

Pediatric Weight Management

A Parent's Guide To Child And Adolescent Weight Management

# **WELL** *moment*

*Better Conversations. Better Health.*

**Vanderbilt Health**

Affiliated Network

# Housekeeping

- Our goal is to have this be an interactive session, so please submit your questions throughout the presentation via the chat box.
- We will send an email of the recording and the presentation slides, along with links to resources discussed.
- We'd love to hear from you! If we don't cover something, or if your question isn't answered, contact us at [memberinfo@vhan.com](mailto:memberinfo@vhan.com).

# The Experts



## **Keena J. Andrews, MS, RD, LDN**

Gastroenterology Outpatient Dietitian  
Pediatric Outpatient Dietitian Team Leader  
Monroe Carell Jr. Children's Hospital at Vanderbilt



## **Myrtis Walker, MS, RDN, CSOWM, LDN**

Pediatric weight management  
Patient care dietitian in the Vanderbilt Outpatient  
Nutrition Clinic.

**Vanderbilt Health**

Affiliated Network

# OBJECTIVES

- What is an unhealthy weight
- What factors are associated with an unhealthy weight
- What are the health consequences
- How does diet and inadequate physical activity contribute to an unhealthy weight
- What are the best treatment options
  - Barriers to successful weight management
- Advantages to meeting with a Registered Dietitian

# UNHEALTHY WEIGHT (CHILDHOOD AND ADOLESCENT OBESITY)

- MOST PREVALENT PEDIATRIC NUTRITIONAL PROBLEM IN THE US

## Overweight

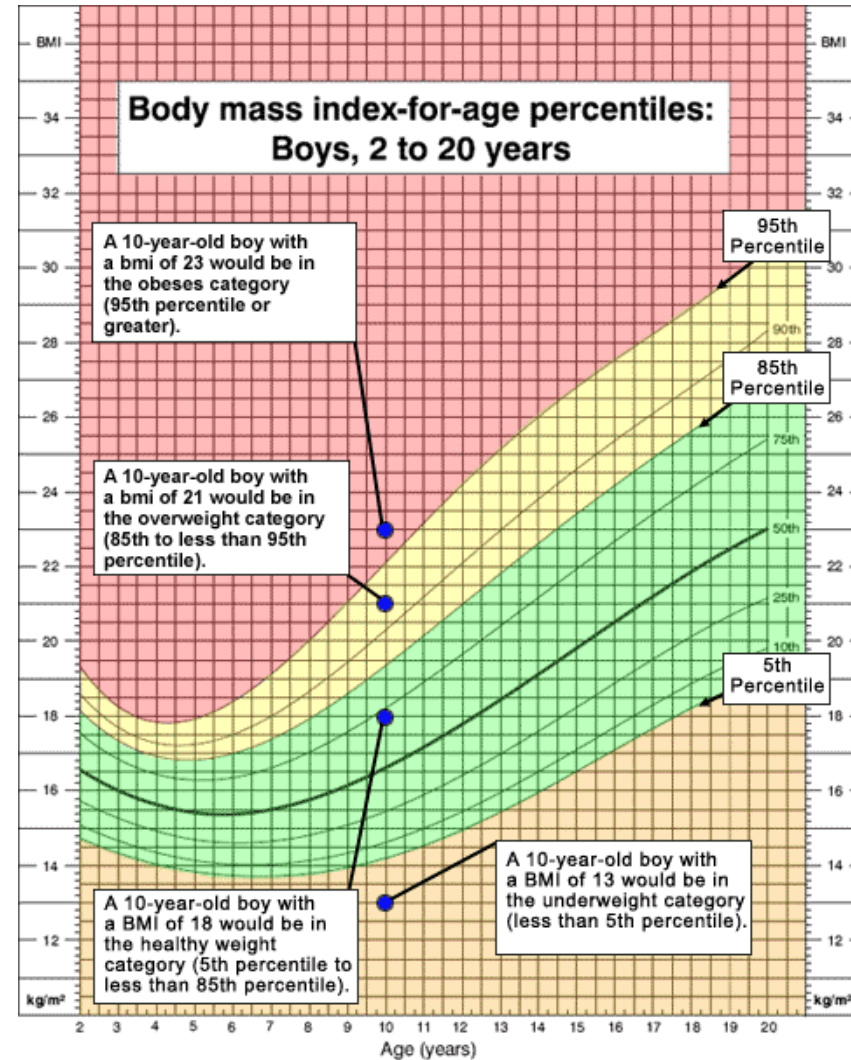
- BMI  $\geq 85^{\text{th}}$  and  $< 95^{\text{th}}$

## Obesity

- BMI  $\geq 95^{\text{th}}$

## Severe (morbid) Obesity

- BMI  $\geq 99^{\text{th}}$



# PREVALENCE

---

1 in 5  
children in US  
an unhealthy  
weight

Overall, 19.3% of children, or 14.4 million children in the United States, have an unhealthy weight.

---

4th

Tennessee ranks 4<sup>th</sup> in the U.S.

---

\$3 billion

Medical costs in the U.S. for overweight children add up to \$3 billion per year

---

# FACTORS THAT RESULT IN AN UNHEALTHY WEIGHT



## Behavior issues

- unhealthy eating patterns
- inactivity



## Family factors

- genetic predisposition
- family environment



## Psychological factors

- stress
- Boredom
- Coping mechanism

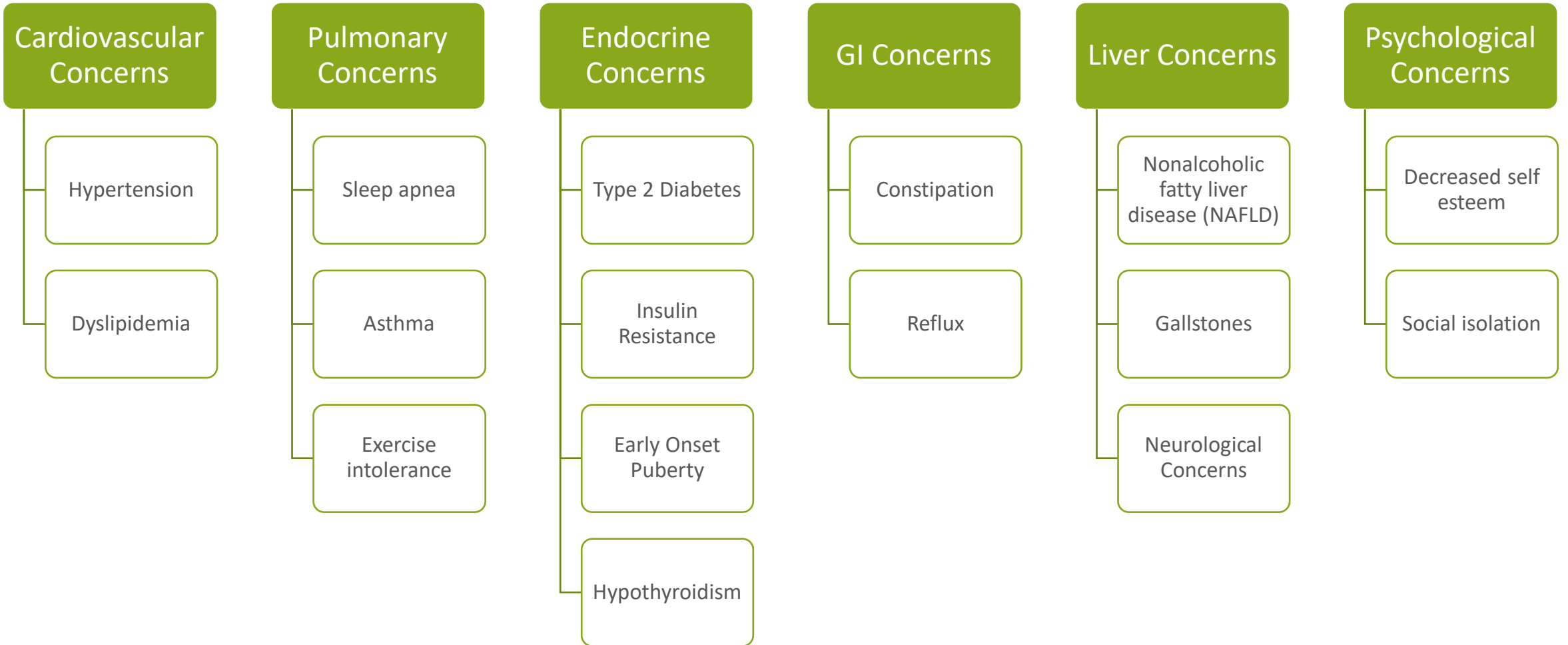


## Socioeconomic Factors

- low income
- Limited access to food
- Lack of safe environment



# HEALTH CONSEQUENCES





# TREATMENT OPTIONS

Lifestyle changes

```
graph TD; A[Lifestyle changes] --> B[Lifestyle changes + Weight loss mediations]; A --> C[Lifestyle changes + bariatric surgery];
```

The diagram illustrates three treatment options. It begins with a green box labeled 'Lifestyle changes'. From this box, two arrows point downwards and then rightwards to two subsequent boxes. The first arrow points to an orange box labeled 'Lifestyle changes + Weight loss mediations'. The second arrow points to a grey box labeled 'Lifestyle changes + bariatric surgery'.

Lifestyle changes + Weight loss mediations

Lifestyle changes + bariatric surgery

# UNHEALTHY HABITS THAT LEAD TO RAPID/EXCESS WEIGHT GAIN

Fast Foods  
Sugar-sweetened  
Beverages  
Excess Juice  
Large Portions  
Grazing  
Inadequate  
Fruits/Veg



Inadequate  
Physical Activity  
Excess Screen  
Time



Boredom  
Stress  
Unhealthy Sleep  
Patterns



RAPID WEIGHT  
GAIN

# A PARENT'S GUIDE TO REVERSE RAPID WEIGHT GAIN

CHILDREN AND ADOLESCENTS AGES 2-18

Myrtis Walker, MS, RDN, CSOWM, LDN  
Registered Dietitian/Nutritionist  
Certified Specialist Obesity Weight Management



# EXCESSIVE CALORIES

BEVERAGES, SNACKS, OUTSIDE MEALS



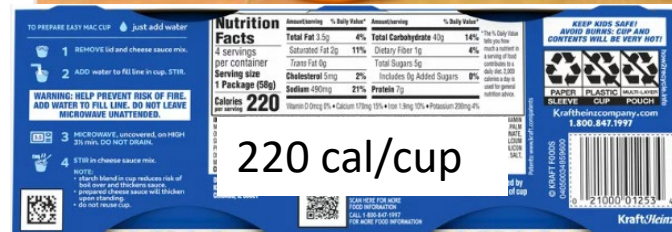
# SNACKING



53 cal/1 pc



400 cal/pack



220 cal/cup



100 cal/15 pc



250 cal/5 pc



210 cal/6 pc



160 cal/15 pc



# BEVERAGES

**WATER  
THROUGHOUT THE DAY**



**OCCASIONAL  
ARTIFICIAL  
SWEETENERS**

12OZ CAN

Nutrition Facts	
Serving Size	1 Can
Amount Per Serving	
<b>Calories</b>	<b>0</b>
	% Daily Value
Total Fat 0g	0%
Sodium 35mg	2%
Total Carbohydrate 0g	0%
Total Sugars 0g	
Includes 0g Added Sugars	0%
Protein 0g	
Potassium 108mg	2%

**AVOID  
ADDED SUGARS**

Nutrition Facts	
Serv. Size	1 Can
Amount Per Serving	
<b>Calories</b>	<b>140</b>
	% Daily Value
Total Fat 0g	0%
Sodium 55mg	3%
Total Carb. 36g	14%
Total Sugars 36g	
Incl. 36g Added Sugars	76%
Protein 0g	

**WHOLE FRUIT OVER JUICE;  
ALL DAY EVERYDAY.**



(1 cup juice - 250 ml)

## RAW ORANGE JUICE

**CALORIES 145 KCAL**  
**FIBER 0.5 G**  
**SUGAR 25 G**  
**VITAMIN C 39.5**

VS.



(1 orange - 140 g)

## WHOLE NAVEL ORANGE

**CALORIES 69 KCAL**  
**FIBER 3 G**  
**SUGAR 12 G**  
**VITAMIN C 83 MG**



# HEALTHIER SNACKS



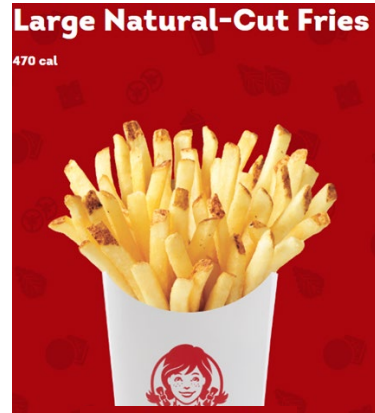


# OUTSIDE MEALS



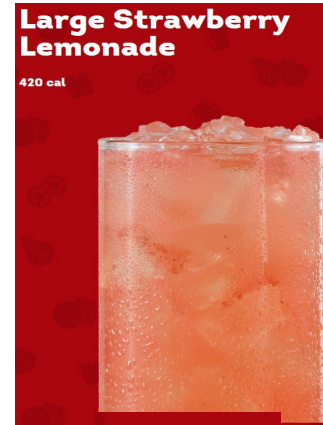
**Baconator®**

960 Cal



**Large Natural-Cut Fries**  
470 cal

**470 cal**



**Large Strawberry Lemonade**  
420 cal

**420 cal**

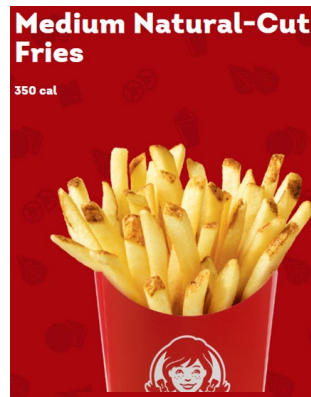


**1,850 calories**



**Classic Chicken Sandwich**

490 Cal



**Medium Natural-Cut Fries**  
350 cal

**350 cal**



**Medium Coca-Cola®**  
250 cal

**250 cal**



**1,090 calories**





## ZAXBY'S BONELESS WINGS & THINGS

Calories	1,450 calories
Saturated fat	13 g
Sodium	4,620 mg
Protein	62 g



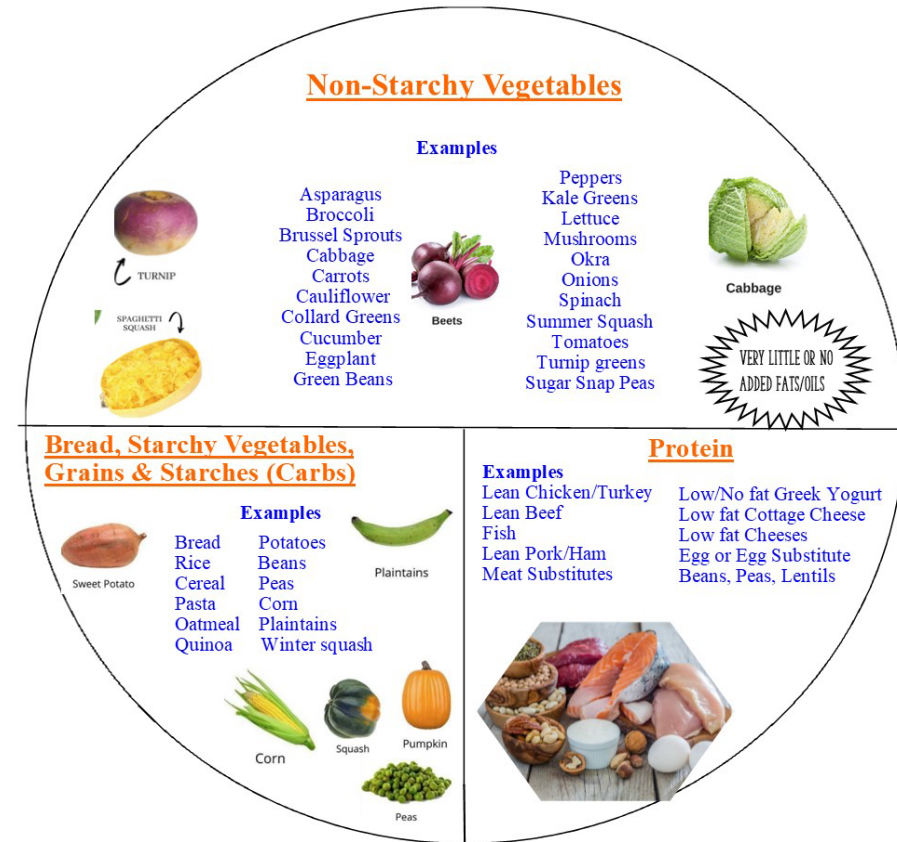
# HOME MEALS

Self-serve

# PLATE METHOD

- Non-Starchy vegetables 50% meal with little or no oils added
- Grains with Starchy vegetables
- Lean protein
- Low fat/Nonfat dairy or nondairy
- Fruit – meal or snack
- Second servings from nonstarchy vegetables

## The Plate Method



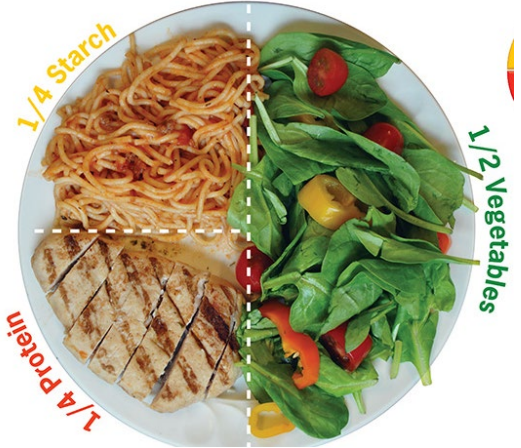
Vanderbilt Nutrition Clinic  
615-936-3952  
Vumc.org/nutrition clinic





# HEALTHY MEAL OPTIONS


My Healthy Plate










# PORTION SIZE RATIONAL

## NONSTARCHY VEGETABLES

 lettuce 8 cal	 cauliflower 27 cal	 tomato 32 cal
 cabbage 21 cal	 green beans 31 cal	 broccoli 55 cal
 spinach 7 cal	 cucumber 16 cal	

1 cup measure

## STARCHY VEGETABLES & GRAINS

 8 oz potato 200 cal	 Pinto beans 244 cal	 Pasta 200 cal
 Rice 200 cal	 sweet potatoes 8 oz 200 cal	

1 cup measure



Nutrition Facts	
15 Servings Per Container	
Serving Size	1 slice (38g)
Amount per serving	
<b>Calories</b>	<b>110</b>
% Daily Value*	
Total Fat 1.5g	2%
Saturated Fat 0g	0%
Trans Fat 0g	

# MEAL OPTIONS – USING HEALTHIER RECIPES



Pepperoni pizza



Chicken alfredo



Spaghetti meat sauce



Hamburger Helper



Low calorie pizza



Skinny spaghetti squash



# LEAN/LOW FAT VS HIGH FAT/ADDED FAT

LOW FAT

HIGH FAT

LOW FAT

ADDED FAT



130 cal (F:40 cal)  
1.5 g SF/4 oz



290 cal (F:200 cal)  
9 g SF/4 oz



Potato, baked

200 cal (F: 0 cal)  
0 g SF/8 oz



1,280 cal (F: 752 cal)  
12 g SF/8 oz

# INCREASE PHYSICAL ACTIVITY

- ✓ ACTIVE PLAY MOST OF THE DAY FOR YOUNGER CHILDREN
- ✓ 60 MINUTES OR MORE/DAY FOR OLDER CHILDREN AND TEENS

REDUCE SCREEN TIME

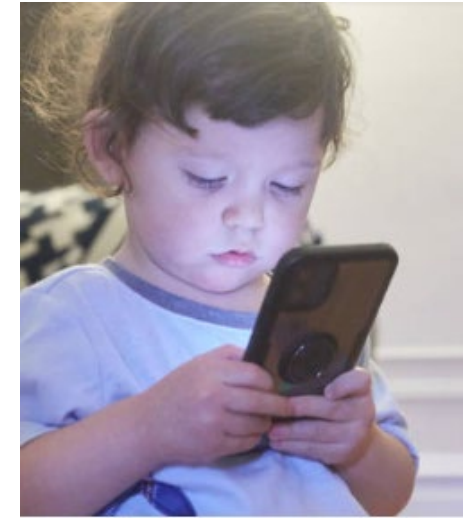


# ASSESS PHYSICAL ACTIVITY YOUNGER CHILDREN

## BIG MUSCLES



## SMALL MUSCLES





# ASSESS PHYSICAL ACTIVITY OLDER CHILDREN & TEENS

## BIG MUSCLES



## SMALL MUSCLES



# Help your kids get more physical activity

## Moderate-intensity aerobic activity

Kids and teens ages 6 to 17 need **at least 60 minutes of physical activity every day** to stay healthy. Most of that can be **moderate-intensity aerobic activity** — anything that gets the heart beating faster counts. And keep in mind that 60 minutes doesn't have to happen all at once — every bit of activity adds up!

At least 3 days a week, encourage them to step it up to **vigorous-intensity aerobic activity**, so they're breathing fast and their heart is pounding



## Muscle- and bone-strengthening activity

To help muscles and bones grow strong, kids and teens also need to do activities like climbing, running, or jumping as part of their 60 minutes. Aim for **muscle- and bone-strengthening activities at least 3 days a week**.



# WEIGHT LOSS MEDICATIONS

AGES 12 -17

## REFERENCES

Saxenda® (Liraglutide) injection 3 mg Prescribing information; available at: <https://www.novo-pi.com/saxenda.pdf>

[Kelly AS, Auerbach P, Barrientos-Perez M, et al. A Randomized, Controlled Trial of Liraglutide for Adolescents with Obesity. N Engl J Med 2020; 382:2117.](#)

Wegovy® (semaglutide) injection 2.4 mg Prescribing information; available at: <https://www.novo-pi.com/wegovy.pdf>

Weghuber D, Barrett T, Barrientos-Pérez M, et al. Once-Weekly Semaglutide in Adolescents with Obesity. N Engl J Med. 2022;387(24):2245. Epub 2022 Nov 2.

Glucagon-like peptide 1-based therapies for the treatment of type 2 diabetes mellitus

[https://www.uptodate.com/contents/glucagon-like-peptide-1-based-therapies-for-the-treatment-of-type-2-diabetes-mellitus?search=ozempic%20weight%20loss&source=search\\_result&selectedTitle=1~150&usage\\_type=default&display\\_rank=1](https://www.uptodate.com/contents/glucagon-like-peptide-1-based-therapies-for-the-treatment-of-type-2-diabetes-mellitus?search=ozempic%20weight%20loss&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1)

# **FACTORS THAT LEAD TO RAPID/EXCESS WEIGHT GAIN**

- Fast Foods
- Sugar-sweetened Beverages
- Excess Juice
- Large Portions
- Grazing
- Inadequate Fruits/Veg
- Inadequate Physical Activity
- Excess Screen Time
- Boredom Stress
- Unhealthy Sleep Patterns

MEDICATION	OZEMPIC (SEMAGLUTIDE)	WEGOVY (SEMAGLUTIDE)
TYPE	<b>Lower dose semaglutide</b> , GLP-1 agonist medication	<b>Higher dose semaglutide caused name change</b> , GLP-1 agonist medication
USE	<b>Approved for use in adults with Type 2 Diabetes.</b> Causes the body to release insulin to lower blood sugar, suppresses appetite, and helps to feel full longer	<b>Approved for weight loss.</b> Suppresses appetite and helps feel fuller, longer. Indicated as an adjunct (additional therapy) to a reduced-calorie diet and increased physical activity for chronic weight management
EXPECTED WEIGHT LOSS	<b>Not approved for weight loss</b> , but some physicians prescribe it to be used for weight loss. <b>All GLP-1 agonist medications produce significantly more weight loss than diet and exercise alone.</b>	Average 6 kg/m <sup>2</sup> reduction in BMI; average weight loss 17.7 kg (38.94 lbs)
AGE GROUP	Adults	12 and older
QUALIFICATION	<b>Adults with Type 2 Diabetes.</b> Experts recommend to avoid using unless diagnosed type 2 diabetes. Instead, talk to health care provider about starting Wegovy for weight loss.	<b>Pediatric body weight</b> above 60 kg (132 lbs) and initial BMI corresponding to 30 kg/m <sup>2</sup> or greater for adults (obese) by international cut-offs and at the 95th percentile or greater for their age and sex
ADMINISTRATION	Injectable medication; once weekly. Designed for long-term use. <b>Typically covered by health insurance</b>	Injectable medication; once weekly. Designed for long-term use. <b>Often not covered by health insurance</b>
GUIDELINES	<b>Most effective with continued lifestyle change</b> of eating appropriately with increased exercise.	<b>Most effective with continued lifestyle change</b> of reduced-calorie diet with increased exercise.
COMMON SIDE EFFECTS	nausea, vomiting, diarrhea, dizziness and fever	nausea, vomiting, diarrhea, dizziness and fever



MEDICATION	SAXENDA (LIRAGLUTIDE)	WEGOVY (SEMAGLUTIDE)
TYPE	GLP-1 agonist that causes the body to release insulin, suppresses appetite, and makes you feel full for longer	GLP-1 agonist that suppresses your appetite and helps you feel fuller for longer.
USE	Indicated as an adjunct (additional therapy) to a reduced-calorie diet and increased physical activity for chronic weight management	Indicated as an adjunct (additional therapy) to a reduced-calorie diet and increased physical activity for chronic weight management
EXPECTED WEIGHT LOSS	Average 1.58 kg/m <sup>2</sup> reduction in BMI; average weight loss 4.50 kg	Average 6 kg/m <sup>2</sup> reduction in BMI; average weight loss 17.7 kg
AGE GROUP	12-17 years	12 and older
QUALIFICATION	body weight above 60 kg (132 lbs) and initial BMI corresponding to 30 kg/m <sup>2</sup> or greater for adults (obese) by international cut-offs and at the 95th percentile or greater for their age and sex	body weight above 60 kg (132 lbs) and initial BMI corresponding to 30 kg/m <sup>2</sup> or greater for adults (obese) by international cut-offs and at the 95th percentile or greater for their age and sex
ADMINISTRATION	Injectable medication; once daily	Injectable medication; once weekly
GUIDELINES	Evaluate the change in BMI after 12 weeks on the maintenance dose and discontinue SAXENDA® if the patient has not had a reduction in BMI of at least 1% from baseline, since it is unlikely that the patient will achieve and sustain clinically meaningful weight loss with continued treatment	Continue a reduced-calorie diet and increased physical activity for chronic weight management
COMMON SIDE EFFECTS	nausea, vomiting, diarrhea, dizziness and fever	nausea, vomiting, diarrhea, dizziness and fever

# PRACTICE CHANGING UPDATES

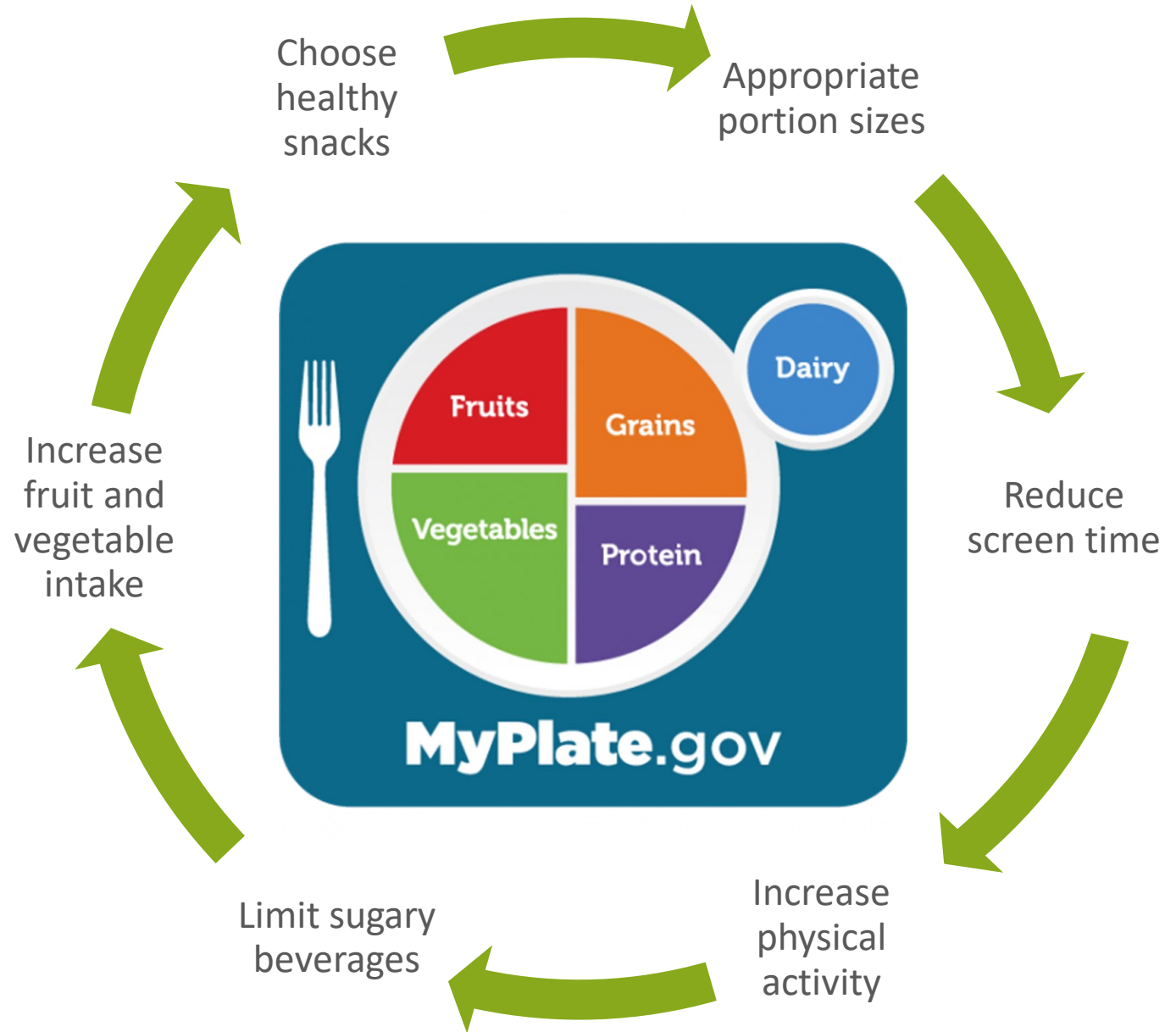
PEDIATRICS (NOVEMBER 2022, MODIFIED JANUARY 2023)

- Semaglutide of obesity in adolescents
  - For adolescents with refractory obesity who opt for pharmacologic therapy, we suggest subcutaneous semaglutide rather than other agents
  - Semaglutide had substantial weight loss compared with lifestyle intervention alone (17.7 kg greater weight loss compared with placebo; 6 kg/m<sup>2</sup> greater decrease in body mass index [BMI]).
  - While head-to-head trials have not been performed in adolescents, indirect evidence suggests greater weight loss with semaglutide than the alternatives, including liraglutide and metformin.
  - While head-to-head trials have not been performed in adolescents, indirect evidence suggests greater weight loss with semaglutide than the alternatives, including liraglutide and metformin.



**IN SUMMARY:**

**FOCUS ON HEALTH  
AND MAKE  
LIFESTYLE  
CHANGES  
THAT LEAD TO  
SUCCESSFUL  
WEIGHT LOSS**



# BARRIERS

## “ I can’t afford healthy foods”

- buy in season
- buy frozen or canned

## “I don’t have time to cook healthy meals

- Start with cooking once per week
- Prep meals on your day off for the rest of the week

## “Healthy foods just aren’t convenient”

- Keep cut up fruits and vegetables in fridge
- Pre-portion healthy snacks into baggies for convenience and keep portions under control
- Get a take-out main entrée and add vegetables and fruits to balance the meal better

## “My kids won’t eat anything healthy”

- Involve kids in meal planning and grocery shopping and let them pick out interesting items to try
- Prepare in different methods such as baking, broiling, roasting as well as raw



## SCHEDULE A VISIT WITH A REGISTERED DIETITIAN

Caregivers with children Ages 2-18

Referrals to:

VUMC Nutrition Clinic

615-936-3952

# APPS AND WEBSITES



**Start Simple with  
MyPlate**



**My Fitness Pal**

**MyPlate**

- <https://www.myplate.gov/>

**BMI Calculator**

- <https://www.cdc.gov/healthyweight/bmi/calculator.html>

**Move Your Way**

- <http://health.gov/moveyourway>

**CDC**

- <https://www.cdc.gov/healthyweight/index.html>

## REFERENCES FOR RECIPES

### **Skinny chicken alfredo**

- <https://dishingoutthehealth.com/skinny-chicken-alfredo-stuffed-spaghetti-squash/>

### **Low calorie pizza**

- <https://thebigmansworld.com/low-calorie-pizza/>

QUESTIONS