OBJECTIVES

- Participants will demonstrate an understanding of evidence based nutrition practices and strategies to prevent childhood obesity in primary care.
- Participants will be able to apply healthy nutrition practices for children from birth through adolescence in a routine office visit.
- Participants will investigate the challenges and barriers of healthy nutrition practices of children and adolescents in Central Indiana.
- Participants will be able to assess and overcome the challenges of obesity seen in children and adolescents by focusing on successful evidence based strategies.
In the past 30 years, prevalence of obesity among children and adolescents aged 2-19 years nearly tripled, from 6%-17%. (Fryar & et al., 2012)

In 2010, almost one third of children and adolescents were overweight or obese. (Ogden & et al., 2012)

Obesity and extreme obesity* among US low-income, preschool-aged children went down for the first time in recent years.

From 2003 through 2010, the prevalence of obesity decreased slightly from 15.21% to 14.94%. Similarly, the prevalence of extreme obesity decreased from 2.22% to 2.07%.

CDC  Centers for Disease Control and Prevention
Childhood Obesity Facts http://www.cdc.gov/obesity/data/childhood.html
OBESITY RATES

- What image do you have of your patients who are obese?
BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM (BRFSS) 2014 ADULT OBESITY RATES
CDC.GOV HTTP://WWW.CDC.GOV/BRFSS/INDEX.HTML
WHAT HAS CHANGED?
BEGIN WITH ASSESSMENT OF DIET

Think about everything you ate or drank last week. Remember what you had for breakfast, lunch, dinner, after school, while watching TV, at bedtime, and on the weekend.

Please write your name in this box.

How many days last week did you eat or drink it?

<table>
<thead>
<tr>
<th>ID NUMBER</th>
<th>HOW MANY DAYS LAST WEEK</th>
<th>HOW MUCH IN ONE DAY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>None last week</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1-2 days last week</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3-4 days last week</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5-6 days last week</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Everyday last week</td>
<td></td>
</tr>
</tbody>
</table>

Cereal, like corn flakes, Frosted Flakes
Cooked cereal, like oatmeal
Eggs, breakfast sandwiches or breakfast burritos
Breakfast bars, granola bars, Protein bars
Glasses of milk
Real fruit juice, like orange juice, apple juice, or Mexican fruit drinks like licuados (DO NOT include soda)
Drinks like Coke or 7-Up, Sunny Delight, Hawaiian Punch, or aguas frescas (DO NOT include diet soda)
Apples, bananas, or oranges
Applesauce, fruit cocktail
Any other fruit, like strawberries, grapes
French fries, hash browns, tater tots
Other potatoes, like mashed or boiled
Ketchup or salsa
Lettuce salad
Tomatoes, including on salad
Green beans or peas
Other vegetables, like corn, carrots, greens, broccoli
Vegetable soup, tomato soup, any soup or stew with vegetables in it
Chili beans, pinto beans, black beans, including in burritos

1. Look for the 3-A-Day logo on packages of milk, cheese and yogurt.
2. Eat your favorite flavors of great-tasting milk, snackable cheeses and portable yogurt.
3. Take a "3 p.m. break" of milk, cheese and/or yogurt everyday to tally daily dairy servings.


The dairy case has something for everyone - from fat free to reduced fat varieties, families can choose milk, cheese or yogurt products to meet everyone's taste and nutritional needs.
MONITOR NUTRITIONAL INTAKE WITH EXPERT RECOMMENDATIONS

- 24 hour recall
- Variety
- Moderation
- Balance
- Types of dietary supplements
- Fluid intake

( Pulgaran, 2013)
QUESTION

Childhood obesity is prevented by
a) Early initiation of breastfeeding
b) Exclusive breastfeeding until 6 months of age
c) Introduction of safe solid foods at 6 months of age
d) All of the above
TYPES OF FOODS BY AGE OF CHILD

- Birth – 12 months
- Feeding practices
  - Breastfeeding
  - Formula feeding
- Solid foods
HOW MUCH MY NEWBORN NEEDS

Size of a newborn’s stomach

Day 1
size of a cherry
5 - 7 ml
1 - 1.4 teaspoon

Day 3
size of a walnut
22 - 27 ml
0.75 - 1 oz

Day Week
size of an apricot
45 - 60 ml
1.5 - 2 oz

One Month
size of a large egg
80 - 150 ml
2.5 - 5 oz

Health & Parenting
QUESTION

What type of milk is recommended by the AAP for children age 1 year to 2 years of age?

a) 2% milk
b) Skim milk
c) Whole milk
EXPERT RECOMMENDATIONS

- 12 months – 36 months
Juice consumption for children should be limited to
a) Only 100% fruit juice
b) 12 ounces of juice per day
c) Can substitute fruit juice for sweetened beverages
d) None of the above
EXPERT RECOMMENDATIONS

- 36 months – 5 years
QUESTION

If a family does not have adequate resources for food you can refer them to

a) National School lunch Program
b) Supplemental Nutrition Assistance Program (SNAP)
c) Community Food Pantry
d) All of the above
EXPERT RECOMMENDATIONS

- School age 5 years – 12 years
- Fluids
- Diet recall
  - Portions
  - Meal times
  - Where are you eating?
- Distractions
- Food availability
Adequate protein, calcium, fruit, vegetable and grain intake can be low or high during adolescence, recommendations to meet nutrient needs include

a) 3 or more servings daily of milk or milk products
b) 2 to 3 servings of meat or meat substitutes
c) 6-11 (5-7 ounce servings) of grains
d) 3 cups of vegetables and 1 - 2 cups of fruits
e) All of above
EXPERT RECOMMENDATIONS

- 12 years – 15 years
- Fluids
- Diet recall
  - Portions
  - Meal times
  - Where are you eating?
- Distractions
- Food availability
EXPERT RECOMMENDATIONS

- 15 years – 19 years
- Education of adolescent
- Fluids
- Diet recall
  - Portions
  - Meal times
  - Where are you eating?
- Distractions
- Food availability
# Recommendations for Servings

<table>
<thead>
<tr>
<th>Food Group</th>
<th>Servings per Day</th>
<th>Portion Size for Ages 1 to 3</th>
<th>Portion Size for Ages 4 to 6</th>
<th>Portion Size for Ages 7 to 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruits</td>
<td>2–3 servings</td>
<td>¼ cup cooked, frozen, or canned, ½ piece fresh, ¼ cup 100% juice</td>
<td>¼ cup cooked, frozen, or canned, ½ piece fresh, ½ cup 100% juice</td>
<td>½ cup cooked, frozen, or canned, 1 piece fresh, ½ cup 100% juice</td>
</tr>
<tr>
<td>Vegetables</td>
<td>2–3 servings</td>
<td>¼ cup cooked</td>
<td>¼ cup cooked</td>
<td>½ cup cooked</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>½ cup salad</td>
<td>1 cup salad</td>
</tr>
<tr>
<td>Grains</td>
<td>6–11 servings</td>
<td>½ slice bread, ¼ cup cooked cereal, rice, or pasta, ½ cup dry cereal, 2–3 crackers</td>
<td>½ slice bread, ¼ cup cooked cereal, rice, or pasta, ½ cup dry cereal, 3–4 crackers</td>
<td>1 slice bread, ½ cup cooked cereal, rice, or pasta, ¾–1 cup dry cereal, 4–5 crackers</td>
</tr>
<tr>
<td>Meats and other proteins</td>
<td>2 servings</td>
<td>1 ounce meat, fish, chicken, or tofu, ½ cup cooked beans, ½ egg</td>
<td>1 ounce meat, fish, chicken, or tofu, ½ cup cooked beans, 1 egg</td>
<td>2–3 ounces meat, fish, chicken, or tofu, ½ cup cooked beans, 1 egg or 2 eggs</td>
</tr>
<tr>
<td>Dairy</td>
<td>2–3 servings</td>
<td>½ cup milk, ½ ounce cheese, ½ cup yogurt</td>
<td>½ cup milk, 1 ounce cheese, ½ cup yogurt</td>
<td>1 cup milk, 1 ounce cheese, ¾–1 cup yogurt</td>
</tr>
</tbody>
</table>

# Caloric Needs

Daily calorie needs based on age, gender, and activity level

<table>
<thead>
<tr>
<th>Age (Years)</th>
<th>Gender</th>
<th>Sedentary (Not Active)</th>
<th>Moderately Active</th>
<th>Active</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-3</td>
<td>Male or female</td>
<td>1,000</td>
<td>1,000</td>
<td>1,000</td>
</tr>
<tr>
<td>4-8</td>
<td>Male</td>
<td>1,200 – 1,400</td>
<td>1,400 – 1,600</td>
<td>1,600 – 2,000</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>1,200 – 1,400</td>
<td>1,400 – 1,600</td>
<td>1,400 – 1,800</td>
</tr>
<tr>
<td>9-13</td>
<td>Male</td>
<td>1,600 – 2,000</td>
<td>1,800 – 2,200</td>
<td>2,000 – 2,600</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>1,400 – 1,600</td>
<td>1,600 – 2,000</td>
<td>1,800 – 2,200</td>
</tr>
<tr>
<td>14-18</td>
<td>Male</td>
<td>2,000 – 2,400</td>
<td>2,400 – 2,800</td>
<td>2,800 – 3,200</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>1,800</td>
<td>2,000</td>
<td>2,400</td>
</tr>
<tr>
<td>19-30</td>
<td>Male</td>
<td>2,400 – 2,600</td>
<td>2,600 – 2,800</td>
<td>3,000</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>1,800 – 2,000</td>
<td>2,000 – 2,200</td>
<td>2,400</td>
</tr>
<tr>
<td>31-50</td>
<td>Male</td>
<td>2,200 – 2,400</td>
<td>2,400 – 2,600</td>
<td>2,800 – 3,000</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>1,800</td>
<td>2,000</td>
<td>2,200</td>
</tr>
<tr>
<td>51 and older</td>
<td>Male</td>
<td>2,000 – 2,200</td>
<td>2,200 – 2,400</td>
<td>2,400 – 2,800</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>1,600</td>
<td>1,800</td>
<td>2,000 – 2,200</td>
</tr>
</tbody>
</table>

CARBS
PROTEIN
ChooseMyPlate.gov
THE FORGOTTEN NUTRIENT
QUESTION

Children that are allowed to suck on a bottle with carbohydrates for a prolonged period are at risk of developing

a) Diarrhea
b) Dental carries
c) Enhanced appetite
d) All of the above
JUICE

- Limit 100% fruit juice to 4–6 oz per day and avoid consumption of fruit drinks and sodas.
- Encourage consumption of water and milk rather than sweetened beverages.
- Get rid of the bottle/sippy cup sooner than later.
**RECOMMENDED INTAKE**

- **Calcium** - Ensure a calcium intake of 1000*-1500 mg daily (3–4 eight oz glasses of milk daily or the equivalent)
- **Vitamin D** – 400 IU daily (1 glass of milk = 100 IU regardless of fat % of milk)
- **Iron** – 18mg* (beans, leafy greens, & red meats)

*based off 2000kcal diet
EER, RDA, & AI
PORTION SIZE CHANGE

**Portion Distortion**

<table>
<thead>
<tr>
<th>20 YEARS AGO</th>
<th>TODAY</th>
<th>DIFFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burger</td>
<td></td>
<td>257 MORE CALORIES</td>
</tr>
<tr>
<td>333 Calories</td>
<td>590</td>
<td><code>Lifting weights for 1 HOUR AND 30 MINUTES burns approximately 257 calories</code> *Based on 130-pound person</td>
</tr>
<tr>
<td>Pizza</td>
<td></td>
<td>350 MORE CALORIES</td>
</tr>
<tr>
<td>500 Calories</td>
<td>850</td>
<td><code>Playing golf (while walking and carrying your clubs) for 1 HOUR burns approximately 350 calories</code> *Based on 160-pound person</td>
</tr>
<tr>
<td>Spaghetti</td>
<td></td>
<td>525 MORE CALORIES</td>
</tr>
<tr>
<td>1 cup</td>
<td>2 cups</td>
<td><code>Housecleaning for 2 HOURS AND 35 MINUTES burns approximately 525 calories</code> *Based on 130-pound person</td>
</tr>
<tr>
<td>500 Calories</td>
<td>1,025</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>20 YEARS AGO</th>
<th>TODAY</th>
<th>DIFFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mocha Coffee</td>
<td></td>
<td>305 MORE CALORIES</td>
</tr>
<tr>
<td>45 Calories</td>
<td>350</td>
<td><code>Walking 1 HOUR AND 20 MINUTES burns approximately 305 calories</code> *Based on 130-pound person</td>
</tr>
<tr>
<td>Dessert</td>
<td></td>
<td>290 MORE CALORIES</td>
</tr>
<tr>
<td>2 oz</td>
<td>500</td>
<td><code>Vacuuming for 1 HOUR AND 30 MINUTES burns approximately 290 calories</code> *Based on 130-pound person</td>
</tr>
<tr>
<td>Cookie</td>
<td></td>
<td>220 MORE CALORIES</td>
</tr>
<tr>
<td>1.5 diameter</td>
<td>3.5</td>
<td><code>Washing a car for 1 HOUR AND 15 MINUTES burns approximately 220 calories</code> *Based on 130-pound person</td>
</tr>
</tbody>
</table>
Serving Sizes:
The Secret is in Your Hand!

Serving sizes can be confusing at first. Here’s a quick guide to help you get started.

1 fist/cupped hand = 1 cup
1 cup = 2 oz of cooked rice or pasta
8 oz of milk or yogurt

1 tennis ball = ½ cup fruit/veggie

Thumb = 1 oz of cheese
1 ½ oz cheese = 8 oz of milk

Palm = 3 oz meat
The size of a woman’s palm

Thumb tip = 1 tsp
3 tsp = 1 tbsp
Limit fats and oils to this size

Handful = 1-2 oz of snack food
1 handful = 1 oz nuts
2 handfuls = 1 oz chips
PORTION SIZE

Choose appropriate types, amounts, and portion sizes of healthful foods

- 1 cup = Baseball
- ¾ cup = Tennis Ball
- ½ cup = Computer Mouse
- ¼ cup = Egg
- 3 oz. = Deck of Cards
- 2 tablespoons = Ping Pong Ball

(Matthews, 2011)
MONITOR BARRIERS TO HEALTHY EATING

- Lack of healthy foods in home or community
- Financial barriers
- Lack of knowledge about healthful food choices
- Multiple providers
- Lack of parental supervision

(Barlow, 2007)
EVIDENCE BASED STRATEGIES

- Nutrition recommendations that work
SETTING AN EXAMPLE

- What are the parents eating?
- Are the parents expecting kids to eat foods they do not?
- Are parents willing to make changes with their children?
- Changing the families unhealthy habits is key.
  - Change is hard and having more support will help the healthy changes continue.
EASY TO REMEMBER

5210

5 or more servings of fruits and vegetables per day.
2 hours or less of screen time
1 or more hours of PA
0 sweetened beverages
HEALTH LITERACY

- How to assess health Literacy
INTERPROFESSIONAL COLLABORATIVE PRACTICE AND LEADERSHIP

- Involving everyone in your practice
- Use appropriate language not shaming children or families
- Model the way
- Inspire a Shared Vision
- Challenge the Process
- Enable Others to Act
- Encourage the Heart

- Kouzes and Posner (2012)
REFERENCES : ONLINE RESOURCES

- www.motivationalinterview.org
- www.myplate.gov
- http://www.cdc.gov/growthcharts
- http://www.heart.org/HEARTORG/GettingHealthy/NutritionCenter
- http://www.nel.gov/
- www.eatright.org
- healthychildren.org/growinghealthy
- http://ellynsatterinstitute.org/
REFERENCES

- Margaret R. Karagas, PhD1,2; Tracy Punshon, PhD1,3; Vicki Sayarath, MPH1,2; Brian P. Jackson, PhD1,4; Carol L. Folt, PhD1,3,5; Kathryn L. Cottingham, PhD1,3. Association of Rice and Rice-Product Consumption With Arsenic Exposure Early in Life. JAMA Pediatric. 2016;170(6):609-616. doi:10.1001/jamapediatrics.2016.0120.
REFERENCES