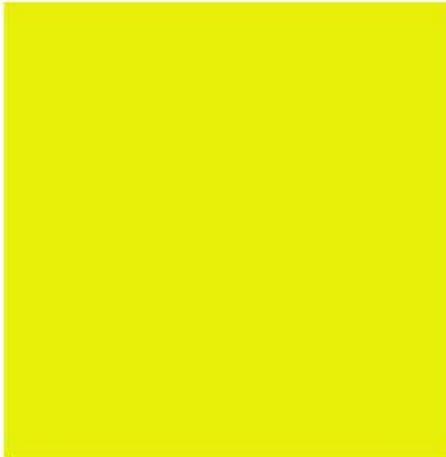
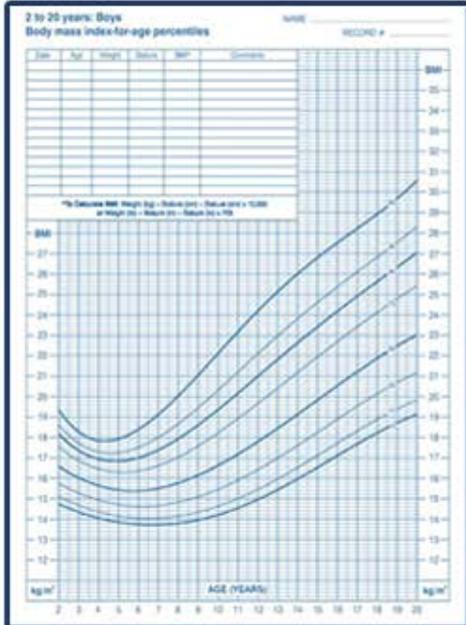




Using Evidence-based Practices to Provide Nutrition and Physical Activity Counseling in the SBHC

"IT TO PROMOTE MI FOR HEALTHY BMI"

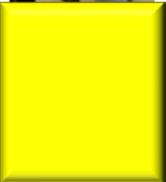
Bonnie Gance-Cleveland
PhD, RNC, PNP, FAAN
Loretta C. Ford
Endowed Professor
University of Colorado



Purpose



1. To describe the evidence-based guidelines for providing nutritional and physical activity counseling for overweight/obese children seen in SBHCs.
2. Demonstrate how motivational interviewing can be used to address pediatric overweight and obesity.



Disclosure Statement – no financial relationships to disclose

Bonnie Gance-Cleveland, PhD, RNC, PNP, FAAN



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Statement of Disclosure



Help

I have no relevant financial relationships with commercial interests pertaining to the content presented in this program.



Exit

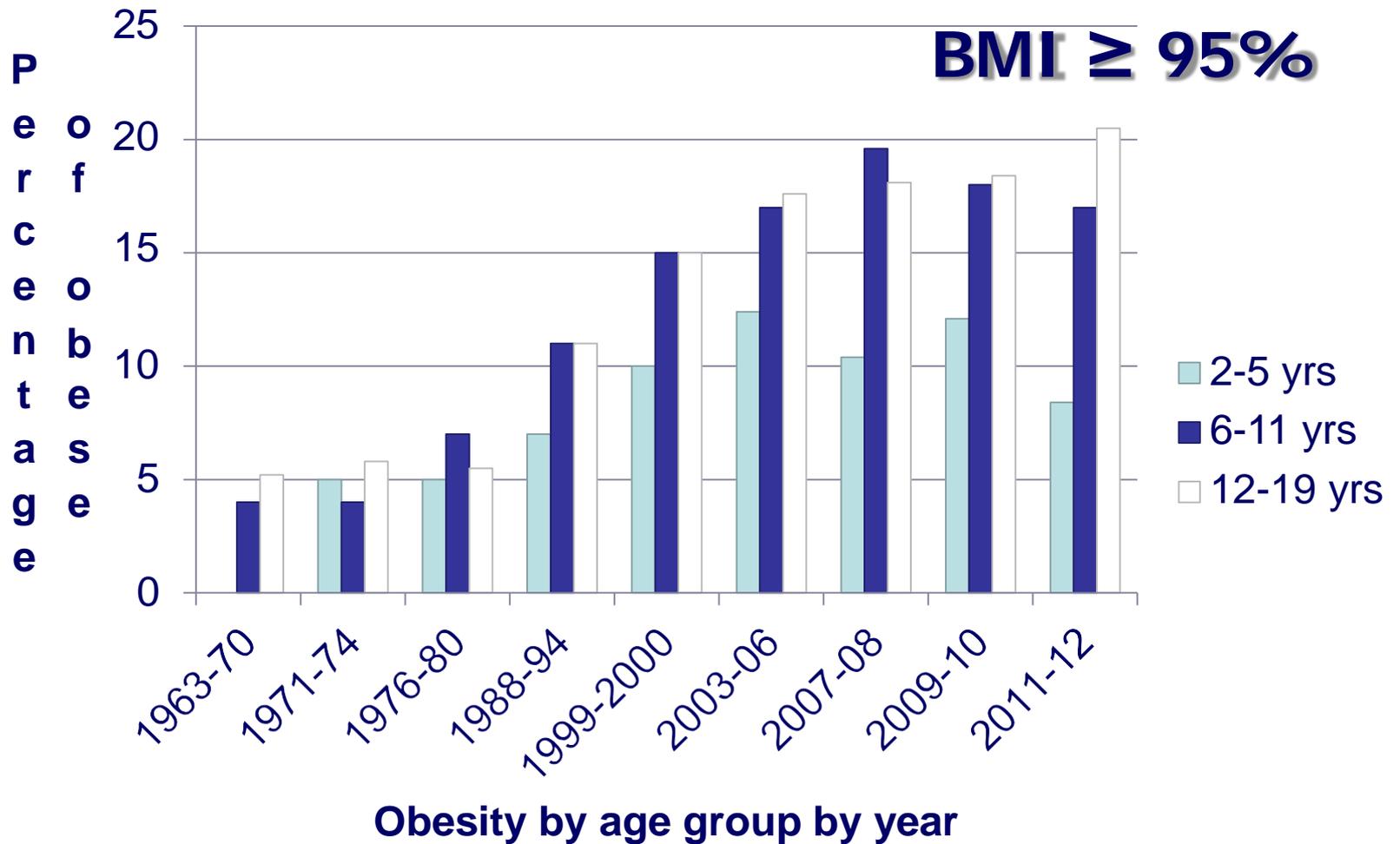
Prevalence of Obesity Among Children & Adolescents



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Prevalence of Overweight/Obese Children & Adolescents



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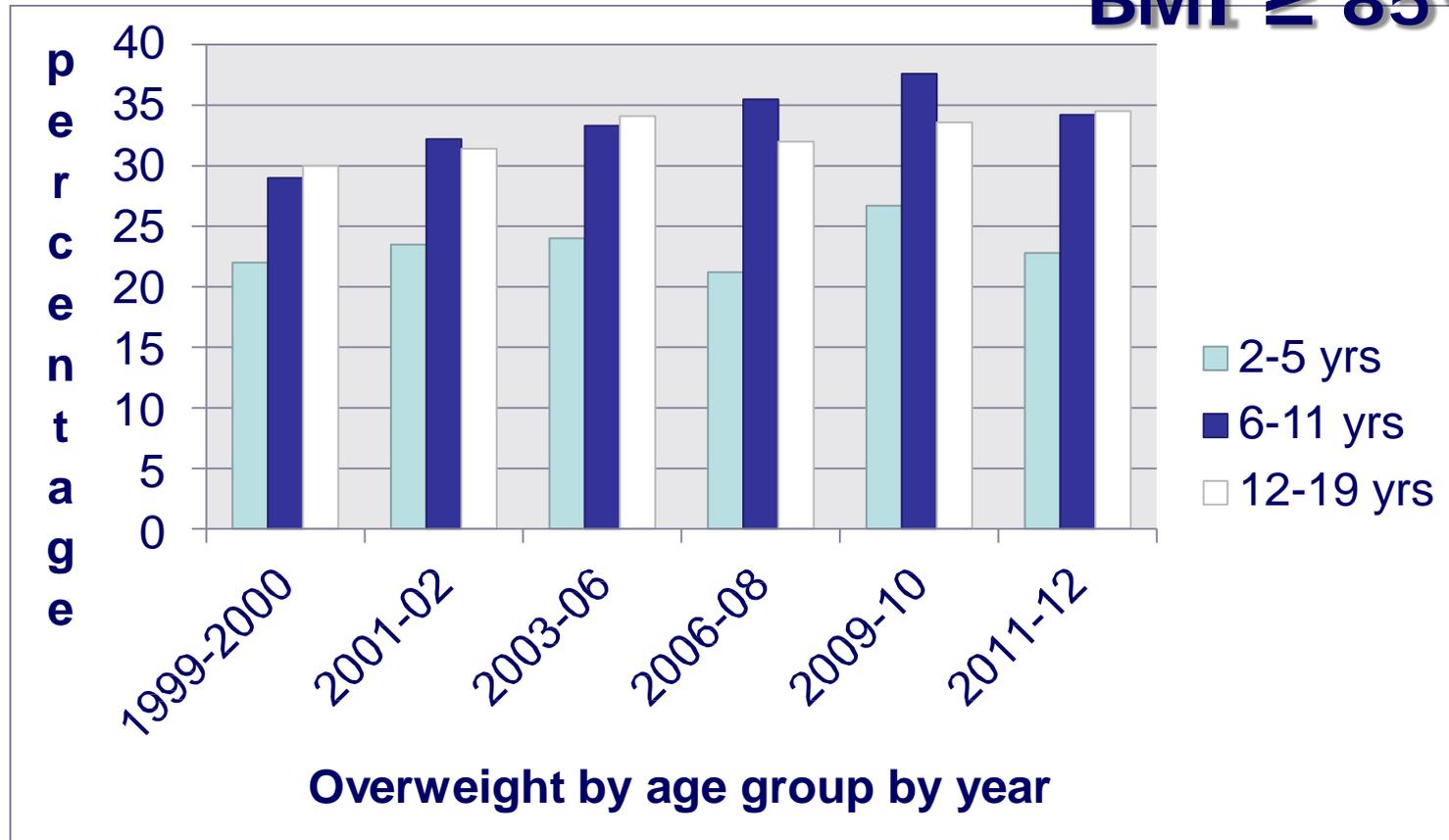
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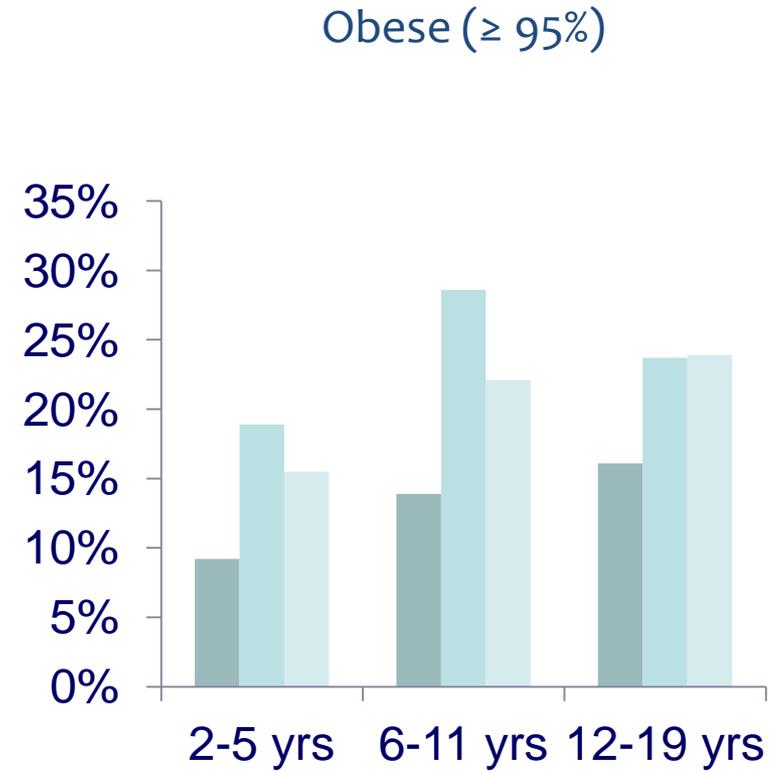
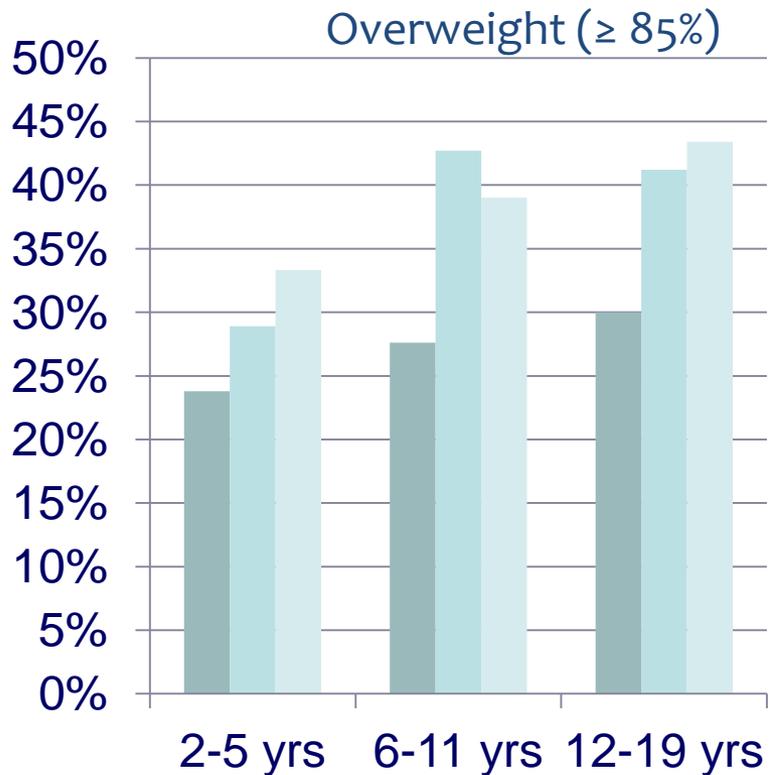
Exit



BMI \geq 85%



Ethnic Disparities in Childhood Obesity



■ Non-Hisp White ■ Non-Hisp Black ■ Mexican-American

Ogden, C. et al. (2012)

Health Risks of Being Overweight



Potential Problems in Childhood

Type II Diabetes
Joint Problems
High Blood Pressure
High Cholesterol/Lipids
Asthma/Sleep Apnea
Depression/Self-Esteem
Eating Disorders

Additional Potential Problems in Adulthood

Heart Attack
Stroke
Cancer
Gallbladder Disease
Kidney Stones
Osteoarthritis
Pregnancy Complications

Health Risks: Psychosocial

• School Performance in Middle Schoolers

- Students with BMI > 85thile had lower grades ($p < 0.001$) and lower physical fitness scores ($p < 0.0001$).
 - GPA was 0.4 letter grade lower than normal weight students
- Students with BMI > 85thile had more detentions, poor attendance, tardiness, and less participation in athletics.

• Quality of Life

- Obese children and their parents rate the quality of life as similar to pediatric cancer patients. Shaw-Hemmet, Brundage, & Van, 2003; Shore, Sachs, Lidicker, Brett, Wright, & Libonati, 2008. Obesity 16, 1535-1538.



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About



Current Recommendations & Guidelines



Expert Panel Recommendations

Maternal
Child Health
Bureau

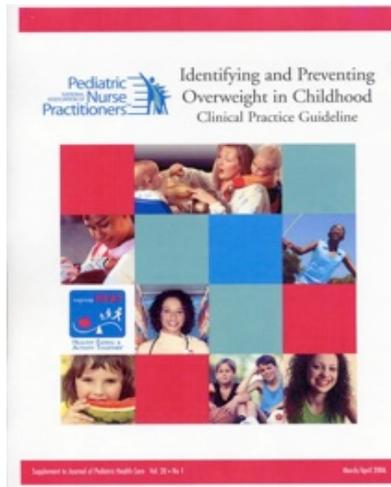


Center for Disease Control
and Prevention



NHLBI Pediatric
Hypertension

NAPNAP Healthy
Eating & Activity
Together (HEAT)



AAP Bright
Futures



**Bright
Futures™**

Prevention and health
promotion for infants,
children, adolescents,
and their families™

Pediatric
Metabolic Syndrome
Working Group
Recommendations



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Exit



Universal Recommendations



Family History

- Early CV events
- Hypertension
- Diabetes

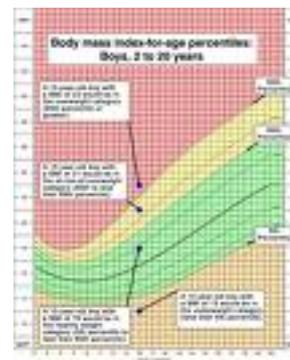


Using MI Discuss

- Growth
- Activity
- Eating habits

Growth Charts

- H/W
- BMI, BMI% for age > 2yrs
- Infant weight/length ratio



Assessment



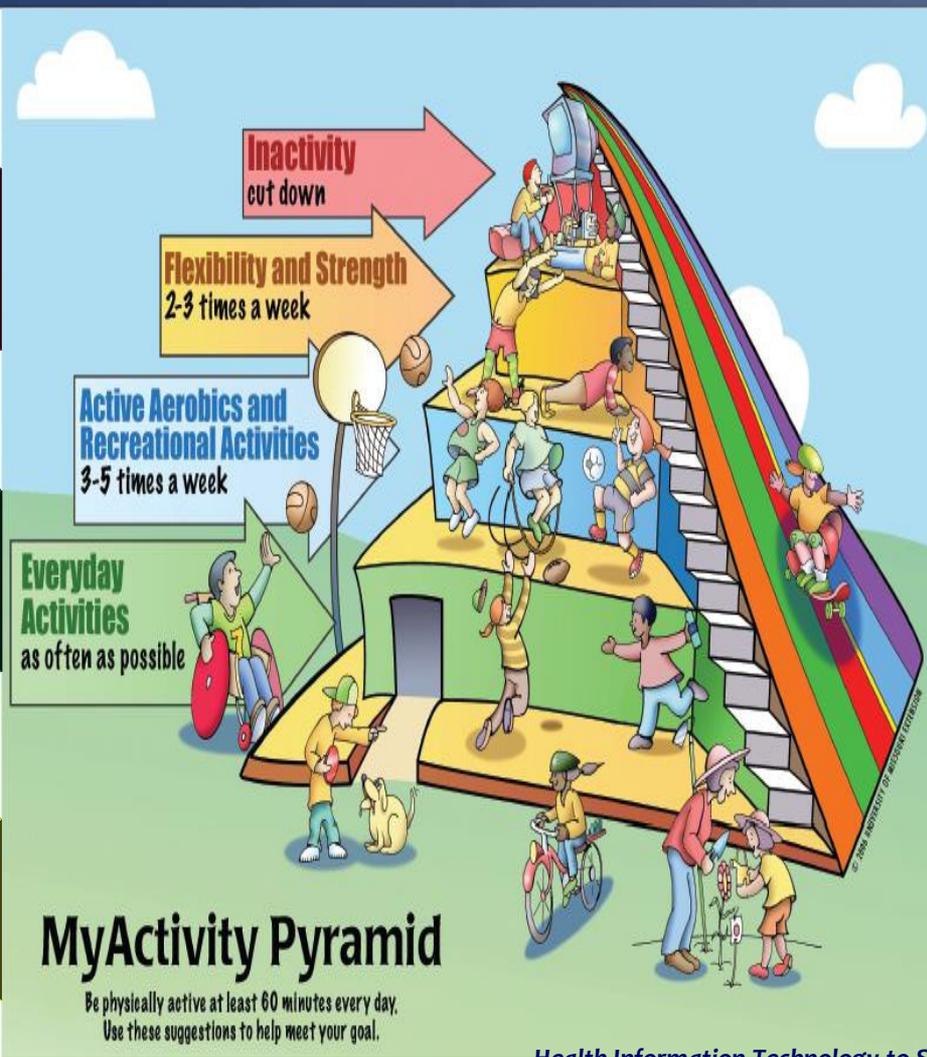
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About



MyActivity Pyramid

Be physically active at least 60 minutes every day.
Use these suggestions to help meet your goal.

Last Updated: January 12, 2015



Measurement of Growth

Body Mass Index (BMI):

- Surrogate measure of body fat
- Correlates with adiposity
- BMI = $\frac{\text{Weight in Kilograms}}{(\text{Height in Meters})^2}$

<http://apps.nccd.cdc.gov/dnpabmi/Calculator.aspx>



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About



CDC Home
CDC Centers for Disease Control and Prevention
Your Online Source for Credible Health Information

A-Z Index: [A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#) [X](#) [Y](#) [Z](#) <#>

Healthy Weight - it's not a diet, it's a lifestyle!

[Healthy Weight](#) > [Assessing Your Weight](#)

BMI Percentile Calculator for Child and Teen English Version

This calculator provides BMI and the corresponding BMI-for-age percentile on a CDC BMI-for-age growth chart. Use this calculator for children and teens, aged 2 through 19 years old. For adults, 20 years old and older, use the [Adult BMI Calculator](#).

[Measuring Height and Weight Accurately At Home](#)

BMI Calculator for Child and Teen [English](#) | [Metric](#)

Birth Date:
month day year

Date of Measurement:
month day year

Sex:
 boy girl

Height, to nearest 1/8 inch:
 feet, inches, fractions of an inch
(12 inches = 1 foot; Example: 4 feet, 5 1/2 inches)

Weight, to nearest 1/4 (.25) pound:
 pounds, fractions of a pound
(8 ounces = 1/2 pounds; Example: 75 3/4 pounds)

Calculate

Healthy Weight

- Introduction
- Assessing Your Weight
 - BMI - Body Mass Index
 - Adult BMI Calculator
 - Adult - About BMI
 - Child and Teen BMI Calculator**
 - Children's BMI Tool for Schools
 - Child and Teen - About BMI
- Balancing Calories
- Preventing Weight Gain
- Losing Weight
- Healthy Eating for Healthy Weight
- Physical Activity for Healthy Weight
- Tips for Parents
- The Health Effects of Overweight and Obesity
- Other Resources

Related Links

- [Overweight and Obesity](#)
- [Nutrition for Everyone](#)
- [Physical Activity for Everyone](#)

Laboratory Screening Recommendations

- BMI \geq 85% and no risk factors
 - Fasting lipid panel only
- BMI \geq 85% plus 2 risk factors (FH, \uparrow BP, \uparrow lipids, tobacco use)
 - Fasting lipid panel
 - AST and ALT
 - Fasting glucose
- BMI \geq 95%
 - Fasting lipid panel
 - AST and ALT
 - Fasting glucose



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Help



About



Developmental Factors and Communication

- Assess school behaviors (eating, activity, junk food)
- Tanner Stage (sexual maturity)
- BP percentile for age, sex, height
- Discuss physical, psychosocial and emotional changes
- Set goals and ask which of the recommendations might work for them
- Encourage parents to model a healthy lifestyle!



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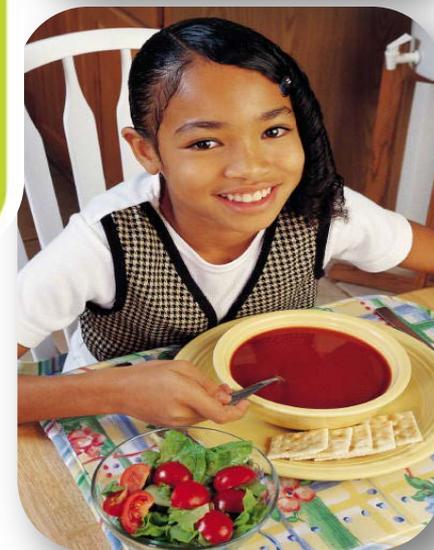


About



Nutrition Essentials, Optimal Feeding and Eating Behaviors

- Family meals
- Breakfast every morning
- Limiting sweetened beverages
- Food from all groups
- Portion control
- Include friends and family members when you can



Encourage Physical Activity

Current recommendations:

At least 60 minutes of physical activity daily.

- Most should be moderate or vigorous aerobic physical activity
- Muscle strengthening 3 days per week
- Bone strengthening 3 days per week
- *Should be appropriate for age*



Physical Activity Guidelines for Americans (2008).
<http://www.health.gov/paguidelines/pdf/paguide.pdf>



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Help



About



Physical Activity and Sedentary Behavior



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Help



About



- Limit screen time to 2 hours per day
- No TV in the bedroom
- Encourage variety of active play options, preferably outdoors



Sleep

- Lack of sleep linked to overweight
- Assess sleep behaviors
- Recommendations
 - Regular bedtime
 - Bedtime routine
 - Limit distraction in bedroom (no cell phone, computer, TV in bedroom)
 - Adequate duration for age



Chronic Care Model



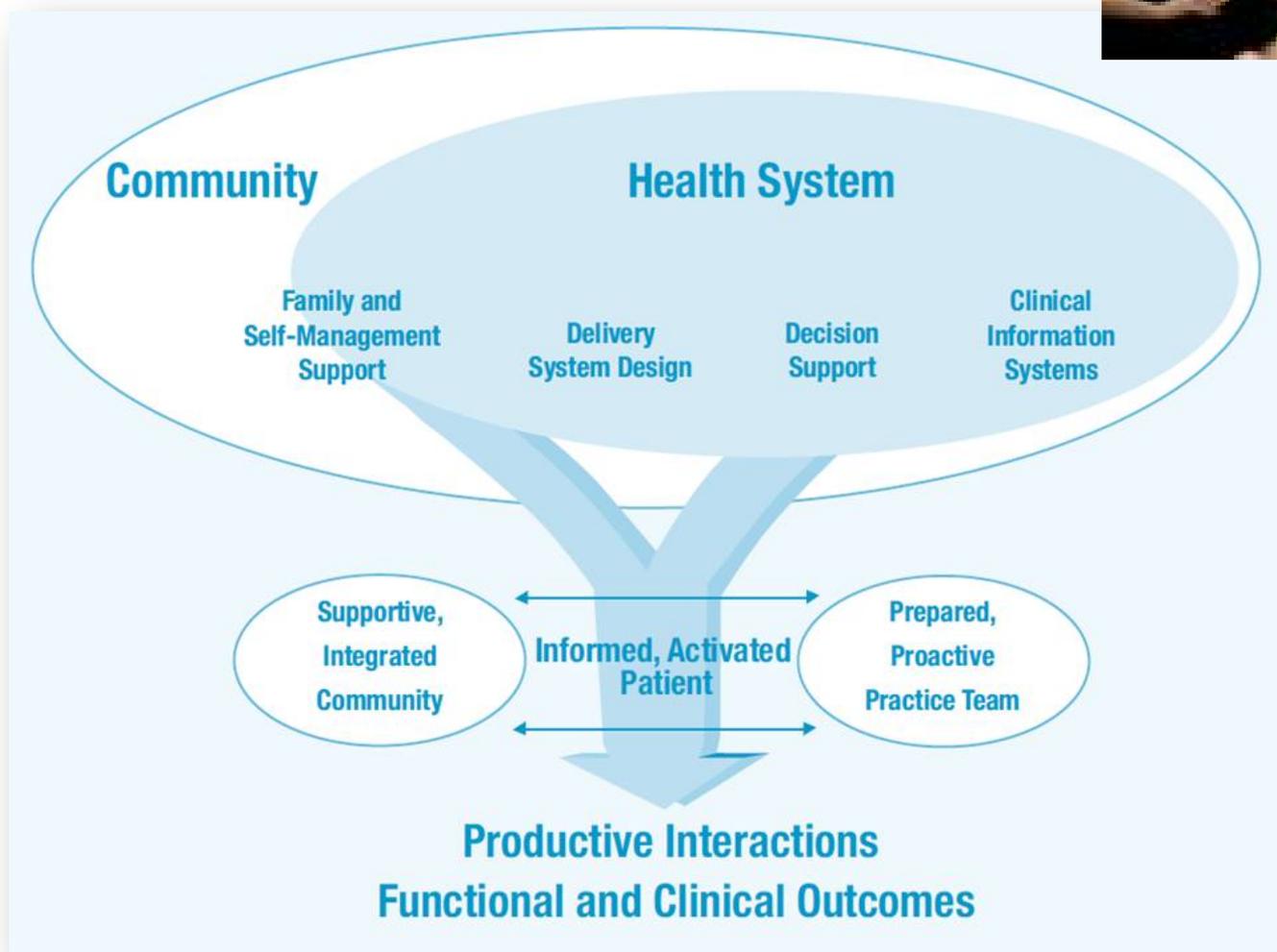
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Treatment



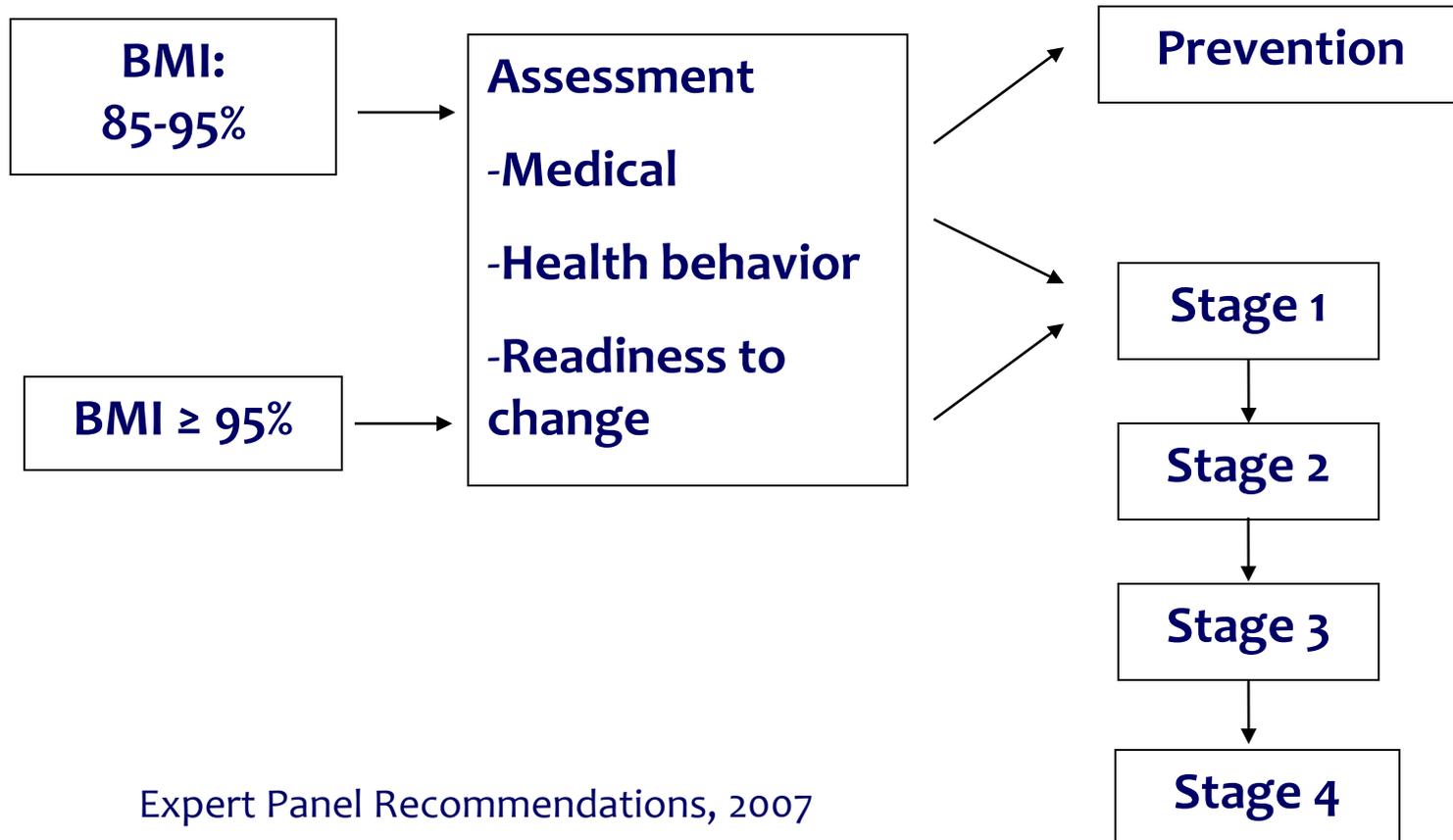
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About



Expert Panel Recommendations, 2007

Stage 1: Prevention Plus



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About



What

- ≥ 5 servings of fruits and vegetables per day
- ≤ 2 hrs of television per day
- no television in bedroom
- \downarrow sugar sweetened beverages
- Portion control
- Daily breakfast
- \downarrow eating out
- Family meals
- ≥ 60 min physical activity per day

Expert Panel Recommendations, 2007

How

- Setting- PCP office
- Personnel- PCP or staff
- Visits- based upon readiness to change & severity of condition
- Advance stage based upon progress, medical condition, risks, length of time, & readiness to change.

Stage 2: Structured Weight Management



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About



What

- In addition to above
- Targeted effort to ↓ calories
- Balanced macronutrient diet
- ↓ screen time
- Focused behavior change counseling
- Self/parent monitoring



Expert Panel Recommendations, 2007

How

- Setting- PCP office + dietician
- Personnel- PCP + RD if available
- Connect with community programs
- Visits- monthly tailored & based upon readiness to change & severity of condition
- Support from mental health provider as needed
- Advance stage based upon progress, age, medical condition, risks, length of time, & readiness to change

Stage 3: Comprehensive Multidisciplinary Treatment

What

- In addition to all of above
More frequent visits (weekly)
 - Structured monitoring with assessment measures
- Multidisciplinary approach (dietician, psych, physical therapist, MD, NP, PA)
- Behavioral modification training for parents
- Strong parental involvement initially
- Group sessions may be helpful



Expert Panel Recommendations, 2007

How

- Setting- PCP coordinates care
 - Structured wt management program 8-12 weeks
 - Referral when available
 - Co-manage with experts if not available
- Personnel- interdisciplinary team: behavior, RD, PCP
- Visits weekly include nutrition, exercise & behavioral counseling
 - Goal setting
 - Monitoring
- Advance depending on response, age, health risk, motivation, & availability of Stage 4 programs.



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About



Stage 4: Tertiary Care Treatment

What

- Consider referral for medical, surgical, meal replacement therapy to supplement behavioral tx



How

- Pediatric weight management center
- Multidisciplinary team with experience with children & adolescents
- Visits- according to clinical protocol

Expert Panel Recommendations, 2007



Motivational Interviewing



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Help



About



***Creating a Working Partnership
Using Motivational Interviewing***

Motivational Interviewing: A Paradigm Shift



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About



- Empowering, client centered, and collaborative
- Focus on individual beliefs
- Believe in client's abilities
- Positive reinforcement
- Providing tools for life skills and behavior change

Benson, A. & Latter, S. 1998. J Adv Nurs 27, 100-107.

Motivational Interviewing Process



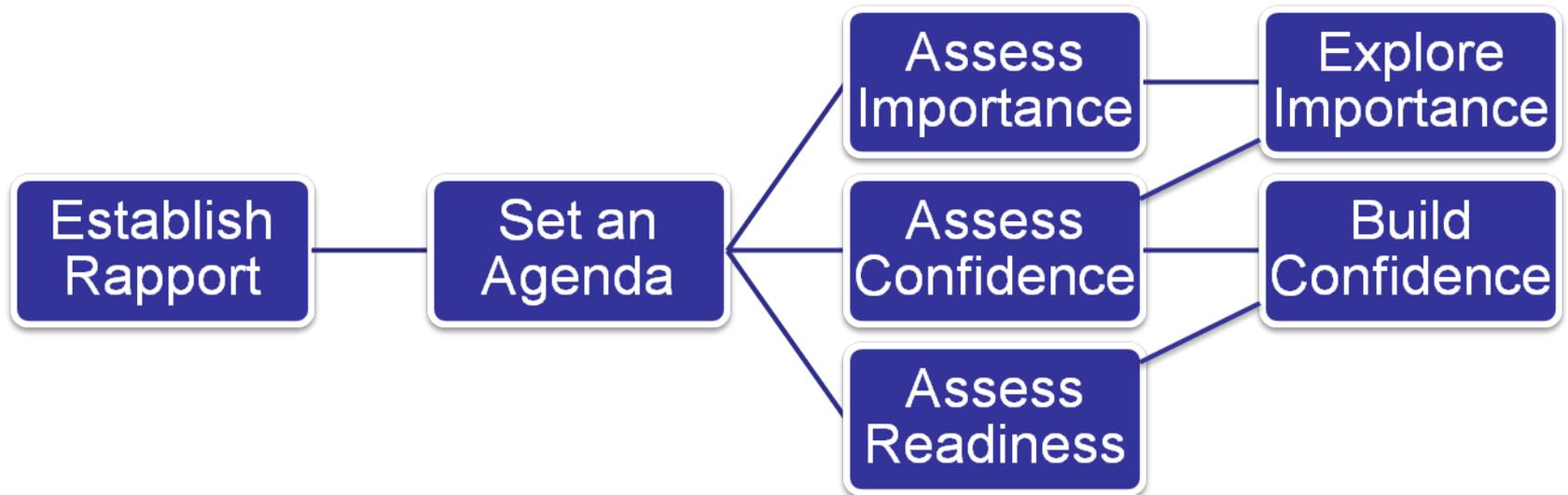
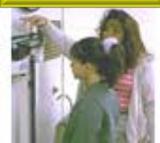
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Sample MI in practice



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Advocacy Guidelines



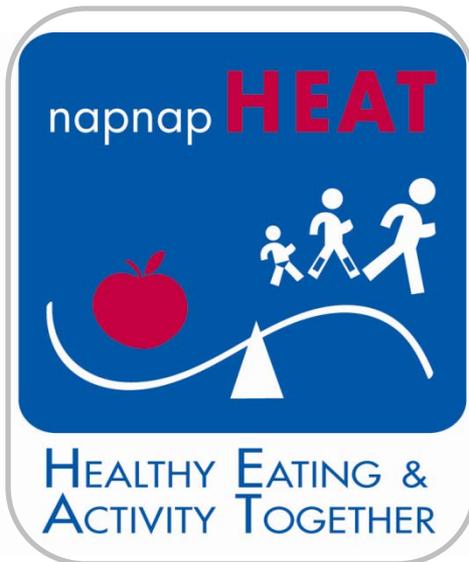
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The Challenge



- Research indicates widespread failure to implement guidelines
- Despite the recommendations to screen BMI
 - BMI documented in 5% of initial visits for children dx with obesity during WCC visit (Mabry, 2005)
 - <1% (0.93%) of WCC visits documented a diagnosis of obesity (Cook, 2005)
 - Chart audit of 191 WCC visits (20% of population) at a SBHC (Kopanos, unpublished)
 - 98% had a weight and height documented
 - 20% had a BMI documented
 - 17% had a BMI %
 - 84% of those ≥ 3 years old had a BP
 - 1% had BP % for age

Comparative effectiveness trial

1. To evaluate the effectiveness of web-based training with and without computerized clinical decision support on provider's process and outcome behaviors related to implementing the current guidelines for prevention of obesity and related conditions.
2. To explore the role of HIT in the processes of system change for implementation of the guidelines for prevention of obesity and related conditions including the facilitators, barriers, and impact of the care model on change.

Sample and Methods



- 24 SBHC providers from six states (AZ, CO, MI, NC, NM, NY)
- Measures
 1. Providers – self report survey of knowledge and behavior in managing overweight. Pre, post, 1 year post.
 2. Providers conduct chart audit pre, post, 1 year post on 32 charts.
 3. Parents complete a satisfaction survey (n=32) independent sample after well child visit at same intervals.
 4. Focus groups of adopters and non-adopters at the end.

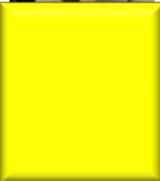
Health Disparities Collaborative Approach



Virtual Collaborative

Four learning sessions over one year

1. Overview of recommendations/guidelines
2. Motivational Interviewing
3. Culturally sensitive care and community collaboration
4. Sharing lessons learned

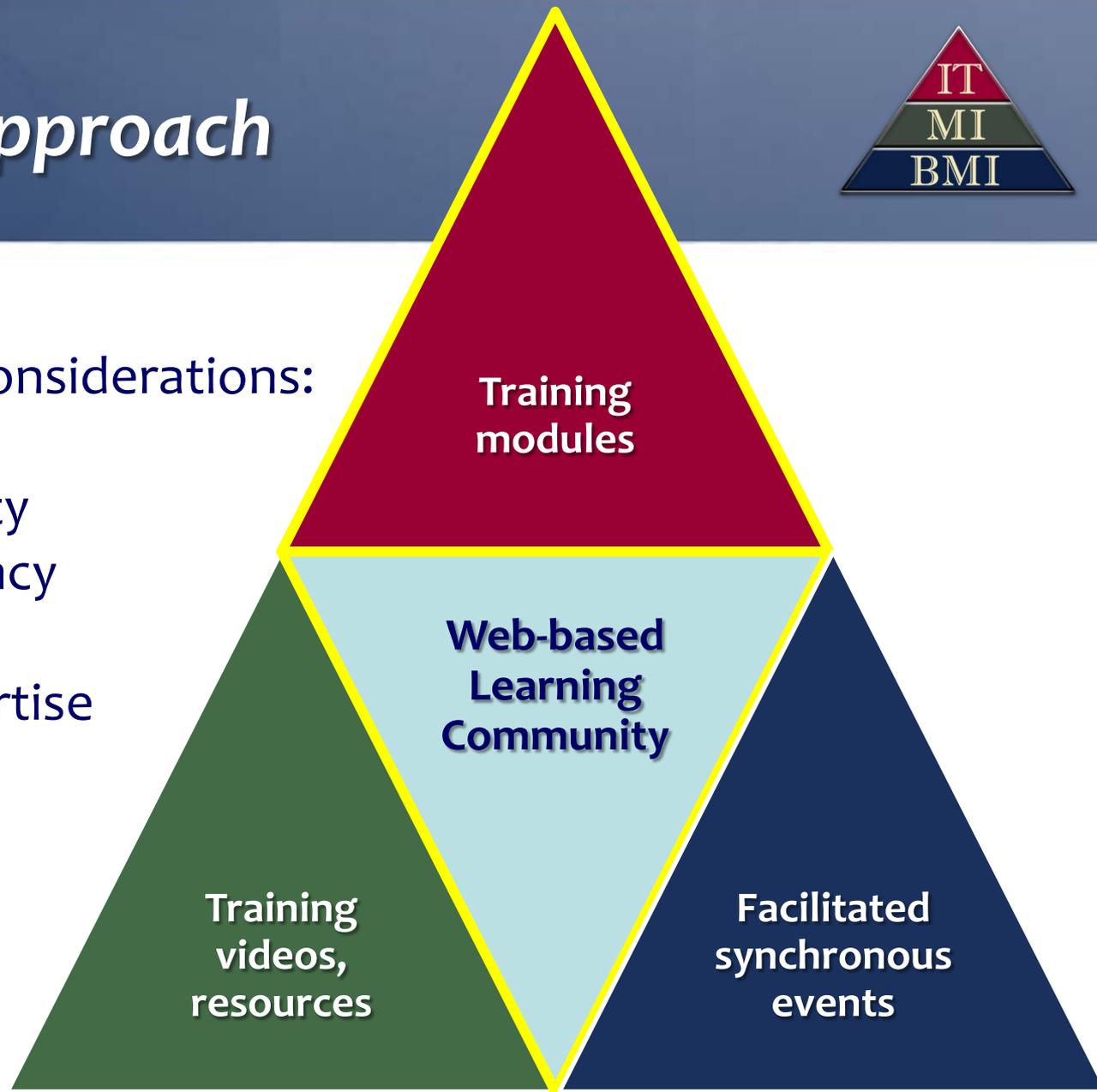


Technology Approach



Formative Considerations:

- ✓ Accessibility
- ✓ Transparency
- ✓ Usability
- ✓ Cost, Expertise



Training
videos,
resources

Facilitated
synchronous
events





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HEARTSMARTkids

HEART SMART KIDS

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www.heartsmartkids.com

Patient interview

- Self-guided
- 2-6 minutes to gather behavioral information



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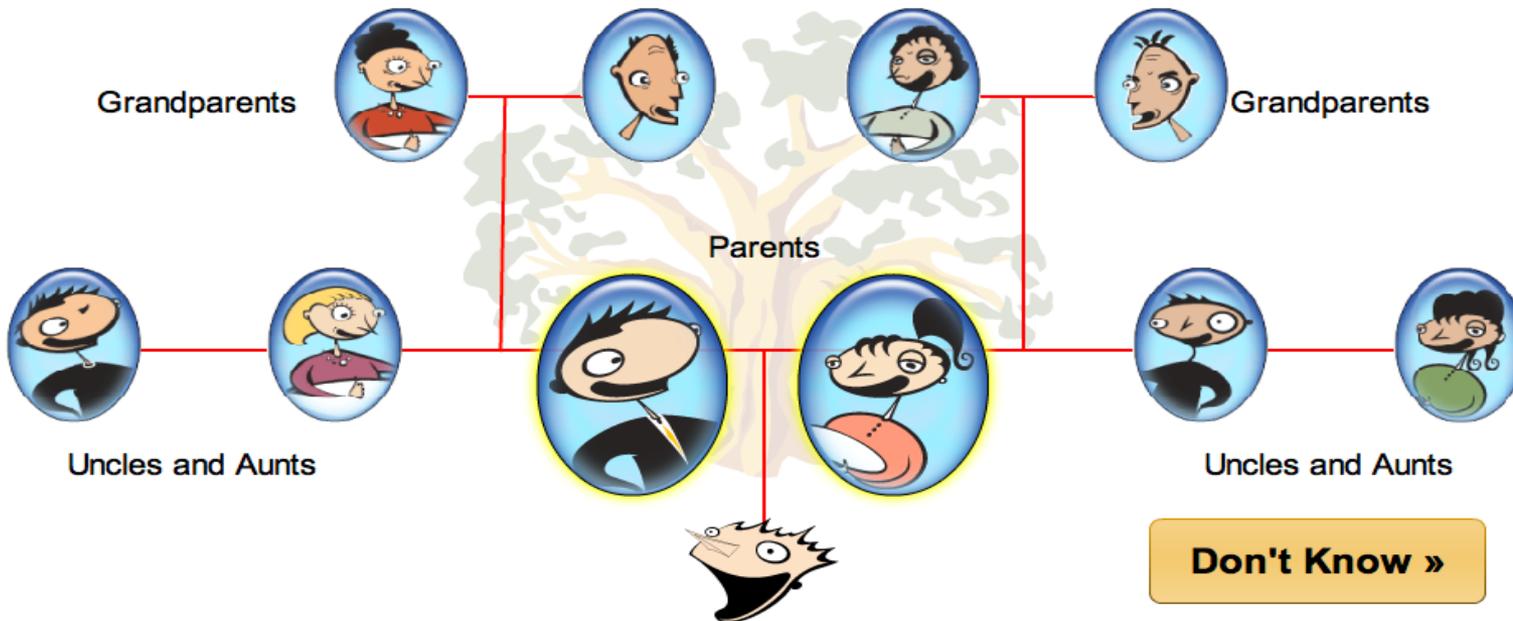
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Family History of CV Risk

Family History

Please indicate any family members who have had heart attacks or strokes before age 55, or have been told they have high cholesterol.



Don't Know »

« Previous

X Cancel Interview

None »

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Adobe Reader - [flip_print_1022.pdf]

File Edit View Document Tools Window Help

Save a Copy Search Select 76% Help Search Web

Sedentary Time

HEARTSMARTkids™

How many hours per day does your child spend watching TV, using the computer, playing video games, or on the telephone?

0 1 2 3 4+

« Previous X Cancel Interview

21 of 31

Adobe Reader - [flip_print_1022.pdf]

File Edit View Document Tools Window Help

Save a Copy Search Select 76% Help Search Web

Office Client Edit Patient Add Patient Merge Data Log Out

Patient Report - © 2007 HeartSmartKids, LLC

Enter patient information below. You may correct any previously captured information. When you are finished, press the "Print" button. You can use "Tab" to move between fields and "Return" to send the report.

Height* 42 in BirthDate* 02/14/1995

Weight* 112 lbs. or Patient's initials: TMC

Blood Pressure: 100 Systolic Patient ID: 219

52 Diastolic

Gender* Male Use Metric Measurements
 Female Automatically Print Report

Patient List Print

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start 3 Internet... 2 Windows... Microsoft Po... flip_print_10... Adobe Read... 9:49 AM



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Attachments

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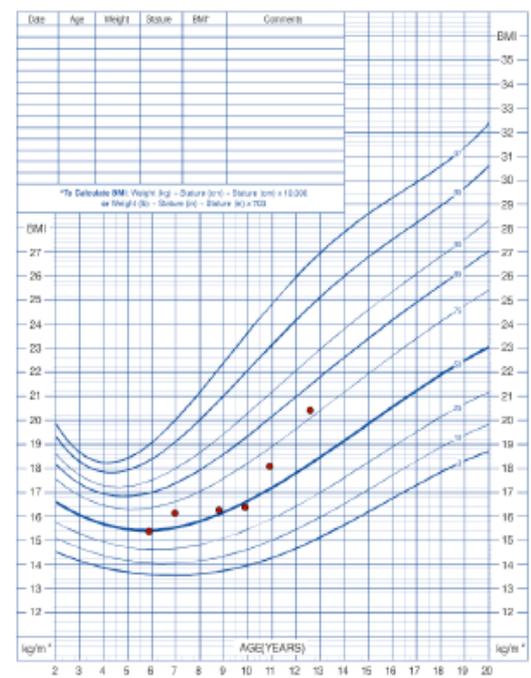
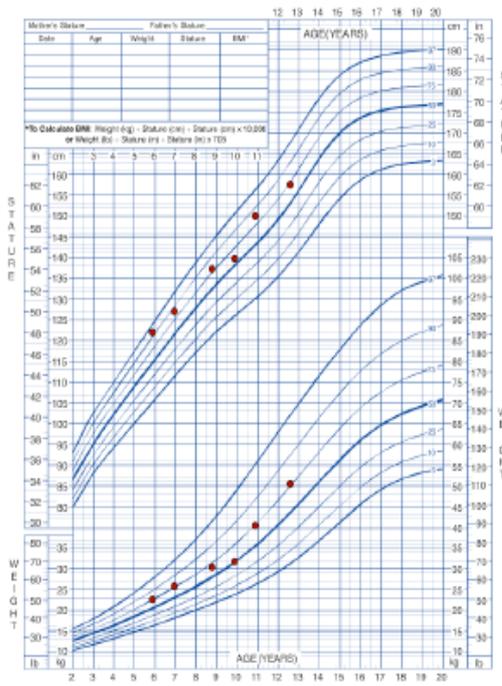
Comments

HeartPrint™

HSK
DOB: 2/14/1995
Initials: TMC
Patient ID: 1387
10/20/2007 12:6PM

Age: 12 Years, 8 Months
Height: 62in/157cm (68%)
Weight: 111lbs/50...kg (75%)
BMI: 20.3 (76%)
Weight for BMI85: 117 lbs/
53...kg
BP: 110/80
BP for 90%: 123/77

Family History: 1
Smoking: No
Sedentary: 1
Activity: 3 hour(s)
Breakfast: 6/week
Beverages: 12oz
Milk: 3 cups (1%)
Eats Out: 3/week
Junk Snacks: 2/day
Fruits/Vege: 4times





Initials: PP Birthday: 1994-07-14 Visit: 2010-02-26

Your Recommendations

Choose one or two changes to work on for several weeks. Experts advise not making many changes at the same time.

Activity

It seems you are doing a good job keeping your child active. Being active is very important for your child's health.

Nutrition

Give your child portion sizes that fit his or her age. Restaurants often give more food than children need.

Do not eat out more than two times per week.

Give your child a glass of milk with each meal.

Drink no more than one can or glass of sweet drinks each day (or 2-3 each week).

Remove all soda from the house.

At restaurants, order water instead of sweet drinks.

Notes from your provider:



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Analysis

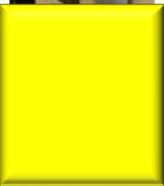
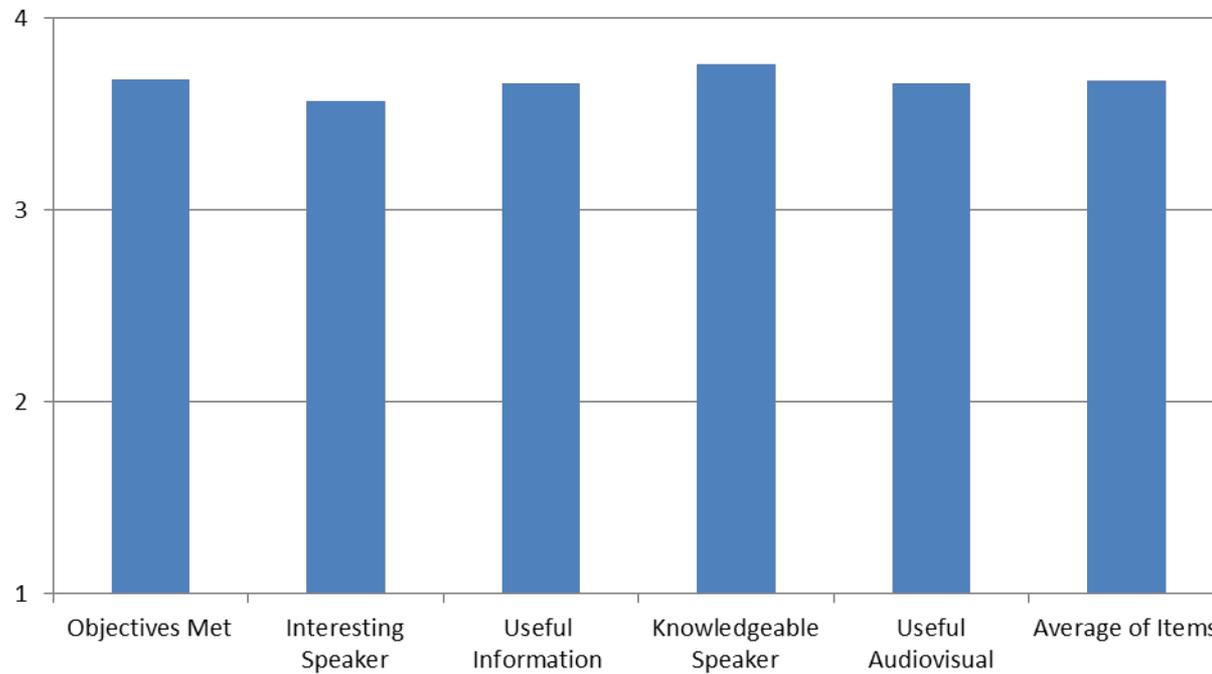


- Multi-level modeling as appropriate
- Constant comparison method of analysis for the focus group data.

Results



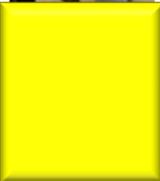
MI Total Score



Results



- Qualitative data suggests
 - Providers plan to incorporate MI into their visits
 - Change the way they discuss behavior change
 - Use MI tools when counseling patients



Pertinent Review of Symptoms

Provider Adherence to Recommendations

Condition	Pre & Post	Just Post	Just Pre	Neither
Poor self-esteem* (M,O)	14	6	-	2
Eating disorders* (M,O)	5	5	-	12
Depression (M,O)	12	4	3	3
History of abuse* (M,O,S)	14	5	-	3
Readiness to make changes (M,O)	15	4	2	1
Parent concern about weight (M,O)	13	5	3	1
Patient concern about weight (M,O)	20	2	-	-
Being teased about weight (M,O)	12	3	2	5
Family dynamics (M,O)	10	6	1	5

*Significant change pre-test to post-test ($p < 0.05$)

M=Most of the time; O=Often; S=Sometimes



Family History Evaluations

Provider Adherence to Recommendations

Condition	Pre & Post	Just Post	Just Pre	Neither
Overweight (M,O)	15	2	1	4
Dyslipidemia (M,O)	15	2	2	3
Hypertension (M,O)	20	1	-	1
Cardiovascular disease (M,O)	21	1	-	-
Gallbladder disease (M,O)	1	4	1	16
Eating disorders in the parents* (M,O,S)	1	5	-	16
Diabetes mellitus (M,O)	21	-	-	-
Other endocrine abnormalities (M,O)	2	3	3	11

*Significant change pre-test to post-test ($p < 0.05$)

M=Most of the time; O=Often; S=Sometimes



Other Significant Changes

Providers Responding “Most of the Time”

Condition	Pre & Post	Just Post	Just Pre	Neither
Asking about time spent in sedentary activities*	12	4	-	6
Asking about readiness to change weight*	5	7	1	9

*Significant change pre-test to post-test ($p < 0.05$)



Healthcare Climate Questionnaire



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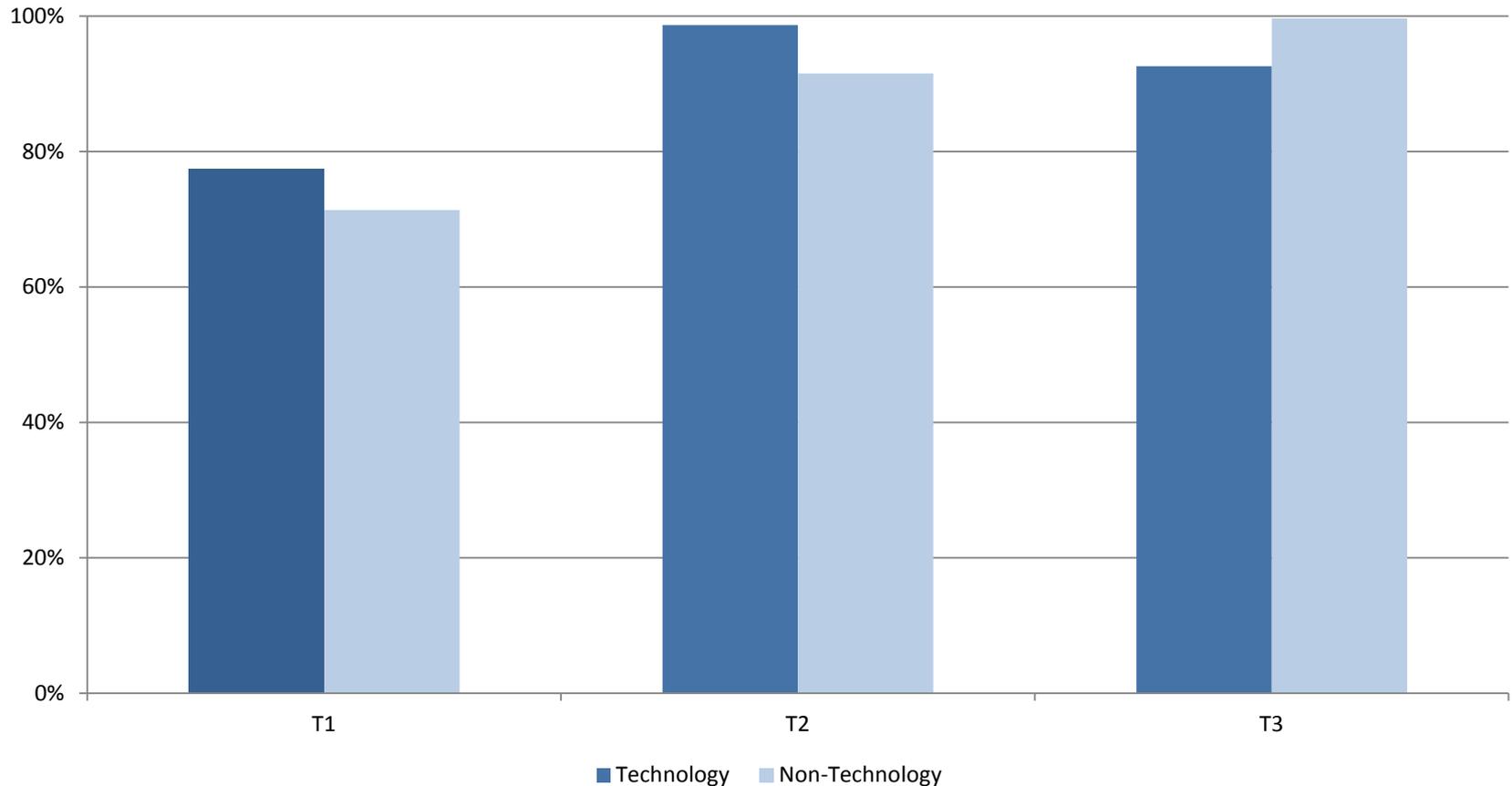
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Variable	Group	T1	T2	Time Main Effect	Technology Main Effect	Time*Technology Interaction
A1: I feel that my healthcare providers have provided me with choices and options about changing my child's diet (including not changing).	Tech	6.19	6.52	p=.49	p=.05	p=.09
	Non-Tech	5.91	5.27			
A2: I feel my healthcare providers understand how I see things about my child's diet.	Tech	6.32	6.47	p=.90	p=.26	p=.20
	Non-Tech	6.11	5.32			
A3: My healthcare providers show confidence in my ability to make changes regarding my child's diet.	Tech	6.33	6.51	p=.44	p=.06	p=.04
	Non-Tech	6.04	5.26			
A4: My healthcare providers listen to how I would like to do things regarding my child's diet.	Tech	6.40	6.54	p=.76	p=.07	p=.18
	Non-Tech	6.04	5.35			
A5: My healthcare providers encourage me to ask questions about my child's diet.	Tech	6.38	6.54	p=.64	p=.09	p=.39
	Non-Tech	6.02	5.54			
A6: My healthcare providers try to understand how I see my child's diet before suggesting any changes.	Tech	6.29	6.48	p=.78	p=.16	p=.30
	Non-Tech	6.01	5.36			
B1: I feel that my healthcare providers have provided me with choices and options about changing my child's exercising regularly (including not exercising regularly).	Tech	6.24	6.59	p=.50	p=.10	p=.07
	Non-Tech	5.93	5.23			
B2: I feel my healthcare providers understand how I see things about my child exercising regularly.	Tech	6.36	6.56	p=.81	p=.14	p=.23
	Non-Tech	6.00	5.28			
B3: My healthcare providers show confidence in my ability to make changes regarding my child exercising regularly.	Tech	6.28	6.58	p=.50	p=.19	p=.09
	Non-Tech	6.00	5.19			
B4: My healthcare providers listen to how I would like to do things regarding my child's exercise.	Tech	6.33	6.58	p=.50	p=.17	p=.17
	Non-Tech	6.03	5.31			
B5: My healthcare providers encourage me to ask questions about my child's exercise regime.	Tech	6.31	6.58	p=.49	p=.21	p=.12
	Non-Tech	6.07	5.37			
B6: My healthcare providers try to understand how I see my child's exercising before suggesting any changes.	Tech	6.29	6.58	p=.26	p=.21	p=.22
	Non-Tech	6.00	5.30			

BMI percentile documentation after training

Figure 2. BMI percentile documentation, by time and technology group.



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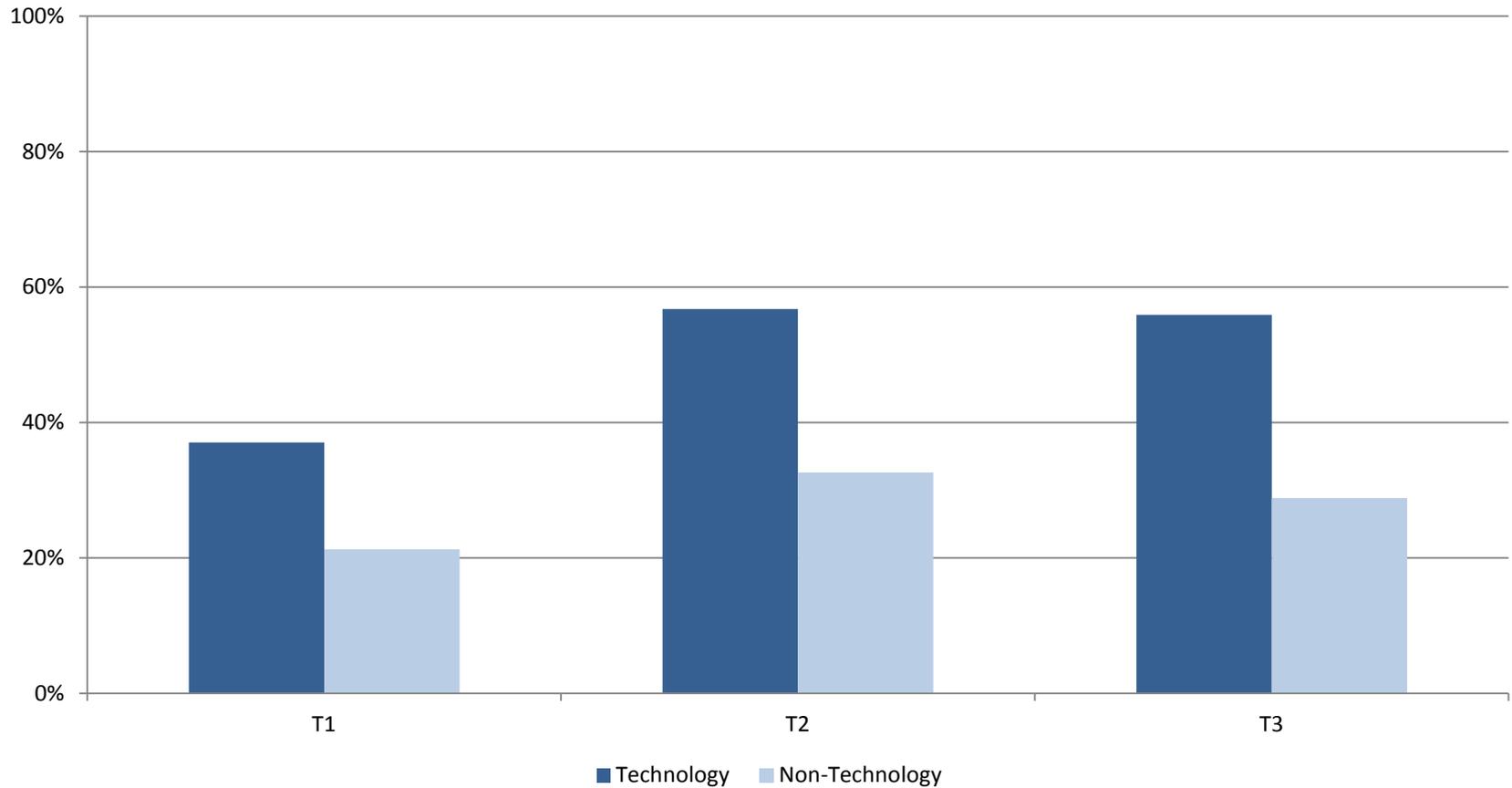


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Blood pressure percentile after training

Figure 3. Blood pressure percentile documentation, by time and technology group.



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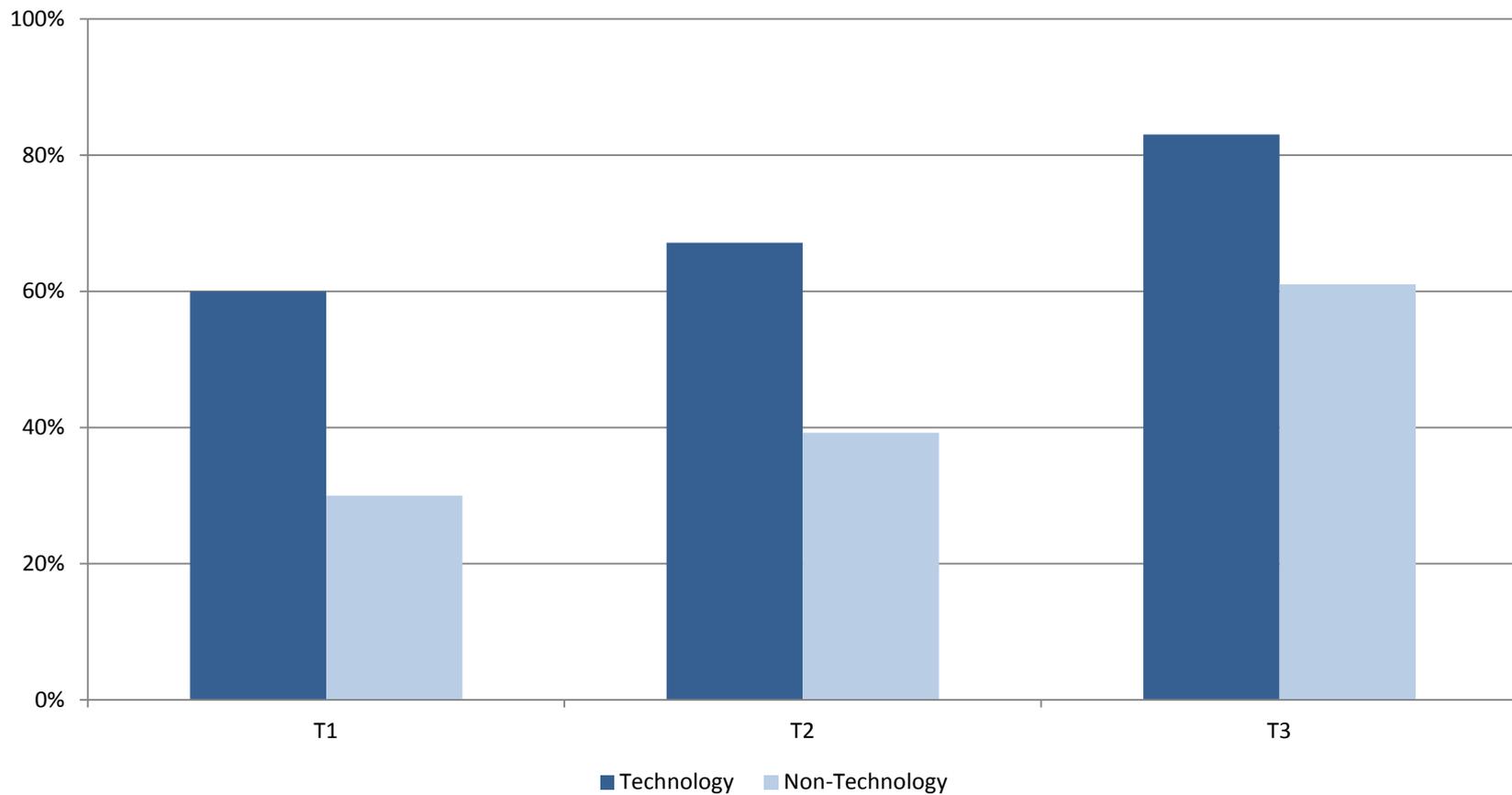


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Figure 4. Proportion of overweight accurately diagnosed, by time and technology group.

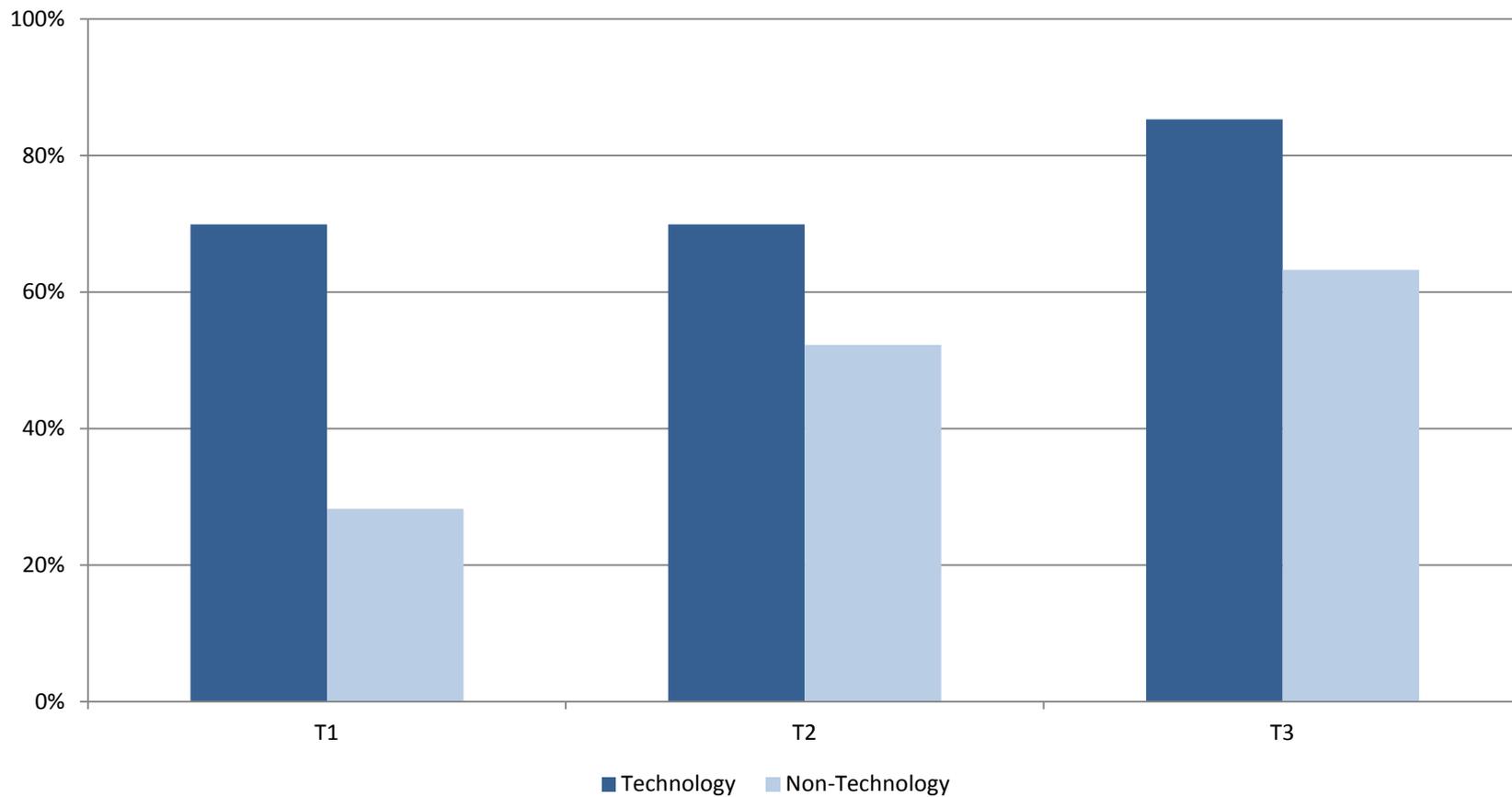


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Figure 5. Proportion of obese accurately diagnosed, by time and technology group.



Overall Results

- Provider satisfaction was high with web-based training
- Practices set goals for improving MI counseling
- There were significant improvements in provider behaviors after training
- Those who received technology were significantly better in counseling on diet



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Limitations

- Retention was a challenge but clinics who dropped were replaced.
- Weakness of self report was balanced with chart audits.
- Did not measure patient outcomes.
- Non-tech group was aware they did not get the technology.



Questions?



"IT TO PROMOTE MI FOR HEALTHY BMI"

About this Project



Health Information Technology to Support Clinical Decision Making in Obesity Care

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