

# **Issues in Office-based Treatment and Prevention of Obesity in Youth**

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# These are Children at Risk

190 lbs

BMI=50.2

BMI>>>99%

8 Years Old



# These are Children at Risk

BMI = 95%

BMI > 99%

9 Year Olds

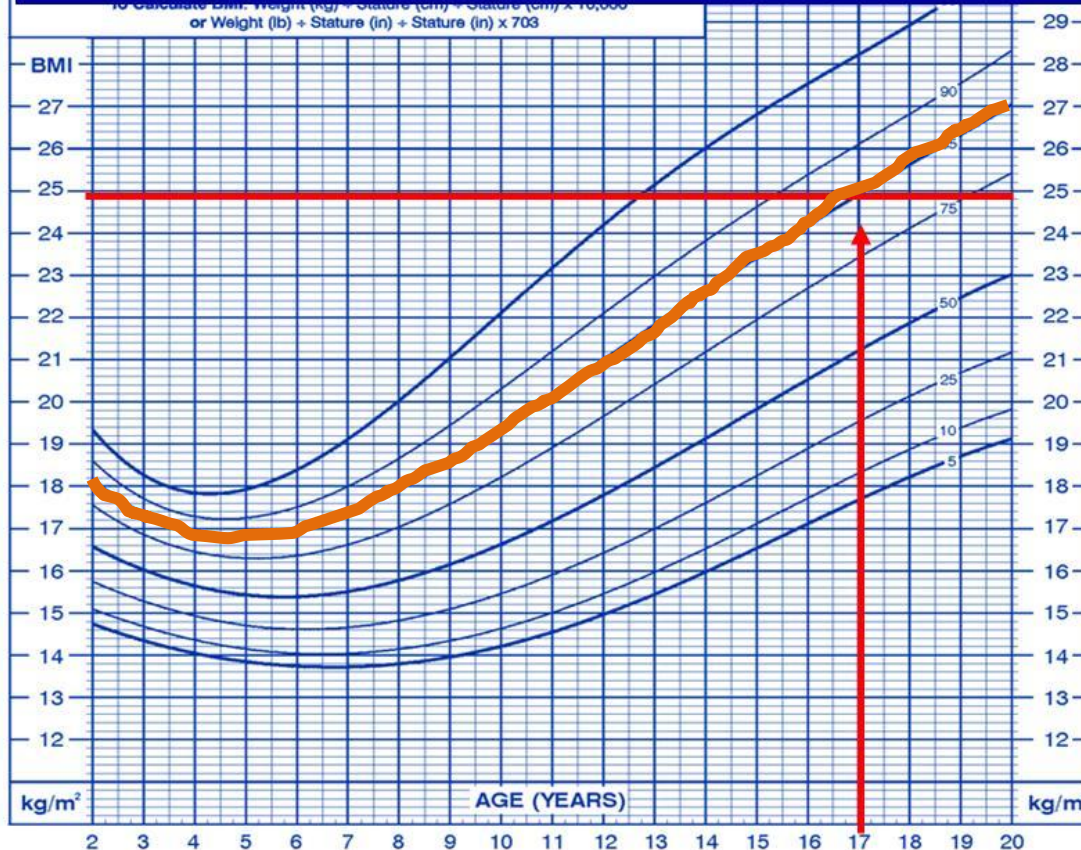


$$\text{BMI} = \text{wgt in kgs} / (\text{hgt in m})^2$$

**85% - at risk of overweight**

**95% - overweight**

To calculate BMI: Weight (kg) ÷ Stature (m) × Stature (m) × 10,000  
or Weight (lb) ÷ Stature (in) × Stature (in) × 703



Published May 30, 2000 (modified 10/16/00).

SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).  
<http://www.cdc.gov/growthcharts>



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# Intervention

## When to start:

- 85% BMI (>2 years of age) or weight/length (<2 years of age)
- 95% (>2 years of age) or weight/length(<2 years of age)
- Upward trend in percentile (tracking)

## Focus

- Parent(s), Child, Dyad, Age dependent

## Intervention

- Behavior, diet, activity, “lifestyle”, environment, “holistic”, pharmacologic, bariatric surgery, “tailored”

## Models

- “Ecological” model, “States of Change” model

# **Effectiveness of Primary Care Interventions for Weight Management in Children and Adolescents: An Updated, Targeted Systematic Review for the USPSTF**

[Whitlock EP, O'Conner EA, Williams SB, Beil TL, Lutz KW.](#)

Rockville (MD): Agency for Healthcare Research and Quality (US);  
2010 Jan. Report No.: 10-05144-EF-1.

[U.S. Preventive Services Task Force Evidence Syntheses, formerly Systematic Evidence Reviews.](#)

# Definitions (Age 2 and above)

- Overweight
  - BMI  $\geq$  85% and  $<95\%$  for age/gender
- Obese
  - BMI  $\geq$  95% or BMI  $\geq$  30
  - Bogalusa data – 65% will have excess body fat, 39% with  $\geq$  2 cardiovascular risk factors
- Severe Obesity
  - BMI  $\geq$  99%
  - Bogalusa data - 94% will have excess body fat, 59% with  $\geq$  2 cardiovascular risk factors

# Prevalence of Overweight, Obesity and Severe Obesity in Children and Youth

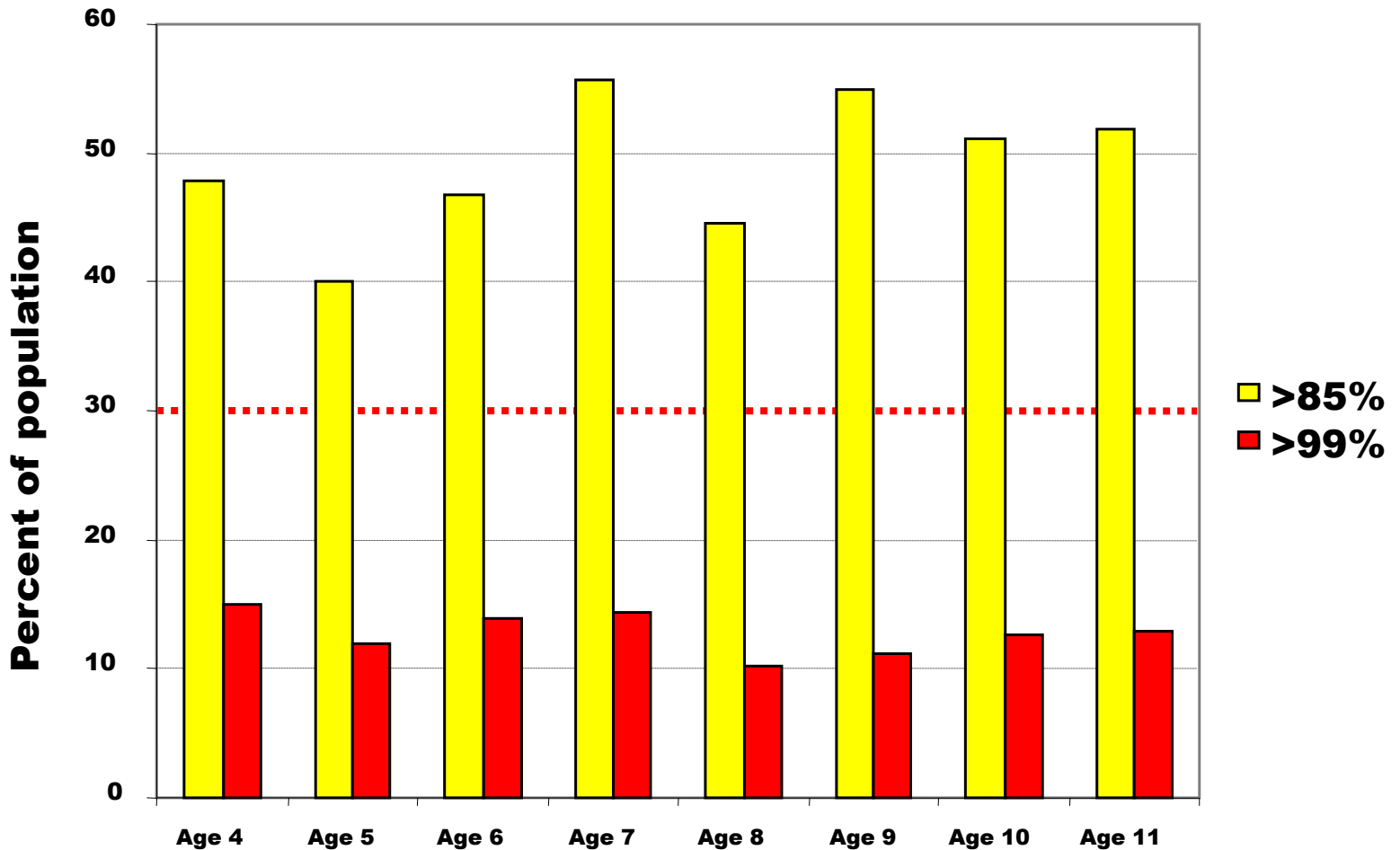
- National, regional, state, county, etc
- School-based or population-based
- Ethnic composition of population
- Economic composition of population
- Prevalence of adult obesity in the community

But if you have to quote a number for pediatric obesity

- 15-25% between 2-18 years of age
- Boys > Girls
- Hispanics > Blacks > Whites
- Economically disadvantaged > affluent



# Prevalence of Obesity in Male Children in South Texas



# Types of Interventions

- Behavioral
  - Parent focused (especially for younger children)
  - Child focused (especially for teens)
  - Parent/child focused
  - Brief (counseling)
  - Intensive (management)
- Pharmacologic
  - Orlistat (OTC) (approved age 12 and above)
  - Sibutramine (approved age 16 and above)
  - Others (not approved for weight loss) – e.g. metformin, topiramate, bupropion

# Considerations (1)

- “Dose”
  - amount of time per session
  - number of sessions
  - frequency of sessions (weekly, monthly)
  - consolidation and maintenance phases
- Effectiveness
  - Pre/post change vs case controls or attentional controls
- Sustainability
  - How long did the “positive benefit” last

# Considerations (2)

- Target Population (s)
  - Overweight
  - Obese
  - Severely Obese
  - Complicated Obese (e.g., psychiatric medications)
- Age, Gender, Ethnicity, Economy

# Outcomes

- Attitudes about food and activity
- Behaviors around food and activity
- “Quality of life”
- Nutrient content and caloric intake
- Amount and intensity of activity
- Change in
  - weight, BMI, BMI Z score
  - other physical parameters (e.g., waist circ)
  - biomarkers (cholesterol)



# Interventions (Long)

	Age (n) Initial BMI	Intervention	Dose (Hours)	BMI Change
Savoye	8-16 (174) ~36	Diet, Physical Activity, Behavior, Family	97.5 hours	(I) $-1.7 \pm 3.1$ (C) $1.6 \pm 3.3$
Reinehr	6-14 (240) ~26	Diet, Physical Activity, Behavior, Family	76	(I) $0.1 \pm 1.9$ (C) $2.0 \pm 1.8$
Nemet	~11 (54) ~28	Diet, Physical Activity, Behavior, Family	35.75	(I) $-1.5 \pm 2.1$ (C) $0.6 \pm 2.5$

# Interventions/Counseling

	Age (n) Initial BMI	Intervention	Dose (Hours)	BMI Change
Flodmark	10-11 (93) ~25	Diet, Physical Activity, Behavior, Family	12-24	(I) $+1.1 \pm 2.0$ (C) $2.8 \pm 2.3$ @48 months
Rooney	5-12 (98) ~22	Diet, Physical Activity, Behavior, Family	21	(I) $-0.9 \pm 1.3$ (C) $-0.4 \pm 1.1$ @9months
Epstein	~4-7 (70) ~19	Physical Activity, Behavior, Family	"Low"	(I) $-0.24 \pm 1.9.1$ (C) $-0.13 \pm 2.1$ @24 months

# Challenges

- How much time does the average primary care provider spend with each of his patients  
**6 - 20 minutes**
- How many visits/year for children 4-12 years  
**3 or less** (and child often sick when seen)

# Summary

- The shorter the intervention, the less effective the outcome
- The shorter the intervention, the less effective the maintenance over time
- No “single intervention” programs (only education, only physical activity)
- No focus on “unique ages/stages” (e.g., only girls, only boys, only single ethnic groups)

# Pharmacologic Trials

- All done in ages 12-18 years
- Comparator primarily “lifestyle”
  - increased activity/decreased intake/education
- Sibutramine, orlistat (Ally) and Metformin
- Drugs + lifestyle more effective than lifestyle alone
- Effect on BMI  $\sim 2 \text{ kg/m}^2$ 
  - Starting BMI  $\sim 35 \text{ kg/m}^2$  so weight loss  $\sim 4 \text{ kg}$
  - Nothing about maintenance status post intervention



**If you are concerned about a child's  
or parent's  
(or your) weight**

**Then here are 5 things that you can  
begin to change.**

# I DARE YOU

Tip Sheet for Parents to Promote  
Healthy Eating and Physical Activity

# 1. Turn off the television (& computers and play stations)

- Limit screen time to <2 hrs (Your child will not die) Make TV watching a “conscious” choice (Turn on the TV with a purpose) The TV is in a public space in your house - If you do not like the TV program, turn it off and talk about it - If you do not like a commercial, then talk about it - Ask your child about the “message” (You will be surprised) Videos have no commercials and can be pre-reviewed for content Remember the other options (Coloring books, games, a walk)  
<http://www.cqcm.org> Control yourself

## 2. Children walk (run, bike, hike, swim)

- At least 1 hour of vigorous physical activity every day Walk zones (1 block,  $\frac{1}{4}$  mile)

Resources: <http://www.kidshealth.org>;

<http://www.mayoclinic.com/health/fitness/>;

<http://bam.gov> (CDC);

<http://www.verbnow.com>

### 3. No sugary beverages (sodas, sports drinks, fruit juices)

- Water/low fat milk are the only beverages at home Cold water and low-fat milk always available and always cold Many “no cal” flavored waters available (do taste tests at home) Sports drinks are for sports activities (not watching sports) – typical sport drink is 100 calories per 8 oz. 100 calories of physical activity is about 30 minutes of vigorous physical activity. Fruit – not fruit juices



4. Fast food is a treat 1 time per week  
(beware of any “meal” >600 calories)

- The best “combo” is fast food with activity.  
e.g., post hike Avoid supersizes, doubles, etc,  
(>600 calories beware !) Brainstorm about  
easy food to prepare at home and use the  
internet Moderation in all things (appropriate  
portion sizes) Start early, with yourself (you  
are role models) Offer choices, but limit them  
(milk or water) Toys come from the toy store  
(not restaurants)

## 5. Healthy snacks only

Fruits & Vegetables (beware of everything else)

- If it is available it will get eaten (If it is not available, it will not get eaten) Fresh fruits and vegetables available (Frozen fruit can be cheap and stores well) Explore smart options (blender, a little ice, fresh or frozen fruit, a little milk or yogurt) If hungry, one will eat what is available (If bored, one wants a treat)

# 5 ACTION ITEMS THAT HELP TO KEEP YOUR KIDS (and you) HEALTHY

## 1. Limit screen time to <2 hrs/day

Possibilities: Play a game, read a book, plan an activity

## 2. At least 1 hr of vigorous physical activity every day

Possibilities: Go for a walk, ride a bike, play chase, walk the dog for a neighbor

## 3. Water/low fat milk are the only beverages in the house

Possibilities: Try flavored waters, Crystal Lite, a squeeze of lemon or lime

## 4. Fast food is a 1 time a week treat

Possibilities: Make your own fast food, cook at home together, make a big salad and a piece of grilled chicken

## 5. Fruit and vegetables are the only snacks

Possibilities: Celery sticks and salsa, carrots and low-fat ranch dressing

**Make a commitment to 1 of these  
choices each week  
I Dare You!!!!!!!!!!**

# Conversation Starters (Parents)

- In thinking about being a 10 years old, what do you remember doing that was fun?
- When you think about spending time with your child, what comes to mind?
- If you planned a special day with your child, what would you plan?

# **Conversation Starters**

## **(Educationally Motivated Teens)**

- So you are doing really great in school. That is wonderful. What do you hope to do or be when you are 25 or 30?
- That is great. So you are really thinking about your future.
- So is there anything about your health or physical condition that puts all of your hard work at risk?

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Q & A session with audience