



Nutritional Assessment in the Primary Care Setting

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Relevant Disclosure and Resolution

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Learning Objectives

After attending this presentation, providers should be able to:

- Use information from the FNPA to identify dietary risk factors for obesity in children and adolescents
- Conduct a 24-hour dietary recall to identify dietary risk factors for obesity in children and adolescents
- Use the American Academy of Pediatrics Hunger Vital Sign to screen for food insecurity
- Assess readiness for health behavior change using the Readiness Ruler and scaling techniques
- Develop SMART goals with families who demonstrate readiness for health behavior change

Objective # 1

Use information from the FNPA to identify dietary risk factors for obesity in children and adolescents.

Expert Committee Guidelines: Dietary Risk Factors for Obesity

- Excess sugar sweetened beverages
- Excess consumption of low nutrient, energy dense foods
- Limited intake of fruits and vegetables
- Excess age appropriate portions
- Frequent fast foods: > 2 meals/week
- Breakfast skipping
- Overly restrictive parental feeding practices

The Process: FNPA to SMART Goal

FNPA
Screening

24-hour
Dietary
Recall

Hunger Vital
Sign
Screening

Readiness
Assessment

SMART
Goal

The First Step

ASK PERMISSION to discuss weight, nutrition and physical activity habits.

Family Nutrition and Physical Activity (FNPA) Screening Tool

FNPA screening: assess *frequency* of breakfast skipping, fast foods meals, sugar sweetened beverages and low nutrient, energy dense food consumption

FNPA screening: assess *frequency* of intake from fruit, vegetables and dairy groups



Advantages of the FNPA Screening Tool

- Validated screening tool that includes evidence based nutrition, screen time, physical activity and sleep hygiene risk factors for obesity in children and adolescents
- Multiple versions: English, Spanish and online version
- Low staff and parent burden to complete and score the instrument
- Provides overview of risk factors in the home environment that can be used to facilitate family based health behavior changes



FNPA: Nutrition, Eating Practices and Behaviors

- **Family Meals:** *breakfast skipping*, eating one meal a day with at least one family member
- **Family Eating Practices:** TV watching with meals and snacks, *frequency of fast food meals*
- **Food Choices:** use of convenience foods, *fruit/vegetable intake*
- **Beverage Choices:** *sugar sweetened beverages*, milk intake
- **Parental Restriction and Reward:** *monitoring low nutrient, energy dense foods* and use of sweets as a reward



Administration of FNPA

- Health provider provides guidelines on *typical* pattern for child or family
- Self administered screening tool
- Health provider uses a 1- 4 score for each question and a composite score for each of the 10 constructs
- Reverse scoring: questions 3, 4, 5, 7, 10, 13
- Low scoring questions: target for health behavior changes
- High scoring questions: positive reinforcement of healthy behaviors

Nutrition, Eating Practices and Behaviors

The Family Nutrition & Physical Activity Screening Tool

Instructions: For each question, select the answer category that best fits your child or your family. It is important to indicate the most common or typical pattern for your family, and not what you would like to happen.

	Never/ Almost Never	Sometimes	Often	Very Often/ Always
Family Meals				
1. How often does your child eat breakfast, either at home or at school?	1	2	3	4
2. How often does your child eat at least one meal a day with at least one other family member?	1	2	3	4
Family Eating Practices	Never/ Almost Never	Sometimes	Often	Very Often/ Always
3. How often does your child eat while watching TV? [Includes meals or snacks]	1	2	3	4
4. How often does your family eat "fast food?"	1	2	3	4
Food Choices	Never/ Almost Never	Sometimes	Often	Very Often/ Always
5. How often does your family use packaged "ready-to-eat" foods? [Includes purchased frozen or on-the-shelf entrees, often designed to be microwaved]	1	2	3	4
6. How often does your child eat fruits and vegetables at meals or snacks? [Not including juice]	1	2	3	4
Beverage Choices	Never/ Almost Never	Sometimes	Often	Very Often/ Always
7. How often does your child drink soda pop or sweetened beverages? [Includes regular or diet soda pop, Kool-Aid, Sunny-D, Capri Sun, fruit or vegetable juice, caffeinated energy drinks (Monster/Red Bull), Powerade/Gatorade, etc.]	1	2	3	4
8. How often does your child drink low-fat milk for meals or snacks? [Includes 1% or skim dairy, flavored, soy, almond, etc.]	1	2	3	4
Restriction/Reward	Never/ Almost Never	Sometimes	Often	Very Often/ Always
9. How often does your family monitor the amount of candy, chips, and cookies your child eats?	1	2	3	4
10. How often does your family use candy, ice cream or other foods as a reward for good behavior?	1	2	3	4

FNPA:

Sedentary Time and Physical Activity

- **Screen Time:** *frequency of < 2 hrs/day of screen time, parental monitoring of screen time*
- **Healthy Environment:** *frequency of child's screen time in bedroom, availability of opportunities for physical activity*
- **Family Activity:** *parental encouragement of physical activity, frequency of physical activity with family member(s)*
- **Child Activity:** *frequency of physical activity, participation in sports*
- **Family Schedule/Sleep Routine:** *sleep hygiene, adequate sleep*

Sedentary Time and Physical Activity

Screen Time	Never/ Almost Never	Sometimes	Often	Very Often/ Always
11. How often does your child have less than 2 hours of "screen time" in a day? [Includes TV, computer, game system, or any mobile device with visual screens]	1	2	3	4
12. How often does your family monitor the amount of "screen time" your child has?	1	2	3	4
Healthy Environment	Never/ Almost Never	Sometimes	Often	Very Often/ Always
13. How often does your child engage in screen time in his/her bedroom?	1	2	3	4
14. How often does your family provide opportunities for physical activity?	1	2	3	4
Family Activity	Never/ Almost Never	Sometimes	Often	Very Often/ Always
15. How often does your family encourage your child to be physically active?	1	2	3	4
16. How often does your child do physical activities with at least one other family member?	1	2	3	4
Child Activity	Never/ Almost Never	Sometimes	Often	Very Often/ Always
17. How often does your child do something physically active when he/she has free time?	1	2	3	4
18. How often does your child participate in organized sports or physical activities with a coach or leader?	1	2	3	4
Family Schedule/Sleep Routine	Never/ Almost Never	Sometimes	Often	Very Often/ Always
19. How often does your child follow a regular routine for your child's bedtime?	1	2	3	4
20. How often does your child get enough sleep at night?	1	2	3	4

The FNPA tool was developed at Iowa State University by Michelle [Imels](#) and Greg Welk (gwelk@iastate.edu) in partnership with the American [Dietetics Association](#)



FNPA: Dietary Risk Factors?

	Never/ Almost Never	Sometimes	Often	Very Often/ Always
Family Meals				
1. How often does your child eat breakfast, either at home or at school?	1	2	3	4
2. How often does your child eat at least one meal a day with at least one other family member?	1	2	3	4
Family Eating Practices	Never/ Almost Never	Sometimes	Often	Very Often/ Always
3. How often does your child eat while watching TV? [Includes meals or snacks]	4	3	2	1
4. How often does your family eat "fast food?"	4	3	2	1
Food Choices	Never/ Almost Never	Sometimes	Often	Very Often/ Always
5. How often does your family use packaged "ready-to-eat" foods? [Includes purchased frozen or on-the-shelf entrees, often designed to be microwaved]	4	3	2	1
6. How often does your child eat fruits and vegetables at meals or snacks? [Not including juice]	1	2	3	4
Beverage Choices	Never/ Almost Never	Sometimes	Often	Very Often/ Always
7. How often does your child drink soda pop or sweetened beverages? [Includes regular or diet soda pop, Kool-Aid, Sunny-D, Capri Sun, fruit or vegetable juice, caffeinated energy drinks (Monster/Red Bull), Powerade/Gatorade, etc.]	4	3	2	1
8. How often does your child drink low-fat milk for meals or snacks? [Includes 1% or skim dairy, flavored, soy, almond, etc.]	1	2	3	4
Restriction/Reward	Never/ Almost Never	Sometimes	Often	Very Often/ Always
9. How often does your family monitor the amount of candy, chips, and cookies your child eats?	1	2	3	4
10. How often does your family use candy, ice cream or other foods as a reward for good behavior?	4	3	2	1

Objective # 2

Conduct a 24-hour dietary recall to identify dietary risk factors for obesity in children and adolescents.

Dietary Assessment Methods

Diet History: uses a combination of dietary assessment methods to obtain information about dietary patterns, cooking skills, food insecurity, food access in built environment, and other lived experiences which might impact dietary decision making

- **Food Frequency Questionnaire/FNPA:** screening form to assess the *frequency* of food and beverages consumed over a period of time
- **24-Hr Recall:** conducted by a trained interviewer to obtain a *detailed* description of food and beverage intake over a 24-hour period
- **3 Day Food Diary:** self administered record of all food and beverage intake over three consecutive days



Food Frequency Questionnaire (FFQ)

Advantages

- Low staff burden
- Low patient burden
- A crude estimate of intake
- Rapid screening tool

Disadvantages

- Requires moderate literacy to self administer
- Relies on memory recall
- Lacks detail on serving sizes, cooking methods

Family Health and Nutrition Clinic Lifestyles Questionnaire

How often does your child...	Never	1-2 days	3-4 days	5-6 days	Everyday
Eat fruit?					
Eat vegetables?					
Eat dairy products (milk, yogurt, or cheese?)					
Eat snacks between meals and/or at night?					
Eat fried foods?					
Drink sweetened beverages (soda pop, Kool-Aid, sweetened tea, Sunny D, Capri Sun, PowerAde/Gatorade, fruit juice or energy drinks)?					
Eat breakfast and/or lunch at school?					
Skip breakfast?					
Eat chips, candy, cookies?					



24–Hour Recall

Advantages

- Probing questions increase details of dietary intake
- Detailed description of cooking methods, brand names of products
- No literacy required
- Most valid measurement tool if repeated over multiple days

Disadvantages

- Underreporting bias in individuals with a history of increased dietary intake
- Relies on memory recall
- Time burden to conduct detailed history

24 Hour Recall

School or Sack Lunch

Breakfast

Nighttime

Bedtime

Dinner

After school



3 Day Food Record

Advantages

- No reliance on memory recall
- Detailed record on dietary intake, cooking methods
- Details on eating behaviors, "triggers" for emotional eating
- Self monitoring tool

Disadvantages

- High staff burden for education and review of record
- High patient burden to measure and record intake
- Literacy and writing skills
- Alter eating behaviors?

3 Day Food Record

Complete the food record each time you eat! Include the portion size and a description of the foods that are eaten.

Like This

Turkey Sandwich: 1 sl bread, 1 sl turkey, 1 tsp mayo
1C 1% milk
16 grapes
2 C buttered popcorn

Not This

½ Sandwich
Glass of milk
Grapes
Bowl of popcorn

Day	Breakfast	Morning	Lunch	Afternoon	Dinner	HS
1						
2						
3						

Which Method Works Best?

- A *combination* of methods provides the most complete information for identifying dietary risk factors for obesity and to estimate dietary intake
- Determine what dietary information is needed: screening vs detailed information
- Dietary assessment process: information gathering over multiple visits to develop a care plan to assist families in developing a nutrition SMART goal

From FNPA to SMART Goal

- **FNPA screening:** assess *frequency* of breakfast skipping, fast foods meals, sugar sweetened beverages and low nutrient, energy dense foods as well as to assess *frequency* of intake from fruit, vegetables and dairy groups
- **24-Hour Recall:** assess *types* and *quantities* of sugar sweetened beverages, low nutrient, energy dense foods, fruits, vegetables and dairy



Objective # 3

Use the American Academy of Pediatrics Hunger Vital Sign to screen for food insecurity

Food Insecurity Screener

Within the past 12 months, we worried whether our food would run out before we got money to buy more

- often true sometimes true
- never true never true/refused

Within the past 12 months, the food we bought just didn't last and we didn't have money to get more.

- often true sometimes true
- never true never true/refused

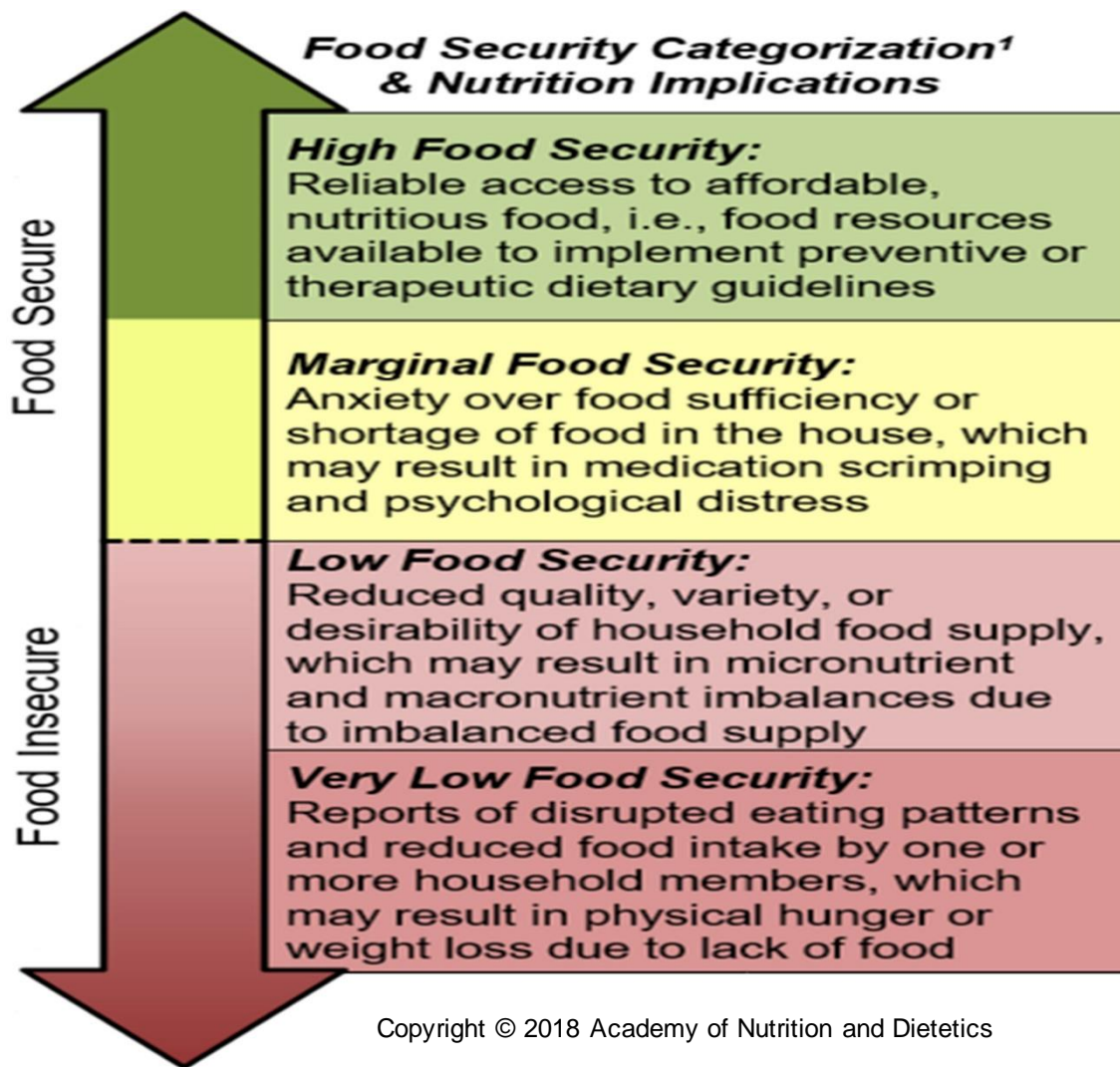


Food Insecurity in Oklahoma

- Households with children experience higher rates of food insecurity
- Oklahoma has the *7th highest rate* of child food insecurity
- Food insecurity impacts 22.2% of children in Oklahoma or more than 1 in 5 children

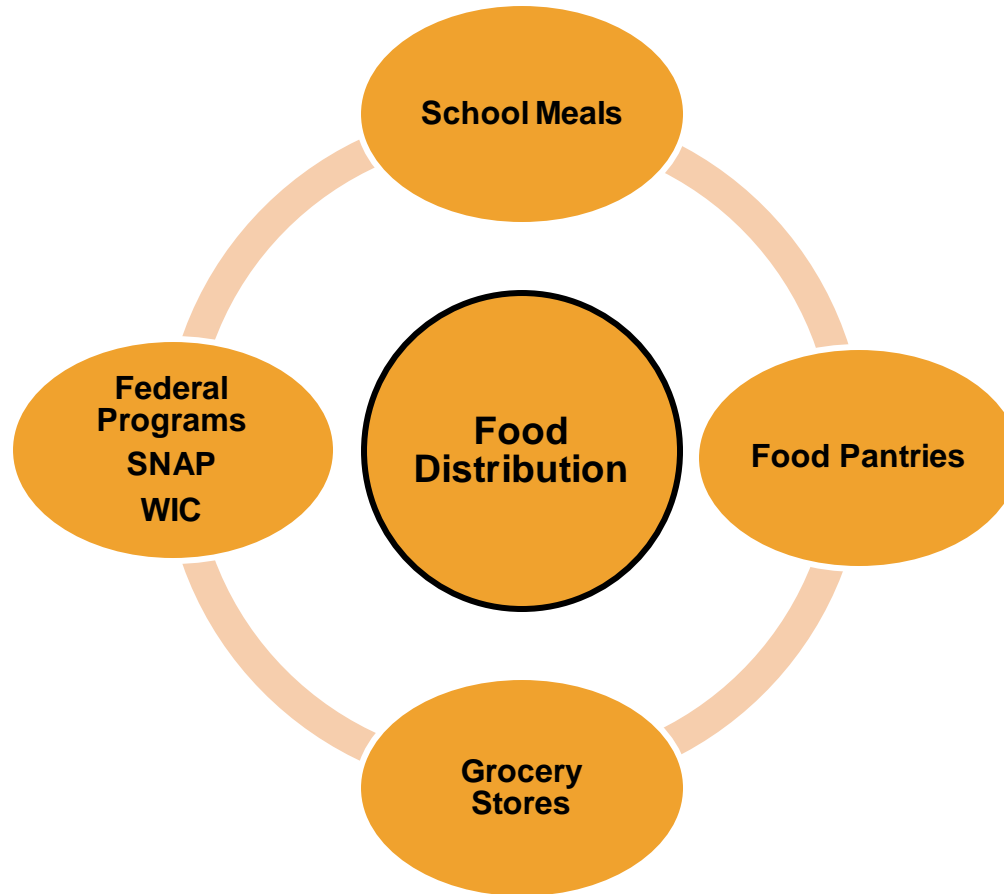


A Shift From Food Security to Food Insecurity

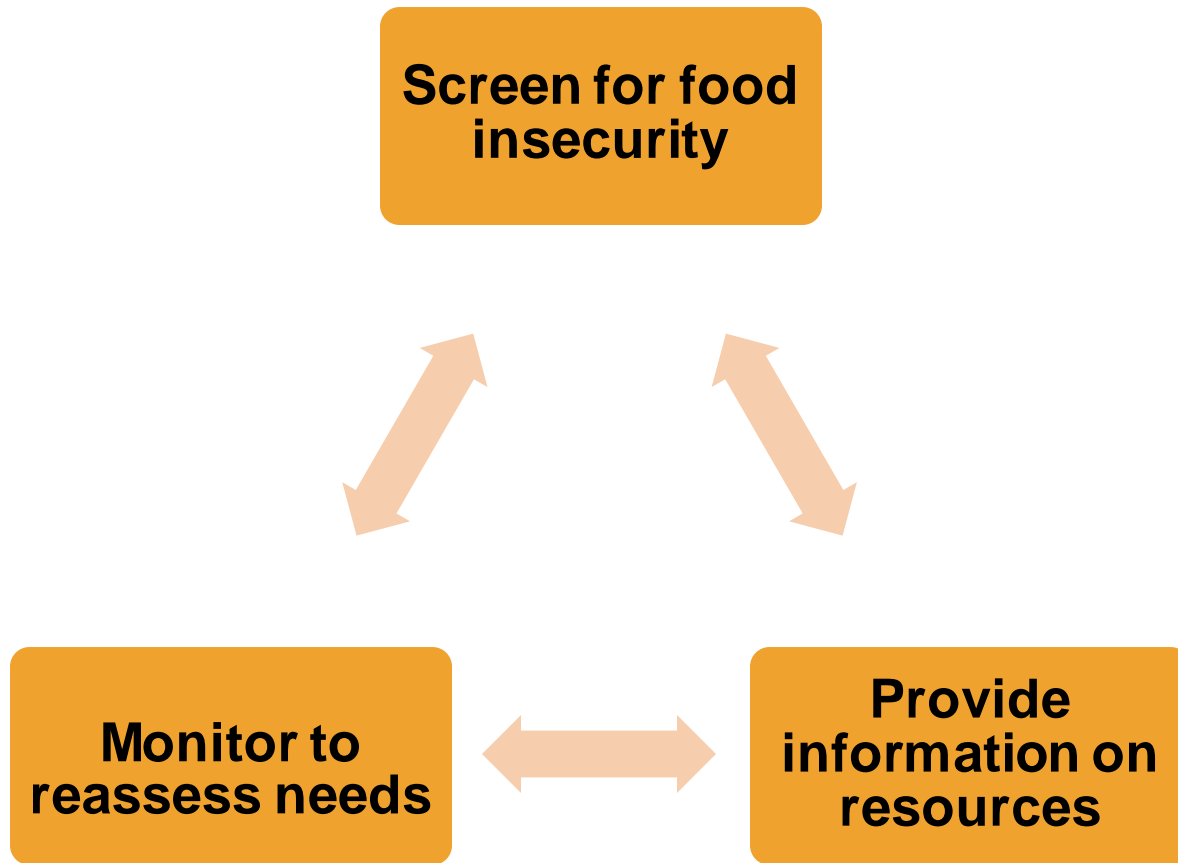


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Reducing Risk for Food Insecurity: A Systems Approach



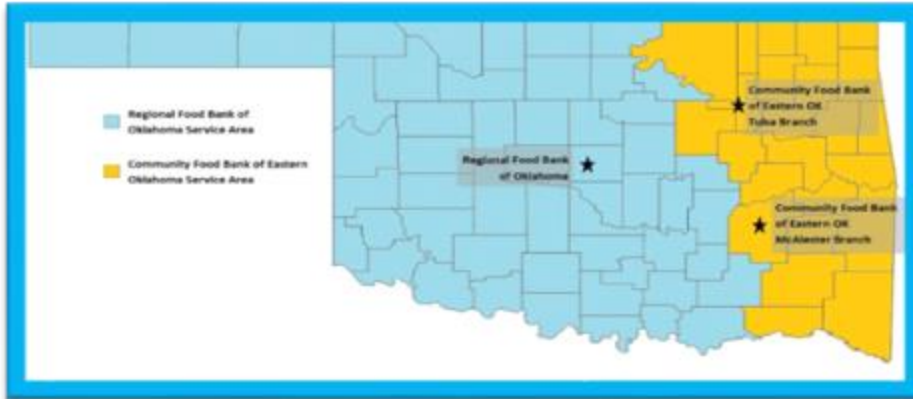
The Process



Supplemental Food Resources: Food Banks and Pantries

- Food banks: providing food and emergency food boxes to food pantries throughout Oklahoma
 - Regional Food Bank <https://www.regionalfoodbank.org/get-help>
 - Community Food Bank of Eastern Oklahoma
 - Community Food Bank of Eastern Oklahoma McAlister Branch
- Hunger Free Oklahoma: state wide map of community food resources <https://public.tableau.com/profile/gia.chow#!/vizhome/COVID-19OKCommunityResources/COVID-19CommunityResourcesMap>

Co-Vid 19 Emergency Food Boxes



Community Food Bank of Eastern Oklahoma

350 community based partners in eastern Oklahoma

Shelf Stable Items

Canned fruit
Peanut butter
Jelly
Packaged meals
Pasta/Rice
Canned protein
Canned vegetables
Canned pasta sauce

Regional Food Bank of Oklahoma

1,300 community based partners in central and western Oklahoma

Supplemental Food Resources: WIC

- **Women, Infants and Children(WIC)**

Oklahoma WIC services: assistance with finding formula

Phone: 1-888-655-2942 ext. 14765

Email: https://www.ok.gov/health/Family_Health/WIC/index.html

- **COVID-19 Response:** USDA approval of Physical Presence Waiver for Oklahoma children birth to 5 years and pregnant/lactating mother's through 5/31/2020

Participants enroll and re-certify online <http://www.okdhslive.org/>

Defer anthropometric, bloodwork requirements to determine nutritional risk

Objective # 4

Assess readiness for health behavior change using the Readiness Ruler and scaling techniques

Assess Readiness for Change: Readiness Ruler

Thinking About Change

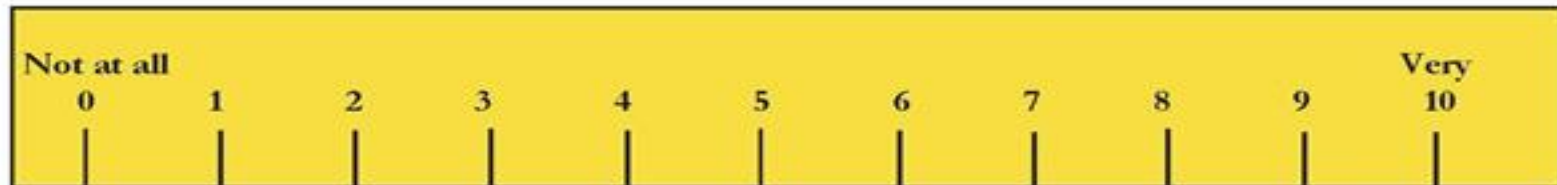
What change(s) are you considering?

How important is it that you make this change?

How confident are you that you are able to make this change?

How ready are you to make this change?

Readiness Ruler



Objective # 5

Develop SMART goals with families who demonstrate readiness for health behavior change

SMART Goals Checklist

- Specific** Identify what to work on
- Measurable** How much and/or how often
- Attainable** Realistic, identify barriers, assess confidence
- Relevant** Identify promoters, assess importance
- Timely** Define time frame for goal

Family Based Dietary Behavior Changes

- Our family will eat healthier
- Our family will eat less junk food
- *I will substitute Crystal Light for soda pop at dinner 3 days a week each week for the next 2 weeks.*
- *I will eat 1/2 cup vegetables and 1 cup fruit at lunch 3 days a week for the next 4 weeks.*

Conclusions and Clinical Pearls

- Use a combination of dietary assessment methods to determine areas of relative strengths and areas around which to set SMART goals to facilitate health behavior change
- The FNPA is a validated screening tool to identify risk factors in the home environment that are associated with childhood obesity
- A 24 hour dietary recall offers details on the types, amounts and frequency of intake from sugar sweetened beverages, low nutrient, energy dense foods and MyPlate food groups
- Repeated FNPA's and 24 hour dietary recalls can be used to assess and monitor lifestyle changes around nutrition, screen time, physical activity and sleep hygiene over time
- Assess for food insecurity, other social barriers, and readiness for health behavior change prior to setting SMART goals

References

- Academy of Nutrition and Dietetics.(2017a). Family Nutrition and PhysicalActivity (FNPA). <http://www.myfnpa.org/>
- Academy of Nutrition and Dietetics.(2017b). Family Nutrition and PhysicalActivity (FNPA). <http://www.myfnpa.org/resources.html>
- American Dietetic Association. (2011). The State of Family Nutrition and Physical Activity -Are We Making Progress? https://eatrightfoundation.org/wp-content/uploads/2016/10/fnpa-report_2011.pdf
- Barlow SE. (2017) Expert Committee Recommendations Regarding the Prevention, Assessment and Treatment of Child and Adolescent Overweight and Obesity. http://pediatrics.aappublications.org/content/pediatrics/120/Supplement_4/S164.full.pdf
- Children's Hospital Association.(2016). Nutrition Interventions for Stage III Pediatric Weight Management: Consensus of Registered Dietitians on Best Practices. <https://www.childrenshospitals.org/Issues-and-Advocacy/Population-Health/Obesity/Focus-on-a-Fitter-Future/Nutrition-Interventions-for-Stage-III-Pediatric-WeightManagement>
- Smolin, L.A. and Grosvenor, M.B. (2013). Nutrition: Science and Applications (3^d Ed). Hoboken, NJ: John Wiley & Sons.
- Community Food Bank of Eastern Oklahoma.(2020). Food Bank COVID-19 Preparedness and Prevention Plan. <https://okfoodbank.org/covid-19-prepare-and-prevention-plan/>
- Dinour, L., Bergen, D., Yeh, MC.,(2007). The Food Insecurity-Obesity Paradox: A review of the Literature and the Role Food Stamps May Play. <https://linkinghub.elsevier.com/retrieve/pii/S0002822307016161>
- Dunn, C., Kenney, E., Fleischhaker, S., Bleisch, S.(2020). Feeding Low-Income Children During the CoVid-19 Pandemic. <https://www.nejm.org/doi/pdf/10.1056/NEJMp2005638?articleTools=true>
- Feeding America, Map the Meal Gap 2019.(2019). <https://www.feedingamerica.org/sites/default/files/2019-05/2017-map-the-meal-gap-full.pdf>
- HungerFree Oklahoma.(2020a). Meal Sites for Kids Ages 1-18. <https://meals4kidsok.org/>
- HungerFree Oklahoma(2020b). Food Resources by County. <https://public.tableau.com/profile/gia.chow#!/vizhome/COVID-19OKCommunityResources/COVID-19CommunityResourcesMap>
- Wetherill, M, Castleberry White, K, Rivera, C. (2018). Food Insecurity and the Nutrition Care Process: Practical Considerations for Dietetics Practitioners. [https://jandonline.org/article/S2212-2672\(17\)31351-5/pdf](https://jandonline.org/article/S2212-2672(17)31351-5/pdf)
- AAPHunger Vital Sign <https://frac.org/aaptoolkit>

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