Let’s Go!
Childhood Obesity Project ECHO®

Dr. Tory Rogers
Dr. Carrie Gordon
Meg Nadeau

June 2, 2022
Housekeeping

• This session will be recorded for educational and quality improvement purposes.
• Please do not provide any protected health information (PHI) during any ECHO session.
• Zoom trouble? Chat to Meg Nadeau

Please turn on your video!
Please enter your name, organization, and email address (needed for CME) in the chat.
If you are watching as a group, please put everybody’s information in the chat.

Introduce Yourself

Microphones

Please mute your microphone when not speaking.

Agenda

Welcome and Introductions (5 min)
Lecture & Q&A (25 min)
Case/Discussion (25 min)
Close (5 min)
Focus of this Project ECHO®

• Increase the understanding and minimization of bias and stigma that is associated with obesity

• Promote a supportive, health-forward approach in your workforce and office environment around treatment of obesity

• Model health-focused language for parents

• Put Motivational Interviewing into practice

• Develop individualized treatment plans based on obesity physiology to help families reach their healthy goals

• Initiate treatment early and provide timely follow up
Anti-Obesity Medications For Management of Pediatric Obesity
Pediatric Obesity ECHO Session

Dr. Valerie M. O’Hara, FAAP, DABOM
Medical Director, WOW 4 Wellness Clinic
Bangor, ME
No Disclosures

- Will be discussing FDA approved Anti-Obesity Medications as well as off label use of pharmacotherapy for Obesity Management
- Some slides generously shared by Dr. Fox from Advanced Therapies for Pediatric Obesity
Learning Objectives

• Review current use of Anti-Obesity Medications compared to other chronic diseases
• Review FDA approved AOM as well as additional medications used in Obesity Medicine, how many target key areas of the Energy Regulatory System
• Discuss the variability of responses to these interventions
• Touch on Clinical Tips & Challenges for use of AOM
Goal of obesity treatment with anti-obesity medications is to decrease the body fat mass set point.

Anti-Obesity Medications

Body fat mass set point

Abnormal dietary constituents  Unhealthy muscle  Sleep deprivation  Stress  Disrupted circadian rhythms  Weight gain inducing medications

Obesogenic environment

Blackburn, Lee Kaplan, MD, PhD – personal communication  Yale SCHOOL OF MEDICINE
Obesity remains undertreated

- Nearly half (46%) of adults in the U.S. meet recommendations for anti-obesity pharmacotherapy (BMI ≥30 or BMI ≥27 kg/m² with comorbidity)
- 2% of those adults receive proper pharmacotherapy treatment
Background

• Pediatric severe obesity (BMI ≥ 1.2 times 95th percentile): fastest growing obesity category

• Anti-obesity medications (AOMs) often used as adjunct to lifestyle modification
  • Examples: phentermine, topiramate, GLP-1 agonists, etc.

• While AOMs associated with weight loss, substantial variability in individual-level response

Ryder et al, Obesity, 2019
Early Intervention is key to prevention of medical complications, disability and hospitalization

We now have 4 FDA approved medications for Pediatric Obesity

More in the Pipeline

- BMI >27 with weight-related comorbidity or BMI >30 (older adolescents/adults)
- >95th BMI percentile with weight-related comorbidity or >120th of the 95th BMI percentile
Anti-obesity Therapies Current

CNS drugs
- Setmelanotide (MC4R agonist)
- Phentermine
- Phentermine/topiramate
- Naltrexone-Bupropion SR

Endocrine agents
- GLP1 Agonists
  - Liraglutide 3.0mg
  - Semaglutide 2.4mg
- Incretins
  - GIP-GLP1
  - Amylin-GLP1
  - Glucagon-GLP1
  - Glucagon-GIP-GLP1

Miscellaneous
- Orlistat (fat malabsorption)
- Hydrogel capsule

Srivastava, G and Apovian, CM. *Curr Obes Rep.* 2018
<table>
<thead>
<tr>
<th>FDA Approved in Pediatrics for Obesity Indication</th>
<th>Off-Label, w/ Pediatric Evidence in Obesity Treatment</th>
<th>Off-label, no pediatric data for Obesity Treatment</th>
<th>2021 FDA approval, adults with plans for pediatric trials</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Phentermine</strong> age &gt;16 years [4.1% BMI reduction at 6 months]</td>
<td><strong>Metformin</strong> [BMI reduction -0.86]</td>
<td><strong>Lorcaserin (off market in 2020)</strong></td>
<td><strong>Semaglutide 2.4mg (-14.9% weight loss in adults)</strong></td>
</tr>
<tr>
<td><strong>Orlistat</strong> &gt;12 years [-2.61 kg at 1 year]</td>
<td><strong>Topiramate</strong> [BMI reduction -4.9% on 75mg dose x 3 months]</td>
<td><strong>Naltrexone/bupropion SR</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Liraglutide 3.0mg</strong> 12-17 years [-4.5kg or 5% wt reduction in 43.3% vs 18.7% placebo]</td>
<td><strong>Exenatide</strong> (BMI -3.42% at 3 months)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Setmelanotide</strong> (-20-50kg weight loss in select patients with genetic obesity)</td>
<td><strong>Lisdexamfetamine</strong> (2.5 pounds over 4 weeks on 70mg)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Srivastava et al. Obesity 2019
Decreasing the fat mass set point

Anti-obesity medications

- PHENTERMINE
- TOPIRAMATE
- LIRAGLUTIDE
- SEMAGLUTIDE
- SETMELANOTIDE

Slide: adapted from Nadia Ahmad, MD
CNS and anti-obesity medications

Dopamine pathways
- Functions
  - Reward (motivation)
  - Pleasure, euphoria
  - Motor function (fine tuning)
  - Compulsion
  - Perseveration

Serotonin pathways
- Functions
  - Mood
  - Memory processing
  - Sleep
  - Cognition

Hedonic/Salience
- Opioid: naltrexone
- GABA: topiramate

Wang, Volkow et al, *Lancet*, 2001; Figure of brain adapted Robertson, NMLS, Shutterstock, 2016. Yale School of Medicine.
Orlistat

- Trade name: Xenical, OTC as Ali
- FDA approved 1999; Approved age 12 yrs. +
- Dose: 60-120mg TID w/ meals (Xenical)
  80 mg TID w/ meals (Ali)
- MOA: gastric/pancreatic lipase inhibition in stomach & small Intestine
  - (30% reduction in fat absorption)
- Side effects: steatorrhea, fecal urgency/incontinence, oily spotting, flatulence, decreased absorption of Vit ADEK
- CI: pregnant, Breastfeeding, cholestasis, malabsorption syndrome

Pediatric Outcomes

- Largest RCT (N = 539) reported BMI reduction of 2.4% at 1 year (mean baseline BMI = 36 kg/m²)

Chanoine et al. JAMA 2005
Phentermine

- Trade name: Adipex-P, Suprenza, Lomaira
- Approved for short-term (some States) for ages 16yrs+
- Dose: 15-37.5mg once a day
  
  8 mg BID to TID
- MOA: norepinephrine re-uptake inhibitor, affects serotonin & dopamine reuptake
- Side Effects: headache, Incr Pulse, valvular disease, anxiety, palpitations, dry mouth, insomnia,
- CI: hx of heart disease, uncontrolled HTN, uncontrolled anxiety, pregnancy, breastfeeding, MAOI use, substance use disorder hx

Ref: Apovian et al. Endo Society CPG, JCEM 2015
Pediatric Outcomes

- Retrospective chart review of clinical experience with phentermine in adolescents reported 4% BMI reduction at 6 months with 15 mg, once per day dose

Ryder et al. Int J Obes 2017
Topiramate

- Trade name: Topamax, Trokendi (XR) Qudexy XR
- Not an AOM independently - but as part of combo med Qsymia
- Approved for pediatric Seizures 2 yrs.+ (dose:200-400mg/day), for Migraines 12yrs
- Dose when used in Obesity: counter wt. gain SEs of medications or for LOC/BED:
  75-100mg daily
- MOA: inhibitory effect on post synaptic neurons, enhances GABA release, Blocks AMPA and NMDA receptors, Carbonic anhydrase inhibition
- Side Effects: Paresthesia, dizziness, mental fog, teratogenic
- CI: severe depression, acute myopia, glaucoma, SI, metabolic acidosis

Ref: Apovian et al. Endo Society CPG, JCEM 2015
Pediatric Outcomes

- Small RCT (N = 30) in 12-19 year-olds with meal replacement “run-in” reported 1.9% BMI reduction at 28 weeks with 75 mg dose
Phentermine/Topiramate

• Trade name: Qsymia
• FDA approved for obesity ages 18 yrs. +
• New study by Kelly et al, NEJM April 2022: or 12 yrs. +
• Dose: 7.5mg/46mg and 15mg/92mg once daily in am
  - Discontinue if SEs, or <3% wt. loss titrate dose @12 weeks at full dose, discontinue if <5% wt. loss at 12 weeks at max dose.
  - Ref: Garvey et al Am J Clin Nutr 2012
• MOA: as per prior slides
• CI: as per prior slides

Ref: Apovian et al. Endo Society CPG, JCEM 2015
Adult Outcomes

- RCT (N = 2,487) demonstrated approximately 7% and 9% weight loss (7.5/46 mg, 15/92 mg, respectively) at 1 year.
GLP-1 analogues mechanism of action in the brain

GLP-1
- directly activates POMC/CART neurons
  - POMC/CART
  - Anorexigenic
  - decrease food intake
  - increase energy expenditure
- indirectly inhibits (via GABAergic transmission) the NPY/AgRP neurons
  - AgRP/NPY
  - Orexigenic
  - increase food intake
  - decrease energy expenditure
- collectively results in signals that reduce food intake

Baggio & Drucied, JCI, 2014

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Liraglutide

- Trade Name: Saxenda
- FDA approved adults in 2014, pediatrics 12 yrs.+ in 2020 (Victoza prior age 10yrs + for T2DM)
- Dose: SC injection 3.0mg daily
- MOA: GLP-1 agonist: central affect on hypothalamus (appetite) and slowing of gastric motility/CNS effect (satiety)
- Side effects: nausea, vomiting, diarrhea, dyspepsia, headache, fatigue, dizziness
- CI: pancreatitis, gallbladder disease, personal or Fhx of medullary thyroid CA or MEN2

Ref: Apovian et al. Endo Society CPG, JCEM 2015, Astrup et al Int J of Obesity 2012 (long term wt loss due to set point change)
Pediatric Outcomes

A Absolute Change in BMI Standard-Deviation Score

B Relative Change in BMI

No. of Participants
Placebo 126 125 123 116 116 105 101 105 97 102
Liraglutide 125 123 119 118 119 110 107 113 106 112

Weeks since Randomization

Kelly et al. NEJM 2020
GLP-1 analogue: Semaglutide 2.4mg weekly for the treatment of obesity in adults

Once-Weekly Semaglutide in Adults with Overweight or Obesity

John P.H. Wilding, D.M., Rachel L. Batterham, M.B., B.S., Ph.D., Salvatore Calanna, Ph.D., Melanie Davies, M.D., Luc F. Van Gaal, M.D., Ph.D., Ildiko Lingvay, M.D., M.P.H., M.S.C.S., Barbara M. McGowan, M.D., Ph.D., Julio Rosenstock, M.D., Marie T.D. Tran, M.D., Ph.D., Thomas A. Wadden, Ph.D., Sean Wharton, M.D., Pharm.D., Koutaro Yokote, M.D., Ph.D., et al., for the STEP 1 Study Group

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

RCT: N=1961
BMIavg 36 kg/m²
Ageavg 46-47 yrs

Weeks since Randomization

TBWL = total body weight loss

Wilding et al, NEJM, 2021

Yale SCHOOL OF MEDICINE
GLP-1 analogue: Semaglutide 2.4mg weekly for the treatment of obesity in adolescents

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Adolescent Obesity and Effects of Semaglutide: The STEP TEENS Study – Phase IIIa

Effect and Safety of Semaglutide 2.4 mg Once Weekly on Weight Management in Adolescents With Overweight or Obesity

RCT: N=192, age 12-17 years
semaglutide 2.4 mg vs. placebo
Spring 2022

Wilding et al, NEJM, 2021

1/2 participants $\rightarrow$ 15% TBWL
1/3rd of participants $\rightarrow$ 20% TBWL

TBWL = total body weight loss

Yale SCHOOL OF MEDICINE
• Sometimes insurance will cover “diabetes doses” for pre-diabetes:
  – Liraglutide 1.8 mg qd (Victoza)
  – Semaglutide 1 mg qwk (Ozempic)
  – Dulaglutide 4.5 mg qwk (Trulicity)
**Metformin**

- Trade name: Glucophage, Glucophage XR, Riomet
- Approved for T2DM 10yrs +, not FDA for obesity
- Dose: 500mg - 2000mg in BID or daily(XR) doses
- MOA: activation of AMP-activated protein kinase: key regulator of energy balance promoting catabolism, for T2DM: decr gluconeogenesis, decr insulin resistance
- Frequently used to counter wt gain SEs of atypical antipsyc meds
- Side effects: nausea, diarrhea, bloating, vit B12 def, lactic acidosis in presence of renal insuff.
Pediatric Outcomes

Adolescents

- RCT (N = 77) in adolescents 13-18 years old reported 3% BMI reduction at 1 year with XR 2000 mg dose (once daily)

Pediatric Outcomes

Children

- RCT (N = 100) in children 6-12 years old reported 3% BMI reduction at 6 months with 1000 mg dose (twice daily)
Naltrexon/Bupropion

- Trade name: Contrave
- FDA approved 2014
- Dose: weekly titrate dose of 8mg/90mg tab: 1 tab daily; 1 tab BID; 2 tabs am, 1 tab pm; 2 tabs BID
- MOA: Naltrexone: opioid receptor antagonist; Bupropion: reduces uptake of DA (and NE) and activates POMC neurons, modulates reward pathways
- Side Effects: nausea, depression, HA, vomiting, dizziness
- CI: uncontrolled HTN, Sz disorder, BN, dur or alcohol withdrawal, MAOI inhibitors

Ref: Apovian et al. Endo Society CPG, JCEM 2015
Pediatric Outcomes

- None
- Pediatric Development
  - Timeline for initiation of juvenile animal toxicology study, adolescent PK study, and adolescent safety/efficacy trial unknown

NB Patient Selection

- BMI
  - $\geq 95^{th}$ percentile + comorbidity
  - $\geq 1.2 \times 95^{th}$ percentile
- Age
  - FDA approved for $\geq 18$ years

- Considerations
  - Add naltrexone to bupropion
  - Binge eating
  - Depression
- Contraindications
  - Seizures
  - Opioid use
Lisdexamfetamine

- Trade name: Vyvanse
- Approved for ADHD Tx 6yrs+, for BED 18yrs+ in 2015
- Dose: 20-70mg daily in am (BED dose 50-70mg daily)
- MOA: norepinephrine and dopamine re-uptake inhibitor
- No current adult or pediatric weight loss trials
- Side effects: CVS: disease, BP, pulse, palpitations,
- CI/ caution: structural heart, substance use disorder, MAOI, Tourette's, HTN, manic-depression, glaucoma

Setmelanotide

- Trade name: Imcivree
- FDA approved for 6 yrs. + for genetic deficiencies involving POMC,
- PCSK1 (proprotein convertase subtilisin/kexin type 1) or LEPR (leptin receptor).
- Dose: SC inj daily starting for 12yrs +: 2mg up to 3mg after 2 wks.
  6-<12yrs: 1mg and up to 2mg after 2 wks.
  *can consider 3mg if tolerated
- Side effects: nausea, diarrhea, HA, vomiting, depression/SI, skin pigmentation, spontaneous penile erections
- CI: pregnancy, breastfeeding
MC4R agonist: Setmelanotide for the treatment of POMC, PCSK1, LEPR deficiency

- **POMC/PCSK1** (N=10)
  - 80% of participants achieved ≥10% weight loss (95% CI, 44.39% to 97.48%); P=0.0022; n=10
  - Mean reduction in body weight: 23%

- **LEPR** (N=11)
  - 45.5% of participants achieved ≥10% weight loss (95% CI, 16.73% to 76.62%); P=0.0022; n=11
  - Mean increase in weight during double-blind withdrawal period
  - Mean reduction in body weight: 9.7%


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AOM/Phenotype

• Hungry Brain
  • Phentermine-Topiramate 7.5/46 mg daily
• Emotional Hunger
  • Naltrexone/Bupropion sustained release 16/180mg BID
• Hungry Gut
  • Liraglutide 3mg SQ daily
• Slow burn
  • Phentermine 15mg daily + increased resistance training
• If 2 or more phenotypes → predominant phenotype

Clinical Tips

- Aim to use one medication that in some cases can address more than one diagnosis:
  - ADHD + LOC eating + Obesity: Vyvanse good first choice
  - Depression + Obesity + food cravings: Wellbutrin (with or w/out Naltrexone)
  - Pre-DM or PCOS + Obesity: Metformin
  - Pre-DM/T2DM + Obesity: GLP-1 agonist (challenge: coverage by Insurance)
  - Migraine and Obesity: Topiramate
  - Weight-Promoting Medications + Obesity: Metformin and/or Topiramate
Clinical Tips (cont.)

- Many patients will require combination therapies to address their obesity
- Studies illustrate that the chronic disease of obesity will require long term medical management.
- If a medication is working and pts reach a plateau, may warrant consideration of adding additional interventions.
- Initial goal, particularly in severe obesity, may be to slow weight gain or stabilize, to 3-5% wt. loss
- Off label use of medication is not new to Pediatrics (AAP statement), be open and transparent with patients & families.
- Weight regain if a medication is stopped is likely
Long-term, on-going therapy is needed for...

Obesity

Life intervention effect

Drug effect

Drug stopped

Drug continued

medication stopped

weight regain

Metabolic adaptation?

Disease progression?

Obesity is a chronic disease

Schultes, Visc Med, 2016, figure adapted Ania Jastreboff, MD, PhD.
Challenges

- **Coverage of AOM by Insurance**
  - Requires significant work by team for Prior Authorizations and likely will still be denied

- **AOM use hesitancy by families as well as many PCPs**
  - Requires significant education, reinforced by lack of coverage which may cause confusion for families re: safety and appropriateness of these tools.

- **Variability of individual Patient response to AOMs** can be frustrating, may not result in level of BMI change needed or expected by patient/family.

- **Need to review data outcomes for each medication.** Newer medications (particularly combination therapies) for some patients can approach MBS outcomes, this is not universal for all patient.

- **Need to discuss realistic expectations** based on the Intervention being reviewed.
• Treat obesity as you would any other disease.
• Pathophysiology of obesity is complex - the brain plays a key role, impacted by hormonal/metabolic signaling.

![Diagram of hormones/metabolic factors, neural circuitry, neural response, eating behavior, anti-obesity medications, and obesity]

• A majority of anti-obesity pharmacotherapy targets neural mechanisms and thus eating behavior.
• It is critical to understand not only if an obesity treatment is effective, but how it works and for whom it is effective.
Key physiological concepts in treating the disease of obesity

Obesity is a disease

Heterogeneous

Complex

Chronic

No cure for obesity (yet) necessitating lifelong treatment

Slide: Ania M. Jastreboff, MD, PhD

Yale School of Medicine
Thank You

Look forward to the CASE Presentation

voharado@gmail.com
Resources

• Advanced Therapies for Pediatric Obesity

• AAP Pediatric Obesity Management Course

• Blackburn Obesity Course June 23-28, 2022
References


Pediatric Obesity Pharmacotherapy


Let’s Go! Project ECHO

Case Presentation

Carrie Gordon
# Reasons for Selecting this Case

**Do NOT include PHI**

| Why did you choose this case? | 1. Complex patient  
2. Potential to improve multiple health challenges with intervention  
3.  
4. |
|--------------------------------|------------------------------------------------------------------------------------------------|

| What questions do you have for the group? | 1. What is underlying this patients eating patterns? Diagnosis?  
2. What medication adjustments may help this patient?  
3. Is this patient a candidate for Bariatric Surgery  
4. |
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td></td>
<td>Note any additional comments</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>13 years 4 months</td>
</tr>
<tr>
<td><strong>Gender Identity</strong></td>
<td>male</td>
</tr>
<tr>
<td><strong>Race/Ethnicity</strong></td>
<td>caucasian</td>
</tr>
<tr>
<td><strong>Current Weight and Height</strong></td>
<td>336 lb, 63 inches</td>
</tr>
<tr>
<td><strong>Current BMI and BMI%</strong></td>
<td>BMI 53.45, &gt; 190% of the 95%ile</td>
</tr>
<tr>
<td><strong>How long has the patient had</strong></td>
<td>longstanding obesity, but trends worsened around age 9 years</td>
</tr>
<tr>
<td><strong>concerning growth trends?</strong></td>
<td></td>
</tr>
</tbody>
</table>
Growth Chart
## Relevant ROS

<table>
<thead>
<tr>
<th>Sign</th>
<th>Present? Check if Yes</th>
<th>Comments</th>
</tr>
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<tbody>
<tr>
<td>Headaches</td>
<td></td>
<td>no</td>
</tr>
<tr>
<td>Snoring</td>
<td></td>
<td>no</td>
</tr>
<tr>
<td>Poor sleep hygiene - no standard bedtime, no bedtime routine, screens in bedroom, inadequate sleep duration, disordered sleep, etc.</td>
<td></td>
<td>eating at night, sleeps late &gt;8hrs</td>
</tr>
<tr>
<td>Shortness of breath</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>✔</td>
<td>GI for constipation/encopresis</td>
</tr>
<tr>
<td>Heartburn, dysphagia, chest paint</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polyuria or polyphagia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constipation</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Menstrual irregularities</td>
<td></td>
<td></td>
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<tr>
<td>Pain/discomfort with activity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flat affect, sad or loss of interest</td>
<td>✔</td>
<td>low energy, anhedonia</td>
</tr>
<tr>
<td>Internal weight bias</td>
<td></td>
<td>unclear, probable</td>
</tr>
</tbody>
</table>
# Relevant Past Medical History

<table>
<thead>
<tr>
<th>Medical History</th>
<th>Abnl, NL or N/A</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth History</td>
<td>Normal</td>
<td>SVD, maternal cigarettes/marijuana use</td>
</tr>
<tr>
<td>Growth in First 2 years</td>
<td>Normal</td>
<td>care shifted to mgm for guardianship, no growth failure</td>
</tr>
<tr>
<td>Developmental Concerns</td>
<td>Normal</td>
<td>testing shows normal IQ, probable ADD, depression, anxiety, neglect/trauma hx early in life</td>
</tr>
<tr>
<td>Puberty or Menstrual Concerns</td>
<td>Normal</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
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</tbody>
</table>
# Relevant Obesity Related Family History

Does the patient have a parent, or a first degree relative with any of the following? 

Do NOT include PHI

<table>
<thead>
<tr>
<th>Condition</th>
<th>Y, N, or Unknown</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obesity</td>
<td>Yes</td>
<td>parents</td>
</tr>
<tr>
<td>Type 2 Diabetes</td>
<td>Yes</td>
<td>grandparents on both sides</td>
</tr>
<tr>
<td>Dyslipidemia</td>
<td>Unknown</td>
<td></td>
</tr>
<tr>
<td>PCOS</td>
<td>Unknown</td>
<td></td>
</tr>
<tr>
<td>CVD</td>
<td>Yes</td>
<td>grandparent maternal side</td>
</tr>
<tr>
<td>Bariatric Surgery</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Sleep Apnea</td>
<td>Unknown</td>
<td></td>
</tr>
<tr>
<td>Mood disorder</td>
<td>Yes</td>
<td>maternal drug abuse/use and mood disorders and ADHD</td>
</tr>
<tr>
<td><strong>Relevant Social History</strong></td>
<td><strong>Do NOT include PHI</strong></td>
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</tr>
</tbody>
</table>
| **What is the patient’s living situation?**  
(parents together, divorced, siblings?) | Lives alone with mgm, who is longstanding guardian |
| **How is school going?**  
(Are there signs of bullying? Does the patient attend school? How are their grades? Do they have an IEP or 504?) | performance passing, but not meeting expectations. Trouble getting work done, falling asleep sometimes in class, low energy |
| **Is the family food insecure? If yes, is this being addressed?** | no |
| **Is there a past history of trauma?**  
If yes, is this being addressed? | in trauma counseling at school |
| **Is there a history of substance abuse?**  
If yes, what substance and is this being addressed? | no |
| **Does the patient see a counselor?**  
If yes, for what? | above |
### Nutrition

**Comment on all that apply**

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Family food habits</strong> (Does the patient or family diet, or have food restriction patterns?)</td>
<td>no restrictions, limited understanding of nutrition, interested in having healthier foods and some simple recipes, loves &quot;asian foods&quot;</td>
</tr>
<tr>
<td><strong>What is the family’s understanding of nutrition?</strong></td>
<td>average/reasonable knowledge, hunger bigger limitation than food knowledge</td>
</tr>
<tr>
<td><strong>Does the patient have selective eating?</strong></td>
<td>no</td>
</tr>
<tr>
<td><strong>Does the patient have any of the following:</strong></td>
<td>nighttime eating, gets up at 10:30 every night and eats leftovers from dinner or makes a sandwich. Could eat 3 sandwiches. more controlled food intake during day. Grandmother wonders if this is because she watches him/he is embarassed to eat more</td>
</tr>
<tr>
<td>- excessive hunger</td>
<td></td>
</tr>
<tr>
<td>- night time eating</td>
<td></td>
</tr>
<tr>
<td>- sneaking food</td>
<td></td>
</tr>
<tr>
<td><strong>Can the patient accept food limits?</strong></td>
<td>yes, daytime</td>
</tr>
</tbody>
</table>
# Physical Activity and Socialization

Comment on all that apply

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>What does the patient do for physical activity?</td>
<td>limited-has encopresis sometimes with activity</td>
</tr>
<tr>
<td>What does the patient like to do for physical activity?</td>
<td>not sharing any positive activity memories</td>
</tr>
<tr>
<td>Does screen time significantly displace other activities like physical activity, school work, etc.?</td>
<td>yes, excessive screen time after school, most of socializing is via video games</td>
</tr>
<tr>
<td>Does the patient have friends?</td>
<td>no</td>
</tr>
<tr>
<td>Does the patient have healthy social interactions?</td>
<td>no</td>
</tr>
</tbody>
</table>
### Relevant PE

<table>
<thead>
<tr>
<th>Condition</th>
<th>Check if positive, document any concerns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>no, grandmother has home cuff</td>
</tr>
<tr>
<td>Short Stature</td>
<td>no</td>
</tr>
<tr>
<td>Tonsillar hypertrophy/mouth breathing</td>
<td>no</td>
</tr>
<tr>
<td>Wheezing/Increased WOB</td>
<td>no</td>
</tr>
<tr>
<td>Abdominal concerns (pain/liver enlargement)</td>
<td>no</td>
</tr>
<tr>
<td>Gait/LE concerns</td>
<td></td>
</tr>
<tr>
<td>Acanthosis nigricans/skin concerns</td>
<td>✔</td>
</tr>
<tr>
<td>Inappropriate pubertal development</td>
<td></td>
</tr>
<tr>
<td>Age appropriate clinic interaction</td>
<td>flat affect, one word answers if possible</td>
</tr>
<tr>
<td>Dysmorphic findings</td>
<td>none</td>
</tr>
</tbody>
</table>
Does the patient have any of the following?

<table>
<thead>
<tr>
<th>Condition</th>
<th>Check if yes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prediabetes/Diabetes</td>
<td>✔</td>
<td>5.9 A1C</td>
</tr>
<tr>
<td>Dyslipidemia</td>
<td></td>
<td>low HDL only</td>
</tr>
<tr>
<td>NAFLD</td>
<td></td>
<td>ALT 30</td>
</tr>
<tr>
<td>HTN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sleep Apnea</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCOS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCFE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blount’s Disease</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Idiopathic Intracranial</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypertension</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Do NOT include PHI
<table>
<thead>
<tr>
<th>Lab</th>
<th>Results</th>
<th>Fasting? Check if yes</th>
<th>No Labs Ordered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glucose</td>
<td>5.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HbA1C</td>
<td>85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LDL</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HDL</td>
<td>159</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Cholesterol</td>
<td>143</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Triglycerides</td>
<td>27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALT</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AST</td>
<td>26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vit D</td>
<td>35 (slt high)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other insulin</td>
<td>35 (slt high)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Screeners</th>
<th>At risk, Not at risk, Didn’t Screen / Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHQ9 - for depression</td>
<td>At risk</td>
</tr>
<tr>
<td>Vanderbilt for ADHD</td>
<td>At risk</td>
</tr>
<tr>
<td>GAD-7/SCARED for anxiety related disorders</td>
<td>At risk</td>
</tr>
<tr>
<td>CRAFFT for substance abuse disorder</td>
<td>Not at risk</td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>
## Current Medications

<table>
<thead>
<tr>
<th>Medication and Dose</th>
<th>Start date</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>metformin 1000 mg daily</td>
<td>Summer 2021</td>
<td></td>
</tr>
<tr>
<td>miralax</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalers (albuterol)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Melatonin 3 mg qhs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>flovent</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### What have you tried?

**Do NOT include PHI**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>other providers have used sertraline (low dose, &lt;2 months, fluoxetine 40 mg daily&lt;3 months)</td>
<td></td>
</tr>
<tr>
<td>metformin started by another provider has had no impact on eating patterns/hunger/weight</td>
<td></td>
</tr>
</tbody>
</table>

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## Patient Successes and Challenges

<table>
<thead>
<tr>
<th>Successes</th>
<th>Challenges</th>
</tr>
</thead>
</table>
| Strengths:  
- wants to make changes  
- In counseling  
- Strong advocate in guardian  
- IEP done, school supports in place | overwhelmed caregiver  
- Sibling also with health needs and medical appointments  
- getting discouraged with lack of improvement  
- trauma/encopresis has not been improving  
- bullying/teasing  
- low energy |
Some possible next steps for you....

1. Are there a few key take aways you can put into practice next week?
2. View the supplemental learning options - LetsGo.org/ECHO
3. Think about any bias you have that might get in the way with your patients
   - Bias screening test - https://implicit.harvard.edu/implicit/takeatest.html
4. Do you have a Team to help you?
   - Internal team
   - Community partners
   - Referring physicians
5. Do you need to develop new Workflows for Well Visits and Follow Up Visits?
6. Think about taking an MI course
New Resources

- We have two new handouts that you can share with parents and caregivers of children who carry extra weight:
  - Speaking with Your Child About Health when they Have Extra Weight
  - Why Consider Bariatric Surgery for Adolescents?

- Download at LetsGo.org/PedClinicalTools
  - Parent & Caregiver Resources Menu
What’s Next

• Office Hours

• Monthly ECHO session: July 7 | 12-1 pm
  - Bariatric Surgery

• August session- Participant choice
  - Vote for the topic you want to learn more about
    https://www.surveymonkey.com/r/ECHOWildCard

Scan with Smartphone camera
Evaluation and CMEs

If you haven’t already done so, please enter your name and email address in the Chat

- After each ECHO session, you will receive an email with a link to a brief evaluation survey and Post-Test.
  - Please complete within 1 week.

- Upon completion, a link to the CME credit will be sent to you.
Thank you

• Feel free to reach out to us at:
  - ObesityECHO@mainehealth.org
  or
  - Tory - victoria.rogers@mainehealth.org
  - Carrie - carrie.gordon@mainehealth.org