



# The Nuts & Bolts of Comprehensive Obesity Treatment

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# Disclosures

## Karli Burridge

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- Novo Nordisk — Speaker



# Objectives

01

Recognize obesity as a chronic, progressive, relapsing disease that requires a comprehensive, long-term treatment approach

02

Identify the goals of obesity treatment

03

Implement a step-wise, comprehensive treatment plan

# Obesity is a Disease



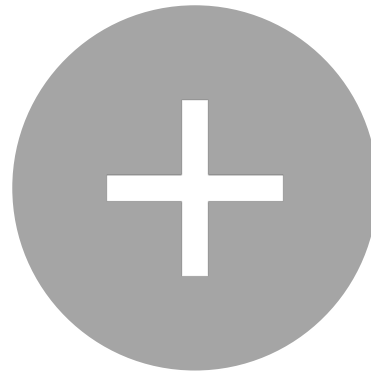
“Obesity is defined as a chronic, progressive, relapsing, multi-factorial, neurobehavioral disease, wherein an increase in body fat promotes adipose tissue dysfunction and abnormal fat mass physical forces, resulting in adverse metabolic, biomechanical, and psychosocial health consequences.”

Obesity Medicine Association

# Obesity is the most common chronic disease in the U.S.



IT AFFECTS 42.3% OF U.S.  
ADULTS



ANOTHER 33% HAVE PRE-  
OBESITY (OVERWEIGHT)



19% OF CHILDREN HAVE  
OBESITY



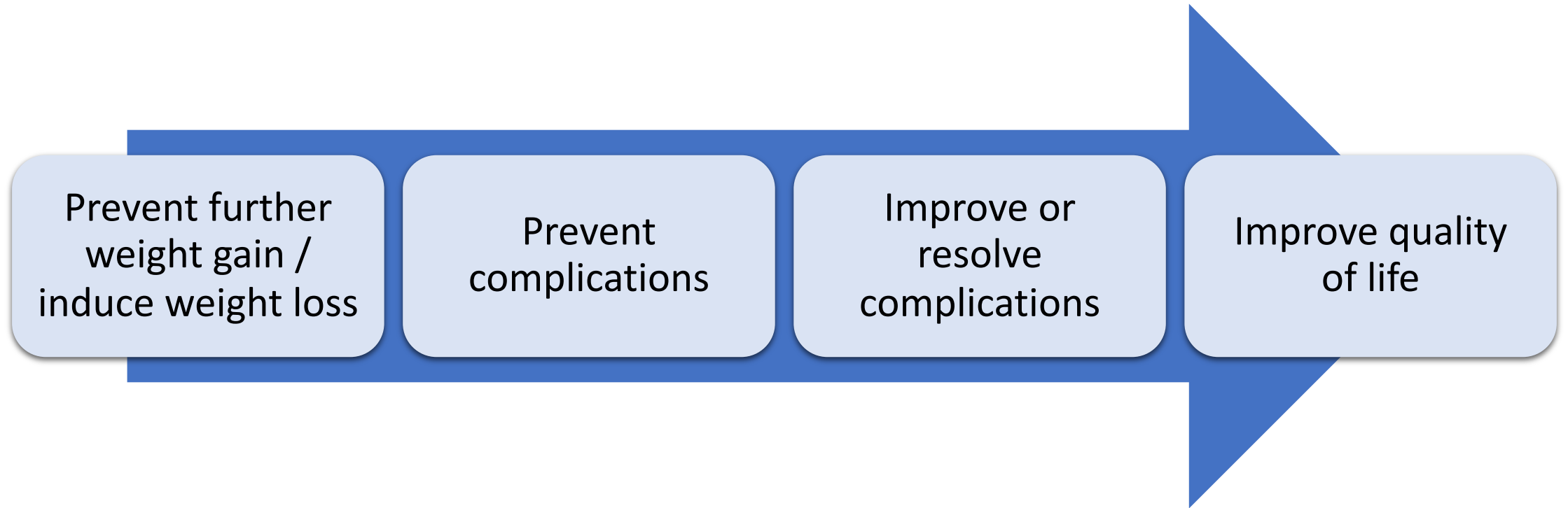


Obesity is the  
root of 237  
conditions,  
including 22  
types of cancer

Bhaskaran, K, et al. Body-mass index and risk of 22 specific cancers: a population-based cohort study of 5.24 million UK adults. *The Lancet* . 2014;384(9945):755-765.



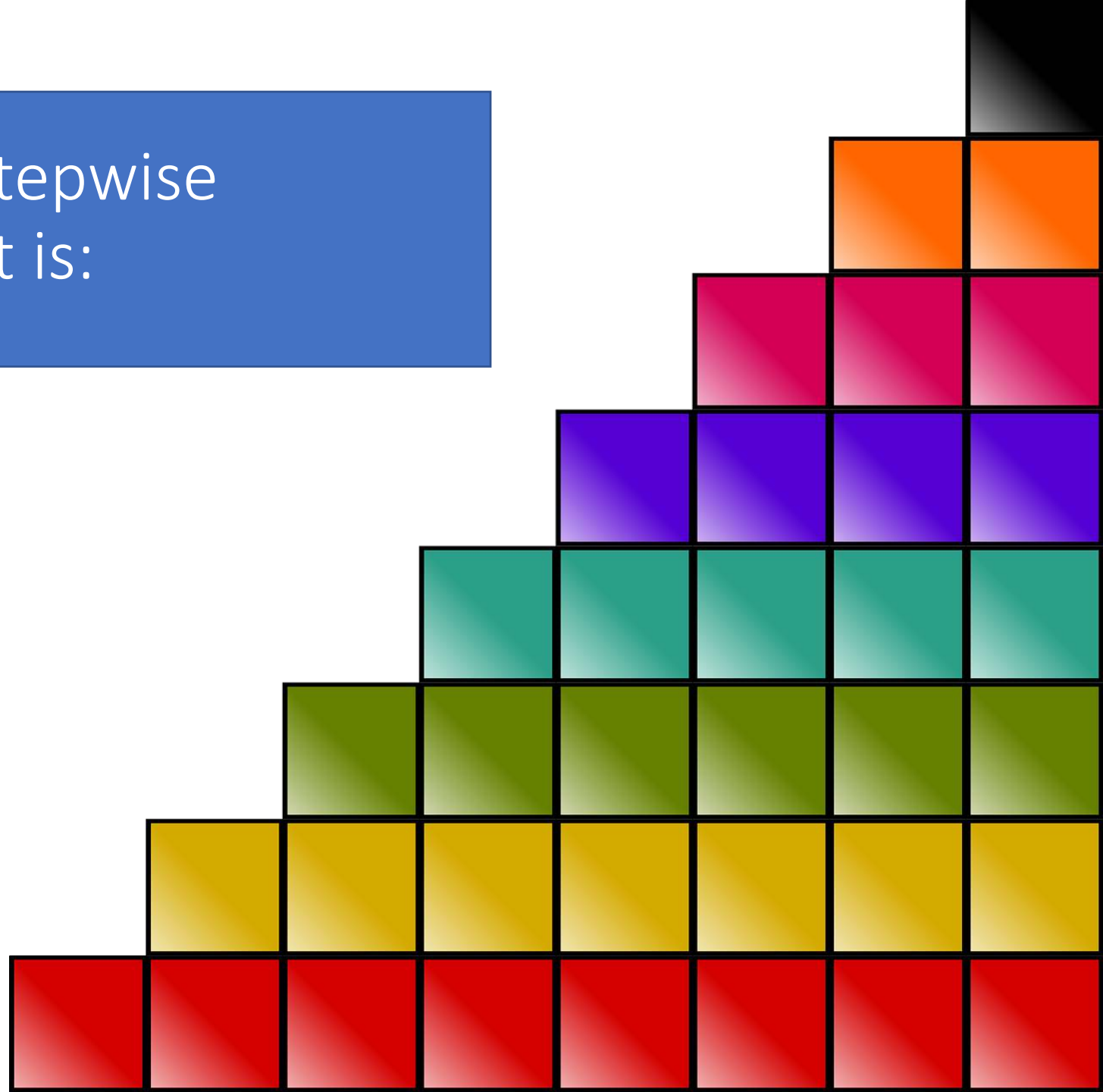
# Obesity Treatment Goals



**A 5-10% loss can significantly improve health**

It requires a long-term stepwise treatment approach that is:

- Individualized
- Patient-centered
- Matched to the disease burden





# Comprehensive Treatment Modalities



**NUTRITION**



**PHYSICAL ACTIVITY**



**BEHAVIORAL  
THERAPY**



**PHARMACO-  
THERAPY**



**BARIATRIC SURGERY  
& PROCEDURES**

# Meet Jasmine

37 year-old black female

University professor

Married with a 6 year-old daughter

She saw you for her annual, at which time you diagnosed her with obesity. She agreed to follow up in 2 weeks.



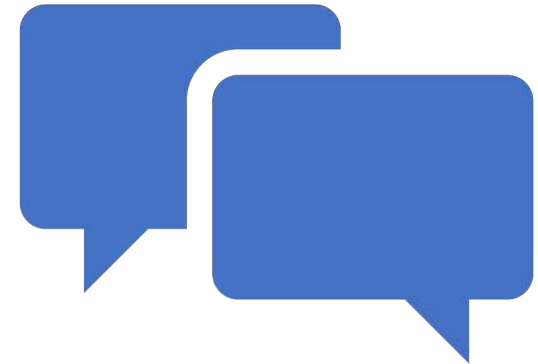


## Create a Collaborative Partnership

- ✓ Use Shared Decision Making
- ✓ Use Motivational Interviewing
- ✓ Send the message: *"It's you and me against the disease."*

# Use Motivational Interviewing to Better Understand

- Jasmine's perception of her weight & health
- How Jasmine has tried to manage her weight in the past
- Jasmine's motivating factors





# 5A's of Obesity Treatment



ASK



ASSESS



ADVISE



AGREE



ARRANGE &  
ASSIST

Wt	BMI	BP	A1c	Fast Glu	Trig	HDL-C	LDL-C	Chol	AST	ALT
254.9	41.2	118/78	5.9	118	189	51	97	179	21	24

### PMH

- Prediabetes
- Hypertension
- PCOS
- Depression / anxiety

### Current Meds

- Paroxetine 20 mg
- Lisinopril 10 mg
- Metformin 500 mg BID
- Oral contraceptive

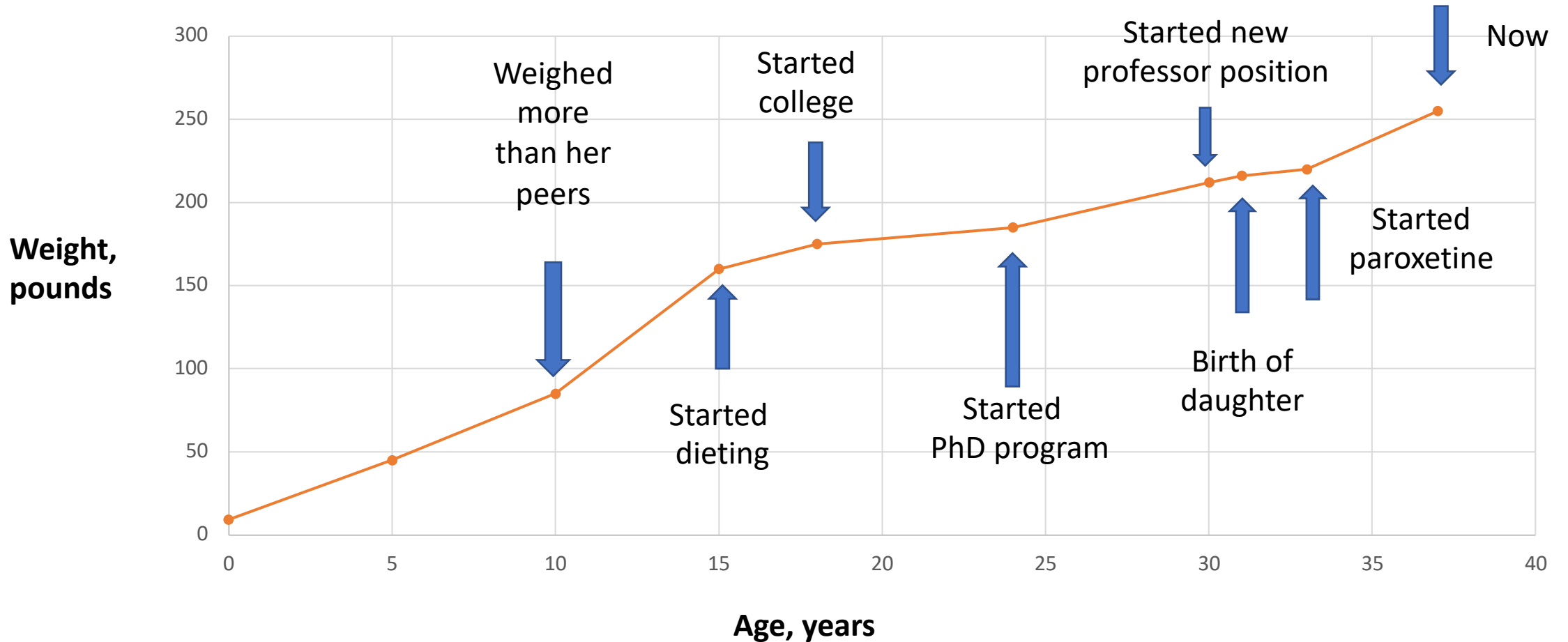
### Preventative screening

- Last annual & pap 2 weeks ago

### FH

- Family hx of obesity, both parents
- Mother has T2DM & hypertension
- Father has hypertension & NAFLD
- Paternal uncle had stroke at age 61

# Jasmine's Weight Graph



# Identify Obesogenic Medications

## Antihypertensives

- Beta blockers
- Calcium channel blockers

## Antidiabetes medications

- Insulin
- Sulfonylureas
- TZDs

## Antidepressants & mood stabilizers

- Some SSRIs & SNRIs (paroxetine, venlafaxine)
- Tricyclics (amitriptyline, imipramine)
- Carbamazepine, lithium

## Antiseizure medications

- Gabapentin, valproate, pregabalin

## Contraceptives

- Injectable & implantable progestins



# Replace with Weight-Neutral or Weight-Negative Alternatives

## Antihypertensives

- ACE inhibitors
- ARBs

## Antidiabetes medications

- Metformin
- GLP-1 RAs
- SGLT2 inhibitors

## Antidepressants & mood stabilizers

- Sertraline, fluoxetine
- Lamotrigine, oxcarbazepine

## Antiseizure medications

- Topiramate, zonisamide

## Contraceptives

- Copper IUDs
- Estrogen-based

# Plan



Switch weight promoting medication (paroxetine) to fluoxetine (she didn't tolerate bupropion in the past)



RTC in 2 weeks to review nutrition hx & initiate nutrition plan



# Nutrition

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*“Let Thy Food Be Thy Medicine and  
Thy Medicine Be Thy Food”*

Hippocrates

# Ask About Nutrition

Nutrition plays a very important role in our overall health. Is it okay if we discuss your nutrition today?

If permission is granted...

How do you feel about your nutrition?

Are there any areas of your nutrition that you struggle with?

Would you be interested in working together on your nutrition?



# Assess: Nutrition History

## Meals and snacks

- Timing?
- Frequency?
- What and how much?
- Where? (location)
- Who prepares/shops for food?

## Records

Food and beverage logs (3 days)

- Electronic
  - MyFitnessPal
  - Loselt
  - CarbManager
- Paper



# Assess: Nutrition History

## Behavior

- Triggers: stress, hunger, boredom, lack of satiety or satiation, cravings, time of day
- Barriers: financial, lack of cooking skills, lack of time, cultural/familial, food desserts
- Disordered eating: binge eating, bulimia, night eating syndrome, sleep eating, anorexia

## Past History

- Nutrition plans that have worked/not worked in the past
- Preferences
- Likes/dislikes
- Cultural/ Ethical considerations
- Food allergies/ intolerances
- Assess nutrition knowledge





# Jasmine's Nutritional History

- Hasn't been able to stick to calorie restricted diets because she gets too hungry
- Is hungry between meals & winds up snacking & grazing
  - Pretzels, popcorn, granola bars
- Dislikes vegetables
- No food allergies
- Time barrier
  - Early in busy academic career
  - Married & parenting a young child



# Advise: Nutrition Plan

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## Low Carbohydrate Nutrition Plan

- Avoid ultra-processed foods, sugary & starchy foods
  - Limit grains, starchy vegetables, beans & legumes, some fruits
- Encourage whole foods:
  - Vegetables, low sugar fruits, nuts, seeds, meat, poultry, fish, eggs, healthy fats—olive oil, avocado oil, avocados, nuts
- Read labels vs. marketing claims
- Give resources: websites, hand-outs







# Agree

Use Motivational Interviewing & shared decision making to develop a nutrition plan together with your patient





Arrange  
&  
Assist

## **Provide Resources**

- Handouts
- Websites
  - DietDoctor.com, SkinnyTaste.com, Delish.com
- Apps
  - MyFitnessPal, Loselt, Carb Manager

## **Refer**

- Commercial plans
- Online programs
- Registered dietitians
- Community resources

# Plan



Implement low-carb eating plan



RTC in 1 month

1 month later

- Weight is down 10.3 pounds (4.0%)
- She is doing well with her nutrition plan
- Appetite is better & there is significant reduction in late-night eating
- Increased energy
- Ready to start physical activity

Image: © Obesity Action Coalition



# Physical Activity

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# Assess: Physical Activity History

## Current Activity

- FITTE (Frequency, intensity, type, time, enjoyment)
- Previous activities: likes/dislikes
- Reasons for discontinuing
  - When?
  - What?
  - Why?
- Barriers / perceived barriers
- Access to safe places
- Readiness







# Jasmine's Physical Activity History

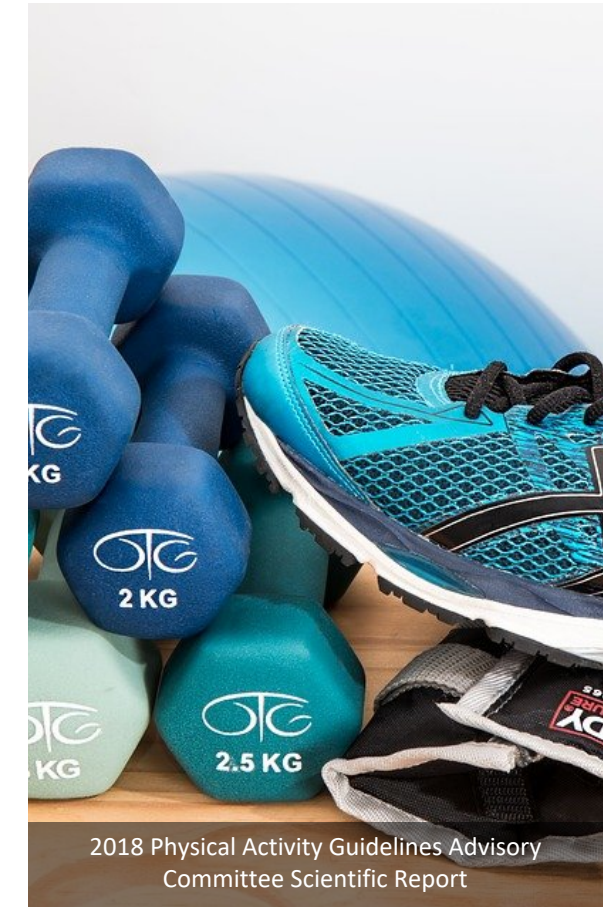
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- Played sports in high school, but didn't continue in college
- Had a gym membership, but let it lapse a few years ago
- Likes to walk while her daughter rides her bike, but isn't consistent & only does it once every few weeks
- Safe, accessible park a few blocks from home
- Sees time as a barrier



# Executive Summary of Scientific Report

- Prevents or minimizes excessive weight gain in adults & prevents obesity
- Reduces risk of excessive increases in body weight & adiposity in children ages 3 - 17 years
- Pregnancy: Less likely to gain excessive weight, develop gestational diabetes, or develop postpartum depression than their less-active peers
- Reduces the risk of breast cancer, colon cancer, cancers of the bladder, endometrium, esophagus, kidney, lung, & stomach
- Reduces the risk of developing a new chronic condition, reduces the risk of progression of current conditions, improves quality of life & physical function



2018 Physical Activity Guidelines Advisory  
Committee Scientific Report

# Key Physical Activity Guidelines for Adults



At least 150 -300 minutes a week of **moderate-intensity** activity

OR

75 -150 minutes a week of **vigorous-intensity** aerobic physical activity



Additional health benefits beyond the equivalent of 300 minutes (5 hours) of moderate-intensity physical activity a week



Spread out throughout the week



Adults should also do muscle-strengthening activities 2 or more days a week






## Non-Exercise Activity Thermogenesis (NEAT)

- Be aware of **compensation**
- Reduce sedentary time, break up sedentary time
- Promote movement at work, home, active hobbies
- Tracking devices (pedometers, step trackers, fitness trackers, smart watches, smart phones, etc)

# Advise: Physical Activity Prescription

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Based on: Readiness to change, medical conditions, barriers, mobility, preferences, etc.



Use Motivational Interviewing!



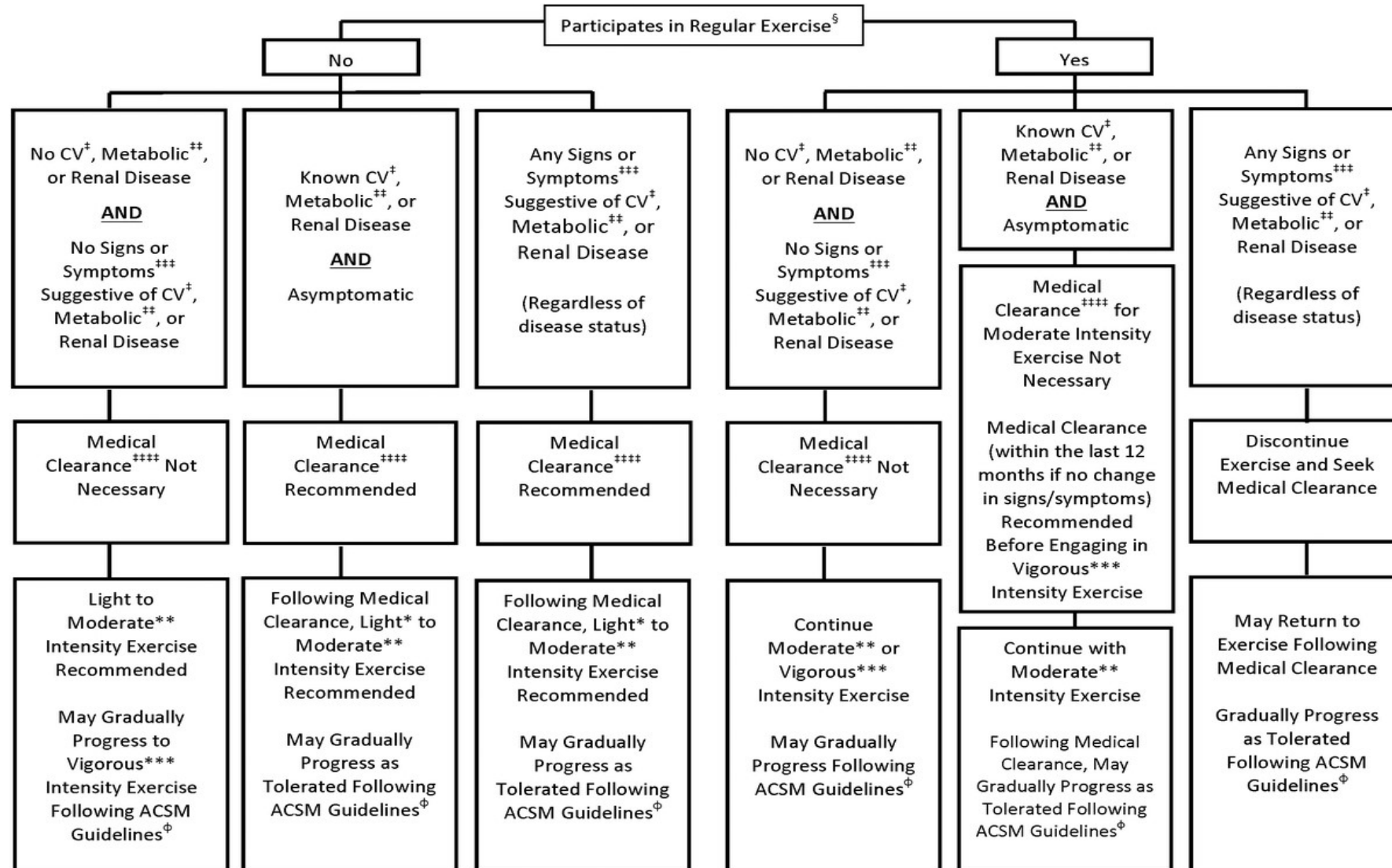
Agree on SMART goals



FITTE-VP principles



# Exercise Pre-screening Chart



# Agree: Jasmine's Physical Activity Prescription



FITTE-VP: Frequency, intensity, type, time, enjoyment, volume, progression



Walk at a brisk pace for 20 minutes



Three times a week: Monday, Wednesday, Friday at 7:00 a.m.



Listen to favorite podcast



Volume: 60 minutes moderate intensity PA per week



Increase by 5 minutes every 2 weeks



A close-up photograph of a red pushpin stuck into a map. The map shows various colored lines and text, but it is out of focus. The pushpin is the central focus, with its sharp point and circular head clearly visible. The background is a soft, blurred mix of colors, suggesting an outdoor or travel theme.

# Arrange & Assist

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## Resources

- <https://www.exerciseismedicine.org/>
- <https://www.nutrition.gov/topics/exercise-and-fitness>
- <https://www.hhs.gov/fitness/resource-center/physical-activity-resources/index.html>
- <https://www.cdc.gov/nccdphp/dnpao/state-local-programs/physicalactivity.html>
- <https://www.nih.gov/health-information/physical-wellness-toolkit-more-resources>

# Develop Your List of Local Referrals

- Physical therapists
- Aquatic programs
- Online programs/DVDs
- Community programs
- Exercise physiologists
  - EIM credential program:  
<http://certification.acsm.org/exercise-is-medicine-credential>
- Exercise professionals
  - Certified through an [NCCA-accredited](#) association



# Plan



Continue low-carb eating plan



Implement physical activity prescription



RTC in 1 month

1 month later

- Weight is down another 7.4 pounds (total= 17.7 pounds, 6.9%)
- Eating is mostly going well, but having more cravings in the evenings
- Implemented walking program, stayed focused for two weeks, then it tapered off to once per week

Image: © Obesity Action Coalition





# Behavioral Therapy

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# Behavioral Therapy

- One of the most important & challenging aspects of obesity management
- Changing long-standing patterns is challenging, & support is needed
- Behavioral counseling is woven into all clinical encounters
- Some may require additional support from health coaches, mental health professionals, & support groups





# Connect Current Concerns, Symptoms, & Function to Lifestyle Choices

Help patients make the connection between their lifestyle choices & quality of life challenges such as:



Joint pain/  
osteoarthritis



Reduced stamina



Shortness of  
breath on exertion

# Gradually Substitute Unhealthy Behaviors With Healthier Ones



## Goal-setting

Set small, achievable goals & build on success



## Self-monitoring

Fitness trackers  
Phone apps  
Notebooks



## Rewards

Non-food  
Small  
Frequent



## Stimulus control

Keep temptations out of the environment

# Assess: Adherence to Plan

- Jasmine has been missing some meals during the day, which has led to more carb cravings in the evening
- She started buying pretzels again & finds them hard to resist in the evening
- Work got busy & she didn't have / make time for walks



# Plan



Resume regular meals & snacks to prevent evening snacking  
Recommit to not buying pretzels



Schedule physical activity



RTC in 1 month

1 month later

- Weight is down another 3.4 pounds (total= 21.1 pounds, 8.3%)
- Eating regular meals & snacks, but finding it harder to resist carbs, especially in the evening
- Feeling hungry between meals & snacks
- Resumed walking program

Image: © Obesity Action Coalition



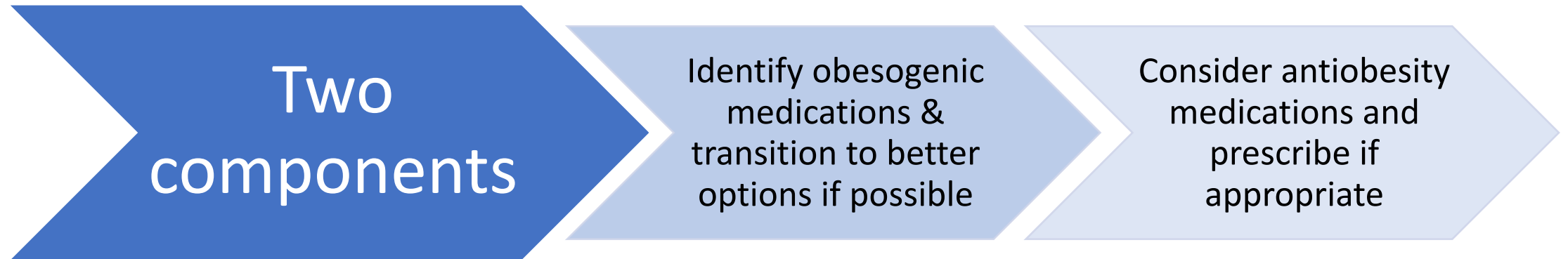


# Pharmacotherapy

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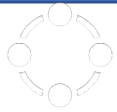


# Pharmacotherapy



# Antiobesity Medications

Evidence-based tools that target specific physiology to improve the disease:



Are most effective when they are part of a comprehensive treatment plan



Facilitate the management of eating behavior



Slow the progression of weight gain & regain

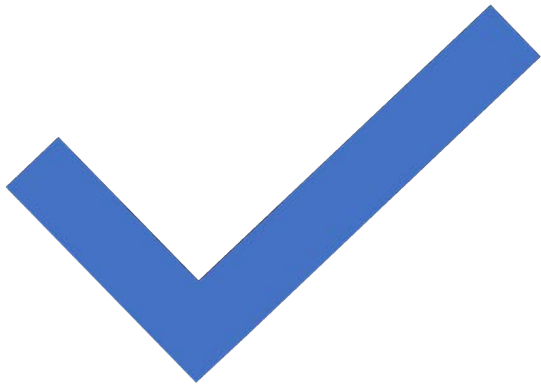


Improve weight, health & quality of life



Will likely need to be used long-term

# Who is Eligible?



## FDA Eligibility criteria

- ❖ BMI > 30
- ❖ BMI > 27 with complications such as:
  - T2DM
  - HTN
  - Dyslipidemia
  - OSA

# Assess: Pharmacotherapy

- Eligible for antiobesity medications & bariatric surgery
- Not interested in surgery
- Prefers medications
- Has insurance coverage for antiobesity medications





**No**

**Yes**

**Maybe**

## Advise: FDA Approved Medication Options

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- R/O phentermine/topiramate, phentermine given that the biggest challenge is in evening
- R/O naltrexone/bupropion due to intolerance of bupropion
- R/O orlistat due to low-carb eating plan
- Consider liraglutide given prediabetes, need for evening coverage, & reduced satiety

# Agree, Arrange & Assist: Liraglutide

- Jasmine agrees to start liraglutide 3.0 mg
- Review escalation dose/ managing potential side effects/ expectations



# Plan



Continue current eating plan



Continue physical activity routine



Start liraglutide as directed



RTC in 1 month

# Bariatric Surgery & Procedures

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# Appropriate Referrals for Bariatric Surgery

## Qualifications for bariatric surgery include the following:

- BMI  $\geq 40$  kg/m<sup>2</sup>
- BMI  $\geq 35$  kg/m<sup>2</sup> with 1 obesity-related disease
- Inability to achieve a healthy weight loss sustained for a period of time with prior weight loss efforts



# Metabolic & Bariatric Surgical Procedures

Surgery	Pros	Cons	Average weight reduction in total body weight at 3 years	Optimally suited for patients with:	Other comments
<b>Roux-en-Y gastric bypass</b>	Greater improvement in metabolic disease	Increased risk of malabsorptive complications over sleeve	31.3%	Higher BMI, GERD, T2D	Largest dataset, more technically challenging than LAGB, VSG
<b>Vertical sleeve gastrectomy</b>	Improves metabolic disease; maintains small intestinal anatomy; micronutrient deficiencies infrequent	Potential GERD, not malabsorptive, irreversible	21%	Metabolic disease	Can be used as the first step of staged approach; most common based on 2014 data
<b>Laparoscopic adjustable gastric banding</b>	Least invasive; removable	30%–50% five-year removal rate internationally	15.9%	Lower BMI; no metabolic disease	Any metabolic benefits achieved are dependent on weight loss
<b>Biliopancreatic diversion with duodenal switch</b>	Greatest amount of weight loss and resolution of metabolic disease	Increased risk of macro- and micronutrient deficiencies over bypass	35%	Higher BMI, T2D	Most technically challenging

# Medical Outcomes of Bariatric Surgery

Condition	Percent reduced or resolved	Percent resolved
Type 2 diabetes	86%	76.8%
Hypertension	78.5%	61.7%
Obstructive sleep apnea	85.7%	83.6%
Hyperlipidemia	78.5%	61.7%

1 month later

- Weight is down another 6.3 pounds (total= 27.4 pounds, 10.7%)
- Eating on track
- Following walking program
- Started liraglutide— current dose 1.8 mg. Good appetite suppression & satiety

Image: © Obesity Action Coalition



# After 4 Months of Treatment

	Wt	BMI	BP	A1c	Fast Glu	Trig	HDL-C	LDL-C	Chol	AST	ALT
<b>Initial</b>	254.9	41.2	118/78	5.9	118	189	51	97	179	21	24
<b>4 Months</b>	227.5	36.6	112/71	5.5	89	134	53	91	169	18	19



# Take Home Points

**Treat obesity comprehensively using the five treatment modalities**

- Nutrition
- Physical Activity
- Behavior Modification
- Pharmacotherapy
- Bariatric Surgery & Procedures

**Individualize treatment**

**Use Motivational Interviewing & patients' expertise about themselves to guide treatment**







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