approved for obesity treatment
- Semaglutide and liraglutide are also available under different names/dosages to treat type 2 diabetes
- All GLP-1 agonists have been shown to reduce the risk of cardiovascular events<sup>(11)</sup>

# GLP-1 AGONISTS FOR DIABETES

- Dulaglutide (Trulicity) - weekly
- Exenatide extended release (Bydureon BCise) - weekly
- Exenatide (Byetta) – twice weekly
- Liraglutide (Victoza, Saxenda)- weekly
- Lixisenatide (Adlyxin)- daily
- Semaglutide (Ozempic) – weekly
- Semaglutide (Rybelsus)- by mouth once daily <sup>(11)</sup>

# WEGOVY DOSING SCHEDULE



# SAXENDA INFORMATION



# VICTOZA INFORMATION

## Starting with Victoza®

**0.6 mg**

Victoza® (18 mg/3 mL)

**Sig:**

Inject 0.6 mg SC once daily  
for at least 7 days

**Quantity:**

6 mL (2-pen box)

## Staying with Victoza®

**1.2 mg**

Victoza® (18 mg/3 mL)

**Sig:**

Inject 1.2 mg SC once daily  
for at least 7 days

**Quantity:**

6 mL (2-pen box)

**1.8 mg**

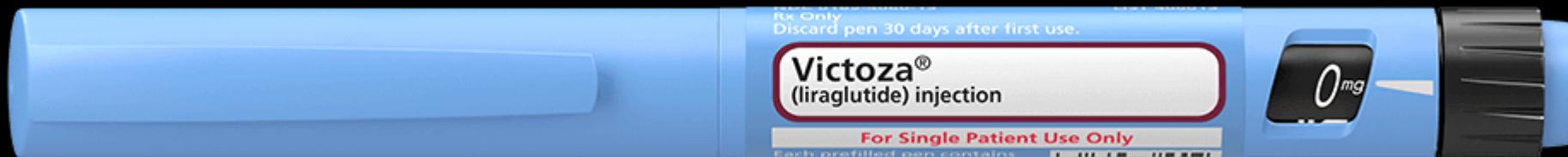
Victoza® (18 mg/3 mL)

**Sig:**

Inject 1.8 mg SC once daily

**Quantity:**

9 mL (3-pen box)



# OZEMPIC DOSING AND PENS

FIGURE. ONCE-WEEKLY OZEMPIC® (SEMAGLUTIDE) INJECTION 0.5 MG OR 1 MG DOSING<sup>1</sup>



The starting dose of 0.25 mg is a nontherapeutic dose

Once patients are on 0.25 mg dose for 4 weeks, they will continue their next dose on 0.5 mg as prescribed for at least 4 weeks.



- Dispense the 1-pen pack, which will provide 4 doses of 0.5 mg each (4-week supply). Each pen contains 2 mg.
- This pen delivers 0.25 mg (used for treatment initiation) and 0.5 mg.
- Since the 1-pen pack is also used for dose escalation, patients on a maintenance dose of 0.5 mg will have 2 extra NovoFine® Plus needles.

**Please note:** If the patient has not started Ozempic®, they will start at 0.25 mg once per week for 4 weeks and then increase to 0.5 mg as prescribed.

**Patients needing additional glycemic control after at least 4 weeks on the 0.5-mg dose** may have the dosage increased by their health care provider to 1 mg once weekly.



- Dispense the 2-pen pack, which provides a total of 4 doses of 1 mg each (4-week supply). Each pen contains 2 mg.
- Each pen in this pack delivers 2 doses of 1 mg.

# TRULICITY DOSING

- Initiate dose at 0.75mg subcutaneously once weekly
- Increase the dose to 1.5mg once weekly for additional glycemic control
- If additional glycemic control needed, may increase to 3mg once weekly after at least 4 weeks on the 1.5mg dose
- If additional glycemic control needed, may increase to 4.5mg once weekly after at least 4 weeks on the 3mg dose <sup>(16)</sup>

# TRULICITY PENS



# MEDICATION COVERAGE: MEDICARE PART D

- Preferred products change regularly
- Must check formulary for specific Part D plans for coverage information

# MEDICATION COVERAGE: COLORADO MEDICAID

- Covered if eligibility criteria met (3-month trial of metformin):
  - Byetta (exenatide)
  - Trulicity (dulaglutide)
  - Victoza (liraglutide)
- PA required (with 3-month trial of metformin AND a 3-month trial of 2 preferred products):
  - Adlyxin (lixisenatide)
  - Bydureon BCise (exenatide ER)
  - Mounjaro (tirzepatide)
  - Ozempic (semaglutide)
  - Rybelsus (semaglutide)

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