The Role of Primary Care in Childhood Obesity

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Learning Objectives

• Describe the prevalence of the childhood obesity epidemic, including the incidence of severe obesity in children and adolescents.
• Review obesity data to describe neighborhood level socioeconomic factors which influence childhood obesity.
• Describe assessment and initial management of comorbidities through case-based learning.
• Review adapted Motivational Interviewing and Coaching tools.
Disclosures

Consultant/ Speakers bureaus  No disclosures
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Off-label uses  No disclosures


% 


Men 41%
Women 38%
Boys 18%
Girls

18%

- 2-5 yo: 21%
- 6-11 yo: 18%
- 12-19 yo: 14%

Changes in the Prevalence of Severe Obesity* in 2-19 yo Youth

- Boys: 9%
- Girls: 8%

* Severe obesity: BMI >120% of 95th Percentile
Prevalence of Obesity in Selected Age Groups – NHANES 2011-2014

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-5 yo</td>
<td>9%</td>
</tr>
<tr>
<td>6-11 yo</td>
<td>17%</td>
</tr>
<tr>
<td>20-39 yo</td>
<td>36%</td>
</tr>
</tbody>
</table>

Ogden CL et al. NCHS Data Brief #219, November 2015

Children’s Preliminary Findings

- Dzewaltowski Lab (Ann Essay) & Children’s Center for the Child & Community (Holly Dingman, Karla Lester)
- Electronic health record data from Children’s Hospital & Medical Center's primary care network
  - 2017-2018
  - Objectively measured heights and weights from a sample of 40,303 children aged two to 20 years in 34 zip codes in Omaha, Nebraska.
Clinical Resources

US Preventive Services Task Force
Recommendations for the Treatment of Obesity

Pediatric

• Moderate to high intensity behavioral intervention including dietary, physical activity, and behavioral counseling; ≥ 26 contact hours

Adult

• Behavioral intervention including self-monitoring delivered in 12-26 visits over the course of a year
# Appropriate Language for Patients with Obesity

<table>
<thead>
<tr>
<th>Terms to Use</th>
<th>Terms to Avoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>Obesity</td>
</tr>
<tr>
<td>Unhealthy weight</td>
<td>Heaviness</td>
</tr>
<tr>
<td>Healthier weight</td>
<td>Fat</td>
</tr>
<tr>
<td>Increased BMI</td>
<td>Unhealthy BMI</td>
</tr>
<tr>
<td>Eating habits</td>
<td>Diet</td>
</tr>
<tr>
<td>Physical activity</td>
<td>Exercise</td>
</tr>
</tbody>
</table>

Wadden T & Didie E. Obesity Res 2003;11:1140

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**BMI for age Percentiles (Girls, 2 to 20)**

![BMI for age Percentiles Graph](image)
Assessment

- Obesity-specific family history, ROS
- Full physical exam, BP
- Lab work to screen for co-morbidities
  - Fasting glucose, HbA1c
  - Fasting lipid profile
  - AST and ALT
- Additional evaluation based on PE findings, lab work
**Framework for Integrated Clinical and Community Systems of Care**

**Care Delivery**
- Information Systems
- Decision Support
- Delivery System Design
- Self Management Support
- Local patient environment
- Clinicians

**Community Systems**
- Resources
- Services
- Supportive Environment
- Social norms

**Integration**
- Convenor, Advocacy, Data Exchange, Financing, Governance/Regulation, Referral Processes, Communications

**Equity**

**Training & Education**

**Family & Individual Empowerment and Engagement**

**Metrics**

**Population Health**

**HPI:**

**CC:** Patient is a 4 y/o with obesity, who presented to local hospital and then to Children's with a h/o vomiting and lethargy and was hospitalized for an evaluation when she was 2 years of age. She has a h/o gross motor delay, vomiting and rapid weight gain. Mom is consistently worried about the amount of fluid intake and is frustrated with her behaviors.

**HPI:** Through consultation by many specialists and genetic testing, she was eventually diagnosed with Bardet Biedl Syndrome. She is followed by Endocrine, Nephrology, GI, Ophthalmology, Sleep clinic, ENT and Neurology and has also been enrolled and followed by the Lincoln HEROES team since 7/16.

She had a normal renal ultrasound and abdominal xray in the interim. She had a sleep study in the last few months, but was not able to complete it. She was scheduled for T&A.
• PCP started to see her at 7 months. She was seeing someone else and came for a consult for vomiting, stomach pain, bloody stools. Diagnosed with MSPI and GERD. Placed on Alimentum and better. Noted tone low.
• She had recurrent ear infections and continued spitting and had tubes at 1 year.
• She failed her 18 month developmental screen and EDN eval and therapy initiated. Continued to note low tone.
• Started to have vomiting after eating at 18 months. Felt to be due to over eating as noted increased weight gain.
• 8/26/15: Noted very fast weight gain sent to genetics. They did not feel this was Prader Willi and not genetic in cause at that time. Suggested recheck if further concerns.
• 3/17/16: She had continued vomiting and cough off and on. Trial of treatment for allergies, GERD and asthma with limited improved. Felt again to be due to over eating.
• 3/17/16: Vomited and passed out. 911 call and EMT noted blood sugar 44. Admitted to Children’s. CT normal, blood sugar 44, CMP, thyroid, ammonia, cortisol, AST, ALT normal. Felt AGE and hypoglycemia.
• 4/5/16: Continued home monitoring showed some intermittent hypoglycemia. Weight and height elevated. Suggested See Dr. Lutz. Micro-array sent.
• 4/12/16: Initiated HEROS and GI eval.
• 8/5/16: Noted positive for Bardet Biedle per Dr. Lutz.
Past Medical History:
Appropriate for Gestational Age
Term pregnancy complicated by Hypertension
Feeding- bottle with a h/o feeding difficulty
NAFLD
Sleep apnea
Constipation
Hypoglycemia and vomiting
Developmental Delay
Tonsillar hypertrophy
Bardet Biedl Syndrome
S/P T&A
S/P BMT and Adenoidectomy
Medications: Not taking Miralax on a consistent basis and Mom is giving her melatonin for sleep and states that it is helping. Several medications have been started and stopped over the past year.

Developmental History:
Gross motor delay
Fine motor delay
Speech delay

Family History: Obesity- Mother; Diabetes- MGM; Thyroid problem- MAunt; Substance abuse- PAunt
Social History:

Insurance information
Medicaid

Primary caregiver
Biological mother

With whom does the patient live?
Lives with Biological Mother

School grade
Head Start preschool

Is the patient on an IEP or 504 plan?
Yes

Food insecure

Resources
WIC
Free or reduced lunch
SNAP

Previous Trauma
Single Mom with multiple stressors; financial stress

PE: VS- Blood Pressure- 89/63

Labs:
Total Cholesterol - 143; HDL- 39; LDL- 84; Triglycerides- 165;
TSH- 4.28; Free T4- 1.1; HgbA1C- 4.6%; Fasting glucose- 92
ALT- 77; AST- 52; BUN- 14; Creatinine-.36

Other studies:
Genetic testing: Diagnosed with Bardet Biedl Syndrome by genetic testing showing variant in BBS9; PTH and Calcium levels normal; GTT- normal; Renal ultrasound normal; Liver ultrasound showed fatty infiltrate
Example of Genetic Syndromes: Obesity with Developmental Delay

- Prader Willi Syndrome- mental retardation, short stature, hyperphagic obesity and hypogonadotropic hypogonadism. Poor weight gain and hypotonia in infants.
- Albright Hereditary Osteodystrophy- short stature, obesity, skeletal defects, impaired olfaction resistance to parathyroid hormone (pseudohypoparathyroidism type IA), or paternal transmission leading to pseudopseudohypoparathyroidism
- Bardet–Biedl Syndrome- obesity, mental retardation, dysmorphic extremities,(syndactyly, brachydactyly or polydactyly), retinal dystrophy or pigmentary retinopathy, hypogonadism and structural abnormalities of the kidney or functional renal impairment.

Maternal Health

- Over 1/3 of women 20-39 yrs have a BMI> 30
  - Non-Hispanic white women (31.3%)
  - Non-Hispanic black women (47.2%)
  - Hispanic women (37.6%)
- 18% women 20-39 yrs have BMI > 35
- 4.2% women 20-39 yrs have BMI > 40
- Newborns of mothers with obesity
  - Increased fat mass, body fat, ponderal index (wt/ht3), and insulin resistance
  - Degree of insulin resistance in an infant correlates with maternal insulin resistance and infant adiposity

References:
Effect of Maternal Lifestyle on Likelihood of Her Child’s Obesity

Dhana K et al. BMJ 2018;362:k2486

Obesity Prevalence in 2-4 yo WIC Participants 2000 - 2014

Pan L et al. MMWR 2016; 65:1256
HPI:

- Patient is a 16 y/o WM who returned to the Children's Hospital and Medical Center HEROES/Weight Management Multidisciplinary Clinic on 2/6/2018 for his follow up assessment. He was last seen 15 weeks ago for abnormal lab values, abnormal weight gain, acanthosis nigricans, sleep apnea, fatty liver disease and hypertension. He has been coming to HEROES in Lincoln for three years and over the course of the first year of attendance, he lost approximately 70# and was weaned off of Risperdal, which he gained 100# over the course of one year while taking. One of the main reasons the family stopped taking the Risperdal was because of gynecomastia. He states he has been compliant with CPAP and taking his medications for hypertension, but this has been a difficulty for him in the past. He has multiple risk factors including use of obesogenic psychogenic medications, family history of morbid obesity and comorbidities, and psychosocial stressors.

Past Medical History:
- Hypertension
- NAFLD
- Dyslipidemia
- Sleep apnea
- ADHD
- Depression
- Self-harming behaviors

Medications:
Lisinopril/Hydrochlorothiazide- 10mg/12.5mg; Clonidine 0.2mg 1 qhs; Vitamin D3; Vyvanse 70 mg; Lexapro 10mg
Developmental History:
No developmental concerns

Family History:
Overweight/obesity: Mother, Father, MGM, PGF, MAunt, PAunt, Sister
Hypertension: Mother, MGM
Diabetes: Mother, MGM
Thyroid Problem: MAunt
Asthma: Father
Sleep Apnea: Mother, MGM
Fatty Liver Disease: Father, MGM
Polycystic Ovary Syndrome: Mother
Metabolic Syndrome: Mother
Eating Disorder: Sister
Alcoholism: Father, MGF
Depression: Mother, Father, MAunt, PAunt, Sister
Anxiety: Sister, Maternal Aunt
Substance Abuse: Father
Weight Loss Surgery: Sister, Mother, Maternal Aunt
Sleep History
Snoring Sleep apnea
Difficult with sleep onset; Frequent awakening; Excessive daytime sleepiness
Followed by sleep clinic and has CPAP, but has not always been consistently compliant,
Has Severe OSA with 18.3/hr. On CPAP since 3/2016 and Poor CPAP adherence at 20% worn >4
hours; Compliance reports every 30 days

Overall Sleep Hygiene
Poor

Sleep Study results if applicable
Diagnostic PSG (3/8/2015 CH) - oAHI of 18.3/hr, low-normal SpO2 distribution, 3% desat index at
19.0 (normal < 3.0) & decreased REM sleep.

On CPAP
Yes

Social History:
Insurance information  Private

With whom does the patient live?  Biological Mother and 18 y/o sister

School grade  11th grade – good school performance

Food insecure  No

Previous Trauma
Victim of physical abuse
Victim of psychological abuse
Witness to abuse
Parental separation or divorce
Parental incarceration

Substance abuse
None
Blood Pressure: 149/68

Labs
Total Cholesterol 134
HDL 34
LDL 89
Triglycerides 63
Hgb A1C 5.2%
Fasting glucose 83
ALT 23
AST 26
BUN 15
Creatinine .76

Obesity: OSAHS
(obstructive sleep apnea/hypopnea syndrome)

- Definitions
  - Sleep disordered breathing
  - Apnea vs hypopnea, obstructive vs central
  - OSAHS
    - Obstructive index > 1

- Symptoms
  - Snoring, gasping, mouth breathing, AM difficulty, hypersonmolance, mood
  - Comorbid GER, hypertension, pulmonary HTN
Obesity: OSAHS
(obstructive sleep apnea/hypopnea syndrome)

- Complications
  - Poor school performance, behavioral problems
  - Increased appetite, worsening obesity
  - Hypoxemia, pulmonary hypertension
  - Hypertension
  - Obesity associated hypoventilation (Pickwickian)

- Refer
  - PSG assessment or abnormal PSG
  - CPAP/BiPAP consult

Obesity: OSAHS
(obstructive sleep apnea/hypopnea syndrome)

- Evaluation
  - Sleepiness questionnaire
  - Exam: allergy, tongue, lymphoid hyperplasia,
  - Polysomnography

- Treatment – comprehensive and family based
  - Weight management
  - Environmental control, nasal steroid, montelukast
  - Surgical management: adenotonsillectomy, UPP
  - PAP therapy
Definition of Hypertension (1–18 years)

| TABLE 3 Updated Definitions of BP Categories and Stages |
|----------------------------------|----------------------------------|
| For Children Aged 1–13 y         | For Children Aged ≥13 y          |
| Normal BP: <90th percentile      | Normal BP: <120/≤80 mm Hg        |
| Elevated BP: ≥90th percentile to | Elevated BP: 120/<80 to 129/<80 mm Hg |
| <95th percentile or 120/80       |                                 |
| mm Hg to <95th percentile        |                                 |
| (whichever is lower)             |                                 |
| Stage 1 HTN: ≥95th percentile to | Stage 1 HTN: 130/80 to 139/89 mm Hg |
| <95th percentile + 12 mm Hg,    | (whichever is lower)             |
| or 130/80 to 139/89 mm Hg       |                                 |
| Stage 2 HTN: ≥95th percentile + 12 mm Hg, or ≥140/90 mm Hg |
|                                 | (whichever is lower)             |


Blood Pressure Measurement Frequency

- Unclear what age is optimal to begin routine BP measurement.
- Data suggest that prevention and intervention efforts should begin early.
- New guideline does not change recommendation to begin BP measurement at age 3.
  - Now, only **annual** measurement is recommended unless risk factors are present.
Simplified Blood Pressure Table

- Full BP tables are complicated
  - Leads to under-recognition of childhood HTN
- Simplified BP table created for use in initial screening of BP values
  - Based on 90th percentile BP values for children at 5th height percentile

![Simplified Blood Pressure Table Image]

Patient Evaluation and Management by Blood Pressure Level

<table>
<thead>
<tr>
<th>BP Category (see Table 3)</th>
<th>BP Screening Schedule</th>
<th>Lifestyle Counseling (Weight, Nutrition)</th>
<th>Check Upper and Lower Extremity BP</th>
<th>ASMPA</th>
<th>Diagnostic Evaluation</th>
<th>Initiate Treatment</th>
<th>Consider Sub-specialty Referral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Annual</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
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<tr>
<td>Elevated BP</td>
<td>Initial measurement</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Second measurement:</td>
<td>Repeat in 6 months</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Third measurement:</td>
<td>Repeat in 6 months</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Stage 1 HTN</td>
<td>Initial measurement</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Second measurement:</td>
<td>Repeat in 1-2 weeks</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Third measurement:</td>
<td>Repeat in 3 months</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Stage 2 HTN</td>
<td>Initial measurement</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Second measurement:</td>
<td>Repeat/refer to specialty care within 1 week</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

![Patient Evaluation and Management by Blood Pressure Level Image]

References:
Lipid Screening

- 9-11 years
  - **Universal screening**
    - FLP or if non-FLP (calculate non-HDL-C)
    - Non-HDL-C=TC – HDL-C
    - If Non-HDL ≥ 145 mg/dL or HDL < 40 mg/dL obtain FLP x 2
  - Screening FLP
    - LDL-C ≥ 130 mg/dL, non-HDL-C ≥ 145 mg/dL, HDL-C <40 mg/dL TG ≥ 100 mg/dL if <10 years or ≥ 130 mg/dL if > 10 years
    - Repeat FLP at least 2 weeks apart, but within three months
- 12-16 years No routine screening
  - FLP x 2 if:
    - Family history, Parents with TC ≥ 240 mg/dL or dyslipidemia, patient has diabetes, hypertension, **BMI ≥ 85th percentile**, smokes cigarettes, or has a moderate to high risk medical condition

Lipid Screening

- Birth to 24 months – no lipid screening
- 2-8 years
  - No routine screening
  - Measure fasting lipid profile (FLP) x 2 if:
    - Family History
    - Parent with total cholesterol ≥ 240 mg/dL or known dyslipidemia
    - Child has diabetes, hypertension, **BMI ≥ 95th percentile**, smokes cigarettes
    - Other moderate to high risk condition
  - FLP should be at least 2 weeks apart, but done within 3 months
Heterozygous Familial Hypercholesterolemia

- Occurs in 1 out of every 200 people
- Total cholesterol levels 350-550 mg/dL
- Suspected in children and young adults (<20) if LDL-C ≥ 160 mg/dL or non-HDL-C ≥ 190 mg/dL
- When LDL-C ≥ 190 the probability that patient has FH is 80%
- Screen for family history
- A brief period of diet intervention should be trialed, repeat FLP to determine inherited versus acquired dyslipidemia

Lipid and Lipoprotein Values in Children in Adolescents

<table>
<thead>
<tr>
<th>Category</th>
<th>Acceptable</th>
<th>Borderline</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC</td>
<td>&lt; 170</td>
<td>170-199</td>
<td>≥ 200</td>
</tr>
<tr>
<td>LDL-C</td>
<td>&lt; 110</td>
<td>110-129</td>
<td>≥ 130</td>
</tr>
<tr>
<td>Non-HDL-C</td>
<td>&lt; 120</td>
<td>120-144</td>
<td>≥ 145</td>
</tr>
<tr>
<td>ApoB</td>
<td>&lt; 90</td>
<td>90-109</td>
<td>≥ 110</td>
</tr>
<tr>
<td>TG 0-9 years</td>
<td>&lt; 75</td>
<td>75-99</td>
<td>≥ 100</td>
</tr>
<tr>
<td>TG 10-19 years</td>
<td>&lt; 90</td>
<td>90-129</td>
<td>≥ 130</td>
</tr>
<tr>
<td>HDL-C</td>
<td>&gt; 45</td>
<td>40-45</td>
<td>&lt; 40</td>
</tr>
<tr>
<td>ApoA-I</td>
<td>&gt; 120</td>
<td>115-120</td>
<td>&lt; 115</td>
</tr>
</tbody>
</table>
Diet

- Refer to dietician
- 25-30% of calories from fat
  - ≤7% from saturated fat
  - 10% from monounsaturated fat
  - <200 mg/d of cholesterol
  - Avoid trans fat
- Decrease sugar intake
  - Replace simple carbohydrates with complex carbohydrates
  - No sugar sweetened beverages
- Increase dietary fish to increase omega-3 fatty acids

Lifestyle Modifications

- Unless very extreme LDL-C (>190 mg/dL) or severe TG elevation (>500 mg/dL), start with 6 months
- Physical activity
  - One hour a day of moderate to vigorous physical activity
  - Age appropriate
- <2 hours per day of screen time
- Anti-tobacco counseling
- Weight management
  - Calculate and plot body mass index (BMI)
  - 85-95th percentile → overweight
  - ≥95th percentile → obese
  - Counsel on appropriate weight maintenance or loss recommendations if applicable
Prediabetes and T2DM

- **BMI criteria for screening:**
  - Severely obese (BMI >99th%)
  - Obesity with early onset puberty
  - Overweight with one or more risk factors

- **Risk factors:**
  - FHx of T2DM
  - High-risk ethnicity
  - Signs of insulin resistance
  - Maternal history of diabetes or gestational diabetes
  - Patient prescribed second generation antipsychotics

- **Age at initial testing:**
  - 10 years or onset of puberty if younger age
  - Under age 10 if severely obese

- **Retesting:**
  - Biannually if normal

---

Summary of Criteria for Diagnosing Prediabetes and Diabetes:


<table>
<thead>
<tr>
<th></th>
<th>Prediabetes</th>
<th>Diabetes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fasting plasma glucose</td>
<td>100-125 mg/dL</td>
<td>&gt;126 mg/dL</td>
</tr>
<tr>
<td>2-hour plasma glucose (OGTT)</td>
<td>140-199 mg/dL</td>
<td>&gt;200</td>
</tr>
<tr>
<td>Random plasma glucose</td>
<td>&gt;200 mg/dL</td>
<td></td>
</tr>
<tr>
<td>Hemoglobin A1c</td>
<td>5.7 - 6.4 %</td>
<td>&gt;6.5%</td>
</tr>
</tbody>
</table>
What is the central issue of change?

Ambivalence:
The balance of change

Three Essential Elements in Any Definition of MI

• MI is a particular kind of conversation about change (counseling, therapy, consultation, method of communication)
• MI is collaborative (person-centered, partnership, honors autonomy, not expert-recipient)
• MI is evocative, seeks to call forth the person’s own motivation and commitment
Change Talk vs Sustain Talk

A newer way of referring to RESISTANCE to change

CHANGE TALK – Your patient gives you a signal they are ready to move forward. It is what you are trying to elicit.

SUSTAIN TALK – Your patient is signaling that they want to continue their behavior. They are defending the status quo. Don’t confront this talk, just be alert to it and try not to reinforce it.

Skills, Some New, Some Old

- Open Questions
- Reflective Statements
- Readiness Ruler
- Elicit-Provide-Elicit
Helpful Starters

- Tell me about...
- To what extent...
- What else...
- Help me understand...
- How did you...
- What, if any...
- BEWARE “Why?”

Reflective Listening

- THE central skill of Motivational Interviewing
- Lets patient realize that you “get it”, evokes patient’s internal motivation
“How important is it to you to change this?”
OR
“How confident are you that you could change if you decided to?”

Figure 8-2
Readiness Ruler

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Ready</td>
<td>Unsure</td>
<td>Ready</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Pre-contemplation --- Contemplation --- Preparation --- Action ---→

Greater than 7 – likely to change?

---

What does the ruler elicit?

- When you ask “Why not a ___ (higher)?”
- When you ask “Why not a ___ (lower)”?"
• **Elicit** What are your thoughts?

• **Provide** May I share some ideas?

• **Elicit** What do you think about that?

---

**Adapted MI Summary…**

• Practice makes perfect
• You won’t become comfortable with this overnight
• It represents a change to the language we use
• Have fun!
Keys to Treatment

• Goals
  – Use Motivational Interviewing to set an initial goal
  – Once goal is set explore what facilitators and barriers exist to achieving the goal
  – Discuss how the family actually plan to implement the change
  – Schedule focused follow up to see how they are progressing on the goal
• If achieving the goal and weight loss is occurring – keep existing goal and set new goal
• If achieving goal and weight loss is not occurring – explore set backs and exceptions and try again
• Structure, routine, and parenting child behavior are the underpinnings of achieving goals
What Works for Obesity Prevention and Control

Community
- Baby Friendly Hospitals
- Local policies including schools (Healthy Communities Study, COBD)
- Sugary drink taxes
- Healthy mothers
- Healthy neighborhoods
- Physical activity
- Physical transportation design

Community Resources
- Children’s HEROES Weight Management Program
- ENERGY Rx Fitness – Fallbrook; Copple Family; and Northeast YMCA
- Double Up Food Bucks
- ENERGY Nutrition Videos
- WIC
- Milkworks
- Children’s Project ECHO
AAP Institute for Healthy Childhood Weight

Thank you!

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